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November 10, 2023

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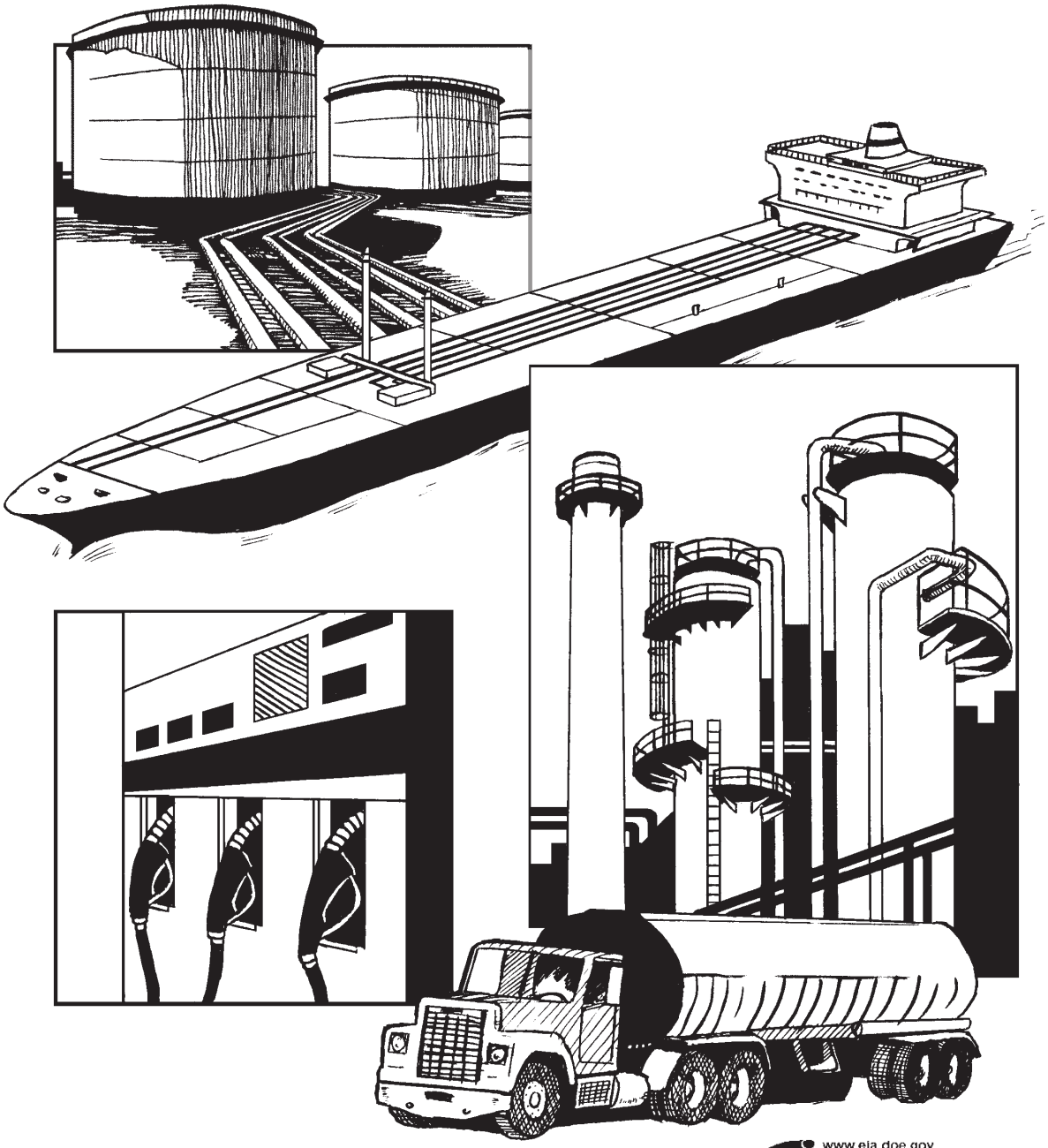
Weekly Table A1
(See Page 31)

Petroleum Supply Monthly
(Data for August 2023)

Weekly Petroleum Status Report



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Preface

The Weekly Petroleum Status Report (WPSR) provides timely information on supply and selected prices of crude oil and principal petroleum products. It provides the industry, press, planners, policymakers, consumers, analysts, and State and local governments with a ready, reliable source of current information.

Petroleum supply data presented in the *WPSR* describe supply and disposition of crude oil and petroleum products in the United States and major U.S. regions called Petroleum Administration for Defense (PAD) Districts. Geographic coverage in the *WPSR* includes the 50 States and District of Columbia. U.S. territories are treated as import sources but are otherwise excluded from weekly petroleum supply statistics. Petroleum supply data include field production, imports and exports, inputs and production at refineries and blending terminals, production from gas processing plants and fractionators, and inventories at refineries, terminals, pipelines, and fractionators. Crude oil inventories include Alaskan crude oil in transit by water. Aggregated weekly petroleum supply statistics are used for calculation of products supplied, which is an approximation of U.S. petroleum demand.

The supply data contained in this report are based primarily on company submissions for the week ending 7:00 a.m. the preceding Friday. Selected data are released electronically after 10:30 a.m. Eastern Standard Time (EST) each Wednesday.

Price data presented in the *WPSR* include world crude oil contract prices, spot prices of crude oil and major products in major U.S. and world markets, futures prices of crude oil and major products on the New York Mercantile Exchange (NYMEX), and retail prices of gasoline and on-highway diesel fuel. During the heating season, wholesale and retail prices of propane and residential heating oil are also provided. Collectively, these price series provide a comprehensive and timely view of current U.S. and world prices of crude oil and major petroleum products.

Weekly price data are collected as of 8:00 a.m. every Monday. Weekly retail gasoline and on-highway diesel prices are first available around 5:00 p.m. EST on Monday (Tuesday when Monday is a Federal holiday). Wholesale and retail propane and residential heating oil prices are released electronically after 10:30 a.m. EST each Wednesday during the heating season (October through mid-March). The daily spot and futures prices are provided by Reuters, Inc.

Crude Oil Production Re-benchmarking Notice: When we release the *Short-Term Energy Outlook* (STEO) each month, the weekly estimates of domestic crude oil production are reviewed to identify any differences between recent trends in survey-based domestic production reported in the *Petroleum Supply Monthly* (PSM) and other current data. If we find a large difference between the two series, we may re-benchmark the weekly production estimate on weeks when we release STEO. This week's domestic crude oil production estimate incorporates a re-benchmarking that affected estimated volumes by less than 50,000 barrels per day, which is about 0.2% of this week's estimated production total.

This report is available on the World Wide Web at:

http://www.eia.gov/petroleum/supply/weekly/

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Highlights

U.S. crude oil refinery inputs averaged 15.4 million barrels per day during the week ending November 10, 2023, which was 164 thousand barrels per day more than the previous week's average. Refineries operated at 86.1% of their operable capacity last week. Gasoline production decreased last week, averaging 9.4 million barrels per day. Distillate fuel production increased last week, averaging 4.8 million barrels per day.

U.S. crude oil imports averaged 6.4 million barrels per day last week, decreased by 21 thousand barrels per day from the previous week. Over the past four weeks, crude oil imports averaged about 6.3 million barrels per day, 3.3% more than the same four-week period last year. Total motor gasoline imports (including both finished gasoline and gasoline blending components) last week averaged 514 thousand barrels per day, and distillate fuel imports averaged 152 thousand barrels per day.

U.S. commercial crude oil inventories (excluding those in the Strategic Petroleum Reserve) increased by 3.6 million barrels from the previous week. At 439.4 million barrels, U.S. crude oil inventories are about 2% below the five year average for this time of year. Total motor gasoline inventories decreased by 1.5 million barrels from last week and are about 1% below the five year average for this time of year. Both finished gasoline and blending components inventories decreased last week. Distillate fuel inventories decreased by 1.4 million barrels last week and are about 13% below the five year average for this time of year. Propane/propylene inventories increased by 1.3 million barrels from last week and are 17% above the five year average for this time of year. Total commercial petroleum inventories decreased by 0.1 million barrels last week.

Total products supplied over the last four-week period averaged 20.4 million barrels a day, down by 2.0% from the same period last year. Over the past four weeks, motor gasoline product supplied averaged 9.0 million barrels a day, up by 1.9% from the same period last year. Distillate fuel product supplied averaged 4.0 million barrels a day over the past four weeks, slightly below the same period last year. Jet fuel product supplied was up 14.0% compared with the same four-week period last year.

The West Texas Intermediate crude oil price was not available on November 10, 2023, due to the Veteran's Day holiday. The New York Harbor spot price for conventional gasoline increased $0.259 to $2.287 per gallon, while the spot price for No. 2 heating oil decreased $0.046 to $2.741 per gallon.

The national average retail price for regular gasoline was $3.349 per gallon on November 13, 2023, $0.047 less than a week ago, and $0.366 less than the year-ago price. The national average retail diesel fuel price declined $0.072 to $4.294 per gallon, $1.019 less than the price last year.

Refinery Activity (Thousand Barrels per Day)

	Four Weeks Ending		
	11/10/23	11/3/23	11/11/22
Crude Oil Input to Refineries	15,269	15,268	15,880
Refinery Capacity Utilization (Percent)	85.6	85.6	91.1
Motor Gasoline Production	9,740	9,827	9,615
Distillate Fuel Oil Production	4,692	4,677	5,099

See Table 2.

Stocks (Million Barrels)

	11/10/23	11/3/23	11/11/22[1]
Crude Oil (Excluding SPR)[2]	439.4	435.8	435.4
Motor Gasoline[3]	215.7	217.2	207.9
Distillate Fuel Oil[3]	106.6	108.0	107.4
All Other Oils[4]	502.1	502.8	466.1
Crude Oil in SPR	351.3	351.3	392.1
Total[4]	1,614.9	1,615.0	1,608.9

See Table 1.

Net Imports (Thousand Barrels per Day)

	Four Weeks Ending		
	11/10/23	11/3/23	11/11/22
Crude Oil	1,515	1,304	1,991
Petroleum Products	-4,466	-4,262	-3,870
Total	-2,951	-2,957	-1,880

See Table 1.

Products Supplied (Thousand Barrels per Day)

	Four Weeks Ending		
	11/10/23	11/3/23	11/11/22
Motor Gasoline	9,000	8,999	8,836
Distillate Fuel Oil	4,039	4,116	4,040
All Other Products	7,404	7,783	7,980
Total	20,443	20,898	20,856

See Table 1.

Prices (Dollars per Gallon except as noted)

	11/10/23	11/3/23	11/11/22
World Crude Oil (Dollars per Barrel)	–	–	–
Spot Prices			
WTI Crude Oil - Cushing (Dollars per Barrel)	–	81.19	89.14
Conv. Regular Gasoline - NYH	2.287	2.028	–
No. 2 Heating Oil - NYH	2.741	2.787	–
Ultra-Low Sulfur Diesel Fuel - NYH	2.814	2.995	–
Propane - Mont Belvieu	0.630	0.643	0.868

	Retail Prices		
	11/13/23	11/6/23	11/14/22
Motor Gasoline - Regular	3.349	3.396	3.762
Motor Gasoline - Midgrade	3.908	3.962	4.270
Motor Gasoline - Premium	4.262	4.312	4.615
On-Highway Diesel Fuel	4.294	4.366	5.313

See Table 10,11,12,14.

Data for the week ending November 10 reflect benchmarking to the October *Petroleum Supply Monthly* values.

– = Data Not Available.

[1] Distillate fuel oil stocks located in the "Northeast Heating Oil Reserve" are not included.

Note: Data may not add to total due to independent rounding.

Table 1. U.S. Petroleum Balance Sheet, Week Ending 11/10/2023

Petroleum Stocks (Million Barrels)	Current Week	Week Ago			Year Ago		
	11/10/23	11/3/23	Difference	Percent Change	11/11/22	Difference	Percent Change
Crude Oil	790.6	787.0	3.6	0.5	827.5	-36.8	-4.5
Commercial (Excluding SPR)[1]	439.4	435.8	3.6	0.8	435.4	4.0	0.9
Strategic Petroleum Reserve (SPR)[2]	351.3	351.3	0.0	0.0	392.1	-40.8	-10.4
Total Motor Gasoline[3]	215.7	217.2	-1.5	-0.7	207.9	7.7	3.7
Reformulated	0.0	0.0	0.0	11.1	0.0	0.0	-20.0
Conventional	15.3	16.8	-1.5	-9.0	15.9	-0.6	-3.9
Blending Components	200.3	200.4	0.0	0.0	192.0	8.4	4.4
Fuel Ethanol	21.0	21.0	0.0	-0.2	21.3	-0.3	-1.6
Kerosene-Type Jet Fuel	36.7	38.9	-2.1	-5.5	37.3	-0.6	-1.5
Distillate Fuel Oil[3]	106.6	108.0	-1.4	-1.3	107.4	-0.8	-0.7
15 ppm sulfur and Under[3]	96.8	98.3	-1.5	-1.6	96.3	0.5	0.5
> 15 ppm to 500 ppm sulfur	2.4	2.2	0.3	12.2	2.6	-0.2	-8.5
> 500 ppm sulfur	7.4	7.5	-0.1	-2.0	8.4	-1.1	-12.6
Residual Fuel Oil	26.9	27.6	-0.7	-2.7	29.4	-2.5	-8.6
Propane/Propylene[4]	99.7	98.4	1.3	1.3	87.8	11.9	13.6
Other Oils[5]	317.8	316.9	0.9	0.3	290.3	27.5	9.5
Unfinished Oils	90.0	89.6	0.3	0.4	84.3	5.7	6.7
Total Stocks (Including SPR)[2,3,4]	1,614.9	1,615.0	-0.1	0.0	1,608.9	6.1	0.4
Total Stocks (Excluding SPR)[3,4]	1,263.7	1,263.7	-0.1	0.0	1,216.7	46.9	3.9

Petroleum Supply (Thousand Barrels per Day)	Current Week	Week Ago		Year Ago		Four-Week Averages Week Ending			Cumulative Daily Average		
	11/10/23	11/3/23	Difference	11/11/22	Difference	11/10/23	11/11/22	Percent Change	11/10/23	11/11/22	Percent Change
Crude Oil Supply											
(1) **Domestic Production**[6]	13,200	13,200	0	12,100	1,100	13,200	12,025	9.8	12,497	11,892	5.1
(2) Alaska	433	436	-4	448	-16	433	443	-2.2	427	438	-2.5
(3) Lower 48	12,800	12,800	0	11,700	1,100	12,800	11,625	10.1	12,086	11,476	5.3
(4) **Transfers to Crude Oil Supply**	715	–	715	–	715	179	–	0.0	16	–	0.0
(5) Alaskan NGL production[7]	37	–	37	–	37	9	–	0.0	1	–	0.0
(6) Natural Gasoline, Condensate, and Unfinished Oils[8]	678	–	678	–	678	170	–	0.0	15	–	0.0
(7) **Net Imports (Including SPR)**	1,484	1,869	-385	1,697	-213	1,515	1,991	-23.9	2,302	2,868	-19.7
(8) Imports	6,373	6,394	-21	5,559	814	6,301	6,100	3.3	6,488	6,310	2.8
(9) Commercial Crude Oil	6,373	6,394	-21	5,559	814	6,301	6,100	3.3	6,488	6,310	2.8
(10) Imports by SPR	0	0	0	0	0	0	0	0.0	0	0	0.0
(11) Imports into SPR by Others	0	0	0	0	0	0	0	0.0	0	0	0.0
(12) Exports	4,889	4,525	364	3,862	1,027	4,786	4,109	16.5	4,186	3,442	21.6
(13) **Stock Change (+/build; -/draw)**	513	1,981	-1,468	-1,357	1,870	700	-536	– –	-24	-584	– –
(14) Commercial Stock Change	513	1,981	-1,468	-771	1,285	700	-71	– –	42	58	– –
(15) SPR Stock Change	0	0	0	-586	586	0	-465	– –	-67	-642	– –
(16) **Adjustment**[9]	512	2,147	-1,635	997	-485	1,075	1,328	– –	991	549	– –
(17) **Crude Oil Input to Refineries**	15,399	15,235	164	16,152	-753	15,269	15,880	-3.8	15,830	15,892	-0.4
Other Supply											
(18) **Production**	8,990	8,739	6,697	8,281	6,740	3,969	8,348	75.6	2,438	8,008	11.0
(19) Natural Gas Plant Liquids[10]	6,664	6,445	219	6,031	633	1,666	6,087	0.0	149	5,812	0.0
(20) Renewable Fuels/Oxygenate Plant	1,346	1,322	24	1,214	132	1,330	1,241	7.2	1,272	1,192	6.8
(21) Fuel Ethanol	1,047	1,042	5	1,011	36	1,045	1,034	1.1	1,019	1,005	1.4
(22) Other[11]	299	280	19	203	96	284	207	37.2	253	187	35.8
(23) Refinery Processing Gain	980	972	8	1,036	-56	973	1,020	-4.5	1,017	1,005	1.2
(24) **Net Imports**[12]	-4,345	-4,296	-49	-3,731	-614	-4,466	-3,870	– –	-4,154	-3,785	– –
(25) Imports[12]	1,645	1,901	-256	2,294	-649	1,682	2,137	-21.3	2,022	2,059	-1.8
(26) Exports[12]	5,990	6,197	-207	6,025	-35	6,149	6,008	2.4	6,176	5,844	5.7
(27) **Stock Change (+/build; -/draw)**[3,13]	-522	-1,815	1,293	-163	-359	-787	-276	– –	124	14	– –
(28) **Adjustment**[14]	230	229	1	222	7	229	223	– –	214	222	– –
(29) **Transfers to Crude Oil Supply**[15]	-715	–	-715	–	-715	-179	–	0.0	-16	–	–
Products Supplied											
(30) **Total**[16]	20,080	21,722	-1,642	21,087	-1,007	20,443	20,856	-2.0	20,196	20,323	-0.6
(31) Finished Motor Gasoline[17]	8,949	9,492	-544	8,742	206	9,000	8,836	1.9	8,858	8,745	1.3
(32) Kerosene-Type Jet Fuel	1,793	1,821	-29	1,649	144	1,763	1,547	14.0	1,621	1,539	5.3
(33) Distillate Fuel Oil	4,109	4,298	-189	3,863	245	4,039	4,040	0.0	3,819	3,950	-3.3
(34) Residual Fuel Oil	371	228	143	409	-38	275	298	-7.9	232	338	-31.3
(35) Propane/Propylene[18]	854	1,291	-437	943	-89	977	975	0.2	961	1,118	-14.0
(36) Other Oils[19]	4,005	4,591	-586	5,481	-1,475	4,389	5,160	-14.9	4,704	4,633	1.5
Net Imports of Crude and Petroleum Products											
(33) Total	-2,861	-2,427	-434	-2,033	-827	-2,951	-1,880	57.0	-1,853	-917	101.9

– – = Not Applicable.
– = Data Not Available.
1 Includes those domestic and Customs-cleared foreign crude oil stocks held at refineries and tank farms or in transit thereto, and in pipelines.
2 Includes non-U.S. stocks held under foreign or commercial storage agreements.
3 Excludes stocks located in the "Northeast Heating Oil Reserve", "Northeast Regional Refined Petroleum Product Reserve", and "State of New York's Strategic Fuels Reserve Program." For details see Appendix C.
4 Prior to April 10, 2020 this included stocks of propylene held at terminals.
5 Includes weekly data for NGPLs and LRGs (except propane/propylene), kerosene, and asphalt and road oil; and estimated stocks of minor products based on monthly data.
6 Domestic crude oil production includes lease condensate and is estimated using a combination of short-term forecasts for the lower 48 states and the latest available production estimates from Alaska. Weekly crude oil production estimates are rounded to the nearest 100,000 b/d at the U.S. and lower 48 state levels. For more details see Appendix B, under "Data Obtained Through Models."
7 Weekly Production of total NGL in Alaska as reported on EIA-806.
8 Natural gasoline (excluding condensate) and unfinished oils transfers to crude oil supply from most recent "Petroleum Supply Monthly" plus weekly production of condensate minus weekly stock change of condensate then multiply the total by -1.
9 Formerly known as Unaccounted-for Crude Oil, this is a balancing item. Starting with the November 15, 2023 publication, crude oil adjustment includes transfers to crude oil supply (line 4). See Glossary for further explanation.
10 Formerly known as Natural Gas Liquids Production, prior to June 4, 2010, this included adjustments for fuel ethanol and motor gasoline blending components.
11 Includes denaturants (e.g. Pentanes Plus) and other renewables (e.g. biodiesel). Prior to April 10, 2020 this included other oxygenates (e.g. ETBE and MTBE).
12 Includes finished petroleum products, unfinished oils, gasoline blending components, fuel ethanol, and NGPLs and LRGs.
13 Includes an estimate of minor product stock change based on monthly data.
14 Includes monthly adjustments for hydrogen and other hydrocarbon production.
15 Total barrels of NGL and unfinished oils subtracted from supply of products and transferred to supply of crude oil (line 4).
16 Total Product Supplied = Crude Oil Input to Refineries (line 17) + Other Supply Production (line 18) + Net Product Imports (line 24) – Stock Change (line 27) + Adjustment (line 28) + Transfers to crude oil supply (line 29).
17 See Table 2, footnote #3.
18 Calculation of propane product supplied does not include propane produced in Alaska that was transferred to crude oil (line 5).
19 Other Oil Product Supplied = Total Product Supplied (line 30) less the product supplied of Finished Motor Gasoline (line 31), Kerosene-Type Jet Fuel (line 32), Distillate Fuel Oil (line 33), Residual Fuel Oil (line 34), and Propane/Propylene (line 35).
Notes: Some data estimated (see Sources for clarification). Data may not add to total due to independent rounding. Differences and percent changes are calculated using unrounded numbers.
Data source: See page 29.

Table 2. U.S. Inputs and Production by PAD District
(Thousand Barrels per Day, Except Where Noted)

Product / Region	Current Week	Last Week		Year Ago		2 Years Ago		Four-Week Averages		
	11/10/23	11/3/23	Difference	11/11/22	Percent Change	11/12/21	Percent Change	11/10/23	11/11/22	Percent Change
Refiner Inputs and Utilization										
Crude Oil Inputs	15,399	15,235	164	16,152	-4.7	15,397	0.0	15,269	15,880	-3.8
East Coast (PADD 1)	650	587	64	817	-20.4	681	-4.4	610	813	-25.0
Midwest (PADD 2)	3,646	3,745	-99	3,676	-0.8	3,692	-1.3	3,661	3,747	-2.3
Gulf Coast (PADD 3)	8,427	8,242	185	8,837	-4.6	8,370	0.7	8,306	8,561	-3.0
Rocky Mountain (PADD 4)	602	628	-26	578	4.3	523	15.1	626	597	4.9
West Coast (PADD 5)	2,074	2,034	40	2,244	-7.6	2,131	-2.7	2,066	2,162	-4.4
Gross Inputs	15,740	15,562	178	16,688	-5.7	15,940	-1.3	15,636	16,368	-4.5
East Coast (PADD 1)	663	600	64	834	-20.5	683	-2.8	627	835	-24.9
Midwest (PADD 2)	3,658	3,750	-92	3,674	-0.4	3,692	-0.9	3,670	3,751	-2.2
Gulf Coast (PADD 3)	8,650	8,466	184	9,140	-5.4	8,749	-1.1	8,559	8,867	-3.5
Rocky Mountain (PADD 4)	600	625	-25	576	4.3	523	14.8	624	597	4.6
West Coast (PADD 5)	2,168	2,121	47	2,465	-12.0	2,293	-5.5	2,155	2,318	-7.0
Operable Capacity[1]	18,272	18,272	0	17,962	1.7	18,130	0.8	18,272	17,962	1.7
East Coast (PADD 1)	878	878	0	818	7.3	818	7.3	878	818	7.3
Midwest (PADD 2)	4,208	4,208	0	4,197	0.3	4,191	0.4	4,208	4,197	0.3
Gulf Coast (PADD 3)	9,917	9,917	0	9,625	3.0	9,751	1.7	9,917	9,625	3.0
Rocky Mountain (PADD 4)	650	650	0	663	-2.0	657	-1.0	650	663	-2.0
West Coast (PADD 5)	2,620	2,620	0	2,659	-1.5	2,714	-3.5	2,620	2,659	-1.5
Percent Utilization[2]	86.1	85.2	1.0	92.9	– –	87.9	– –	85.6	91.1	– –
East Coast (PADD 1)	75.6	68.3	7.3	102.0	– –	83.5	– –	71.5	102.1	– –
Midwest (PADD 2)	86.9	89.1	-2.2	87.5	– –	88.1	– –	87.2	89.4	– –
Gulf Coast (PADD 3)	87.2	85.4	1.9	95.0	– –	89.7	– –	86.3	92.1	– –
Rocky Mountain (PADD 4)	92.3	96.2	-3.9	86.8	– –	79.6	– –	96.0	90.0	– –
West Coast (PADD 5)	82.8	81.0	1.8	92.7	– –	84.5	– –	82.3	87.2	– –
Refiner and Blender Net Production										
Finished Motor Gasoline[3]	9,415	10,228	-813	9,789	-3.8	9,922	-5.1	9,740	9,615	1.3
Finished Motor Gasoline (excl. Adjustment)[4]	9,516	9,619	-104	9,730	-2.2	9,653	-1.4	9,622	9,733	-1.1
East Coast (PADD 1)	3,260	3,084	176	3,118	4.6	3,177	2.6	3,188	3,183	0.2
Midwest (PADD 2)	2,492	2,426	66	2,487	0.2	2,484	0.3	2,473	2,497	-1.0
Gulf Coast (PADD 3)	2,091	2,280	-189	2,358	-11.3	2,185	-4.3	2,178	2,266	-3.9
Rocky Mountain (PADD 4)	346	378	-32	358	-3.2	337	2.7	367	365	0.7
West Coast (PADD 5)	1,426	1,451	-25	1,410	1.2	1,469	-2.9	1,441	1,422	1.3
Reformulated[4]	3,099	3,023	76	2,981	4.0	3,063	1.2	3,049	2,993	1.9
Conventional[4]	6,518	6,596	-78	6,749	-3.4	6,590	-1.1	6,599	6,740	-2.1
Adjustment[5]	-101	609	-709	60	– –	269	– –	118	-118	– –
Kerosene-Type Jet Fuel	1,582	1,624	-42	1,618	-2.2	1,384	14.3	1,598	1,550	3.1
East Coast (PADD 1)	46	42	4	78	-41.1	71	-35.0	39	78	-49.7
Midwest (PADD 2)	259	291	-32	279	-7.2	212	22.1	272	261	4.3
Gulf Coast (PADD 3)	878	827	51	816	7.6	713	23.1	854	786	8.6
Rocky Mountain (PADD 4)	29	31	-2	33	-11.4	32	-8.7	32	35	-8.7
West Coast (PADD 5)	369	432	-63	412	-10.3	356	3.8	401	390	2.9
Distillate Fuel Oil	4,753	4,700	54	5,097	-6.7	4,842	-1.8	4,692	5,099	-8.0
East Coast (PADD 1)	182	196	-14	249	-26.8	192	-5.0	177	246	-28.1
Midwest (PADD 2)	1,068	1,029	39	1,191	-10.3	1,104	-3.3	1,072	1,209	-11.4
Gulf Coast (PADD 3)	2,835	2,861	-27	2,931	-3.3	2,875	-1.4	2,801	2,900	-3.4
Rocky Mountain (PADD 4)	202	205	-3	184	9.8	155	30.8	207	206	0.8
West Coast (PADD 5)	466	408	58	542	-14.0	516	-9.7	435	538	-19.3
15 ppm sulfur and Under	4,567	4,494	74	4,932	-7.4	4,652	-1.8	4,495	4,913	-8.5
> 15 ppm to 500 ppm sulfur	102	121	-19	91	13.0	68	50.4	107	88	21.9
> 500 ppm sulfur	84	85	-1	74	13.8	122	-31.1	90	99	-8.7
Residual Fuel Oil	295	291	4	234	26.2	250	18.2	283	219	29.2
East Coast (PADD 1)	35	24	11	47	-26.7	42	-17.7	28	42	-33.0
Midwest (PADD 2)	35	46	-11	34	0.4	44	-21.9	34	38	-10.1
Gulf Coast (PADD 3)	133	114	20	63	112.7	92	44.5	110	51	116.2
Rocky Mountain (PADD 4)	11	9	1	10	4.6	10	4.8	10	10	2.2
West Coast (PADD 5)	82	99	-17	79	3.2	61	34.7	99	77	28.3
Propane/Propylene[6]	2,629	2,566	62	2,483	5.9	2,442	7.7	2,582	2,526	2.2
East Coast (PADD 1)	274	251	23	229	19.3	256	6.7	255	253	0.9
Midwest (PADD 2)	547	542	5	502	9.0	490	11.6	533	505	5.5
Gulf Coast (PADD 3)	1,569	1,518	51	1,505	4.3	1,464	7.2	1,555	1,530	1.7
PADDs 4 and 5	239	256	-17	247	-3.1	231	3.5	240	239	0.4
Ethanol Plant Production										
Fuel Ethanol	1,047	1,042	5	1,011	3.6	1,060	-1.2	1,045	1,034	1.1
East Coast (PADD 1)	12	12	0	13	-3.4	12	-1.2	12	12	-2.9
Midwest (PADD 2)	987	986	2	954	3.5	1,008	-2.0	988	975	1.4
Gulf Coast (PADD 3)	23	22	1	23	-1.2	21	11.0	22	24	-7.7
Rocky Mountain (PADD 4)	14	14	0	13	7.6	11	30.3	14	15	-7.4
West Coast (PADD 5)	10	9	2	8	30.9	9	18.3	10	8	21.9

– – = Not Applicable.
– = Data Not Available.
W = Data Withheld.
[1] Based on the latest reported monthly operable capacity.
[2] Calculated as gross inputs divided by the latest reported monthly operable capacity. See Glossary. Percentages are calculated using unrounded numbers.
[3] Finished motor gasoline production and product supplied include a weekly adjustment applied only to the U.S. total to correct for the imbalance created by blending of fuel ethanol and motor gasoline blending components. From 1993 to June 4, 2010, this adjustment was estimated from the latest monthly data and allocated to formulation and PAD District production data.
[4] Excludes adjustments for fuel ethanol and motor gasoline blending components. Historical data prior to June 4, 2010 includes the adjustment allocated by PAD District and formulation.
[5] Adjustment to correct for the imbalance created by the blending of fuel ethanol and motor gasoline blending components. For details see Appendix B.
[6] Includes propane/propylene production from natural gas plants.
Notes: Data may not add to total due to independent rounding. Differences and percent changes are calculated using unrounded numbers.
Data source: See page 29.

Table 3. Refiner and Blender Net Production
(Thousand Barrels per Day)

Product / Region	Current Week	Last Week		Year Ago		2 Years Ago		Four-Week Averages		
	11/10/23	11/3/23	Difference	11/11/22	Percent Change	11/12/21	Percent Change	11/10/23	11/11/22	Percent Change
Refiner Net Production										
Finished Motor Gasoline[1]	1,264	1,453	-189	1,495	-15.5	1,359	-7.0	1,354	1,449	-6.6
East Coast (PADD 1)	63	62	1	61	4.0	57	11.6	61	62	-1.4
Midwest (PADD 2)	316	302	14	345	-8.3	334	-5.2	318	329	-3.4
Gulf Coast (PADD 3)	657	846	-190	872	-24.7	758	-13.3	739	834	-11.4
Rocky Mountain (PADD 4)	156	173	-17	159	-1.8	144	8.5	164	166	-1.0
West Coast (PADD 5)	72	70	2	59	22.2	67	6.6	72	58	22.7
Reformulated	44	44	0	43	3.0	42	4.8	45	43	3.2
Blended with Ethanol	44	44	0	43	3.0	42	4.8	45	43	3.2
Other	0	0	0	0	0.0	0	0.0	0	0	0.0
Conventional	1,220	1,409	-189	1,453	-16.0	1,317	-7.4	1,309	1,406	-6.9
Blended with Ethanol	495	509	-14	489	1.1	471	5.0	507	483	4.8
Ed55 and Lower	495	509	-14	489	1.1	471	5.0	507	483	4.8
Greater than Ed55	0	0	0	0	0.0	0	0.0	0	0	0.0
Other	726	901	-175	963	-24.7	846	-14.3	802	923	-13.1
Distillate Fuel Oil	4,718	4,661	58	5,064	-6.8	4,808	-1.9	4,651	5,065	-8.2
15 ppm sulfur and Under	4,533	4,455	78	4,900	-7.5	4,618	-1.9	4,455	4,879	-8.7
> 15 ppm to 500 ppm sulfur	97	117	-19	86	12.7	63	53.0	102	84	22.2
> 500 ppm sulfur	88	89	-1	78	13.4	126	-29.8	94	103	-8.3
Kerosene	17	5	12	16	2.8	19	-11.9	9	25	-66.3
Kerosene-Type Jet Fuel	1,580	1,621	-42	1,615	-2.2	1,384	14.1	1,598	1,547	3.4
Residual Fuel Oil	295	291	4	234	26.2	250	18.1	283	219	29.2
Blender Net Production										
Finished Motor Gasoline[1]	8,352	8,166	187	8,234	1.4	8,293	0.7	8,294	8,284	0.1
East Coast (PADD 1)	3,197	3,023	175	3,057	4.6	3,120	2.5	3,127	3,121	0.2
Midwest (PADD 2)	2,175	2,123	52	2,142	1.6	2,150	1.2	2,155	2,169	-0.6
Gulf Coast (PADD 3)	1,435	1,434	1	1,486	-3.4	1,427	0.5	1,439	1,432	0.5
Rocky Mountain (PADD 4)	190	205	-15	199	-4.3	193	-1.6	203	199	2.1
West Coast (PADD 5)	1,355	1,381	-26	1,351	0.3	1,402	-3.4	1,369	1,364	0.4
Reformulated	3,055	2,979	76	2,938	4.0	3,021	1.1	3,004	2,950	1.8
Blended with Ethanol	3,055	2,979	76	2,938	4.0	3,021	1.1	3,004	2,950	1.8
Other	0	0	0	0	0.0	0	-66.7	0	0	325.0
Conventional	5,297	5,187	111	5,296	0.0	5,273	0.5	5,290	5,334	-0.8
Blended with Ethanol	5,349	5,212	137	5,300	0.9	5,340	0.2	5,313	5,360	-0.9
Ed55 and Lower	5,340	5,203	137	5,289	1.0	5,333	0.1	5,304	5,350	-0.9
Greater than Ed55	9	9	0	11	-20.2	7	30.6	10	11	-12.4
Other	-52	-25	-27	-3	1,408.4	-67	-22.9	-23	-27	-11.9
Distillate Fuel Oil	35	39	-4	32	8.7	34	3.2	40	34	18.8
15 ppm sulfur and Under	34	39	-4	32	7.2	34	1.7	39	34	17.2
> 15 ppm to 500 ppm sulfur	5	4	1	4	18.4	5	14.7	5	4	17.0
> 500 ppm sulfur	-5	-4	0	-4	7.6	-4	4.1	-4	-4	2.9
Kerosene	-2	-1	0	-1	27.8	0	557.1	-1	-1	-1.5
Kerosene-Type Jet Fuel	2	3	0	3	-23.2	0	1,624.2	-1	3	-118.9

– – = Not Applicable.
[1] Does not include adjustments for fuel ethanol and motor gasoline blending components.
Notes: Data may not add to total due to independent rounding. Differences and percent changes are calculated using unrounded numbers.
Data source: See page 29.

Table 4. Stocks of Crude Oil by PAD District, and Stocks of Petroleum Products,[1] U.S. Totals
(Million Barrels)

Product / Region	Current Week	Last Week		Year Ago		2 Years Ago	
	11/10/23	11/3/23	Difference	11/11/22	Percent Change	11/12/21[2]	Percent Change[2]
Crude Oil	790.6	787.0	3.6	827.5	-4.5	1,039.1	-23.9
Commercial (Excluding SPR)[3]	439.4	435.8	3.6	435.4	0.9	433.0	1.5
East Coast (PADD 1)	9.5	8.7	0.8	7.7	23.4	9.6	-1.4
Midwest (PADD 2)	108.1	103.9	4.2	108.7	-0.5	109.5	-1.2
Cushing[4]	25.0	23.1	1.9	25.6	-2.4	26.6	-6.0
Gulf Coast (PADD 3)	252.4	253.2	-0.8	245.0	3.0	242.6	4.0
Rocky Mountain (PADD 4)	22.9	23.2	-0.4	24.5	-6.7	23.7	-3.7
West Coast (PADD 5)	46.5	46.6	-0.2	49.5	-6.0	47.6	-2.3
Alaska In-Transit[5]	2.5	2.3	0.1	5.2	-51.9	3.5	-28.8
SPR[6]	351.3	351.3	0.0	392.1	-10.4	606.1	-42.0
Total Motor Gasoline[7]	215.7	217.2	-1.5	207.9	3.7	212.0	1.7
Reformulated	0.0	0.0	0.0	0.0	-20.0	0.0	0.0
Conventional	15.3	16.8	-1.5	15.9	-3.9	16.6	-7.6
Blending Components[7]	200.3	200.4	0.0	192.0	4.4	195.4	2.5
Fuel Ethanol[7]	21.0	21.0	0.0	21.3	-1.6	20.1	4.3
Kerosene-Type Jet Fuel	36.7	38.9	-2.1	37.3	-1.5	38.0	-3.3
Distillate Fuel Oil[7]	106.6	108.0	-1.4	107.4	-0.7	123.7	-13.8
15 ppm sulfur and Under[7]	96.8	98.3	-1.5	96.3	0.5	112.1	-13.7
> 15 ppm to 500 ppm sulfur	2.4	2.2	0.3	2.6	-8.5	3.5	-30.2
> 500 ppm sulfur	7.4	7.5	-0.1	8.4	-12.6	8.1	-8.8
Residual Fuel Oil	26.9	27.6	-0.7	29.4	-8.6	27.7	-3.1
Propane/Propylene[8]	99.7	98.4	1.3	87.8	13.6	74.6	33.8
Other Oils [9]	317.8	316.9	0.9	290.3	9.5	294.8	7.8
Unfinished Oils	90.0	89.6	0.3	84.3	6.7	90.6	-0.7
Total Stocks (Including SPR)[4,7,8]	1,614.9	1,615.0	-0.1	1,608.9	0.4	1,830.0	-11.8
Total Stocks (Excluding SPR)[7,8]	1,263.7	1,263.7	-0.1	1,216.7	3.9	1,223.9	3.3

-- = Not Applicable.
[1] Includes those domestic and Customs-cleared foreign stocks held at, or in transit to, refineries, ethanol plants, and bulk terminals, as well as stocks in pipelines. Stocks (excluding propane) held at natural gas processing plants are included in "Other Oils." All stock levels are as of the end of the period.
[2] Year-ago data originally published for crude oil stocks included lease stocks which began being excluded from commercial crude oil inventories with data for the week ended October 7, 2016.
[3] Includes those domestic and Customs-cleared foreign crude oil stocks held at refineries and tank farms or in transit thereto, and in pipelines.
[4] Includes domestic and foreign crude oil stocks held in tank farms in Lincoln, Payne, and Creek counties in Oklahoma. Cushing, Oklahoma, is the designated delivery point for NYMEX crude oil futures contracts.
[5] Includes crude oil stocks in transit by water between Alaska and the other States, the District of Columbia, Puerto Rico, and the Virgin Islands, as well as stocks held at transshipment terminals.
[6] Includes non-U.S. stocks held under foreign or commercial storage agreements.
[7] Excludes stocks located in the "Northeast Heating Oil Reserve", "Northeast Regional Refined Petroleum Product Reserve", and "State of New York's Strategic Fuels Reserve Program." For details see Appendix C.
[8] Prior to April 10, 2020 this included stocks of propylene held at terminals.
[9] Includes weekly data for NGPLs and LRGs (except propane/propylene), kerosene, and asphalt and road oil; and estimated stocks of minor products based on monthly data.
Notes: Some data estimated (see Sources for clarification). Data may not add to total due to independent rounding. Differences and percent changes are calculated using unrounded numbers.
Data source: See page 29.

Figure 1. Stocks of Crude Oil by PAD District, December 2022 to Present

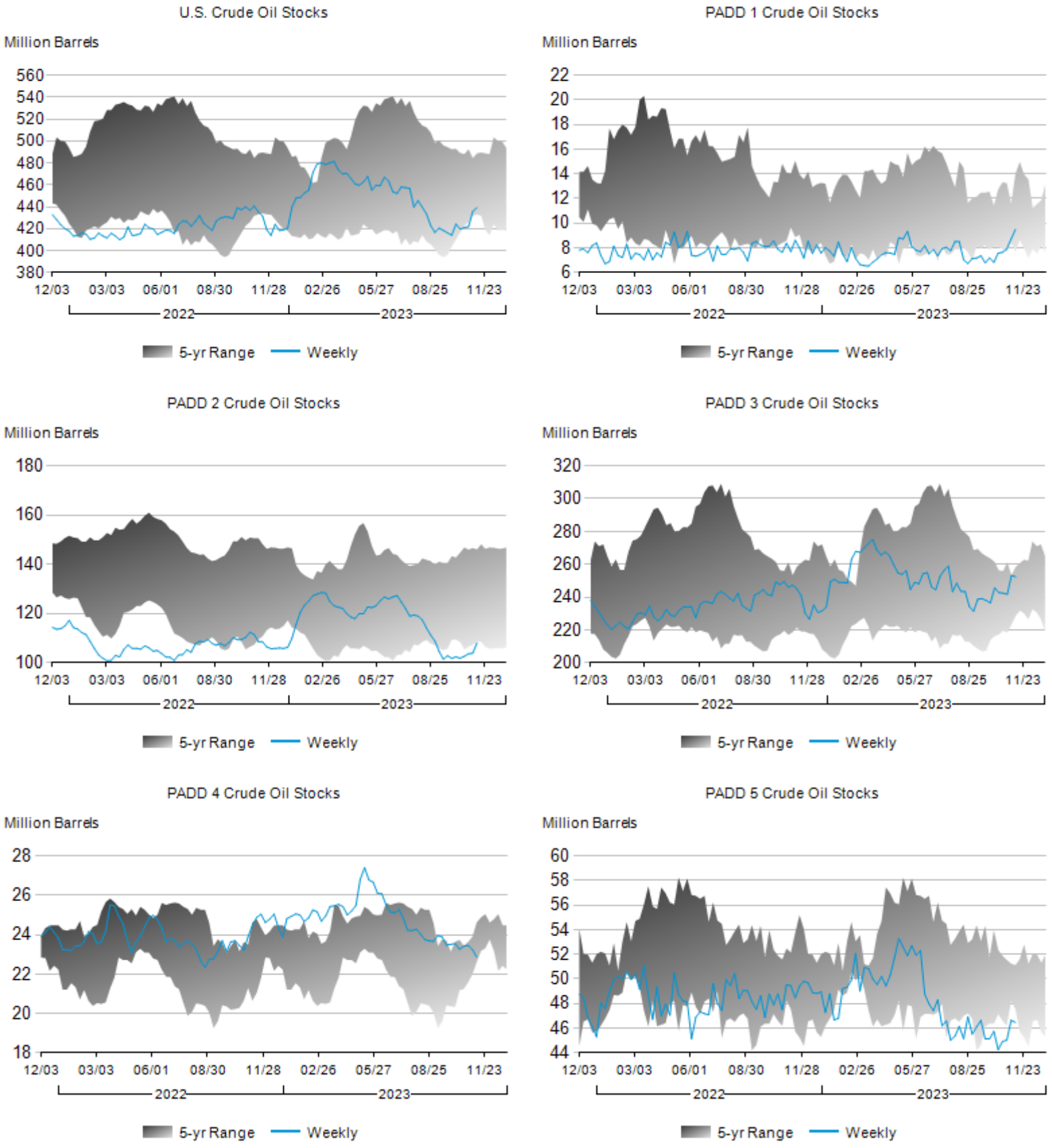


Table 5. Stocks of Total Motor Gasoline and Fuel Ethanol by PAD District
(Million Barrels)

Product / Region	Current Week	Last Week		Year Ago		2 Years Ago	
	11/10/23	11/3/23	Difference	11/11/22	Percent Change	11/12/21	Percent Change
Motor Gasoline							
Total Motor Gasoline[1]	215.7	217.2	-1.5	207.9	3.7	212.0	1.7
East Coast (PADD 1)	52.6	53.5	-0.9	49.3	6.8	53.8	-2.3
Midwest (PADD 2)	43.8	43.2	0.6	44.5	-1.7	43.8	0.0
Gulf Coast (PADD 3)	84.7	85.1	-0.3	79.6	6.4	79.2	7.0
Rocky Mountain (PADD 4)	7.4	7.4	0.0	6.6	12.6	7.6	-2.3
West Coast (PADD 5)	27.2	28.1	-0.9	28.0	-2.8	27.7	-1.7
Finished Motor Gasoline	15.3	16.8	-1.5	16.0	-4.0	16.6	-7.6
East Coast (PADD 1)	3.1	3.5	-0.4	2.7	14.8	2.6	18.9
Midwest (PADD 2)	3.5	3.3	0.2	3.7	-5.2	4.3	-18.3
Gulf Coast (PADD 3)	6.2	6.7	-0.5	6.5	-4.4	6.2	0.0
Rocky Mountain (PADD 4)	0.9	1.3	-0.4	1.1	-23.8	1.4	-37.8
West Coast (PADD 5)	1.7	2.0	-0.3	1.9	-14.7	2.1	-21.5
Reformulated	0.0	0.0	0.0	0.0	-20.0	0.0	0.0
East Coast (PADD 1)	0.0	0.0	0.0	0.0	25.0	0.0	0.0
Midwest (PADD 2)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gulf Coast (PADD 3)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rocky Mountain (PADD 4)	0.0	0.0	0.0	0.0	-100.0	0.0	0.0
West Coast (PADD 5)	0.0	0.0	0.0	0.0	-25.0	0.0	0.0
Conventional	15.3	16.8	-1.5	15.9	-3.9	16.6	-7.6
East Coast (PADD 1)	3.1	3.5	-0.4	2.7	14.8	2.6	18.9
Midwest (PADD 2)	3.5	3.3	0.2	3.7	-5.2	4.3	-18.3
Gulf Coast (PADD 3)	6.2	6.7	-0.5	6.5	-4.4	6.2	0.0
Rocky Mountain (PADD 4)	0.9	1.3	-0.4	1.1	-23.8	1.4	-37.8
West Coast (PADD 5)	1.6	2.0	-0.3	1.9	-14.6	2.1	-21.6
Blending Components[1]	200.3	200.4	0.0	192.0	4.4	195.4	2.5
East Coast (PADD 1)[1]	49.5	49.9	-0.5	46.5	6.3	51.2	-3.4
Midwest (PADD 2)	40.3	39.8	0.5	40.9	-1.4	39.5	2.0
Gulf Coast (PADD 3)	78.5	78.4	0.2	73.1	7.4	73.0	7.6
Rocky Mountain (PADD 4)	6.5	6.1	0.4	5.4	20.2	6.2	5.7
West Coast (PADD 5)	25.5	26.1	-0.6	26.0	-1.9	25.5	0.0
Fuel Ethanol							
Fuel Ethanol[1]	21.0	21.0	0.0	21.3	-1.6	20.1	4.3
East Coast (PADD 1)[1]	6.6	6.4	0.2	6.3	5.1	5.3	24.3
Midwest (PADD 2)	8.3	8.5	-0.2	8.5	-2.4	8.1	3.2
Gulf Coast (PADD 3)	3.5	3.4	0.1	3.8	-6.0	3.6	-1.2
Rocky Mountain (PADD 4)	0.3	0.3	0.0	0.3	-1.0	0.4	-12.3
West Coast (PADD 5)	2.1	2.3	-0.2	2.4	-9.9	2.7	-21.7

-- = Not Applicable.
[1] Excludes stocks located in the "Northeast Regional Refined Petroleum Product Reserve" and "State of New York's Strategic Fuels Reserve Program." For details see Appendix C.
Notes: Data may not add to total due to independent rounding. Differences and percent changes are calculated using unrounded numbers.
Data source: See page 29.

Figure 2. Stocks of Total Motor Gasoline by PAD District, December 2022 to Present

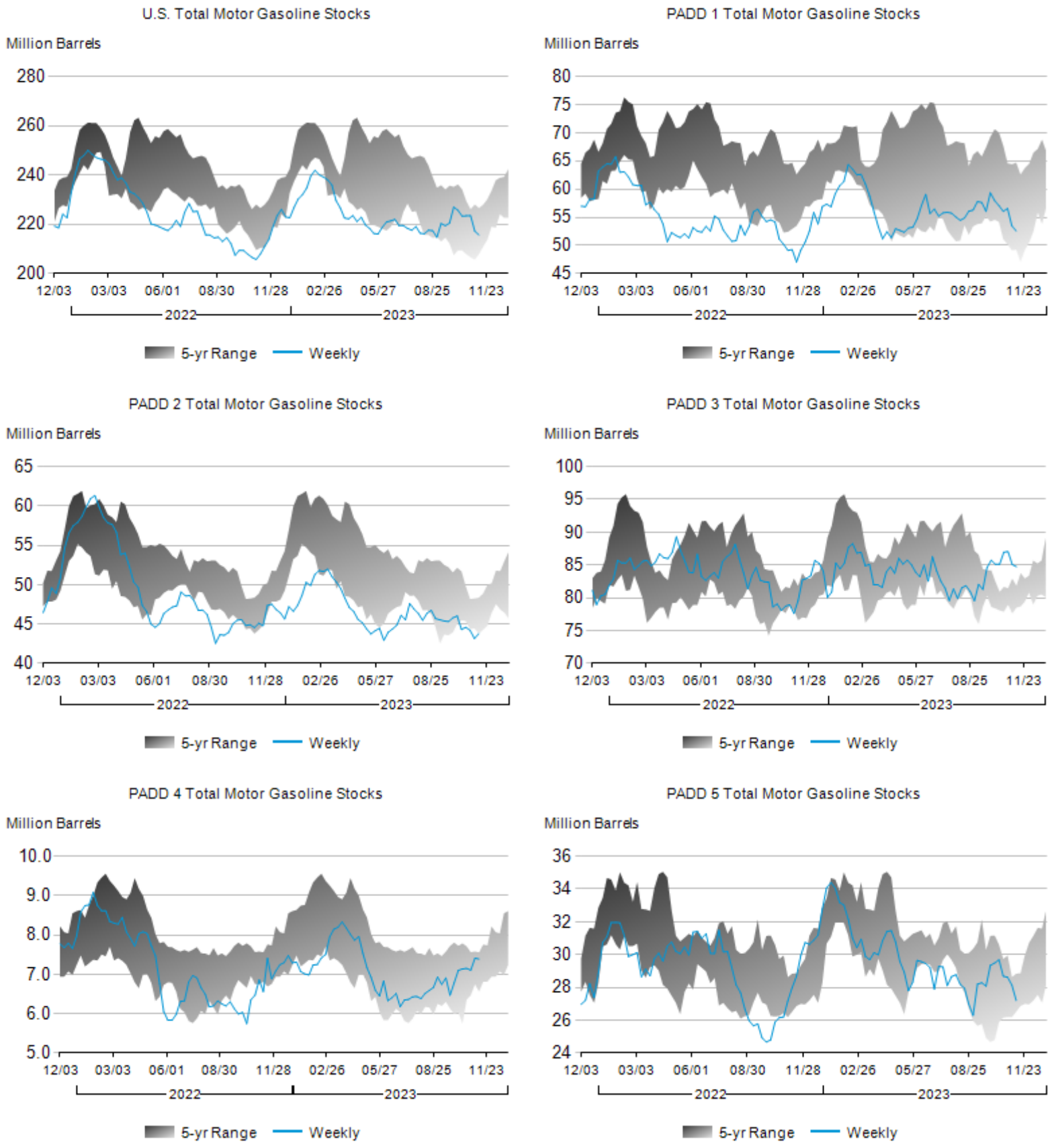


Table 6. Stocks of Distillate, Kerosene-Type Jet Fuel, Residual Fuel Oil, and Propane/Propylene by PAD District
(Million Barrels)

Product / Region	Current Week	Last Week		Year Ago		2 Years Ago	
	11/10/23	11/3/23	Difference	11/11/22	Percent Change	11/12/21	Percent Change
Distillate Fuel Oil[1]	106.6	108.0	-1.4	107.4	-0.7	123.7	-13.8
East Coast (PADD 1)[1]	26.3	25.2	1.1	25.9	1.6	39.9	-34.1
New England (PADD 1A)[1]	3.7	3.3	0.4	3.7	1.6	7.7	-51.7
Central Atlantic (PADD 1B)[1]	12.1	11.1	0.9	11.6	4.3	19.5	-38.1
Lower Atlantic (PADD 1C)	10.5	10.8	-0.3	10.6	-1.2	12.7	-17.1
Midwest (PADD 2)	25.0	26.1	-1.1	24.3	2.6	27.5	-9.1
Gulf Coast (PADD 3)	40.6	41.7	-1.1	42.0	-3.4	41.4	-2.0
Rocky Mountain (PADD 4)	3.7	3.8	-0.1	3.1	18.6	3.2	17.3
West Coast (PADD 5)	11.0	11.2	-0.2	12.0	-8.4	11.8	-6.5
15 ppm sulfur and Under	96.8	98.3	-1.5	96.3	0.5	112.1	-13.7
East Coast (PADD 1)[1]	24.6	23.5	1.1	23.5	4.8	36.3	-32.2
New England (PADD 1A)[1]	3.7	3.3	0.4	3.7	1.6	7.7	-51.4
Central Atlantic (PADD 1B)[1]	11.2	10.2	1.0	10.0	11.8	17.1	-34.7
Lower Atlantic (PADD 1C)	9.7	10.0	-0.3	9.8	-1.1	11.5	-15.7
Midwest (PADD 2)	24.2	25.5	-1.3	23.7	2.2	26.7	-9.3
Gulf Coast (PADD 3)	34.3	35.2	-0.9	34.9	-1.9	35.4	-3.1
Rocky Mountain (PADD 4)	3.5	3.6	-0.1	2.9	19.1	3.0	18.4
West Coast (PADD 5)	10.2	10.5	-0.3	11.3	-9.7	10.8	-5.9
> 15 ppm to 500 ppm sulfur	2.4	2.2	0.3	2.6	-8.5	3.5	-30.2
East Coast (PADD 1)	0.5	0.5	0.0	0.7	-22.0	0.9	-41.3
New England (PADD 1A)	0.0	0.0	0.0	0.0	-20.0	0.0	-79.2
Central Atlantic (PADD 1B)	0.1	0.1	0.0	0.2	-60.8	0.4	-81.6
Lower Atlantic (PADD 1C)	0.4	0.4	0.0	0.5	-4.8	0.4	3.2
Midwest (PADD 2)	0.4	0.3	0.1	0.3	9.3	0.4	-3.4
Gulf Coast (PADD 3)	1.2	1.0	0.2	1.2	-5.7	1.7	-32.9
Rocky Mountain (PADD 4)	0.1	0.2	0.0	0.1	9.7	0.2	-13.9
West Coast (PADD 5)	0.2	0.2	0.0	0.2	-20.8	0.2	-24.9
> 500 ppm sulfur	7.4	7.5	-0.1	8.4	-12.6	8.1	-8.8
East Coast (PADD 1)	1.1	1.2	-0.1	1.7	-33.1	2.7	-57.3
New England (PADD 1A)	0.0	0.0	0.0	0.0	0.0	0.0	-100.0
Central Atlantic (PADD 1B)	0.8	0.8	-0.1	1.3	-41.4	1.9	-58.5
Lower Atlantic (PADD 1C)	0.3	0.4	0.0	0.4	-1.2	0.7	-52.3
Midwest (PADD 2)	0.4	0.2	0.2	0.3	22.3	0.4	-2.1
Gulf Coast (PADD 3)	5.1	5.5	-0.4	5.8	-12.1	4.3	20.2
Rocky Mountain (PADD 4)	0.1	0.0	0.0	0.1	15.1	0.0	84.8
West Coast (PADD 5)	0.7	0.5	0.2	0.5	23.4	0.7	-9.2
Kerosene-Type Jet Fuel	36.7	38.9	-2.1	37.3	-1.5	38.0	-3.3
East Coast (PADD 1)	8.8	9.4	-0.6	8.1	8.2	8.8	-0.1
Midwest (PADD 2)	6.2	6.8	-0.6	6.3	-1.2	7.1	-13.3
Gulf Coast (PADD 3)	12.2	12.8	-0.6	12.3	-0.5	11.1	9.9
Rocky Mountain (PADD 4)	0.9	0.9	0.0	0.8	14.4	0.9	3.8
West Coast (PADD 5)	8.6	9.0	-0.4	9.8	-12.2	10.0	-14.3
Residual Fuel Oil	26.9	27.6	-0.7	29.4	-8.6	27.7	-3.1
East Coast (PADD 1)	5.4	5.5	-0.1	5.2	4.3	5.6	-4.2
New England (PADD 1A)	0.1	0.1	0.0	0.1	33.2	0.3	-47.4
Central Atlantic (PADD 1B)	3.9	3.9	0.0	3.8	4.0	4.1	-3.4
Lower Atlantic (PADD 1C)	1.3	1.4	-0.1	1.3	2.9	1.3	2.7
Midwest (PADD 2)	1.3	1.4	-0.1	1.2	16.9	1.1	19.3
Gulf Coast (PADD 3)	15.4	16.2	-0.8	18.4	-16.2	15.6	-1.2
Rocky Mountain (PADD 4)	0.2	0.2	0.0	0.2	17.1	0.2	13.4
West Coast (PADD 5)	4.5	4.3	0.2	4.5	0.1	5.2	-13.3
Propane/Propylene[2]	99.7	98.4	1.3	87.8	13.6	74.6	33.8
East Coast (PADD 1)[2]	9.8	9.3	0.4	9.0	8.5	8.8	10.8
New England (PADD 1A)[2]	0.8	0.8	0.0	0.7	6.0	0.8	-6.1
Central Atlantic (PADD 1B)[2]	6.7	6.2	0.5	6.3	7.2	6.0	11.6
Lower Atlantic (PADD 1C)[2]	2.3	2.3	-0.1	2.0	13.4	2.0	15.6
Midwest (PADD 2)[2]	26.9	26.8	0.2	25.5	5.8	24.9	8.4
Gulf Coast (PADD 3)[2]	56.1	56.4	-0.3	48.1	16.5	35.7	56.9
PADDs 4 and 5[2]	7.0	5.9	1.0	5.2	32.9	5.2	34.9
Propane, fractionated and ready for sale[3]	–	–	–	–	–	–	–
East Coast (PADD 1)	–	–	–	–	–	–	–
New England (PADD 1A)	–	–	–	–	–	–	–
Central Atlantic (PADD 1B)	–	–	–	–	–	–	–
Lower Atlantic (PADD 1C)	–	–	–	–	–	–	–
Midwest (PADD 2)	–	–	–	–	–	–	–
Gulf Coast (PADD 3)	–	–	–	–	–	–	–
Rocky Mountain (PADD 4)	–	–	–	–	–	–	–
West Coast (PADD 5)	–	–	–	–	–	–	–
Propylene (Total U.S. Nonfuel Use)[2]	– –	– –	– –	– –	– –	– –	– –

– = Data Not Available.
– – = Not Applicable.
R = Revised Data.
[1] Excludes stocks located in the "Northeast Heating Oil Reserve" and "State of New York's Strategic Fuels Reserve Program." For details see Appendix C.
[2] Prior to April 10, 2020 this included stocks of propylene held at terminals.
[3] Includes fractionated propane ready for sale (for example HD-5 propane and HD-10 propane) but excludes the propane component of unfractionated mixed products. Also excludes propylene.
Notes: Data may not add to total due to independent rounding. Differences and percent changes are calculated using unrounded numbers.
Data source: See page 29.

Figure 3. Stocks of Distillate Fuel Oil by PAD District, December 2022 to Present

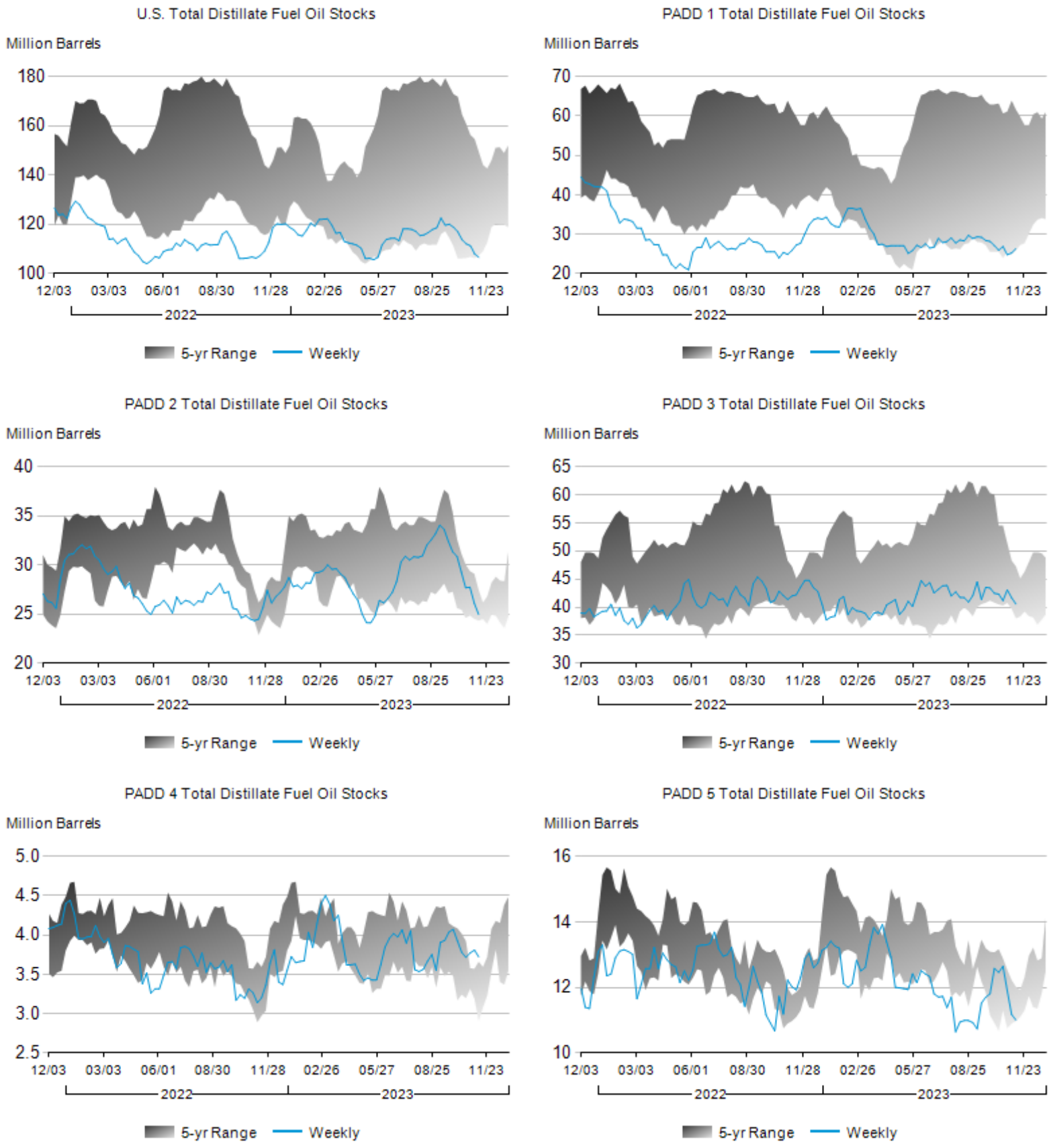


Figure 4. Stocks of Kerosene-Type Jet Fuel by PAD District, December 2022 to Present

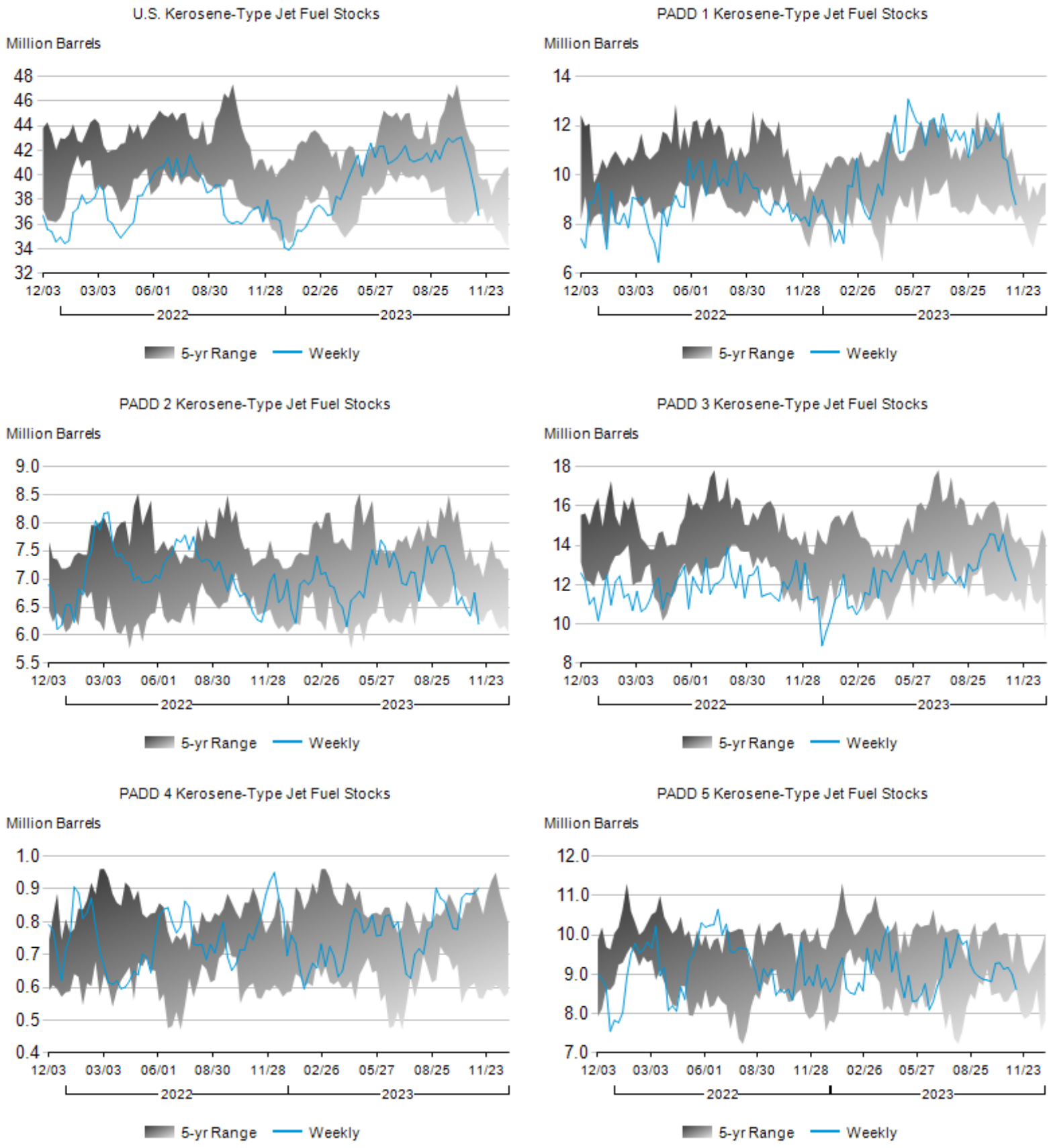


Figure 5. Stocks of Residual Fuel Oil by PAD District, December 2022 to Present

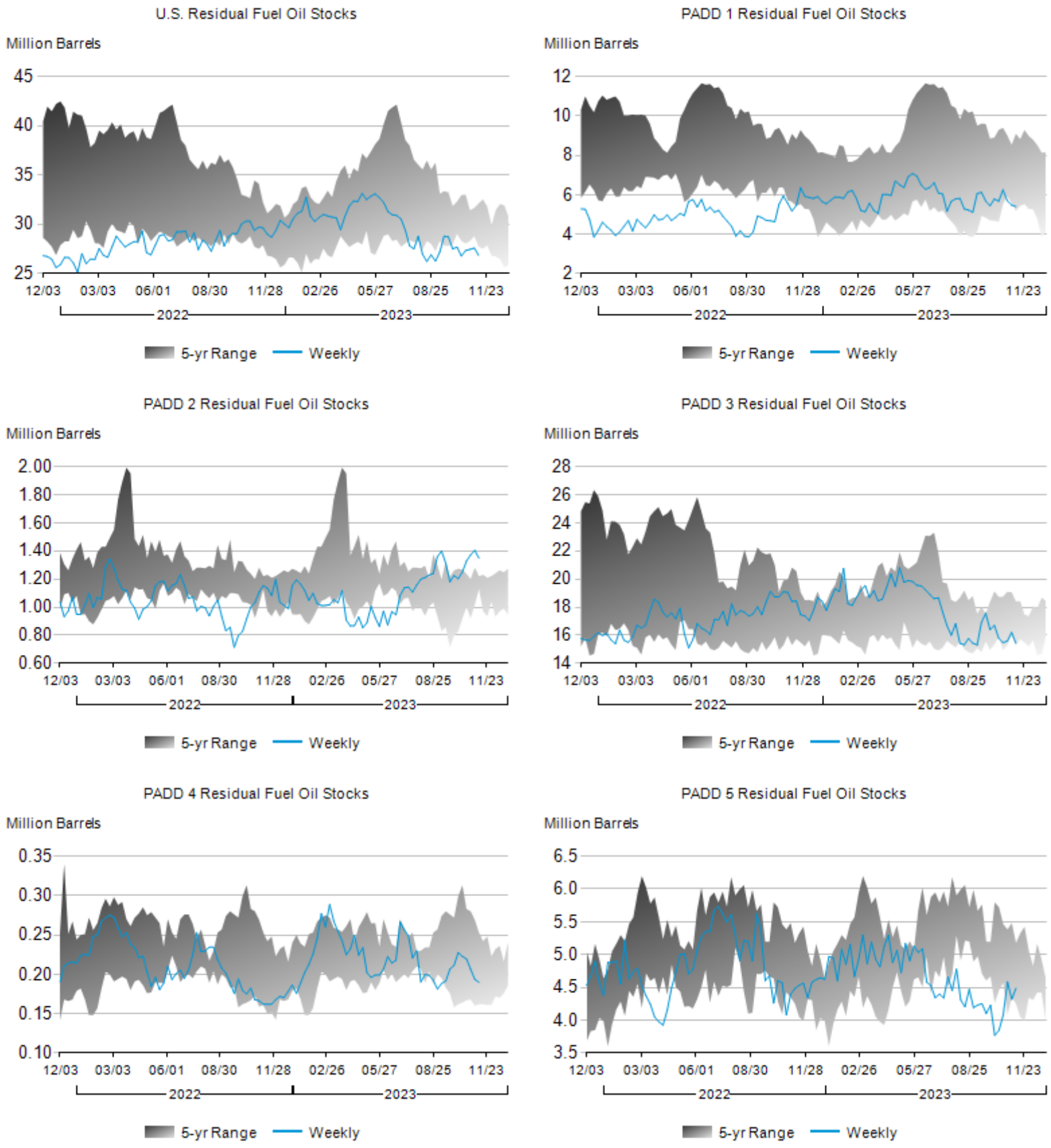


Figure 6. Stocks of Propane/Propylene by PAD District, December 2022 to Present

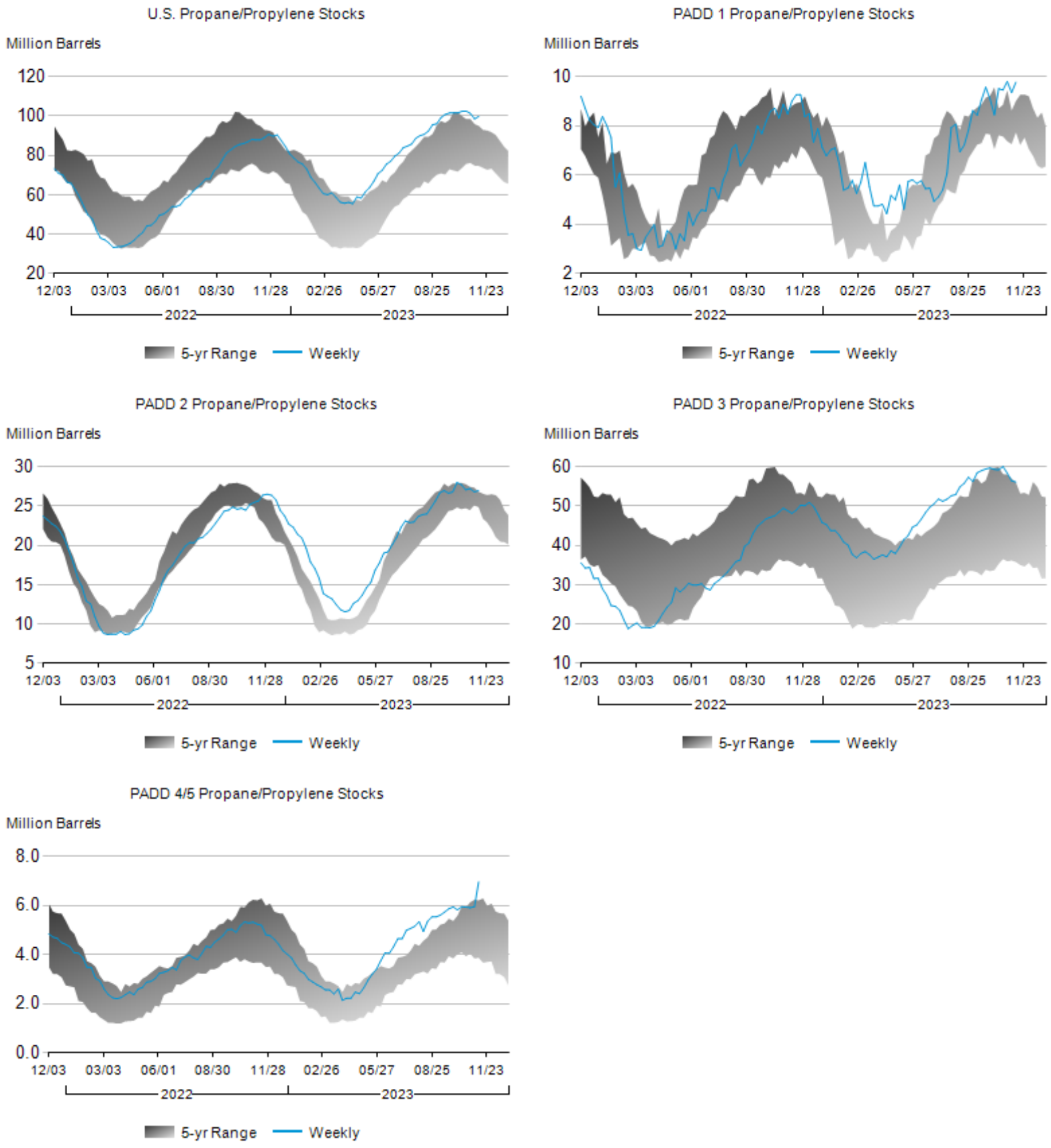


Table 7. Imports of Crude Oil and Total Products by PAD District
(Thousand Barrels per Day)

Product / Region	Current Week	Last Week		Year Ago		2 Years Ago		Four-Week Averages		
	11/10/23	11/3/23	Difference	11/11/22	Percent Change	11/12/21	Percent Change	11/10/23	11/11/22	Percent Change
Net Imports (Incl. SPR)	-2,861	-2,427	-434	-2,033	40.7	-145	1,878.1	-2,951	-1,880	57.0
Imports (Incl. SPR)	8,018	8,295	-277	7,854	2.1	8,624	-7.0	7,984	8,237	-3.1
Exports[1]	10,879	10,722	157	9,887	10.0	8,769	24.1	10,935	10,117	8.1
Crude Oil Net Imports (Incl. SPR)	1,484	1,869	-385	1,697	-12.6	2,565	-42.1	1,515	1,991	-23.9
Commercial[2]	6,373	6,394	-21	5,559	14.6	6,191	2.9	6,301	6,100	3.3
East Coast (PADD 1)	444	526	-82	691	-35.8	701	-36.7	524	668	-21.6
Midwest (PADD 2)	3,089	3,189	-99	2,456	25.8	2,750	12.3	2,995	2,651	13.0
Gulf Coast (PADD 3)	1,004	1,006	-2	879	14.2	1,238	-18.9	1,126	1,052	7.0
Rocky Mountain (PADD 4)	457	471	-14	378	20.8	410	11.5	476	399	19.5
West Coast (PADD 5)	1,380	1,203	177	1,156	19.4	1,093	26.3	1,180	1,330	-11.3
Imports by SPR	0	0	0	0	0.0	0	0.0	0	0	0.0
Imports into SPR by Others	0	0	0	0	0.0	0	0.0	0	0	0.0
Exports[3]	4,889	4,525	364	3,862	26.6	3,626	34.8	4,786	4,109	16.5
Total Products Net Imports	-4,345	-4,296	-49	-3,731	– –	-2,710	– –	-4,466	-3,870	– –
Imports	1,645	1,901	-256	2,294	-28.3	2,433	-32.4	1,682	2,137	-21.3
East Coast (PADD 1)	834	823	11	871	-4.3	1,186	-29.7	782	897	-12.8
Midwest (PADD 2)	67	91	-25	105	-36.8	84	-20.6	90	122	-25.9
Gulf Coast (PADD 3)	465	622	-157	942	-50.6	829	-43.9	458	730	-37.2
Rocky Mountain (PADD 4)	10	8	2	19	-46.4	26	-60.2	12	21	-45.2
West Coast (PADD 5)	269	357	-87	357	-24.5	309	-12.9	340	367	-7.3
Motor Gasoline	514	704	-190	572	-10.2	823	-37.6	607	501	21.3
Reformulated	0	0	0	0	0.0	0	0.0	0	0	0.0
Conventional	150	147	3	99	51.7	56	166.4	108	106	2.0
Blending Components	364	557	-193	473	-23.1	767	-52.5	499	394	26.4
Fuel Ethanol	0	0	0	0	0.0	0	0.0	0	0	0.0
Kerosene-Type Jet Fuel	72	132	-60	201	-64.3	189	-62.0	110	191	-42.3
Distillate Fuel Oil	152	216	-63	110	39.0	239	-36.2	139	175	-20.6
15 ppm sulfur and Under	152	216	-63	110	39.0	239	-36.2	139	175	-20.6
> 15 ppm to 500 ppm sulfur	0	0	0	0	0.0	0	0.0	0	0	0.0
> 500 ppm to 2000 ppm sulfur	0	0	0	0	0.0	0	0.0	0	0	0.0
> 2000 ppm sulfur	0	0	0	0	0.0	0	0.0	0	0	0.0
Residual Fuel Oil	78	56	23	171	-54.1	214	-63.3	89	220	-59.4
Propane/Propylene	69	85	-16	102	-32.1	117	-41.0	90	104	-13.5
Other Oils	760	709	50	1,139	-33.3	852	-10.8	647	947	-31.7
Exports	5,990	6,197	-207	6,025	-0.6	5,143	16.5	6,149	6,008	2.4

– – = Not Applicable.
[1] Includes estimated exports of crude oil, refined petroleum products, and fuel ethanol.
[2] Prior to June 4, 2010, included "Imports into SPR by Others."
[3] On December 18, 2015, the U.S. enacted legislation authorizing the export of U.S. crude oil without a license. Exports to embargoed or sanctioned countries continue to require authorization.
Notes: Data may not add to total due to independent rounding. Differences and percent changes are calculated using unrounded numbers.
Data source: See page 29.

Table 8. Preliminary Crude Imports by Country of Origin (For the Top 10 Importing Countries of 2022)[1]
(Thousand Barrels per Day)

Countries[2]	2022 Percentage [3]	Current Week	Last Week		Year Ago		2 Years Ago		Four-Week Averages		
		11/10/23	11/3/23	Difference	11/11/22	Percent Change	11/12/21	Percent Change	11/10/23	11/11/22	Percent Change
Crude Imports By Country of Origin											
Canada	–	3,835	3,873	-38	3,076	24.7	3,429	11.9	3,645	3,301	10.4
Mexico	–	366	465	-100	528	-30.8	499	-26.7	612	572	7.0
Saudi Arabia	–	242	192	50	211	14.7	453	-46.6	291	397	-26.7
Russia	–	0	0	0	0	0.0	408	-100.0	0	0	0.0
Colombia	–	316	364	-49	143	120.7	302	4.6	225	229	-1.7
Iraq	–	283	187	96	141	100.1	42	580.1	251	250	0.4
Ecuador	–	36	61	-25	101	-64.6	103	-65.4	80	101	-20.3
Nigeria	–	70	39	31	181	-61.5	1	5,311.1	57	106	-46.2
Brazil	–	135	234	-98	307	-55.8	133	1.9	190	232	-18.4
Libya	–	86	0	85	90	-4.6	34	154.9	70	87	-20.4

– = Data Not Available.
[1] Preliminary data collected weekly. See the Petroleum Supply Monthly for updated data or the Petroleum Supply Annual for final data.
[2] Countries reported represent the top 10 countries based on annual import volumes from the PSM data as published on 8/31/2022 from the prior year full year. Some data estimated.
[3] Calculated from annualized import data of each country as a percentage of the total imports from the last full calendar year of the Petroleum Supply Annual as published on 8/31/2022 .
Notes: Data may not add to total due to independent rounding. Differences and percent changes are calculated using unrounded numbers.
Data source: See page 29.

Table 9. U.S. and PAD District Weekly Estimates
(Thousand Barrels per Day Except Where Noted)

Product/Region	Current Week	Last Week	Year Ago	2 Years Ago	Four-Week Averages	
	11/10/23	11/3/23	11/11/22	11/12/21[1]	11/10/23	11/11/22
Crude Oil Production						
Domestic Production[2]	13,200	13,200	12,100	11,400	13,200	12,025
Alaska	433	436	448	443	433	443
Lower 48	12,800	12,800	11,700	11,000	12,800	11,625
Refiner Inputs and Utilization						
Crude Oil Inputs	15,399	15,235	16,152	15,397	15,269	15,880
East Coast (PADD 1)	650	587	817	681	610	813
Midwest (PADD 2)	3,646	3,745	3,676	3,692	3,661	3,747
Gulf Coast (PADD 3)	8,427	8,242	8,837	8,370	8,306	8,561
Rocky Mountain (PADD 4)	602	628	578	523	626	597
West Coast (PADD 5)	2,074	2,034	2,244	2,131	2,066	2,162
Gross Inputs	15,740	15,562	16,688	15,940	15,636	16,368
East Coast (PADD 1)	663	600	834	683	627	835
Midwest (PADD 2)	3,658	3,750	3,674	3,692	3,670	3,751
Gulf Coast (PADD 3)	8,650	8,466	9,140	8,749	8,559	8,867
Rocky Mountain (PADD 4)	600	625	576	523	624	597
West Coast (PADD 5)	2,168	2,121	2,465	2,293	2,155	2,318
Operable Capacity[3]	18,272	18,272	17,962	18,130	18,272	17,962
East Coast (PADD 1)	878	878	818	818	878	818
Midwest (PADD 2)	4,208	4,208	4,197	4,191	4,208	4,197
Gulf Coast (PADD 3)	9,917	9,917	9,625	9,751	9,917	9,625
Rocky Mountain (PADD 4)	650	650	663	657	650	663
West Coast (PADD 5)	2,620	2,620	2,659	2,714	2,620	2,659
Percent Utilization[4]	86.1	85.2	92.9	87.9	85.6	91.1
East Coast (PADD 1)	75.6	68.3	102.0	83.5	71.5	102.1
Midwest (PADD 2)	86.9	89.1	87.5	88.1	87.2	89.4
Gulf Coast (PADD 3)	87.2	85.4	95.0	89.7	86.3	92.1
Rocky Mountain (PADD 4)	92.3	96.2	86.8	79.6	96.0	90.0
West Coast (PADD 5)	82.8	81.0	92.7	84.5	82.3	87.2
Refiner and Blender Net Inputs						
Motor Gasoline Blending Components	534	813	421	536	704	555
East Coast (PADD 1)	2,579	2,442	2,377	2,406	2,537	2,411
Midwest (PADD 2)	126	298	212	269	191	287
Gulf Coast (PADD 3)	-2,412	-2,118	-2,185	-2,419	-2,241	-2,193
Rocky Mountain (PADD 4)	40	24	-9	33	29	2
West Coast (PADD 5)	201	167	26	247	188	49
RBOB	758	554	278	582	668	405
East Coast (PADD 1)	558	586	328	552	600	427
Midwest (PADD 2)	90	116	32	91	88	81
Gulf Coast (PADD 3)	-55	-199	-64	-176	-134	-111
Rocky Mountain (PADD 4)	19	24	0	0	21	0
West Coast (PADD 5)	146	26	-18	115	93	8
CBOB	-259	188	-73	-153	24	105
East Coast (PADD 1)	1,737	1,623	1,724	1,579	1,680	1,679
Midwest (PADD 2)	69	174	135	240	116	237
Gulf Coast (PADD 3)	-2,080	-1,647	-1,986	-2,063	-1,828	-1,871
Rocky Mountain (PADD 4)	27	-14	-2	43	10	9
West Coast (PADD 5)	-12	53	57	48	45	51
GTAB	45	44	100	223	40	84
East Coast (PADD 1)	45	44	100	223	40	84
Midwest (PADD 2)	0	0	0	0	0	0
Gulf Coast (PADD 3)	0	0	0	0	0	0
Rocky Mountain (PADD 4)	0	0	0	0	0	0
West Coast (PADD 5)	0	0	0	0	0	0
All Other Blending Components	-10	27	116	-116	-28	-39
East Coast (PADD 1)	239	189	225	52	217	221
Midwest (PADD 2)	-33	9	45	-62	-13	-31
Gulf Coast (PADD 3)	-278	-272	-135	-181	-280	-212
Rocky Mountain (PADD 4)	-5	13	-7	-10	-3	-8
West Coast (PADD 5)	67	88	-12	85	50	-11
Fuel Ethanol	903	891	893	898	901	899
East Coast (PADD 1)	326	315	321	326	322	326
Midwest (PADD 2)	241	240	242	239	243	243
Gulf Coast (PADD 3)	157	154	153	153	155	152
Rocky Mountain (PADD 4)	33	33	30	29	33	31
West Coast (PADD 5)	146	150	146	150	148	147
Refiner and Blender Net Production						
Finished Motor Gasoline[5]	9,415	10,228	9,789	9,922	9,740	9,615
Finished Motor Gasoline (excl. Adjustment)[6]	9,516	9,619	9,730	9,653	9,622	9,733
East Coast (PADD 1)	3,260	3,084	3,118	3,177	3,188	3,183
Midwest (PADD 2)	2,492	2,426	2,487	2,484	2,473	2,497
Gulf Coast (PADD 3)	2,091	2,280	2,358	2,185	2,178	2,266
Rocky Mountain (PADD 4)	346	378	358	337	367	365
West Coast (PADD 5)	1,426	1,451	1,410	1,469	1,441	1,422
Adjustment[7]	-101	609	60	269	118	-118
Reformulated[6]	3,099	3,023	2,981	3,063	3,049	2,993
East Coast (PADD 1)	1,218	1,161	1,161	1,207	1,186	1,168
Midwest (PADD 2)	354	332	337	324	340	341
Gulf Coast (PADD 3)	500	489	479	480	487	473
Rocky Mountain (PADD 4)	21	23	0	0	24	0
West Coast (PADD 5)	1,006	1,018	1,005	1,052	1,013	1,011

See footnotes at end of table.

Table 9. U.S. and PAD District Weekly Estimates
(Thousand Barrels per Day Except Where Noted) — Continued

Product/Region	Current Week	Last Week	Year Ago	2 Years Ago	Four-Week Averages	
	11/10/23	11/3/23	11/11/22	11/12/21[1]	11/10/23	11/11/22
Refiner and Blender Net Production						
Blended with Fuel Ethanol[6]	3,099	3,023	2,981	3,063	3,049	2,993
East Coast (PADD 1)	1,218	1,160	1,161	1,207	1,185	1,168
Midwest (PADD 2)	354	332	337	324	340	341
Gulf Coast (PADD 3)	500	489	479	479	487	473
Rocky Mountain (PADD 4)	21	23	0	0	24	0
West Coast (PADD 5)	1,006	1,018	1,005	1,052	1,013	1,011
Other[6]	0	0	0	0	0	0
East Coast (PADD 1)	0	0	0	0	0	0
Midwest (PADD 2)	0	0	0	0	0	0
Gulf Coast (PADD 3)	0	0	0	0	0	0
Rocky Mountain (PADD 4)	0	0	0	0	0	0
West Coast (PADD 5)	0	0	0	0	0	0
Conventional[6]	6,518	6,596	6,749	6,590	6,599	6,740
East Coast (PADD 1)	2,042	1,924	1,957	1,970	2,003	2,015
Midwest (PADD 2)	2,138	2,094	2,150	2,160	2,133	2,157
Gulf Coast (PADD 3)	1,591	1,791	1,879	1,705	1,691	1,793
Rocky Mountain (PADD 4)	325	355	358	337	344	365
West Coast (PADD 5)	421	433	405	417	428	411
Blended with Fuel Ethanol[6]	5,844	5,720	5,789	5,811	5,820	5,844
East Coast (PADD 1)	2,070	1,942	2,003	2,014	2,020	2,043
Midwest (PADD 2)	2,011	1,999	2,018	2,023	2,021	2,027
Gulf Coast (PADD 3)	1,043	1,029	1,023	1,042	1,040	1,022
Rocky Mountain (PADD 4)	287	296	305	293	293	308
West Coast (PADD 5)	433	454	440	438	448	443
Ed55 and Lower	5,835	5,712	5,778	5,804	5,811	5,833
East Coast (PADD 1)	2,068	1,939	2,000	2,013	2,017	2,041
Midwest (PADD 2)	2,005	1,994	2,011	2,019	2,015	2,021
Gulf Coast (PADD 3)	1,042	1,028	1,022	1,042	1,039	1,020
Rocky Mountain (PADD 4)	287	296	304	293	293	307
West Coast (PADD 5)	433	454	440	438	447	443
Greater than Ed55	9	9	11	7	10	11
East Coast (PADD 1)	2	3	3	1	3	2
Midwest (PADD 2)	6	5	7	4	6	6
Gulf Coast (PADD 3)	0	0	1	1	1	1
Rocky Mountain (PADD 4)	0	0	1	1	0	1
West Coast (PADD 5)	0	0	0	0	0	0
Other[6]	674	876	960	779	779	896
East Coast (PADD 1)	-28	-18	-46	-44	-17	-28
Midwest (PADD 2)	128	95	132	137	112	129
Gulf Coast (PADD 3)	549	762	856	663	651	771
Rocky Mountain (PADD 4)	38	59	53	44	51	57
West Coast (PADD 5)	-12	-21	-35	-20	-19	-33
Kerosene-Type Jet Fuel	1,582	1,624	1,618	1,384	1,598	1,550
East Coast (PADD 1)	46	42	78	71	39	78
Midwest (PADD 2)	259	291	279	212	272	261
Gulf Coast (PADD 3)	878	827	816	713	854	786
Rocky Mountain (PADD 4)	29	31	33	32	32	35
West Coast (PADD 5)	369	432	412	356	401	390
Commercial[8]	1,543	1,570	1,593	1,295	1,562	1,506
East Coast (PADD 1)	46	42	78	71	42	78
Midwest (PADD 2)	260	292	278	212	272	260
Gulf Coast (PADD 3)	853	811	802	638	839	770
Rocky Mountain (PADD 4)	25	27	30	29	27	31
West Coast (PADD 5)	359	398	404	346	382	368
Military[8]	37	51	23	89	36	40
East Coast (PADD 1)	0	0	0	0	0	0
Midwest (PADD 2)	0	0	1	1	1	1
Gulf Coast (PADD 3)	23	14	12	74	14	15
Rocky Mountain (PADD 4)	3	2	2	2	3	2
West Coast (PADD 5)	10	34	7	12	19	22
Distillate Fuel Oil	4,753	4,700	5,097	4,842	4,692	5,099
East Coast (PADD 1)	182	196	249	192	177	246
Midwest (PADD 2)	1,068	1,029	1,191	1,104	1,072	1,209
Gulf Coast (PADD 3)	2,835	2,861	2,931	2,875	2,801	2,900
Rocky Mountain (PADD 4)	202	205	184	155	207	206
West Coast (PADD 5)	466	408	542	516	435	538
15 ppm sulfur and Under	4,567	4,494	4,932	4,652	4,495	4,913
East Coast (PADD 1)	192	188	254	198	184	251
Midwest (PADD 2)	1,062	1,035	1,189	1,098	1,072	1,211
Gulf Coast (PADD 3)	2,701	2,676	2,776	2,711	2,615	2,730
Rocky Mountain (PADD 4)	197	207	184	151	208	205
West Coast (PADD 5)	415	388	531	493	416	516
> 15 ppm to 500 ppm sulfur	102	121	91	68	107	88
East Coast (PADD 1)	1	0	-1	-1	1	-1
Midwest (PADD 2)	4	2	1	7	4	5
Gulf Coast (PADD 3)	82	109	78	46	98	66
Rocky Mountain (PADD 4)	1	0	4	4	0	2
West Coast (PADD 5)	14	10	9	12	4	16
> 500 ppm sulfur	84	85	74	122	90	99
East Coast (PADD 1)	-12	7	-4	-5	-8	-4
Midwest (PADD 2)	2	-7	1	-2	-5	-7
Gulf Coast (PADD 3)	52	76	77	118	89	105
Rocky Mountain (PADD 4)	5	-1	-3	0	0	-2
West Coast (PADD 5)	36	10	2	11	14	7

See footnotes at end of table.

Table 9. U.S. and PAD District Weekly Estimates
(Thousand Barrels per Day Except Where Noted) — Continued

Product/Region	Current Week	Last Week	Year Ago	2 Years Ago	Four-Week Averages	
	11/10/23	11/3/23	11/11/22	11/12/21[1]	11/10/23	11/11/22
Refiner and Blender Net Production						
Residual Fuel Oil	295	291	234	250	283	219
East Coast (PADD 1)	35	24	47	42	28	42
Midwest (PADD 2)	35	46	34	44	34	38
Gulf Coast (PADD 3)	133	114	63	92	110	51
Rocky Mountain (PADD 4)	11	9	10	10	10	10
West Coast (PADD 5)	82	99	79	61	99	77
Propane/Propylene[9]	2,629	2,566	2,483	2,442	2,582	2,526
East Coast (PADD 1)	274	251	229	256	255	253
Midwest (PADD 2)	547	542	502	490	533	505
Gulf Coast (PADD 3)	1,569	1,518	1,505	1,464	1,555	1,530
PADDs 4 and 5	239	256	247	231	240	239
Ethanol Plant Production						
Fuel Ethanol	1,047	1,042	1,011	1,060	1,045	1,034
East Coast (PADD 1)	12	12	13	12	12	12
Midwest (PADD 2)	987	986	954	1,008	988	975
Gulf Coast (PADD 3)	23	22	23	21	22	24
Rocky Mountain (PADD 4)	14	14	13	11	14	15
West Coast (PADD 5)	10	9	8	9	10	8
Stocks (Million Barrels)[10]						
Crude Oil (including SPR)[11]	790.6	787.0	827.5	1,039.1	– –	– –
Commercial	439.4	435.8	435.4	433.0	– –	– –
East Coast (PADD 1)	9.5	8.7	7.7	9.6	– –	– –
Midwest (PADD 2)	108.1	103.9	108.7	109.5	– –	– –
Cushing, Oklahoma[12]	25.0	23.1	25.6	26.6	– –	– –
Gulf Coast (PADD 3)	252.4	253.2	245.0	242.6	– –	– –
Rocky Mountain (PADD 4)	22.9	23.2	24.5	23.7	– –	– –
West Coast (PADD 5)	46.5	46.6	49.5	47.6	– –	– –
Alaska In-Transit[13]	2.5	2.3	5.2	3.5	– –	– –
SPR[14]	351.3	351.3	392.1	606.1	– –	– –
Total Motor Gasoline[15]	215.7	217.2	207.9	212.0	– –	– –
East Coast (PADD 1)[15]	52.6	53.5	49.3	53.8	– –	– –
Midwest (PADD 2)	43.8	43.2	44.5	43.8	– –	– –
Gulf Coast (PADD 3)	84.7	85.1	79.6	79.2	– –	– –
Rocky Mountain (PADD 4)	7.4	7.4	6.6	7.6	– –	– –
West Coast (PADD 5)	27.2	28.1	28.0	27.7	– –	– –
Finished Motor Gasoline	15.3	16.8	16.0	16.6	– –	– –
Reformulated	0.0	0.0	0.0	0.0	– –	– –
East Coast (PADD 1)	0.0	0.0	0.0	0.0	– –	– –
Midwest (PADD 2)	0.0	0.0	0.0	0.0	– –	– –
Gulf Coast (PADD 3)	0.0	0.0	0.0	0.0	– –	– –
Rocky Mountain (PADD 4)	0.0	0.0	0.0	0.0	– –	– –
West Coast (PADD 5)	0.0	0.0	0.0	0.0	– –	– –
Blended with Fuel Ethanol	0.0	0.0	0.0	0.0	– –	– –
East Coast (PADD 1)	0.0	0.0	0.0	0.0	– –	– –
Midwest (PADD 2)	0.0	0.0	0.0	0.0	– –	– –
Gulf Coast (PADD 3)	0.0	0.0	0.0	0.0	– –	– –
Rocky Mountain (PADD 4)	0.0	0.0	0.0	0.0	– –	– –
West Coast (PADD 5)	0.0	0.0	0.0	0.0	– –	– –
Other	0.0	0.0	0.0	0.0	– –	– –
East Coast (PADD 1)	0.0	0.0	0.0	0.0	– –	– –
Midwest (PADD 2)	0.0	0.0	0.0	0.0	– –	– –
Gulf Coast (PADD 3)	0.0	0.0	0.0	0.0	– –	– –
Rocky Mountain (PADD 4)	0.0	0.0	0.0	0.0	– –	– –
West Coast (PADD 5)	0.0	0.0	0.0	0.0	– –	– –
Conventional	15.3	16.8	15.9	16.6	– –	– –
East Coast (PADD 1)	3.1	3.5	2.7	2.6	– –	– –
Midwest (PADD 2)	3.5	3.3	3.7	4.3	– –	– –
Gulf Coast (PADD 3)	6.2	6.7	6.5	6.2	– –	– –
Rocky Mountain (PADD 4)	0.9	1.3	1.1	1.4	– –	– –
West Coast (PADD 5)	1.6	2.0	1.9	2.1	– –	– –
Blended with Fuel Ethanol	0.2	0.3	0.2	0.2	– –	– –
East Coast (PADD 1)	0.0	0.0	0.0	0.0	– –	– –
Midwest (PADD 2)	0.1	0.2	0.1	0.1	– –	– –
Gulf Coast (PADD 3)	0.0	0.0	0.0	0.0	– –	– –
Rocky Mountain (PADD 4)	0.0	0.0	0.1	0.1	– –	– –
West Coast (PADD 5)	0.0	0.0	0.0	0.0	– –	– –
Ed55 and Lower	0.2	0.3	0.2	0.2	– –	– –
East Coast (PADD 1)	0.0	0.0	0.0	0.0	– –	– –
Midwest (PADD 2)	0.1	0.2	0.1	0.1	– –	– –
Gulf Coast (PADD 3)	0.0	0.0	0.0	0.0	– –	– –
Rocky Mountain (PADD 4)	0.0	0.0	0.1	0.1	– –	– –
West Coast (PADD 5)	0.0	0.0	0.0	0.0	– –	– –
Greater than Ed55	0.0	0.0	0.0	0.0	– –	– –
East Coast (PADD 1)	0.0	0.0	0.0	0.0	– –	– –
Midwest (PADD 2)	0.0	0.0	0.0	0.0	– –	– –
Gulf Coast (PADD 3)	0.0	0.0	0.0	0.0	– –	– –
Rocky Mountain (PADD 4)	0.0	0.0	0.0	0.0	– –	– –
West Coast (PADD 5)	0.0	0.0	0.0	0.0	– –	– –
Other	15.1	16.6	15.7	16.4	– –	– –
East Coast (PADD 1)	3.1	3.5	2.7	2.6	– –	– –
Midwest (PADD 2)	3.3	3.1	3.6	4.1	– –	– –
Gulf Coast (PADD 3)	6.2	6.7	6.5	6.2	– –	– –
Rocky Mountain (PADD 4)	0.8	1.2	1.1	1.3	– –	– –
West Coast (PADD 5)	1.6	2.0	1.9	2.1	– –	– –

See footnotes at end of table.

Table 9. U.S. and PAD District Weekly Estimates
(Thousand Barrels per Day Except Where Noted) — Continued

Product/Region	Current Week	Last Week	Year Ago	2 Years Ago	Four-Week Averages	
	11/10/23	11/3/23	11/11/22	11/12/21[1]	11/10/23	11/11/22
			Stocks (Million Barrels)[10]			
Motor Gasoline Blending Components[15]	200.3	200.4	192.0	195.4	– –	– –
East Coast (PADD 1)[15]	49.5	49.9	46.5	51.2	– –	– –
Midwest (PADD 2)	40.3	39.8	40.9	39.5	– –	– –
Gulf Coast (PADD 3)	78.5	78.4	73.1	73.0	– –	– –
Rocky Mountain (PADD 4)	6.5	6.1	5.4	6.2	– –	– –
West Coast (PADD 5)	25.5	26.1	26.0	25.5	– –	– –
RBOB	43.7	43.4	41.1	43.5	– –	– –
East Coast (PADD 1)[15]	16.6	15.6	14.1	15.0	– –	– –
Midwest (PADD 2)	4.2	4.8	4.1	4.1	– –	– –
Gulf Coast (PADD 3)	10.1	10.0	9.9	11.9	– –	– –
Rocky Mountain (PADD 4)	0.4	0.4	0.0	0.0	– –	– –
West Coast (PADD 5)	12.2	12.7	13.0	12.5	– –	– –
CBOB	102.7	102.3	100.6	99.1	– –	– –
East Coast (PADD 1)[15]	24.9	25.7	24.9	26.1	– –	– –
Midwest (PADD 2)	28.4	27.8	29.0	28.7	– –	– –
Gulf Coast (PADD 3)	37.6	37.6	36.2	31.8	– –	– –
Rocky Mountain (PADD 4)	4.6	4.4	4.2	5.1	– –	– –
West Coast (PADD 5)	7.2	6.8	6.4	7.5	– –	– –
GTAB	1.6	1.8	0.6	1.2	– –	– –
East Coast (PADD 1)	1.6	1.7	0.6	1.2	– –	– –
Midwest (PADD 2)	0.0	0.0	0.0	0.0	– –	– –
Gulf Coast (PADD 3)	0.0	0.0	0.0	0.0	– –	– –
Rocky Mountain (PADD 4)	0.0	0.0	0.0	0.0	– –	– –
West Coast (PADD 5)	0.0	0.0	0.0	0.0	– –	– –
All Other Blending Components	52.4	52.9	49.6	51.6	– –	– –
East Coast (PADD 1)	6.3	7.0	6.9	8.9	– –	– –
Midwest (PADD 2)	7.6	7.3	7.7	6.8	– –	– –
Gulf Coast (PADD 3)	30.8	30.7	27.1	29.2	– –	– –
Rocky Mountain (PADD 4)	1.5	1.4	1.3	1.1	– –	– –
West Coast (PADD 5)	6.1	6.6	6.6	5.6	– –	– –
Fuel Ethanol[15]	21.0	21.0	21.3	20.1	– –	– –
East Coast (PADD 1)[15]	6.6	6.4	6.3	5.3	– –	– –
Midwest (PADD 2)	8.3	8.5	8.5	8.1	– –	– –
Gulf Coast (PADD 3)	3.5	3.4	3.8	3.6	– –	– –
Rocky Mountain (PADD 4)	0.3	0.3	0.3	0.4	– –	– –
West Coast (PADD 5)	2.1	2.3	2.4	2.7	– –	– –
Kerosene-Type Jet Fuel	36.7	38.9	37.3	38.0	– –	– –
East Coast (PADD 1)	8.8	9.4	8.1	8.8	– –	– –
Midwest (PADD 2)	6.2	6.8	6.3	7.1	– –	– –
Gulf Coast (PADD 3)	12.2	12.8	12.3	11.1	– –	– –
Rocky Mountain (PADD 4)	0.9	0.9	0.8	0.9	– –	– –
West Coast (PADD 5)	8.6	9.0	9.8	10.0	– –	– –
Distillate Fuel Oil[15]	106.6	108.0	107.4	123.7	– –	– –
East Coast (PADD 1)[15]	26.3	25.2	25.9	39.9	– –	– –
New England (PADD 1A)[15]	3.7	3.3	3.7	7.7	– –	– –
Central Atlantic (PADD 1B)[15]	12.1	11.1	11.6	19.5	– –	– –
Lower Atlantic (PADD 1C)	10.5	10.8	10.6	12.7	– –	– –
Midwest (PADD 2)	25.0	26.1	24.3	27.5	– –	– –
Gulf Coast (PADD 3)	40.6	41.7	42.0	41.4	– –	– –
Rocky Mountain (PADD 4)	3.7	3.8	3.1	3.2	– –	– –
West Coast (PADD 5)	11.0	11.2	12.0	11.8	– –	– –
15 ppm sulfur and Under	96.8	98.3	96.3	112.1	– –	– –
East Coast (PADD 1)[15]	24.6	23.5	23.5	36.3	– –	– –
New England (PADD 1A)[15]	3.7	3.3	3.7	7.7	– –	– –
Central Atlantic (PADD 1B)[15]	11.2	10.2	10.0	17.1	– –	– –
Lower Atlantic (PADD 1C)	9.7	10.0	9.8	11.5	– –	– –
Midwest (PADD 2)	24.2	25.5	23.7	26.7	– –	– –
Gulf Coast (PADD 3)	34.3	35.2	34.9	35.4	– –	– –
Rocky Mountain (PADD 4)	3.5	3.6	2.9	3.0	– –	– –
West Coast (PADD 5)	10.2	10.5	11.3	10.8	– –	– –
> 15 ppm to 500 ppm sulfur	2.4	2.2	2.6	3.5	– –	– –
East Coast (PADD 1)	0.5	0.5	0.7	0.9	– –	– –
New England (PADD 1A)	0.0	0.0	0.0	0.0	– –	– –
Central Atlantic (PADD 1B)	0.1	0.1	0.2	0.4	– –	– –
Lower Atlantic (PADD 1C)	0.4	0.4	0.5	0.4	– –	– –
Midwest (PADD 2)	0.4	0.3	0.3	0.4	– –	– –
Gulf Coast (PADD 3)	1.2	1.0	1.2	1.7	– –	– –
Rocky Mountain (PADD 4)	0.1	0.2	0.1	0.2	– –	– –
West Coast (PADD 5)	0.2	0.2	0.2	0.2	– –	– –
> 500 ppm sulfur	7.4	7.5	8.4	8.1	– –	– –
East Coast (PADD 1)	1.1	1.2	1.7	2.7	– –	– –
New England (PADD 1A)	0.0	0.0	0.0	0.0	– –	– –
Central Atlantic (PADD 1B)	0.8	0.8	1.3	1.9	– –	– –
Lower Atlantic (PADD 1C)	0.3	0.4	0.4	0.7	– –	– –
Midwest (PADD 2)	0.4	0.2	0.3	0.4	– –	– –
Gulf Coast (PADD 3)	5.1	5.5	5.8	4.3	– –	– –
Rocky Mountain (PADD 4)	0.1	0.0	0.1	0.0	– –	– –
West Coast (PADD 5)	0.7	0.5	0.5	0.7	– –	– –
Residual Fuel Oil	26.9	27.6	29.4	27.7	– –	– –
East Coast (PADD 1)	5.4	5.5	5.2	5.6	– –	– –
New England (PADD 1A)	0.1	0.1	0.1	0.3	– –	– –
Central Atlantic (PADD 1B)	3.9	3.9	3.8	4.1	– –	– –
Lower Atlantic (PADD 1C)	1.3	1.4	1.3	1.3	– –	– –
Midwest (PADD 2)	1.3	1.4	1.2	1.1	– –	– –
Gulf Coast (PADD 3)	15.4	16.2	18.4	15.6	– –	– –
Rocky Mountain (PADD 4)	0.2	0.2	0.2	0.2	– –	– –
West Coast (PADD 5)	4.5	4.3	4.5	5.2	– –	– –

See footnotes at end of table.

Table 9. U.S. and PAD District Weekly Estimates
(Thousand Barrels per Day Except Where Noted) — Continued

Product/Region	Current Week	Last Week	Year Ago	2 Years Ago	Four-Week Averages	
	11/10/23	11/3/23	11/11/22	11/12/21[1]	11/10/23	11/11/22
Stocks (Million Barrels)[10]						
Propane/Propylene[16]	99.7	98.4	87.8	74.6	– –	– –
East Coast (PADD 1)[16]	9.8	9.3	9.0	8.8	– –	– –
New England (PADD 1A)[16]	0.8	0.8	0.7	0.8	– –	– –
Central Atlantic (PADD 1B)[16]	6.7	6.2	6.3	6.0	– –	– –
Lower Atlantic (PADD 1C)[16]	2.3	2.3	2.0	2.0	– –	– –
Midwest (PADD 2)[16]	26.9	26.8	25.5	24.9	– –	– –
Gulf Coast (PADD 3)[16]	56.1	56.4	48.1	35.7	– –	– –
PADD's 4 & 5 [16]	7.0	5.9	5.2	5.2	– –	– –
Propane, fractionated and ready for sale[17]	–	–	–	–	– –	– –
East Coast (PADD 1)	–	–	–	–	– –	– –
New England (PADD 1A)	–	–	–	–	– –	– –
Central Atlantic (PADD 1B)	–	–	–	–	– –	– –
Lower Atlantic (PADD 1C)	–	–	–	–	– –	– –
Midwest (PADD 2)	–	–	–	–	– –	– –
Gulf Coast (PADD 3)	–	–	–	–	– –	– –
Rocky Mountain (PADD 4)	–	–	–	–	– –	– –
West Coast (PADD 5)	–	–	–	–	– –	– –
Propylene (Total U.S. Nonfuel Use)[16]	– –	– –	– –	– –	– –	– –
Other Oils[18]	317.8	316.9	290.3	294.8	– –	– –
Unfinished Oils	90.0	89.6	84.3	90.6	– –	– –
Kerosene	1.4	1.2	1.5	2.9	– –	– –
Asphalt and Road Oil	20.8	20.9	21.4	19.4	– –	– –
NGPLs/LRGs (Excluding Propane/Propylene)	172.4	172.4	153.2	152.2	– –	– –
Total Stocks (Excluding SPR)[15,16]	1,263.7	1,263.7	1,216.7	1,223.9	– –	– –
Total Stocks (Including SPR)[14,15,16]	1,614.9	1,615.0	1,608.9	1,830.0	– –	– –
Imports						
Total Crude Oil Incl SPR	6,373	6,394	5,559	6,191	6,301	6,100
Commercial[19]	6,373	6,394	5,559	6,191	6,301	6,100
East Coast (PADD 1)	444	526	691	701	524	668
Midwest (PADD 2)	3,089	3,189	2,456	2,750	2,995	2,651
Gulf Coast (PADD 3)	1,004	1,006	879	1,238	1,126	1,052
Rocky Mountain (PADD 4)	457	471	378	410	476	399
West Coast (PADD 5)	1,380	1,203	1,156	1,093	1,180	1,330
Imports by SPR	0	0	0	0	0	0
Imports into SPR by Others	0	0	0	0	0	0
Total Motor Gasoline	514	704	572	823	607	501
East Coast (PADD 1)	415	560	514	755	511	400
Midwest (PADD 2)	0	3	4	8	2	6
Gulf Coast (PADD 3)	22	23	11	58	26	9
Rocky Mountain (PADD 4)	1	1	1	1	1	1
West Coast (PADD 5)	76	115	42	2	68	85
Finished Motor Gasoline	150	147	99	56	108	106
East Coast (PADD 1)	96	108	99	55	70	83
Midwest (PADD 2)	0	0	0	0	0	0
Gulf Coast (PADD 3)	0	0	0	0	3	0
Rocky Mountain (PADD 4)	0	0	0	0	0	0
West Coast (PADD 5)	54	39	0	2	35	23
Reformulated	0	0	0	0	0	0
East Coast (PADD 1)	0	0	0	0	0	0
Midwest (PADD 2)	0	0	0	0	0	0
Gulf Coast (PADD 3)	0	0	0	0	0	0
Rocky Mountain (PADD 4)	0	0	0	0	0	0
West Coast (PADD 5)	0	0	0	0	0	0
Blended with Fuel Ethanol	0	0	0	0	0	0
East Coast (PADD 1)	0	0	0	0	0	0
Midwest (PADD 2)	0	0	0	0	0	0
Gulf Coast (PADD 3)	0	0	0	0	0	0
Rocky Mountain (PADD 4)	0	0	0	0	0	0
West Coast (PADD 5)	0	0	0	0	0	0
Other	0	0	0	0	0	0
East Coast (PADD 1)	0	0	0	0	0	0
Midwest (PADD 2)	0	0	0	0	0	0
Gulf Coast (PADD 3)	0	0	0	0	0	0
Rocky Mountain (PADD 4)	0	0	0	0	0	0
West Coast (PADD 5)	0	0	0	0	0	0
Conventional	150	147	99	56	108	106
East Coast (PADD 1)	96	108	99	55	70	83
Midwest (PADD 2)	0	0	0	0	0	0
Gulf Coast (PADD 3)	0	0	0	0	3	0
Rocky Mountain (PADD 4)	0	0	0	0	0	0
West Coast (PADD 5)	54	39	0	2	35	23
Blended with Fuel Ethanol	0	0	0	0	0	0
East Coast (PADD 1)	0	0	0	0	0	0
Midwest (PADD 2)	0	0	0	0	0	0
Gulf Coast (PADD 3)	0	0	0	0	0	0
Rocky Mountain (PADD 4)	0	0	0	0	0	0
West Coast (PADD 5)	0	0	0	0	0	0
Ed55 and Lower	0	0	0	0	0	0
East Coast (PADD 1)	0	0	0	0	0	0
Midwest (PADD 2)	0	0	0	0	0	0
Gulf Coast (PADD 3)	0	0	0	0	0	0
Rocky Mountain (PADD 4)	0	0	0	0	0	0
West Coast (PADD 5)	0	0	0	0	0	0

See footnotes at end of table.

Table 9. U.S. and PAD District Weekly Estimates
(Thousand Barrels per Day Except Where Noted) — Continued

Product/Region	Current Week	Last Week	Year Ago	2 Years Ago	Four-Week Averages	
	11/10/23	11/3/23	11/11/22	11/12/21[1]	11/10/23	11/11/22
Imports						
Greater than Ed55	0	0	0	0	0	0
East Coast (PADD 1)	0	0	0	0	0	0
Midwest (PADD 2)	0	0	0	0	0	0
Gulf Coast (PADD 3)	0	0	0	0	0	0
Rocky Mountain (PADD 4)	0	0	0	0	0	0
West Coast (PADD 5)	0	0	0	0	0	0
Other	150	147	99	56	108	106
East Coast (PADD 1)	96	108	99	55	70	83
Midwest (PADD 2)	0	0	0	0	0	0
Gulf Coast (PADD 3)	0	0	0	0	3	0
Rocky Mountain (PADD 4)	0	0	0	0	0	0
West Coast (PADD 5)	54	39	0	2	35	23
Motor Gasoline Blending Components	364	557	473	767	499	394
East Coast (PADD 1)	319	453	415	700	441	316
Midwest (PADD 2)	0	3	4	8	2	6
Gulf Coast (PADD 3)	22	23	11	58	22	9
Rocky Mountain (PADD 4)	1	1	1	1	1	1
West Coast (PADD 5)	22	77	42	0	33	62
RBOB	58	146	108	393	114	111
East Coast (PADD 1)	58	146	108	347	114	111
Midwest (PADD 2)	0	0	0	0	0	0
Gulf Coast (PADD 3)	0	0	0	46	0	0
Rocky Mountain (PADD 4)	0	0	0	0	0	0
West Coast (PADD 5)	0	0	0	0	0	0
CBOB	52	17	0	31	35	19
East Coast (PADD 1)	52	17	0	25	35	11
Midwest (PADD 2)	0	0	0	6	0	1
Gulf Coast (PADD 3)	0	0	0	0	0	0
Rocky Mountain (PADD 4)	0	0	0	0	0	0
West Coast (PADD 5)	0	0	0	0	0	8
GTAB	42	170	156	192	101	94
East Coast (PADD 1)	42	170	156	192	101	94
Midwest (PADD 2)	0	0	0	0	0	0
Gulf Coast (PADD 3)	0	0	0	0	0	0
Rocky Mountain (PADD 4)	0	0	0	0	0	0
West Coast (PADD 5)	0	0	0	0	0	0
All Other Blending Components	211	224	209	151	248	169
East Coast (PADD 1)	166	120	151	136	190	100
Midwest (PADD 2)	0	3	4	2	2	5
Gulf Coast (PADD 3)	22	23	11	12	22	9
Rocky Mountain (PADD 4)	1	1	1	1	1	1
West Coast (PADD 5)	22	77	42	0	33	54
Fuel Ethanol	0	0	0	0	0	0
East Coast (PADD 1)	0	0	0	0	0	0
Midwest (PADD 2)	0	0	0	0	0	0
Gulf Coast (PADD 3)	0	0	0	0	0	0
Rocky Mountain (PADD 4)	0	0	0	0	0	0
West Coast (PADD 5)	0	0	0	0	0	0
Kerosene-Type Jet Fuel	72	132	201	189	110	191
East Coast (PADD 1)	6	0	80	29	2	78
Midwest (PADD 2)	0	0	0	0	0	0
Gulf Coast (PADD 3)	0	0	0	0	0	0
Rocky Mountain (PADD 4)	0	0	0	0	0	0
West Coast (PADD 5)	65	131	121	160	108	113
Distillate Fuel Oil	152	216	110	239	139	175
East Coast (PADD 1)	140	202	89	207	119	141
Midwest (PADD 2)	3	3	0	9	3	6
Gulf Coast (PADD 3)	0	0	0	0	1	0
Rocky Mountain (PADD 4)	1	1	2	5	2	2
West Coast (PADD 5)	8	10	19	17	14	26
15 ppm sulfur and Under	152	216	110	239	139	175
East Coast (PADD 1)	140	202	89	207	119	141
Midwest (PADD 2)	3	3	0	9	3	6
Gulf Coast (PADD 3)	0	0	0	0	1	0
Rocky Mountain (PADD 4)	1	1	2	5	2	2
West Coast (PADD 5)	8	10	19	17	14	26
> 15 ppm to 500 ppm sulfur	0	0	0	0	0	0
East Coast (PADD 1)	0	0	0	0	0	0
Midwest (PADD 2)	0	0	0	0	0	0
Gulf Coast (PADD 3)	0	0	0	0	0	0
Rocky Mountain (PADD 4)	0	0	0	0	0	0
West Coast (PADD 5)	0	0	0	0	0	0
> 500 ppm to 2000 ppm sulfur	0	0	0	0	0	0
East Coast (PADD 1)	0	0	0	0	0	0
Midwest (PADD 2)	0	0	0	0	0	0
Gulf Coast (PADD 3)	0	0	0	0	0	0
Rocky Mountain (PADD 4)	0	0	0	0	0	0
West Coast (PADD 5)	0	0	0	0	0	0
> 2000 ppm sulfur	0	0	0	0	0	0
East Coast (PADD 1)	0	0	0	0	0	0
Midwest (PADD 2)	0	0	0	0	0	0
Gulf Coast (PADD 3)	0	0	0	0	0	0
Rocky Mountain (PADD 4)	0	0	0	0	0	0
West Coast (PADD 5)	0	0	0	0	0	0
Residual Fuel Oil	78	56	171	214	89	220
East Coast (PADD 1)	5	20	123	89	41	130
Midwest (PADD 2)	1	0	1	0	3	2
Gulf Coast (PADD 3)	73	35	41	113	36	82
Rocky Mountain (PADD 4)	0	0	0	0	0	0
West Coast (PADD 5)	0	0	5	11	9	7

See footnotes at end of table.

Table 9. U.S. and PAD District Weekly Estimates
(Thousand Barrels per Day Except Where Noted) — Continued

Product/Region	Current Week 11/10/23	Last Week 11/3/23	Year Ago 11/11/22	2 Years Ago 11/12/21[1]	Four-Week Averages 11/10/23	Four-Week Averages 11/11/22
Imports						
Propane/Propylene	69	85	102	117	90	104
East Coast (PADD 1)	26	23	23	38	27	19
Midwest (PADD 2)	18	37	31	43	29	43
Gulf Coast (PADD 3)	0	0	0	0	0	0
PADDs 4 and 5	25	25	47	36	34	42
Other Oils	760	709	1,139	852	647	947
East Coast (PADD 1)	242	18	43	69	83	131
Midwest (PADD 2)	45	48	68	23	52	65
Gulf Coast (PADD 3)	370	563	889	658	396	639
Rocky Mountain (PADD 4)	2	1	6	5	3	9
West Coast (PADD 5)	102	79	133	97	114	103
Kerosene	0	0	3	0	0	1
NGPLs/LRGs (Excluding Propane/Propylene)	50	40	53	25	48	52
Total Product Imports	1,645	1,901	2,294	2,433	1,682	2,137
East Coast (PADD 1)	834	823	871	1,186	782	897
Midwest (PADD 2)	67	91	105	84	90	122
Gulf Coast (PADD 3)	465	622	942	829	458	730
Rocky Mountain (PADD 4)	10	8	19	26	12	21
West Coast (PADD 5)	269	357	357	309	340	367
Total Imports (Incl SPR)	8,018	8,295	7,854	8,624	7,984	8,237
East Coast (PADD 1)	1,278	1,349	1,562	1,887	1,306	1,566
Midwest (PADD 2)	3,156	3,280	2,561	2,834	3,085	2,773
Gulf Coast (PADD 3)	1,468	1,627	1,821	2,066	1,584	1,782
Rocky Mountain (PADD 4)	467	479	397	435	488	420
West Coast (PADD 5)	1,649	1,560	1,513	1,402	1,520	1,697
Exports[20]						
Total	10,879	10,722	9,887	8,769	10,935	10,117
Crude Oil[21]	4,889	4,525	3,862	3,626	4,786	4,109
Products	5,990	6,197	6,025	5,143	6,149	6,008
Total Motor Gasoline[22]	933	982	–	–	896	–
Fuel Ethanol[23]	85	92	–	–	78	–
Kerosene-Type Jet Fuel	166	165	127	176	172	156
Distillate Fuel Oil	1,000	1,088	1,183	849	1,048	1,191
Residual Fuel Oil	107	99	127	119	95	129
Propane/Propylene	1,659	1,753	1,631	1,392	1,787	1,588
Other Oils[24]	2,041	2,018	2,030	1,776	2,075	2,035
Net Imports (Incl SPR)						
Total	-2,861	-2,427	-2,033	-145	-2,951	-1,880
Crude Oil	1,484	1,869	1,697	2,565	1,515	1,991
Products	-4,345	-4,296	-3,731	-2,710	-4,466	-3,870
Product Supplied						
Total Product Supplied[25]	20,080	21,722	21,087	21,629	20,443	20,856
Finished Motor Gasoline[5]	8,949	9,492	8,742	9,241	9,000	8,836
Kerosene-Type Jet Fuel	1,793	1,821	1,649	1,385	1,763	1,547
Distillate Fuel Oil	4,109	4,298	3,863	4,350	4,039	4,040
Residual Fuel Oil	371	228	409	546	275	298
Propane/Propylene[26]	854	1,291	943	1,194	977	975
Other Oils[27]	4,005	4,591	5,481	4,913	4,389	5,160
Ultra Low Sulfur Distillate Reclassification						
< 15 ppm Distillate, Downgraded to 15 to 500 ppm	–	–	–	–	–	–

– – = Not Applicable.
– = Data Not Available.
W = Data Withheld.
R = Revised Data.
1 Year-ago data originally published for crude oil stocks included lease stocks which began being excluded from commercial crude oil inventories with data for the week ended October 7, 2016.
2 Domestic crude oil production includes lease condensate and is estimated using a combination of short-term forecasts for the lower 48 states and the latest available production estimates from Alaska. Weekly crude oil production estimates are rounded to the nearest 100,000 b/d at the U.S. and lower 48 state levels. For more details see Appendix B, under "Data Obtained Through Models."
3 Based on the latest reported monthly operable capacity.
4 Calculated as gross inputs divided by the latest reported monthly operable capacity. See Glossary. Percentages are calculated using unrounded numbers.
5 Finished motor gasoline production and product supplied include a weekly adjustment applied only to the U.S. total to correct for the imbalance created by blending of fuel ethanol and motor gasoline blending components. From 1993 to June 4, 2010, this adjustment was estimated from the latest monthly data and allocated to formulation and PAD District production data.
6 Excludes adjustments for fuel ethanol and motor gasoline blending components. Historical data prior to June 4, 2010 includes the adjustment allocated by PAD District and formulation.
7 Adjustment to correct for the imbalance created by the blending of fuel ethanol and motor gasoline blending components. For details see Appendix B.
8 Commercial and military kerosene jet fuel production is only collected from refiners and may not total to total kerosene jet fuel production.
9 Includes propane/propylene production from natural gas plants.
10 Includes those domestic and Customs-cleared foreign stocks held at, or in transit to, refineries, ethanol plants, and bulk terminals, as well as stocks in pipelines. Stocks (excluding propane) held at natural gas processing plants are included in "Other Oils." All stock levels are as of the end of the period.
11 Includes those domestic and Customs-cleared foreign crude oil stocks held at refineries and tank farms or in transit thereto, and in pipelines.
12 Includes domestic and foreign crude oil stocks held in tank farms in Lincoln, Payne, and Creek counties in Oklahoma. Cushing, Oklahoma, is the designated delivery point for NYMEX crude oil futures contracts.
13 Includes crude oil stocks in transit by water between Alaska and the other States, the District of Columbia, Puerto Rico, and the Virgin Islands, as well as stocks held at transshipment terminals.
14 Includes non-U.S. stocks held under foreign or commercial storage agreements.
15 Excludes stocks located in the "Northeast Heating Oil Reserve", "Northeast Regional Refined Petroleum Product Reserve", and "State of New York's Strategic Fuels Reserve Program." For details see Appendix C.
16 Prior to April 10, 2020 this included stocks of propylene held at terminals.
17 Includes fractionated propane ready for sale (for example HD-5 propane and HD-10 propane) but excludes the propane component of unfractionated mixed products. Also excludes propylene.
18 Includes weekly data for NGPLs and LRGs (except propane/propylene), kerosene, and asphalt and road oil; and estimated stocks of minor products based on monthly data.
19 Prior to June 4, 2010, included "Imports into SPR by Others."
20 Exports are estimated.
21 On December 18, 2015, the U.S. enacted legislation authorizing the export of U.S. crude oil without a license. Exports to embargoed or sanctioned countries continue to require authorization.
22 Beginning with June 1, 2023, Motor Gasoline Blending Components exports are included with Total Motor Gasoline exports. They were previously included with Other Oil Exports.
23 Before June 1, 2023, Fuel Ethanol exports were included in Other Oil exports.
24 Other Oil Exports = Total Exports less the exports of Finished Motor Gasoline, Motor Gasoline Blending Components, Fuel Ethanol, Kerosene-Type Jet Fuel, Distillate Fuel Oil, Residual Fuel Oil, and Propane/Propylene.
25 See Table 1, footnote #16.
26 See Table 1 footnote #18.
27 See Table 1 footnote #19.
Notes: Some data estimated (see Sources for clarification). Data may not add to total due to independent rounding. Differences and percent changes are calculated using unrounded numbers.
Data source: See page 29.

Table 10. U.S. World Crude Oil Prices
(Dollars per Barrel)

The data on this page are no longer available.

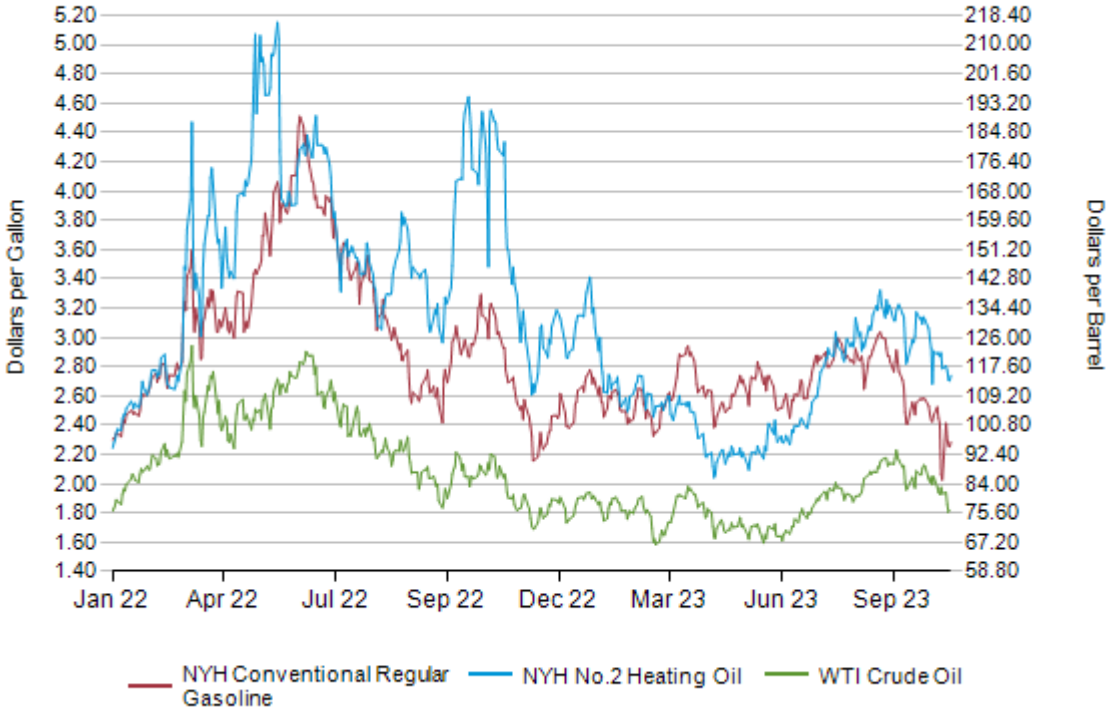
Table 11. Spot Prices of Crude Oil, Motor Gasoline, and Heating Oil, 2022 to Present
(Crude Oil in Dollars per Barrel, Products in Dollars per Gallon)

Year / Product	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2022												
Crude Oil												
WTI - Cushing	83.22	91.64	108.50	101.78	109.55	114.84	101.62	93.67	84.26	87.55	84.37	76.44
Brent	86.51	97.13	117.25	104.58	113.34	122.71	111.93	100.45	89.76	93.33	91.42	80.92
Motor Gasoline												
Conventional												
New York Harbor	2.449	2.739	3.184	3.193	3.828	4.082	3.484	3.027	2.642	3.013	2.852	2.366
U.S. Gulf Coast	2.400	2.648	3.197	3.180	3.750	4.049	3.283	2.793	2.578	2.837	2.456	2.157
RBOB Regular												
Los Angeles	2.548	2.818	3.784	3.408	4.034	4.270	3.330	3.123	3.884	3.227	2.854	2.249
Heating Oils												
No. 2 Heating Oil												
New York Harbor	2.481	2.737	3.635	3.952	4.497	4.246	3.552	3.437	3.257	4.163	3.821	2.937
2023												
Crude Oil												
WTI - Cushing	78.12	76.83	73.28	79.45	71.58	70.25	76.07	81.39	89.43	85.64	–	–
Brent	82.50	82.59	78.43	84.64	75.47	74.84	80.11	86.15	93.72	90.60	–	–
Motor Gasoline												
Conventional												
New York Harbor	2.593	2.532	2.515	2.765	2.570	2.659	2.700	2.874	2.894	2.524	–	–
U.S. Gulf Coast	2.534	2.416	2.536	2.616	2.447	2.427	2.674	2.902	2.824	2.305	–	–
RBOB Regular												
Los Angeles	2.571	2.907	2.756	2.799	2.672	2.802	2.970	3.276	3.780	2.635	–	–
Heating Oils												
No. 2 Heating Oil												
New York Harbor	3.085	2.645	2.571	2.424	2.181	2.278	2.498	2.939	3.168	3.002	–	–

2023	Average for Week Ending:		Daily Prices:									
	Fri 10/20	Fri 10/27	Mon 10/30	Tue 10/31	Wed 11/1	Thu 11/2	Fri 11/3	Mon 11/6	Tue 11/7	Wed 11/8	Thu 11/9	Fri 11/10
Crude Oil												
WTI - Cushing	88.03	85.20	83.03	81.64	81.05	83.04	81.19	81.54	77.96	75.85	76.34	–
Brent	92.47	89.84	90.73	86.82	86.92	89.02	87.55	87.31	83.43	81.46	81.74	83.66
Motor Gasoline												
Conventional												
New York Harbor	2.580	2.485	2.525	2.448	2.412	2.068	2.028	2.415	2.298	2.262	2.254	2.287
U.S. Gulf Coast	2.354	2.249	2.128	2.130	2.107	2.158	2.116	2.157	2.085	2.049	2.069	2.082
RBOB Regular												
Los Angeles	2.637	2.501	2.505	2.508	2.432	2.483	2.493	2.575	2.590	2.554	2.607	2.627
Heating Oils												
No. 2 Heating Oil												
New York Harbor	3.123	2.987	2.884	2.897	2.870	2.895	2.787	2.806	2.771	2.709	2.705	2.741

– = Data Not Available.
Notes: Monthly and weekly prices are calculated by EIA from daily data. See Glossary for definitions of abbreviations.
See Appendix B, Technical Note 1, for more information about the data in this table.
Data source: See page 29.

Figure 7. Daily Crude Oil and Petroleum Product Spot Prices, January 2022 to Present



Note: See Glossary for definitions of abbreviations.
Data source: See page 29.

Figure 8. Daily Trans-Atlantic Spot Product Price Differentials: New York Harbor less Rotterdam (ARA),

This figure is no longer available.

Table 12. Spot Prices of Ultra-Low Sulfur Diesel Fuel, Kerosene-Type Jet Fuel, and Propane, 2022 to Present
(Dollars per Gallon)

Year / Product	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2022												
No. 2 Distillate												
Ultra-Low Sulfur Diesel Fuel												
New York Harbor	2.616	2.872	3.780	4.042	4.646	4.362	3.696	3.596	3.435	4.345	4.063	3.117
U.S. Gulf Coast	2.550	2.810	3.676	3.953	3.934	4.286	3.629	3.535	3.357	3.963	3.344	2.975
Los Angeles	2.674	2.851	3.631	3.887	4.050	4.382	3.630	3.512	3.531	3.858	3.348	2.942
Kerosene-Type Jet Fuel												
U.S. Gulf Coast	2.446	2.682	3.495	3.914	3.902	4.120	3.478	3.339	3.262	3.715	3.160	2.897
Propane												
Mont Belvieu	1.169	1.283	1.448	1.302	1.223	1.219	1.142	1.093	0.991	0.859	0.852	0.692
2023												
No. 2 Distillate												
Ultra-Low Sulfur Diesel Fuel												
New York Harbor	3.267	2.832	2.747	2.593	2.346	2.432	2.671	3.117	3.325	3.114	–	–
U.S. Gulf Coast	3.207	2.771	2.690	2.518	2.302	2.351	2.597	3.050	3.265	3.009	–	–
Los Angeles	3.184	2.942	2.643	2.418	2.386	2.415	2.817	3.437	3.850	3.286	–	–
Kerosene-Type Jet Fuel												
U.S. Gulf Coast	3.542	2.790	2.679	2.374	2.173	2.250	2.488	2.989	3.120	2.881	–	–
Propane												
Mont Belvieu	0.842	0.828	0.794	0.811	0.666	0.574	0.629	0.679	0.730	0.675	–	–

2023	Average for Week Ending:		Daily Prices:									
	Fri 10/20	Fri 10/27	Mon 10/30	Tue 10/31	Wed 11/1	Thu 11/2	Fri 11/3	Mon 11/6	Tue 11/7	Wed 11/8	Thu 11/9	Fri 11/10
No. 2 Distillate												
Ultra-Low Sulfur Diesel Fuel												
New York Harbor	3.219	3.074	2.989	2.994	2.968	3.102	2.995	2.999	2.883	2.814	2.780	2.814
U.S. Gulf Coast	3.078	2.995	2.899	2.915	2.888	2.928	2.832	2.846	2.716	2.632	2.553	2.584
Los Angeles	3.287	3.120	2.974	2.989	3.048	3.135	3.087	3.101	2.983	3.049	3.020	2.996
Kerosene-Type Jet Fuel												
U.S. Gulf Coast	2.952	2.845	2.854	2.869	2.875	3.105	2.837	2.889	2.808	2.724	2.665	2.669
Propane												
Mont Belvieu	0.659	0.654	0.649	0.663	0.661	0.650	0.643	0.648	0.630	0.619	0.619	0.630

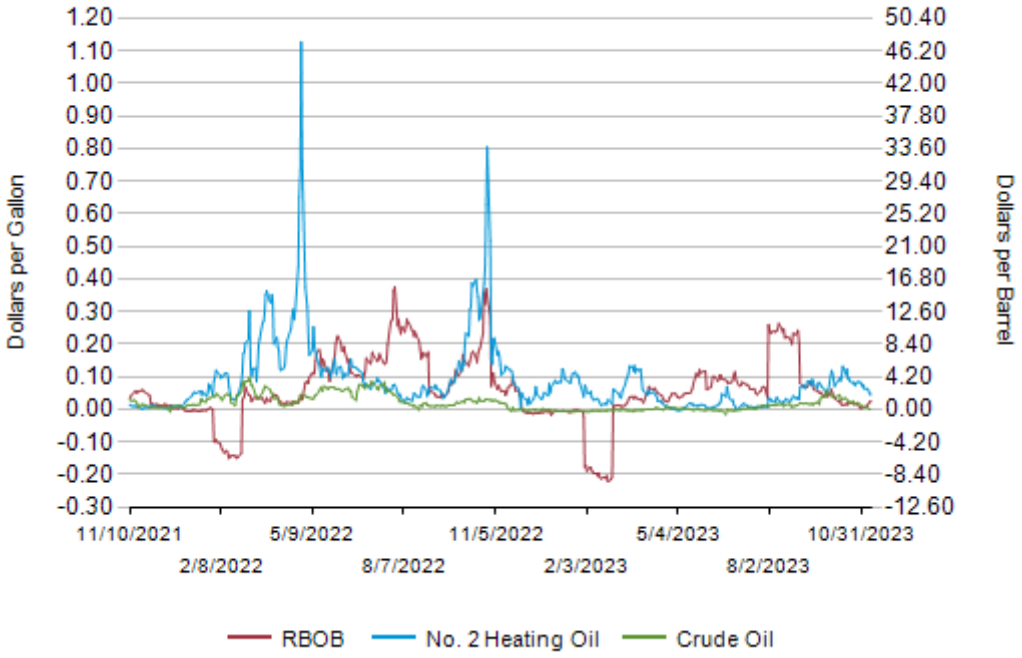
– = Data Not Available.
Notes: Monthly and weekly prices are calculated by EIA from daily data. See Glossary for definitions of abbreviations.
See Appendix B, Technical Note 2, for more information about the data in this table.
Data source: See page 30.

Table 13. NYMEX Futures Prices of Crude Oil, Motor Gasoline, and No. 2 Heating Oil
(Crude Oil in Dollars per Barrel, all others in Dollars per Gallon)

	Mon 10/30	Tue 10/31	Wed 11/1	Thu 11/2	Fri 11/3	Mon 11/6	Tue 11/7	Wed 11/8	Thu 11/9	Fri 11/10
Crude Oil (WTI, Cushing, Oklahoma)										
December-2023	82.31	81.02	80.44	82.46	80.51	80.82	77.37	75.33	75.74	77.17
January-2024	81.68	80.50	80.10	82.16	80.23	80.60	77.21	75.31	75.75	77.15
February-2024	80.99	79.96	79.63	81.70	79.86	80.32	76.98	75.12	75.57	76.93
March-2024	80.34	79.42	79.13	81.20	79.46	79.99	76.73	74.93	75.38	76.68
Regular Reformulated Blendstock for Oxygenate Blending (RBOB) (New York Harbor)										
November-2023	2.220	2.223	–	–	–	–	–	–	–	–
December-2023	2.217	2.217	2.186	2.246	2.201	2.236	2.168	2.129	2.161	2.190
January-2024	2.216	2.212	2.184	2.240	2.195	2.225	2.153	2.111	2.137	2.166
February-2024	2.221	2.216	2.191	2.246	2.201	2.232	2.159	2.116	2.139	2.170
No. 2 Heating Oil (New York Harbor)										
November-2023	2.966	2.991	–	–	–	–	–	–	–	–
December-2023	2.884	2.910	2.962	3.026	2.924	2.952	2.838	2.749	2.719	2.743
January-2024	2.841	2.856	2.891	2.951	2.860	2.889	2.779	2.698	2.674	2.698
February-2024	2.808	2.815	2.842	2.903	2.821	2.848	2.742	2.666	2.647	2.670

– = Data Not Available.
Note: See Appendix B, Technical Note 3, for more information about the data in this table.
Data source: See page 30.

Figure 9. Daily Futures Price Differentials: First Delivery Month Less Second Delivery Month, June 2021 to Present



Note: See Appendix B, Technical Note 4, for more information about the data in this graph.
Data source: See page 30.

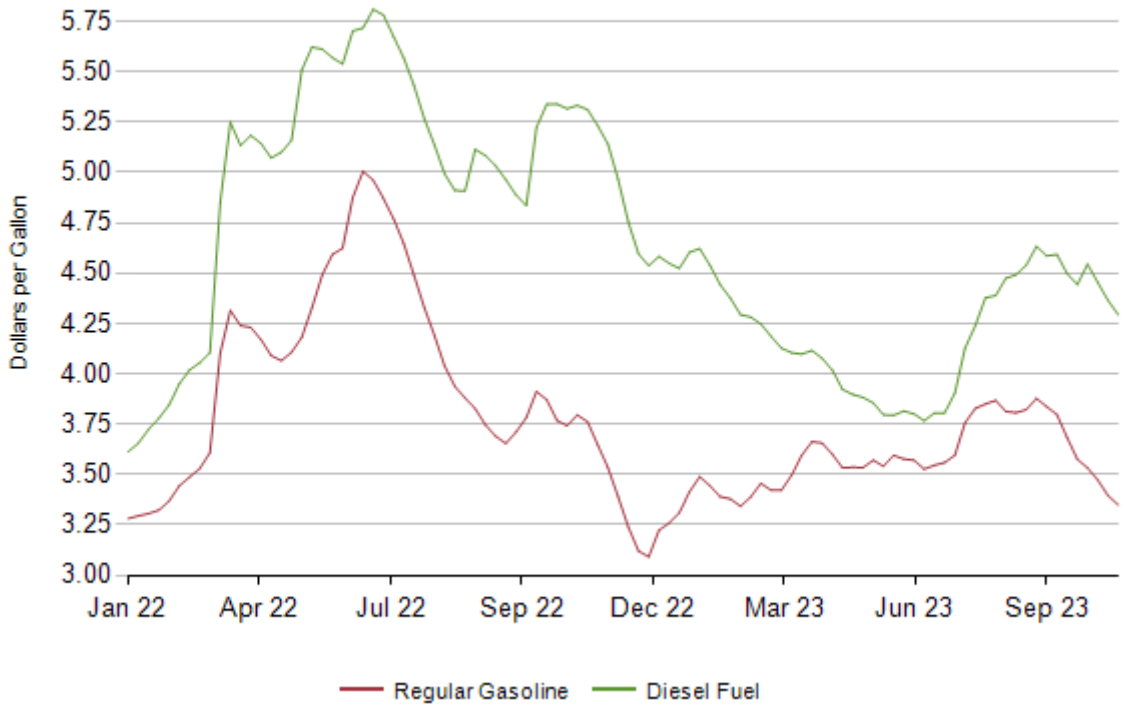
Table 14. U.S. Retail Motor Gasoline and On-Highway Diesel Fuel Prices, 2022 to Present
(Dollars per Gallon, Including Taxes)

Year / Product	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2022												
Motor Gasoline	3.413	3.611	4.322	4.213	4.545	5.032	4.668	4.087	3.817	3.935	3.799	3.324
Conventional Areas	3.260	3.469	4.150	4.036	4.345	4.838	4.495	3.906	3.646	3.720	3.613	3.169
RFG Areas	3.720	3.894	4.665	4.569	4.947	5.422	5.016	4.449	4.156	4.361	4.172	3.633
Regular	3.315	3.517	4.222	4.109	4.444	4.929	4.559	3.975	3.700	3.815	3.685	3.210
East Coast (PADD 1)	3.253	3.478	4.146	3.980	4.367	4.761	4.404	3.881	3.501	3.468	3.552	3.192
New England (PADD 1A)	3.357	3.510	4.229	4.046	4.508	4.958	4.650	4.195	3.638	3.558	3.790	3.427
Central Atlantic (PADD 1B)	3.420	3.632	4.256	4.105	4.588	4.921	4.622	4.175	3.710	3.702	3.851	3.472
Lower Atlantic (PADD 1C)	3.123	3.373	4.056	3.884	4.192	4.609	4.201	3.615	3.335	3.295	3.305	2.960
Midwest (PADD 2)	3.112	3.357	4.024	3.915	4.260	4.879	4.496	3.809	3.590	3.744	3.587	3.014
Gulf Coast (PADD 3)	2.971	3.213	3.918	3.768	4.100	4.574	4.093	3.483	3.158	3.218	3.065	2.715
Rocky Mountain (PADD 4)	3.341	3.344	4.060	4.156	4.296	4.902	4.864	4.250	3.906	3.874	3.662	3.180
West Coast (PADD 5)	4.155	4.228	5.105	5.134	5.347	5.815	5.481	4.941	4.896	5.402	4.810	4.102
Midgrade	3.766	3.939	4.681	4.598	4.900	5.390	5.060	4.487	4.237	4.368	4.197	3.718
Premium	4.036	4.210	4.953	4.871	5.199	5.699	5.361	4.806	4.564	4.704	4.537	4.049
On-Highway Diesel Fuel	3.724	4.032	5.105	5.120	5.571	5.754	5.486	5.013	4.993	5.211	5.255	4.714
East Coast (PADD 1)	3.720	4.077	5.183	5.174	5.861	5.868	5.520	5.031	4.927	5.211	5.424	4.963
New England (PADD 1A)	3.711	4.047	5.120	5.220	6.294	6.118	5.743	5.259	5.057	5.449	5.962	5.380
Central Atlantic (PADD 1B)	3.880	4.224	5.318	5.347	6.262	6.117	5.797	5.327	5.119	5.549	5.946	5.459
Lower Atlantic (PADD 1C)	3.622	3.990	5.110	5.058	5.541	5.726	5.393	4.898	4.842	5.065	5.188	4.743
Midwest (PADD 2)	3.594	3.891	4.912	4.936	5.320	5.662	5.460	5.000	5.023	5.226	5.253	4.609
Gulf Coast (PADD 3)	3.463	3.804	4.937	4.885	5.248	5.393	5.135	4.706	4.717	4.885	4.826	4.309
Rocky Mountain (PADD 4)	3.697	3.920	4.860	5.086	5.465	5.709	5.585	5.008	4.937	5.195	5.392	4.971
West Coast (PADD 5)	4.454	4.666	5.733	5.807	6.076	6.465	6.193	5.648	5.633	5.838	5.736	5.249
California	4.803	5.018	6.133	6.260	6.479	6.874	6.587	6.123	6.149	6.330	6.121	5.558
2023												
Motor Gasoline	3.445	3.501	3.535	3.711	3.666	3.684	3.712	3.954	3.958	3.742	–	–
Conventional Areas	3.335	3.391	3.401	3.573	3.516	3.532	3.565	3.813	3.778	3.531	–	–
RFG Areas	3.665	3.722	3.805	3.987	3.969	3.990	4.007	4.237	4.317	4.164	–	–
Regular	3.339	3.389	3.422	3.603	3.555	3.571	3.597	3.840	3.836	3.613	–	–
East Coast (PADD 1)	3.307	3.320	3.291	3.468	3.425	3.417	3.471	3.714	3.635	3.417	–	–
New England (PADD 1A)	3.325	3.343	3.275	3.378	3.458	3.530	3.563	3.760	3.758	3.614	–	–
Central Atlantic (PADD 1B)	3.469	3.458	3.406	3.554	3.573	3.572	3.627	3.836	3.797	3.643	–	–
Lower Atlantic (PADD 1C)	3.201	3.227	3.221	3.436	3.322	3.290	3.349	3.622	3.502	3.224	–	–
Midwest (PADD 2)	3.217	3.231	3.270	3.512	3.454	3.471	3.436	3.701	3.666	3.371	–	–
Gulf Coast (PADD 3)	2.996	3.007	3.043	3.249	3.086	3.127	3.211	3.426	3.378	3.110	–	–
Rocky Mountain (PADD 4)	3.287	3.767	3.660	3.494	3.558	3.704	3.786	3.978	4.020	3.743	–	–
West Coast (PADD 5)	3.992	4.163	4.372	4.482	4.529	4.558	4.554	4.798	5.076	5.027	–	–
Midgrade	3.809	3.904	3.939	4.083	4.052	4.084	4.121	4.357	4.396	4.211	–	–
Premium	4.128	4.216	4.254	4.406	4.382	4.409	4.444	4.685	4.725	4.555	–	–
On-Highway Diesel Fuel	4.576	4.413	4.211	4.099	3.915	3.802	3.882	4.370	4.563	4.507	–	–
East Coast (PADD 1)	4.812	4.606	4.330	4.194	3.958	3.857	3.934	4.387	4.504	4.431	–	–
New England (PADD 1A)	5.105	4.989	4.684	4.553	4.285	4.117	4.101	4.363	4.535	4.566	–	–
Central Atlantic (PADD 1B)	5.121	4.897	4.659	4.485	4.251	4.132	4.136	4.516	4.697	4.691	–	–
Lower Atlantic (PADD 1C)	4.671	4.459	4.171	4.048	3.816	3.729	3.843	4.343	4.430	4.322	–	–
Midwest (PADD 2)	4.427	4.242	4.055	3.983	3.832	3.731	3.818	4.300	4.435	4.425	–	–
Gulf Coast (PADD 3)	4.277	4.132	3.959	3.867	3.619	3.500	3.590	4.080	4.254	4.167	–	–
Rocky Mountain (PADD 4)	4.727	4.645	4.378	4.118	4.101	4.028	3.983	4.460	4.801	4.713	–	–
West Coast (PADD 5)	5.085	5.006	4.865	4.702	4.605	4.435	4.529	5.110	5.577	5.528	–	–
California	5.467	5.423	5.263	4.990	4.842	4.760	4.907	5.518	6.043	6.094	–	–

2023	8/28	9/4	9/11	9/18	9/25	10/2	10/9	10/16	10/23	10/30	11/6	11/13
Motor Gasoline	3.931	3.925	3.941	4.001	3.963	3.930	3.814	3.706	3.660	3.600	3.520	3.473
Conventional Areas	3.772	3.768	3.780	3.811	3.752	3.688	3.597	3.496	3.461	3.411	3.334	3.300
RFG Areas	4.249	4.238	4.263	4.381	4.387	4.412	4.248	4.125	4.059	3.978	3.894	3.816
Regular	3.813	3.807	3.822	3.878	3.837	3.798	3.684	3.576	3.533	3.473	3.396	3.349
East Coast (PADD 1)	3.678	3.655	3.633	3.654	3.598	3.538	3.476	3.396	3.348	3.327	3.252	3.212
New England (PADD 1A)	3.763	3.749	3.742	3.782	3.759	3.728	3.668	3.602	3.557	3.513	3.456	3.413
Central Atlantic (PADD 1B)	3.809	3.774	3.781	3.834	3.797	3.752	3.681	3.618	3.599	3.567	3.515	3.455
Lower Atlantic (PADD 1C)	3.571	3.556	3.511	3.508	3.431	3.354	3.298	3.204	3.136	3.128	3.033	3.007
Midwest (PADD 2)	3.637	3.630	3.683	3.710	3.639	3.539	3.422	3.326	3.315	3.253	3.210	3.185
Gulf Coast (PADD 3)	3.378	3.364	3.366	3.431	3.351	3.321	3.185	3.040	3.041	2.965	2.871	2.809
Rocky Mountain (PADD 4)	3.975	3.999	4.013	4.071	3.996	3.920	3.820	3.705	3.691	3.579	3.456	3.338
West Coast (PADD 5)	4.880	4.912	4.969	5.163	5.258	5.391	5.167	4.997	4.858	4.723	4.597	4.520
Midgrade	4.349	4.347	4.367	4.446	4.423	4.414	4.293	4.177	4.117	4.053	3.962	3.908
Premium	4.683	4.672	4.694	4.775	4.758	4.759	4.627	4.522	4.465	4.400	4.312	4.262
On-Highway Diesel Fuel	4.475	4.492	4.540	4.633	4.586	4.593	4.498	4.444	4.545	4.454	4.366	4.294
East Coast (PADD 1)	4.475	4.474	4.479	4.537	4.525	4.542	4.458	4.404	4.408	4.342	4.294	4.220
New England (PADD 1A)	4.433	4.467	4.478	4.587	4.607	4.607	4.577	4.557	4.551	4.537	4.523	4.483
Central Atlantic (PADD 1B)	4.616	4.625	4.651	4.748	4.764	4.759	4.721	4.672	4.668	4.633	4.588	4.528
Lower Atlantic (PADD 1C)	4.429	4.419	4.417	4.456	4.429	4.455	4.349	4.290	4.299	4.217	4.163	4.079
Midwest (PADD 2)	4.385	4.383	4.427	4.492	4.439	4.449	4.376	4.304	4.554	4.441	4.334	4.308
Gulf Coast (PADD 3)	4.169	4.171	4.212	4.352	4.281	4.279	4.139	4.114	4.186	4.115	4.032	3.927
Rocky Mountain (PADD 4)	4.658	4.727	4.810	4.864	4.801	4.778	4.717	4.664	4.754	4.650	4.489	4.356
West Coast (PADD 5)	5.302	5.390	5.535	5.695	5.687	5.694	5.600	5.528	5.468	5.348	5.258	5.139
California	5.678	5.801	5.970	6.192	6.208	6.269	6.178	6.119	6.016	5.890	5.816	5.699

– = Data Not Available.
Note: See Glossary for definitions of abbreviations. See Appendix B, Technical Note 5, for more information about data in this table.
Data source: See page 30.

Figure 10. U.S. Average Retail Regular Motor Gasoline and On-Highway Diesel Fuel Prices, January 2022 to Present (Dollars per Gallon, Including Taxes)



Note: See Appendix B, Weekly Petroleum Price Surveys, page 40 for more information about the data in this graph.
Data source: See page 30.

Sources

Table 1

• Current Week Data: Estimates for most series based on data collected on Forms EIA-800, -801, -802, -803, -804, -805, and -809. Other Oils Stocks, Other Supply Stock Change, Other Supply Adjustment, and Total Product Supplied are estimates based on both current weekly data and data published in the most recent month of the *Petroleum Supply Monthly*. Natural Gas Plant Liquids Production, Other Renewable Fuels and Oxygenate Plant Production, and Refinery Processing Gain are estimates based on data published in the most recent month of the *Petroleum Supply Monthly*. Estimates for Other Oils Stocks, Crude Oil Production, Exports, and Other Supply Adjustment are explained in Appendix B.

• Previous Week Data, Previous Year Data, and Four-Week Averages: Estimates based on data published by EIA in the *Weekly Petroleum Status Report* for the respective periods.

Table 2

• Current Week Data: Estimates of Refinery Inputs and Utilization based on weekly data collected on Form EIA-800. Operable Capacity and Percent Utilization are based on data published in the most recent month of the *Petroleum Supply Monthly*. Estimates of Refiner and Blender Net Production based on weekly data collected on Forms EIA-800 and -805. Gasoline Adjustment estimate is based on estimation methodology described in Appendix B. Estimates for Fuel Ethanol Production are based on weekly data collected on Form EIA-809.

• Previous Week Data, Previous Year Data, 2-Year Ago Data, and Four-Week Averages: Estimates based on data published by EIA in the *Weekly Petroleum Status Report* for the respective periods.

Table 3

• Current Week Data: Estimates of Refinery Net Production based on weekly data collected on Form EIA-800. Estimates of Blender Net Production based on weekly data collected on Form EIA-805.

• Previous Week Data, Previous Year Data, 2-Year Ago Data, and Four-Week Averages: Estimates based on data published by EIA in the *Weekly Petroleum Status Report* for the respective periods.

Table 4

• Current Week Data: Estimates based on weekly data collected on Forms EIA-800, -801, -802, -803, and -809. Other Oils estimate is based on both current weekly data and data published in the most recent month of the *Petroleum Supply Monthly* as explained in Appendix B.

• Previous Week Data, Previous Year Data, 2-Year Ago Data, and Four-Week Averages: Estimates based on data published by EIA in the *Weekly Petroleum Status Report* for the respective periods.

Figure 1

• Data for Ranges: 2022-2023, EIA, *Weekly Petroleum Status Report*

• Week-Ending Stocks: Estimates based on weekly data collected on Forms EIA-800, -801, -802 and -803.

Table 5

• Current Week Data: Estimates based on weekly data collected on Forms EIA-800, -801, -802, and -809.

• Previous Week Data, Previous Year Data, 2-Year Ago Data, and Four-Week Averages: Estimates based on data published by EIA in the *Weekly Petroleum Status Report* for the respective periods.

Figure 2

• Data for Ranges: 2022-2023, EIA, *Weekly Petroleum Status Report*

• Week-Ending Stocks: Estimates based on weekly data collected on Forms EIA-800, -801, and -802.

Table 6

• Current Week Data: Estimates based on weekly data collected on Forms EIA-800, -801, and -802.

• Previous Week Data, Previous Year Data, 2-Year Ago Data, and Four-Week Averages: Estimates based on data published by EIA in the *Weekly Petroleum Status Report* for the respective periods.

Figure 3 and Figure 4 and Figure 5 and Figure 6

• Data for Ranges: 2022-2023, EIA, *Weekly Petroleum Status Report*

• Week-Ending Stocks: Estimates based on weekly data collected on Forms EIA-800, -801, and -802.

Table 7

• Current Week Data: Estimates based on weekly data collected on Form EIA-804. Estimate for Exports is explained in Appendix B.

• Previous Week Data, Previous Year Data, 2-Year Ago Data, and Four-Week Averages: Estimates based on data published by EIA in the Weekly Petroleum Status Report for the respective periods.

Table 8

• Current Week Data: Estimates based on weekly data collected on Form EIA-804. Crude Import Percentage by Country is calculated from data published by EIA in the *Petroleum Supply Monthly* and is explained in Appendix B.

• Previous Week Data, Previous Year Data, 2-Year Ago Data, and Four-Week Averages: Estimates based on data published by EIA in the *Weekly Petroleum Status Report* for the respective periods.

Table 9

• Current Week Data: Estimates for most series based on data collected on Forms EIA-800, -801, -802, -803, -804, -805, and -809. Operable Capacity and Percent Utilization are based on data published in the most recent month of the *Petroleum Supply Monthly*. Gasoline Adjustment estimate is based on estimation methodology described in Appendix B. Other Oils Stocks and Total Product Supplied based on both current weekly data and data published in the most recent month of the *Petroleum Supply Monthly*. The methodology for calculating Product Supplied is explained in Appendix B. Estimate for Exports is explained in Appendix B.

• Previous Week Data, Previous Year Data, 2-Year Ago Data, and Four-Week Averages: Estimates based on data published by EIA in the *Weekly Petroleum Status Report* for the respective periods.

Table 10

• EIA/OEA, Office of Integrated and International Energy Analysis.
• Platt's Oilgram Price Report.
• Petroleum Intelligence Weekly.
• Oil and Gas Journal.
• Wall Street Journal.
• Oil Market Intelligence.
• Natural Resources Canada
• Petroleum Place (www.petroleumplace.com)

Table 11 and Figures 7 and 8

• THOMSON REUTERS

Table 12

• THOMSON REUTERS

Table 13 and Figure 9

• Crude Oil Futures: New York Mercantile Exchange (NYMEX), and Products: THOMSON REUTERS

Table 14 and Figure 10

• Motor Gasoline Form EIA-878, "Motor Gasoline Price Survey," and On-Highway Diesel: Form EIA-888, "On-Highway Diesel Fuel Price Survey."

Appendix A

Table A1. Petroleum Supply Summary, October 2023 (derived from weekly data)

Category	October 2023	September 2023	Difference	October 2022	Percent Change	WPSR to PSM Comparison		
						August 2023	PSM August 2023	Difference
Stocks (Million Barrels)								
Total Stocks (Including SPR)[1,2]	1,614.7	1,624.8	-10.1	1,621.4	-0.4	1,605.5	1,608.5	-3.0
Crude Oil	783.1	768.2	14.8	836.8	-6.4	767.0	767.6	-0.7
SPR[3]	351.3	351.3	0.0	397.8	-11.7	350.3	350.3	0.0
Commercial	431.8	417.0	14.8	439.1	-1.7	416.6	417.3	-0.7
Products	831.6	856.5	-24.9	784.6	6.0	838.5	840.9	-2.4
Total Motor Gasoline[1]	219.0	226.6	-7.6	206.1	6.3	214.7	218.9	-4.2
Finished Motor Gasoline	17.0	17.4	-0.4	14.7	15.6	14.5	15.5	-1.1
Reformulated	0.0	0.0	0.0	0.0	-17.1	0.0	0.0	0.0
Conventional	17.0	17.4	-0.4	14.7	15.7	14.4	15.5	-1.1
Blending Components[1]	202.0	209.2	-7.2	191.4	5.5	200.3	203.4	-3.1
Fuel Ethanol	21.0	21.8	-0.8	22.2	-5.5	21.6	21.8	-0.2
Kerosene-Type Jet Fuel	39.3	42.7	-3.4	36.7	7.1	42.0	42.6	-0.6
Distillate Fuel Oil[1]	108.9	118.3	-9.3	106.5	2.3	118.6	116.9	1.7
15 ppm sulfur and Under[1]	99.1	108.3	-9.2	95.9	3.4	108.5	107.4	1.0
> 15 ppm sulfur to 500 ppm	2.2	2.1	0.1	2.7	-17.8	2.4	2.3	0.1
> 500 ppm sulfur	7.6	7.8	-0.2	7.9	-3.5	7.8	7.2	0.6
Residual Fuel Oil	27.6	27.6	0.0	30.3	-9.1	26.3	26.0	0.3
Propane/Propylene[2]	99.2	101.4	-2.2	87.9	12.9	96.0	–	96.0
Other Oils[4]	316.5	318.1	-1.6	294.8	7.4	319.3	317.2	2.1
Unfinished Oils	88.8	86.2	2.6	84.1	5.5	84.9	86.1	-1.2
Products Supplied (Thousand Barrels per Day)								
Total Products Supplied	20,646	20,258	387	20,436	1.0	21,077	20,881	196
Finished Motor Gasoline	8,900	8,354	546	8,696	2.3	9,063	9,299	-236
Kerosene-Type Jet Fuel	1,642	1,675	-33	1,489	10.3	1,682	1,710	-28
Distillate Fuel Oil	4,032	3,869	164	4,139	-2.6	3,763	4,134	-371
Residual Fuel Oil	266	214	53	272	-1.9	231	326	-95
Propane/Propylene	1,038	742	296	1,060	-2.1	946	–	946
Other Oils[5]	4,767	5,405	-638	4,780	-0.3	5,393	4,969	424
Inputs and Utilization (Thousand Barrels per Day)								
Crude Oil Inputs	15,260	16,127	-867	15,685	-2.7	16,677	16,689	-13
Operable Utilization Rate (%)	83.5	88.3	-4.7	87.3	– –	91.3	94.2	-2.9
Imports (Thousand Barrels per Day)								
Total Net Imports	-2,798	-1,713	-1,085	-1,910	-46.5	-1,731	-1,030	-701
Crude Oil	1,584	2,648	-1,065	2,148	-26.3	2,487	2,878	-391
Products	-4,382	-4,361	-21	-4,058	– –	-4,218	-3,908	-311
Imports	7,963	8,662	-699	8,117	-1.9	8,790	8,968	-179
Crude Oil	6,202	6,849	-646	6,137	1.1	6,851	7,019	-168
SPR	0	0	0	0	0.0	0	–	0
Commercial	6,202	6,849	-646	6,137	1.1	6,851	7,019	-168
Products	1,761	1,813	-52	1,980	-11.1	1,938	1,949	-11
Total Motor Gasoline	641	748	-107	518	23.7	813	806	8
Finished Motor Gasoline	79	142	-63	89	-10.9	104	84	20
Reformulated	0	0	0	0	0.0	0	–	0
Conventional	79	142	-63	89	-10.9	104	84	20
Blending Components	562	606	-44	430	30.9	709	721	-12
Fuel Ethanol	0	5	-5	6	-100.0	5	8	-3
Kerosene-Type Jet Fuel	107	99	8	145	-25.7	93	94	-1
Distillate Fuel Oil	114	117	-3	141	-19.6	121	133	-12
15 ppm sulfur and Under	114	117	-3	141	-19.6	121	133	-12
> 15 ppm sulfur to 500 ppm	0	0	0	0	0.0	0	0	0
> 500 ppm sulfur	0	0	0	0	0.0	0	0	0
Residual Fuel Oil	105	93	12	207	-49.0	48	72	-24
Propane/Propylene	100	86	14	94	6.1	87	–	87
Other Oils[4]	693	665	28	868	-20.2	770	737	33
Exports	10,761	10,375	387	10,027	7.3	10,521	9,998	523
Crude Oil	4,619	4,200	418	3,989	15.8	4,364	4,141	223
Products	6,143	6,174	-32	6,038	1.7	6,157	5,857	300
Stock Change (Thousand Barrels per Day)								
Total[6]	-326	643	-968	-517	– –	-386	-334	-51
Crude Oil[6]	478	42	436	-293	– –	-757	-633	-124
Products[6]	-804	600	-1,404	-224	– –	371	298	73

– – = Not Applicable.
– = Data Not Available.
1 Excludes stocks located in the "Northeast Heating Oil Reserve", "Northeast Regional Refined Petroleum Product Reserve", and "State of New York's Strategic Fuels Reserve Program." For details see Appendix C.
2 Prior to April 10, 2020 this included stocks of propylene held at terminals.
3 Crude oil stocks in the SPR include non-U.S. stocks held under foreign or commercial storage agrements.
4 Includes natural gas plant liquids (NGPLs) and liquefied refinery gases (LRGs) (except propane/propylene). Prior to June 2010, "Other Oils" included Fuel Ethanol and Motor Gasoline Blending Components.
5 Includes NGPLs and LRGs, other liquids, and all other finished petroleum products except finished motor gasoline, kerosene-type jet fuel, distillate fuel oil, residual fuel oil, and propane/propylene.
6 A negative number indicates a decrease in stocks and a positive number indicates an increase.
Note: Totals may not equal sum of components due to independent rounding.
Data source: Energy Information Administration, appropriate issues of the Weekly Petroleum Status Report and the Petroleum Supply Monthly.

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Weekly Petroleum Status Report Explanatory Notes

Overview

The Energy Information Administration's Quality Guidelines

The data contained in the *Weekly Petroleum Status Report* (WPSR) are subject to separate information quality guidelines issued by the Office of Management and Budget (OMB), the Department of Energy (DOE), and Energy Information Administration (EIA). With available resources, EIA continually works to improve its systems in order to provide high quality information needed by public and private policymakers and decision makers. EIA has performance standards to ensure the quality (i.e., objectivity, utility, and integrity) of information it disseminates to the public. Quality is ensured and maximized at levels appropriate to the nature and timeliness of the disseminated information. Information about EIA's quality program is available at http://www.eia.doe.gov/smg/EIA-IQ-Guidelines.html.

Concepts of Product Supply and Demand

Petroleum supply estimates contained in the *WPSR* are often interpreted as an approximation of petroleum demand measured as product supplied. Product supplied is often called "implied" demand because it is a measure of demand that is implied by disappearance of petroleum products from facilities and activities in the "primary" supply chain. Facilities and activities in the primary supply chain include refineries and blending terminals, gas processing plants and fractionators, oxygenate producers, importers, exporters, bulk storage terminals, and pipelines. Total product supplied in the *WPSR* may be calculated from petroleum balances reported in Table 1. Total product supplied for crude oil and petroleum products is equal to crude oil input to refineries (line 14) + Other Supply Production (line 15) + net imports(line 21) - Stock Change (line 24) + Adjustment (line 25). Product supplied for individual products equals production plus imports minus stock change minus exports. "Crude Oil Supply Adjustment" (line 13) (formerly called "Unaccounted-for Crude Oil") is the balancing item between crude oil supply and disposition.

The secondary supply chain system is that portion of the overall distribution network that falls between producers and end-users. Product typically flows in bulk from the primary supply system into the secondary system before delivery in small quantities to consumers (the tertiary system). The secondary system includes storage at bulk plants; at retail motor fuel outlets, such as service stations, truck stops, and convenience stores; and at retail fuel oil dealers. Bulk plants are wholesale storage facilities that have less than 50,000 barrels of storage capacity and, by definition, receive product only by tank car or truck, not by barge, tanker, or pipeline. Tertiary inventories are held by end users and include fuel in vehicle tanks, heating oil in residential tanks, fuel oil held by utilities, jet fuel stored in facilities operated by end users, and certain proprietary storage of raw materials for the chemical industry (ethylene, propylene, etc.).

Data users sometimes consider demand as sales to the ultimate consumer or as the actual consumption of the product. Since there may be time delays between the movement of product into the primary market and its ultimate purchase or consumption, these definitions of demand require data on changes in secondary and/or tertiary stocks or the assumption that these values either remain constant or are small compared to primary supply. The most recent study of secondary stocks was done by the National Petroleum Council in 1989. This study revealed that secondary distillate stocks were equal to about 6.9 percent of distillate stocks and 6.7 percent of distillate storage capacity. The study also noted that secondary storage capacity was decreasing due to EPA regulations.

Weekly Petroleum Supply Surveys

The data presented in the *WPSR* include data collected by the EIA on seven weekly petroleum supply and two weekly petroleum price surveys and data released by Reuters Ltd. During the heating months (October through mid-March), data from a 3rd weekly price survey are included in Appendix D, "Winter Fuels Heating Prices."

Weekly Petroleum Supply Reporting System

The seven weekly petroleum supply surveys are part of the Petroleum Supply Reporting System (PSRS). The PSRS tracks the supply and disposition of crude oil, petroleum products, and natural gas liquids in the United States. The PSRS is organized into two data collection subsystems, the Weekly Petroleum Supply Reporting System (WPSRS) and the Monthly Petroleum Supply Reporting System (MPSRS). The WPSRS processes the data from the seven weekly surveys. The MPSRS includes eight monthly surveys and one annual survey. The survey forms that comprise the PSRS are:

1. EIA-800, "Weekly Refinery and Fractionator Report,"
2. EIA-801, "Weekly Bulk Terminal Report,"
3. EIA-802, "Weekly Product Pipeline Report,"
4. EIA-803, "Weekly Crude Oil Stocks Report,"
5. EIA-804, "Weekly Imports Report,"
6. EIA-805, "Weekly Bulk Terminal and Blender Report,"
7. EIA-809, "Weekly Oxygenate Report,"
8. EIA-810, "Monthly Refinery Report,"
9. EIA-812, "Monthly Product Pipeline Report,"
10. EIA-813, "Monthly Crude Oil Report,"
11. EIA-814, "Monthly Imports Report,"
12. EIA-815, "Monthly Bulk Terminal and Blender Report."
13. EIA-816, "Monthly Natural Gas Liquids Report"
14. EIA-817, "Monthly Tanker and Barge Movement Report"
15. EIA-819, "Monthly Oxygenate Report"
16. EIA-820, "Annual Refinery Report."

A copy of the forms and instructions is available at:
http://www.eia.gov/survey/

Weekly supply surveys are administered at seven key points along the petroleum production and supply chain: (1) refineries, fractionators, and gas processing plants, (2) bulk terminals, (3) product pipelines, (4) crude oil stock holders, (5) importers, (6) blenders and (7) fuel ethanol production facilities Monthly surveys also include inter- PAD District movements by pipelines, tankers, and barges. Weekly surveys do not capture petroleum movements. Data collected weekly using

Forms EIA-800 through EIA-805 and EIA-809 are similar to, though less detailed than, the data collected monthly using Forms EIA-810, EIA-812 through EIA-815 and EIA-819. Respondents reporting to the weekly surveys constitute a sample of those reporting on the monthly surveys.

Annual U.S. refinery capacity data are collected on the Form EIA- 820, "Annual Refinery Report." These data are published in the *Refinery Capacity Report*.

Weekly Supply Survey Methodology

Sampling Frame

The EIA weekly reporting system, as part of the Petroleum Supply Reporting System (PSRS), was designed to collect data similar to those collected monthly. The sample of companies that report weekly in the WPSRS are selected from the universe of companies that report on the corresponding monthly forms with the exception of the EIA-801 in 2010.

The sampling frame for Form EIA-800 "Weekly Refinery Report" includes refineries reporting on Form EIA-810 "Monthly Refinery Report" as well as fractionators reporting on Form EIA-816 "Monthly Natural Gas Liquids Report." Monthly reports on Form EIA-810 are required from operators of every operating and idle refinery located in the 50 States, District of Columbia, Virgin Islands, Puerto Rico, and other U.S. territories. Monthly reports on Form EIA-816 are required from operators of every operating and idle gas processing plant, fractionator, and butane isomerization plant located in the 50 States and the District of Columbia.

The EIA-801 sampling frame consists of all companies reporting ending stocks on the EIA-815, "Monthly Bulk Terminal and Blender Report." This includes every bulk terminal and blending facility operating company located in the 50 States, the District of Columbia, Puerto Rico, and the Virgin Islands. A bulk terminal is primarily used for storage and/or marketing of petroleum products and has a total bulk storage capacity of 50,000 barrels or more, and/or receives petroleum products by tanker, barge, or pipeline. Bulk terminal facilities associated with a product pipeline are included.

The EIA-802 sampling frame consists of all companies reporting on the EIA-812, "Monthly Product Pipeline Report." This includes all petroleum product pipeline companies that transport refined petroleum products (including interstate, intrastate, and intracompany pipeline movements) in the 50 States and the District of Columbia. Bulk terminal facilities associated with a product pipeline are excluded.

The EIA-803 sampling frame consists of all companies reporting on the EIA-813, "Monthly Crude Oil Report." This includes all companies that carry or store 1,000 barrels or more of crude oil. Included are gathering and trunk pipeline companies (including interstate, intrastate, and intracompany pipelines), crude oil producers, terminal operators, storers of crude oil (except refineries), and companies transporting Alaskan crude oil by water in the 50 States and the District of Columbia.

The EIA-804 sampling frame consists of all companies reporting on the EIA-814, "Monthly Imports Report." This includes each Importer of Record (or Ultimate Consignee in some situations regarding Canadian imports) that import crude oil or petroleum products (1) into the 50 States and the District of Columbia, (2) into Puerto Rico, the Virgin Islands, Guam and other U.S. possessions (Midway Islands, Wake Island, American Samoa, and Northern Mariana Islands), (3) Foreign Trade Zones located in the 50 States and the District of Columbia and (4) from Puerto Rico, the Virgin Islands and other U.S. possessions into the 50 States and the District of Columbia.

The EIA-805 sampling frame consists of all companies reporting inputs and production on the EIA-815, "Monthly Bulk Terminal and Blender Report." This includes all storage terminals which produce finished motor gasoline through the blending of various motor gasoline blending components, natural gas liquids, and oxygenates in the 50 States, the District of Columbia, Puerto Rico, the Virgin Islands, Guam and other U.S. possessions.

The EIA-809 sampling frame consists of all operators of facilities reporting fuel ethanol production on the EIA-819, "Monthly Oxygenate Report." This includes fuel ethanol production facilities in the 50 States and the District of Columbia.

Sample Design

The sampling procedure used for the weekly surveys is the cut- off method. In the cut-off method, companies are ranked from largest to smallest on the basis of quantities reported during some previous period. Companies are chosen for the sample beginning with the largest and adding companies until the total sample covers approximately 90 percent of the total volumes for each item and each geographic region for which data may be published. For example, for distillate fuel oil stocks, the weekly sample includes those respondents whose combined volumes of stocks for distillate fuel oil from refineries, bulk terminals, and pipelines constitute at least 90 percent of the total volume of distillate fuel oil stocks as reported in the corresponding monthly surveys.

To assure 90-percent coverage of the total for each item collected and each geographic region for each weekly survey, the sample is reviewed each month. This review focuses on changes in the current monthly data as it relates to the weekly surveys, changes in the weekly surveys that impact the monthly surveys, and changes in respondent reporting patterns. Companies are added or removed from the surveys based on the changes. Refer to Table B1 for sample size of weekly surveys.

For the weekly surveys, better coverage will most likely reduce any sampling error. As shown in Table B2, 2012 coverage was comparable to 2011. Of the 21 product and supply type combinations, all except one had coverage above 90 percent in 2012. For 3 of the 21 combinations, 2012 coverage increased slightly over 2011. The largest percentage increase from 2011 to 2012 was for jet fuel oil imports, an increase of 0.4 percent. Bulk Terminals distillate fuel oil stocks and residual fuel oil production had the largest percentage decrease from 2011 to 2012, a decline of 6 percent each. Tabulations were done before rounding of the coverage values. Total motor gasoline production percentages include production from refineries, terminals and blenders.

Collection

Table B1. Frame and Sample Size for Weekly Supply Surveys

	Weekly Form	August 2023 Frame Size	Weekly Sample Size
Refiners (Refineries)	EIA-800	132	100
Bulk Terminals	EIA-801	*	*
Product Pipelines	EIA-802	108	45
Crude Oil Stock Holders	EIA-803	241	88
Importers	EIA-804	281	100
Terminal Blenders	EIA-805	1,475	764
Natural Gas Liquids Report	EIA-806	497	177
Ethanol Producers	EIA-809	185	144

* The sample for the EIA-801 comes from the same frame as the EIA-805.

Table B2. Average Coverage for Weekly Surveys, 2011 and 2012
(Percent of Final Monthly Volumes Included in Monthly-From-Weekly Sample)

Product	Stocks (%)						Production (%)		Imports (%)	
	Refinery		Bulk Terminals		Pipeline					
	2012	2011	2012	2011	2012	2011	2012	2011	2012	2011
Total Motor Gasoline	99	100	89	93	98	99	98	99	97	97
Jet Fuel	99	100	92	94	99	100	100	100	100	99
Distillate Fuel Oil	99	100	86	91	98	98	98	99	96	96
Residual Fuel Oil	99	100	89	93	-	-	99	100	96	99
Crude Oil	99	99	-	-	-	-	-	-	98	99

Survey data for the WPSR are collected by facsimile, Internet using secure file transfer, and electronic transmission on a weekly basis. All respondents must submit their data by 5:00 p.m. on the Monday following the end of the report period. The weekly report period begins at 7:01 a.m. on Friday and ends at 7:00 a.m. on the following Friday.

Processing

Data collected through the WPSRS are received, logged into an automated Survey Control File, keyed, and processed through an edit program. Cell values determined to be unusual or inconsistent with other cell values are flagged either by automated process or analyst review. The validity of the value of each flagged cell is investigated. From the investigation, some flagged values are either verified or corrected by the respondent. Any remaining flagged values are referred to as unresolved. Imputation is performed for nonrespondents and unresolved data items. The cleansed data are further reviewed at the aggregate level to determine if other data issues exist (see Macro Editing).

A clean data file is available by the close of business Tuesday. Corrections to previous periods, late submissions, or resubmissions for the current period received after publication are used in editing and imputation for the following periods (see Revision Policy).

Imputation and Estimation

After company reports have been checked and entered into the weekly database, values are imputed for companies that have not responded, reported incomplete data, or reported data that failed editing and could not be confirmed. The imputed values are calculated using exponentially smoothed means of recent weekly reported values for this specific company.

The equation for the exponential smoothing is:

$$Y_t = \alpha * y_t + (1 - \alpha) * Y_{t-1}$$

where

Y_t is the prediction for week t+1 (using data through week t),

y_t is week t's reported value,

Y_{t-1} is the prediction for week t (using data through week t-1),

α is a number between 0 and 1, chosen by survey/product/type

In the equation for exponential smoothing, the size of α controls the importance of last week's value relative to the aggregate of all weeks before that as represented by the prediction for last week. For example, if $\alpha = 0.8$, then last week's value is much more important in predicting this week's value than all the previous week's values are since the weight of last week is 0.8 and the weight of the previous weeks collectively is 0.2. In general, the α values for the expected means of the non-zero

responses are low for imports (last week is much less important than history) and much higher for production, inputs and stocks.

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 (weekly sum, W_s.) Next, the most recent month's data for the product reported by those same companies are summed (monthly sum, M_s.) Finally, the most recent month's data for the product as reported by all companies, including adjustments made in the monthly process, is summed (M_t). The current week's ratio estimate for that product for all companies, W_t, is given by:

$$W_t = (M_t / M_s) * W_s$$

The ratio (M_t / M_s) may be adjusted to account for very unusual events or industry changes not yet reflected in the lagged monthly data. For example, the hurricanes in September 2005 rendered the September data unrepresentative for purposes of applying the ratio to the *WPSR* in December 2005. Note, however, the gasoline and ethanol fuel adjustment is not included in M_t and is treated explicitly.

This procedure is used directly to estimate total weekly inputs to refineries and production. When refineries are closed or inoperable, the lagged monthly data impacts the estimate of operable capacity and percent utilization in the WPSR. Operable capacity is the latest reported monthly operable capacity. The percent utilization is calculated as gross weekly inputs divided by operable capacity. The use of monthly capacity data may result in an overestimate of operable capacity and an underestimate of percent utilization until the shutdown is shown in the monthly data.

To estimate stocks of finished products, the preceding procedure is followed separately for refineries, bulk terminals, and pipelines. Total estimates are performed by summing over establishment types.

Published values of gasoline production include a fuel adjustment to account for the imbalance between supply and disposition of motor gasoline blending components and fuel ethanol. For further detail, refer to Additional Sources of Data, Data Obtained from Supplemental Sources (below).

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

For imports, the ratio is smoothed as follows:

$$R_t = \alpha * r_t + (1 - \alpha) * R_{t-1}$$

where

R_t is the smoothed ratio for week t+1 (using ratios through week t),

r_t is week t's ratio of the most recent monthly total for all respondents to the monthly total of respondents from the weekly sample,

R_{t-1} is the smoothed ratio for week t (using ratios through week t-1),

α is a number between 0 and 1, chosen by product but not by PADD/Respondent ID.

When $M_s = 0$, then r_t is not defined for the week and the smoothed ratio is not updated, that is, the previous smoothed ratio is used as the multiplier.

Macro Editing

After the respondent-level data have been collected and processed. The WPSR processing system is "locked down" to all staff except a select group of industry analysts and statisticians, referred to as the WPSR Review Team. Aggregate-level estimates are generated by product and geographic region for the current week, three prior weeks, year ago data for the same week, along with 4-week averages. The WPSR Review Team has the responsibility for reviewing the aggregated data for all products and resolving inconsistencies with these estimates.

Once the WPSR Review Team have completed their review, preliminary WPSR tables are generated and provided to the Petroleum Division Director (PDD) for review. At 4 p.m., the team meets with the PDD for a final review and discussion of the estimates. Discrepancies in the data are discussed and, if necessary, adjustments are made and the final published statistics are generated for release on Wednesday morning at 10:30 a.m.

Dissemination

The data are published in the *WPSR* and the *TWIP* every Wednesday for the report period ending on the previous Friday. The WPSR tables are released to the EIA Web site at 10:30 a.m. (Eastern Standard Time) in CSV and XLS formats. The weekly highlights are released in PDF format at 10:30 am. The entire *WPSR* is released at 1:00 p.m. in PDF and HTML format. For weeks which include holidays (or have other disruptions to normal operations), releases are delayed by one day. The *WPSR* tables can be accessed at: http://www.eia.gov/petroleum/supply/weekly/.

Selected data from the weekly supply surveys are also published in the *This Week in Petroleum (TWIP)* generally available at 1:00 p.m. Eastern Time on Wednesdays. The *TWIP* can be accessed at: http://www.eia.gov/oog/info/twip/twip.asp.

Additional Sources of Data

Due to the tight time constraints in publishing weekly petroleum supply statistics and the desire to reduce industry response burden, some of the statistics published in the *WPSR* are obtained from sources other than the 7 weekly supply surveys. These other sources include models to data and data from supplemental sources such as the *PSM* or the Bureau of the Census.

Data Obtained Through Models

Domestic Crude Oil Production (Tables 1 and 9)

EIA estimates weekly domestic crude oil production using a combination of short-term forecasts and the latest available production estimates from Alaska. The four data elements contributing to the estimate are:

- the most recent Short-Term Energy Outlook (STEO) model estimate (including interim estimates) for average daily production for the lower 48 States and the Federal Gulf of Mexico (GOM) (STEO Table 4a: http://www.eia.gov/forecasts/steo/data.cfm?type=tables);
- daily production volumes delivered from the North Slope of Alaska to the Trans-Alaska Pipeline System (TAPS) (reported to EIA by the Alyeska Pipeline Service Company);
- daily volumes of natural gas plant liquids produced on the North Slope delivered to TAPS (reported to EIA by BP); and
- daily production for South Alaska estimated from monthly production reports (lagged by two months) from the Alaska Oil and Gas Conservation Commission (AOGCC).

Most of the uncertainty in the weekly estimate is associated with the STEO forecast for lower 48 and GOM production. For example, when lower 48 crude oil production is either increasing or decreasing rapidly, the accuracy of the estimate for any particular month is likely to be reduced. During tropical storms or hurricanes that affect Gulf of Mexico oil production, near real-time daily shut-in volumes reported by the Bureau of Safety and Environmental Enforcement (BSEE) are subtracted from the daily lower 48 estimate. See Previous STEO Forecasts at http://www.eia.gov/forecasts/steo/data.cfm?type=tables for comparisons of current and previous monthly STEO forecasts for lower 48 oil production and percent changes for STEO quarterly forecasts.

The weekly estimates of domestic crude oil production are reviewed monthly when the *Short-Term Energy Outlook* (STEO) is released to identify differences with recent trends in survey-based domestic production reported in the *Petroleum Supply Monthly* (PSM) and other current data. If a large difference between the two series is observed, the weekly production estimate may be re-benchmarked on weeks when the STEO is released.

Exports (Tables 1, 7, and 9)

Official U.S. exports statistics for crude oil, petroleum products, and biofuels are compiled and published by the U.S. Census Bureau each month. EIA obtains these data on a monthly basis approximately six weeks after the end of the monthly reporting period. Weekly exports statistics for crude oil, petroleum products, and biofuels are obtained through a memorandum of understanding with the U.S. Customs and Border Protection (CBP) to access their Automated Commercial Environment (ACE) system. Except for exports to Canada, all entities exporting products from the United States are required to file export information with ACE. EIA receives unedited data files from CBP each week that EIA processes to remove duplicate entries and to convert measurements as needed. This edited data is then used to estimate U.S. weekly exports of crude oil, petroleum products, and biofuels. For exports to Canada, EIA also applies an Unobserved Components Model as part of the weekly estimate where applicable. For residual fuel oil and other oils, EIA further applies a post processing regression method. The weekly exports estimates are updated each week given the availability of current CBP data. In weeks when CBP data is not available, the most recent four-week average of exports will be used. For more detail, please see Appendix D, the "Statistical Methodology of Estimating Petroleum Exports Using Data from U.S. Customs and Border Protection."

Stocks of Other Oils (Tables 1, 4, 9)

Stocks of "other oils" are derived from a combination of both weekly survey data and estimates based on prior monthly reported values. Other oils stocks include weekly survey data collected for natural gas plant liquids (NGPLs) and liquid refinery gases (LRGs) excluding propane/propylene which is reported separately, unfinished oils, kerosene, and asphalt/road oil. These products typically account for the majority of other oils stocks. Stocks of the remaining minor products included in other oils inventories not collected on weekly survey forms are estimated. Minor products include aviation gasoline, other hydrocarbons and oxygenates, aviation gasoline blending components, naphtha and other oils for petrochemical feedstock use, special naphtha, lube oils, waxes, coke, and miscellaneous oils. An estimate of weekly stocks of minor products is derived by first computing an average daily rate of stock change for the minor products for each month based on monthly data for the past 6 years (Table 1 of the *PSM*). The daily stock change for a month is estimated by subtracting the prior month's end of month other oils stocks from the current month's end of month other oils stocks and dividing by the number of days in the current month. This average daily rate and the minor stock levels from the most recent *PSM* are then used to estimate the minor product stock level for the current week.

Since some of the components of the stocks of other oils are based on values from past monthly data, analysts review the estimate to determine if factors such as recent increases or decreases in crude runs or reported outlier data require an adjustment to the estimate of stocks of minor products.

Refinery Processing Gain (Table 1, Line 20)

Processing gain is the volumetric amount by which total output is greater than input for a given period of time. This difference is due to the processing of crude oil into products which, in total, have a lower specific gravity than the crude oil processed.

Processing gain in the *WPSR* is calculated by dividing processing gain from Table 29 of the *PSM* by Refinery and Blender Net Inputs of Crude Oil in thousands of barrels per day from Table 3 of *PSM* for each of the latest 12 months of the *PSM*. The 12 values are added and divided by 12. The result is then multiplied by this week's crude oil input to refineries value in Table 1 of the *WPSR* to obtain the processing gain value for the week.

Data Obtained from Supplemental Sources

Natural Gas Plant Liquids Production (Table 1, Line 16)

Natural Gas Plant Liquids Production is not collected on the weekly surveys. The volume shown for "Natural Gas Plant Liquids Production" is "Field Production" of "Natural Gas Plant Liquids and Liquefied Refinery Gases" from Table 3, "U.S. Daily Average Supply and Disposition of Crude Oil and Petroleum Products" of the latest *PSM*. For further information see the Explanatory Notes in the appendix of the *PSM* available at: http://www.eia.gov/petroleum/supply/monthly/

Other Renewable Fuels/Oxygenate Plant Production (Table 1, Line 19)

"Other Renewable Fuels/Oxygenate Plant Production" is derived from data on Table 3 of the latest PSM. It is derived by adding Total "Renewable Fuels and Oxygenate Plant Net Production," less Renewable Fuels and Oxygenate Plant "Fuel Ethanol" production, plus the adjustments to "Oxygenates (excluding fuel ethanol) and adjustments to "Renewable Fuels Except Fuel Ethanol." Other Renewable Fuels/Oxygenate Plant Production includes production of "Oxygenates (excluding fuel ethanol)" and "Renewable Fuels Except Fuel Ethanol." "Oxygenates (excluding fuel ethanol)" include ETBE, MTBE, and E85 as well as input of denaturants for fuel ethanol at fuel ethanol plants. For further information see the explanatory notes in the appendix of the *PSM* available at: http://www.eia.gov/petroleum/supply/monthly/

Other Supply Adjustment (Table 1, Line 25)

Other Supply Adjustment is equal to the sum of the "Adjustment" for Refiner and Blender Net Production of Finished Motor Gasoline from Table 2 of the *WPSR* and the adjustments to the supply for "Hydrogen" and "Other Hydrocarbons" from Table 3 of the *PSM*.

Production of Finished Motor Gasoline Adjustment (Tables 2 and 9)

Production of finished motor gasoline reported in Tables 2 and 9 of the *WPSR* includes refinery production, blender production, and adjustments to account for imbalances between supply and disposition of motor gasoline blending components and fuel ethanol. An adjustment is needed to finished motor gasoline production because there typically is more supply than disposition reported for motor gasoline blending components and fuel ethanol. Since there is no end-user demand for motor gasoline blending components or fuel ethanol, the imbalance is typically interpreted as unreported gasoline production at blenders. Gasoline production adjustments are included in Total US finished gasoline production reported in the *WPSR*. The adjustment is the sum of the values required to balance the supply and disposition of motor gasoline blending components and fuel ethanol. Supply is production plus imports minus stock change. Disposition is refinery and blender net production plus exports.

For motor gasoline blending components, production equals the motor gasoline blending component adjustment value from Table 3 of the *PSM*. Imports, stock change, and refinery and blender net inputs are current weekly data; and exports are from the Petroleum Export Model. For fuel ethanol, production equals ethanol plant production, imports, stock change, and refinery and blender net inputs are current weekly data and exports are from the Petroleum Export Model.

Additional details concerning gasoline adjustments are available in Appendix B, "Detailed Statistics Explanatory Notes" of the *PSM*.

Quality

Response Rates

The response rate for the weekly supply surveys 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.

Timing Issues

Timing of reported data can impact published results. For example, the calculation of product supplied includes imports and change in stock levels. Normally imports would result in a stock increase. However, respondents recording inventories are frequently different than the respondents reporting imports. The accounting system of one respondent may lag that of another, resulting in the imports and associated stocks being reported in different weeks. These timing differences result in weekly variations in product supplied.

Non-sampling Errors

The weekly supply data are closely watched by market analysts and are sometimes attributed to movements in both spot and futures prices on the day the data are released. When petroleum markets are particularly tight or when the data are not what the market is expecting, (e.g. a build in inventories occurs when a decline is expected), the weekly data take on a more significant role in the assessment of petroleum markets, where such assessments affect billions of dollars in the financial markets.

Non-sampling errors may arise in the survey estimates from a number of sources including: (1) the inability to obtain data from all companies in the frame or sample (non-response and the method used to account for non-response), (2) response errors, (3) differences in the interpretation of questions or definitions, (4) mistakes in recording or coding of the data obtained from respondents, (5) data timing, and (6) other errors of collection, response, coverage, and estimation.

Resubmissions

Resubmissions are required whenever an error greater than 5 percent of the true value is discovered or if requested by EIA. Late submissions or resubmissions received after the publication date are used for editing and imputation for future periods. In rare instances, the data are used to publish a revised estimate. See Revision Policy below.

Revision Policy

EIA will disseminate revised weekly data only if the revision is expected to substantively affect understanding of U.S. petroleum supplies. The decision to disseminate a revision to weekly data will be based on EIA's judgment of the revision's expected effect. If a revision is necessary, it will be disseminated in the next regularly scheduled release of the weekly products.

Petroleum Historic Stock Ranges

The 5-year high/low stock ranges displayed in Figures 1 through 6 are provided to help WPSR users compare current petroleum inventories to recent historic levels on a U.S. total and regional basis.

The 5-year ranges provide the reader with the highest and lowest weekly stock levels for a given product by region over the equivalent week during the prior five years. Current weekly stock estimates published in the WPSR (labeled Weekly) are plotted in relation to these 5-year stock levels (shaded area on the charts) for crude oil, total motor gasoline, distillate fuel oil, kerosene-type jet fuel, residual fuel oil, and propane inventories. The charts show two years of data, covering periods either from December through December or June to June.

Data Assessment

The principal objective of the PSRS is to provide an accurate picture of petroleum industry activities and of the availability of petroleum products nationwide from primary distribution channels. The weekly data, which are based on sample estimates stemming largely from preliminary company data, serve as leading indicators of the monthly data. The weekly data are not expected to have the same level of accuracy as the preliminary monthly data when compared with final monthly data. However, the weekly data are expected to exhibit like trends and product flow characteristic of the preliminary and final monthly data.

To assess the accuracy of weekly statistics, monthly estimates derived from weekly estimates are compared with the final monthly aggregates published in the Petroleum Supply Annual (PSA). Although final monthly data published in the PSA are still subject to error, they have been thoroughly reviewed and edited, they reflect all revisions made during the year, and they are considered to be the most accurate data available. The mean absolute percent error provides a measure of the average revisions relative to the aggregates being measured for a variable. The mean absolute percent error for 2007 weekly data was less than 2 percent for 22 of the 62 major petroleum variables analyzed. As a group, stocks continued to have the most accurate monthly from weekly estimates. The detailed analysis is available in a feature article entitled "Accuracy of Petroleum Supply Data" available at: http://www.eia.doe.gov/petroleum/supply/monthly/ archive/2009/2009_02/pdf/art0902.pdf

Confidentiality—Data protection and disclosure - Weekly Supply Surveys

The information reported on Forms EIA-800 through EIA-805 and EIA-809 is kept confidential and not disclosed to the public to the extent that it satisfies the criteria for exemption under the Freedom of Information Act (FOIA), 5 U.S.C. §552, the DOE regulations, 10 C.F.R. §1004.11, implementing the FOIA, and the Trade Secrets Act, 18 U.S.C §1905. The Energy Information Administration (EIA) protects this information in accordance with its confidentiality and security policies and procedures.

The Federal Energy Administration Act requires the EIA to provide company-specific data to other Federal agencies when requested for official use. The information reported on these forms 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 Federal agencies authorized by law to receive such information. A court of competent jurisdiction may obtain this information in response to an order. The information may be used for any nonstatistical purposes such as administrative, regulatory, law enforcement, or adjudicatory purposes.

Disclosure limitation procedures are not applied to the statistical data published from these surveys' information. Thus, there may be some statistics from forms EIA-800 through EIA-805 and EIA-809 that are based on data from fewer than three respondents, or that are dominated by data from one or two large respondents. In these cases, it may be possible for a knowledgeable person to estimate the information reported by a specific respondent.

Company specific data are also provided to other DOE offices for the purpose of examining specific petroleum operations in the context of emergency response planning and actual emergencies.

Weekly Petroleum Price Surveys

Weekly Price Survey Methodology

EIA survey price data contained in this report are derived from two weekly surveys, the EIA-878, "Motor Gasoline Price Survey," and the EIA-888, "On-Highway Diesel Fuel Price Survey." These surveys provide timely information on national and regional retail prices of gasoline and on-highway diesel fuel.

Sampling Frame

EIA-878, "Motor Gasoline Price Survey"

The target population is all active retail gasoline outlets in the United States for a given week. The population includes two types of outlets—big-box and non-big-box outlets. Big-box outlets typically sell large volumes of gasoline at discounted prices.

The EIA-878 sample was drawn from a frame of approximately 130,000 retail gasoline outlets in the United States that were active in 2016. The gasoline outlet frame was constructed by combining outlet information from a private commercial source with information contained on existing EIA petroleum product frames and surveys, federal and state administrative records, and other publicly available sources. Outlet names, physical addresses, and ZIP codes were

obtained from the private commercial data source. The individual outlets in the frame were assigned to counties after converting the physical addresses to geographic coordinates. Each outlet is designated as either in an area requiring reformulated gasoline (RFG) based on Environmental Protection Agency (EPA) program requirements or in an area designated as a conventional gasoline area. Reformulated gasoline is required by EPA in any area that is designated as an ozone nonattainment area. A conventional area is defined as any area that does not require the sale of reformulated gasoline. All formulations of finished motor gasoline may be sold in conventional areas. The outlets were then further assigned to city areas based on the geographic areas as defined by EIA.

EIA-888, "On-Highway Diesel Fuel Price Survey"

The target population is all active retail on-highway diesel fuel outlets in the contiguous United States for a given week. Due to statistical and operational considerations, outlets in the States of Alaska and Hawaii were excluded from the target population. The population includes two types of outlets—truck stops and service stations that sell on-highway diesel fuel. For the sole purpose of sampling efficiency, we define a truck stop as an on-highway diesel fuel retail outlet that has diesel fuel bays designed to accommodate and serve large trucks and may also offer amenities such as restaurants, showers, truck maintenance and repair, and laundry services. Truck stops typically sell larger volumes of diesel fuel and have designated diesel fueling bays that are separate from gasoline or diesel fuel pumps intended for automobiles and light trucks. In contrast, service stations sell diesel fuel in the same area as gasoline.

The EIA-888 sample was drawn from a frame of approximately 73,000 service stations and 9,500 truck stops in the contiguous United States that were active in 2021. We constructed the diesel fuel outlet frame by combining information from a private commercial source with information contained on our existing petroleum product frames and surveys and other publicly available sources. Auxiliary data at the outlet level on the frame were used to stratify truck stops on the frame and included truck diesel fuel lane counts, traffic volumes on nearby roadways, truck parking availability at the outlet, and sales of diesel exhaust fluid (DEF) from a pump.

Sample Design

EIA-878, "Motor Gasoline Price Survey"

The gasoline outlet sample implemented on May 14, 2018, is a stratified systematic sample with a total size of 1,000 retail outlets. Retail gasoline outlets are assigned to primary sampling strata based on physical address. These primary sampling strata are non-overlapping, and one or more primary sampling strata may be combined to correspond to a publication cell. A publication cell is defined by geography (PADD, state, and city) and attainment status (reformulated or conventional gasoline). Hence, New York State reformulated gasoline is a publication cell. New York City, conventional gasoline in PADD 1A (New England), and all of the United States are also publication cells.

The primary sampling strata are further substratified by retail gasoline outlet type (big-box or non-big-box). The total sample size is allocated to the sampling substrata in proportion to the number of outlets in the cell after weighting the big-box substrata in recognition of larger annual sales volume per outlet compared with non-big-box substrata. Sampling within each sampling substratum is performed by ordering the outlets by county and ZIP code and selecting an independent systematic random sample without replacement. This procedure results in adequate sample representation by ZIP code within a given substratum.

Based on annual assessments of the gasoline frame, the sample may be augmented to account for new outlets that are established. In addition, some geographic regions may experience relatively higher annual rates of outlets going out of business. Those geographic regions with relatively higher rates of sample attrition may be oversampled for newly identified outlets, compared with other regions, to help offset these smaller sample sizes.

EIA-888, "On-Highway Diesel Fuel Price Survey"

The on-highway diesel fuel sample implemented on June 13, 2022, is a stratified systematic sample with a total size of 590 retail outlets. Retail diesel fuel outlets are assigned to eight primary sampling strata based on physical address. These primary sampling strata are nonoverlapping, and they correspond to the published regional breakouts of Petroleum Administration for Defense Districts (PADDs), the most detailed geographic levels used to define publication cells and include PADDs 2, 3, 4, three sub-PADDs within PADD 1, and the two subparts of PADD 5 (the State of California and the West Coast region excluding California). The U.S., the East Coast (PADD 1), and the West Coast (PADD 5) are considered secondary publication cells because they include primary publication cell components. Each primary sampling stratum is further substratified into a certainty substratum of truck stops and up to four noncertainty substrata: large truck stops, medium truck stops, other truck stops, and service stations. Truck stops that are selected in certainty substrata are included in the sample with a probability of 1. By substratifying the primary strata, 38 sampling strata were formed.

We developed a model using historical sales data collected with Form EIA-821, "Annual Fuel Oil and Kerosene Sales Report," to estimate annual diesel fuel sales volumes at the outlet level. This model helped us stratify the truck stops into up to four substrata for a given primary sampling stratum based on auxiliary data at the outlet level on the frame.

We allocated sample sizes to the noncertainty substrata based on the substratas' relative estimated diesel fuel sales volumes, subject to constraints on minimum sample sizes and maximum sampling weights. Sampling within each noncertainty sampling substratum is performed by ordering the outlets by county and ZIP code and selecting an independent systematic random sample without replacement using a fractional interval. This procedure results in adequate sample representation by ZIP code within a given substratum.

Based on annual assessments of the diesel fuel frame, the sample may be augmented to account for new outlets that we identified since the construction of the initial frame. In addition, some geographic regions may experience relatively higher annual rates of outlets going out of business. Those geographic regions with relatively higher rates of sample attrition may be oversampled for newly identified outlets, compared with other regions, to help offset these smaller sample sizes.

Collection

Each Monday, the individual gasoline and diesel outlets are called and asked to report the pump price of their products including taxes as of 8:00 a.m. local time. If Monday is a holiday, the calls are made on the next business day; however, the Monday price is still recorded. The collection takes place using a computer assisted telephone interview (CATI) with built-in editing. Companies who prefer to report through their headquarters on behalf of their selected outlets are allowed to do so. We also collect weekly prices via email, text, fax, web survey, or manual retrieval from company websites. Data obtained through non-phone methods are entered into the CATI system and treated the same as phone-collected prices. Nonrespondent firms are telephoned several times. The data may be collected more frequently during emergency situations.

For the outlets selected in the gasoline and diesel samples, we collect their most recently available annual sales volume data only once when these outlets are selected for a new sample. The data are collected by mail or electronic transmissions. We use the volume data only to calculate our published volume-weighted average diesel fuel price estimates, and we do not publish these data.

For the few outlets in the sample that report selling on-highway diesel fuel to automobiles and trucks at different prices, we collect only the weekly truck prices from these outlets and weight these prices by the recent annual truck sales volumes collected from Form EIA-888, "On-Highway Diesel Fuel Price Survey Schedule B." We do not collect the weekly automobile diesel prices for these outlets because we do not believe that these automobile sales would have a meaningful impact on the published price estimates to justify the additional response burden.

In 2007, on-highway diesel fuel prices were collected for two types of diesel fuel, ultra-low sulfur and low sulfur. This dual collection was in response to the industry's implementation of EPA requirements phasing out the use of low sulfur diesel fuel. Publication of Low Sulfur On-Highway Diesel (LSD) prices at the U.S. level was discontinued on December 8, 2008 due to a diminishing number of stations selling LSD as a result of EPA diesel fuel regulations. EIA continued to collect LSD prices from retail outlets and included them in the Diesel Average All Types price until July 26, 2010, when no more outlets reported LSD sales. Beginning July 26, 2010 publication of the Ultra-Low Sulfur Diesel (ULSD) price became fully represented by the Diesel Average All Types price. As of December 1, 2010 (September 1, 2006 in California), any on-highway diesel fuel sold is ULSD as mandated by EPA on-highway diesel fuel regulations.

Processing and Micro Editing

The data are edited when they are entered into the CATI system, normally during the phone interview. Respondents are asked to verify prices that fail edits. If prices are outside a certain range or fail other criteria (e.g., the price of a station's fuel grade is the same or less than the price of a lower grade), respondents are also asked to explain the reason for the extreme deviation in price. Data obtained through non-phone methods are also entered into the CATI system. If the data fail the edits, the respondents are called and asked to verify their reported price(s). Imputation is used for outliers and nonrespondents.

In addition, in the middle of the weekly data collection, quality checks are performed on collected data. This is done to test the integrity of the current data, check for severe fuel price changes, and re-set any records which have been resolved. Outliers discovered during the pre-check are re-called to recheck or correct these prices. Any edits introduced to the data by this process will be applied when another pre-check or final processing is run.

Final processing takes place once all records in the CATI system have been resolved. Many of the same tasks of the pre-check process are repeated and final price estimates are created.

Imputation and Estimation

EIA-878, "Motor Gasoline Price Survey"

We handle item and unit nonresponse to weekly gasoline prices and annual sales volumes at the outlet level by imputation. Depending on available information, the imputation procedure is based on a model that incorporates some combination of previous survey data reported by the outlet, survey data reported by similar outlets in the sample, and data obtained from a private commercial source.

The estimation for weekly prices uses two sources of data from the Motor Gasoline Price Survey: annual sales volumes for each outlet in the sample and weekly price data for those outlets. Prior to implementing the new weekly sample, EIA collected annual sales volumes and ethanol content for regular, midgrade, and premium gasoline for the retail gasoline outlets in the sample from owners of the outlets and top suppliers of retail gasoline.

The sampling weight for a given sampled outlet is the reciprocal of the outlet's probability of selection in the sample. Using the annual sales volume data to estimate average prices, the volume weight for a given sampled outlet was constructed by multiplying its sampling weight by its annual sales volume. These volume weights are applied each week to the reported or imputed outlet gasoline prices to obtain weighted average price estimates for the formulations, grades, and geographic areas that EIA publishes. For quality assurance purposes, average price estimates are withheld from publication if at least half of the weighted annual sales volume is based on outlets for which the weekly gasoline prices are imputed.

EIA-888, "On-Highway Diesel Fuel Price Survey"

We handle item and unit nonresponse to weekly diesel fuel prices and annual sales volumes at the outlet level by imputation. Depending on available information, the imputation procedure is based on a model that incorporates some combination of previous survey data reported by the outlet, survey data reported by similar outlets in the sample, and data obtained from a private commercial source.

The estimation for weekly prices uses weekly price data for outlets in the sample that are collected from Form EIA-888, "On-Highway Diesel Fuel Price Survey Schedule A," and recent annual sales volumes for each of these outlets that are collected from Form EIA-888, "On-

Highway Diesel Fuel Price Survey Schedule B." The sampling weight for a given sampled outlet is the reciprocal of the outlet's probability of selection in the sample. To estimate average prices, we first calculate the weighted volume for a given sampled outlet by multiplying its sampling weight by its annual sales volume. We then apply these volume weights each week to the reported or imputed outlet diesel fuel prices to obtain weighted average price estimates for the geographic areas that we publish. For quality assurance purposes, we withhold average price estimates from publication if at least half of the weighted annual sales volume is based on outlets for which the weekly diesel fuel prices are imputed.

Macro Editing and Validation

EIA-878, "Motor Gasoline Price Survey"

Once the motor gasoline price data have been processed, the data are checked through a validation program. The program identifies the outliers in price changes from a week ago and in actual prices by grade and region. Significant outliers are investigated and verified by calling the respondent(s) and/or checking the fax, text, or email from the respondent.

All collected volumes are subjected to error checks during data validation. We verify data flagged for potential errors with the respondents. Volume data reported for only part of the year are inflated to approximate sales volumes for a full calendar year.

EIA-888, "On-Highway Diesel Fuel Price Survey"

After processing, the outlet prices are checked by a diesel validation program. The program identifies outliers and allows the analyst to further examine the data. Significant outliers are investigated and verified by calling the respondent(s) and/or checking the fax or email from the respondent for explanations. Also, credit card transaction prices are obtained from a private source and used to validate the U.S. and PADD level average prices for on-highway diesel fuel. If the survey results differ significantly from these sources, additional verification of the reported prices is done.

All collected volumes are subjected to error checks during data validation. We verify data flagged for potential errors with the respondents. Volume data reported for only part of the year are inflated to approximate sales volumes for a full calendar year.

Dissemination

Estimates of average retail gasoline and on-highway diesel prices are released at approximately 5:00 p.m. each Monday, except on Federal holidays, in which case the data are released on Tuesday (but still represent Monday's prices). These estimates are released on EIA's website: http://www.eia.gov/petroleum/gasdiesel/.

The data are also available through email notification to those customers who sign up for that service. The U.S., PADD, and sub-PADD level regular gasoline and diesel fuel average price estimates are available on EIA's prerecorded telephone hotline at (202) 586-6966 and in this publication, the *Weekly Petroleum Status Report*.

Quality

Response Rates

For EIA-878 and EIA-888, EIA calculates the survey response rate based on the annual volumes represented by the reporting outlets in the sample. For EIA-878, in terms of total weighted annual sales volume, the volumes represented by the reporting outlets in the weekly survey account for at least 80% for regular grade at the U.S. level. For EIA-888, in terms of total weighted annual sales volume, the volumes represented by the reporting outlets in the weekly survey account for at least 80% of diesel fuel sold at the contiguous U.S. level.

Sampling and Non-sampling Errors

Sampling Errors

Sampling error is a statistical term for the error that occurs when survey estimates are based on a sample rather than being derived from a complete census of the frame. Tables showing data from the EIA-878 and EIA-888 surveys utilize a sample of resellers and retailers and, therefore, have sampling error.

Statisticians use measures of sampling variability, such as the standard Statisticians use measures of sampling variability, such as the standard error and the coefficient of variation, to measure the sampling error. These measures of sampling variability are typically estimated from the sample that was selected. The standard error, which is measured in the same units (current dollars per gallon for weekly gasoline and diesel prices) as the estimate, is a measure of the sampling variability of the estimate based on all possible samples that could have been selected using the chosen sample design. The coefficient of variation, which may also be referred to as the relative standard error, is the standard error expressed as a fraction of the estimate. For quality assurance purposes, we flag average price estimates if the corresponding estimated coefficient of variation is more than 5%.

Estimated measures of sampling variability for the EIA-878 can be found at: https://www.eia.gov/petroleum/gasdiesel/gas_proc-methods.php

Estimated measures of sampling variability for the EIA-888 can be found at: https://www.eia.gov/petroleum/gasdiesel/diesel_proc-methods.php

Non-sampling Errors

Potential errors unrelated to sampling, called nonsampling errors, include various response and operational errors, such as those related to data collection, respondent reporting, transcription, and nonresponse. All these types of errors could also occur even if every known outlet had been surveyed under the same conditions as the sample survey. Although nonsampling error is not measured directly, EIA employs quality control procedures throughout the survey process.

Revision Policy

EIA disseminates revised weekly data only if the revision is expected to

substantively affect users understanding of U.S. petroleum prices. The decision to disseminate a revision to weekly data will be based on EIA's judgment of the revision's expected effect. If a revision is necessary, it will be disseminated in the next regularly scheduled release of the weekly products.

Confidentiality—Data protection and disclosure for Weekly Price Surveys

The information reported on the weekly price survey Forms EIA-878 and EIA-888 is considered confidential in accordance with the Confidential Information Protection and Statistical Efficiency Act of 2018 (P.L. 107-347) and the information will be used solely for statistical purposes. Instructions to the forms include the following:

"The information you provide will be used for statistical purposes only and is confidential by law. In accordance with the Confidential Information Protection and Statistical Efficiency Act of 2018 and other applicable Federal laws, your responses will not be disclosed in identifiable form without your consent. Per the Federal Cybersecurity Enhancement Act of 2015, Federal information systems are protected from malicious activities through cybersecurity screening of transmitted data. Every EIA employee, as well as every agent, is subject to a jail term, a fine, or both if he or she makes public ANY identifiable information you reported."

Notes

Note 1

Calculation of World Oil Price

The weighted average international price of oil, shown in the Highlights and in Table 10, is an average calculated using specific crude oil prices weighted by the estimated crude oil export volume for each oil-producing country. To develop Table 10, a list of major oil producing/ exporting countries was chosen. For each country, the contract selling price of one or more representative crude oils was determined by investigating a number of industry publications (i.e., Platt's Oilgram Price Report, Wall Street Journal, and Canadian Ministry of Natural Resources) and by contacting oil market analysts. Then, the appropriate crude oil exporting volumes to be used as weighting factors for each country were determined. These volumes are estimates based on a number of sources which provide data on production, consumption, and petroleum product exports for these countries. Export volumes for a number of smaller producing/ exporting countries, not listed in the table, are included in the weighting factors. After the export volumes had been determined, simple mathematical weighted averages were calculated to arrive at the Total OPEC, Total Non-OPEC, and Total World prices. The average United States (FOB) import price is derived by the same basic procedure as the world oil price that is, taking the representative contract crude oil price of a specific crude oil from a particular country and weighting this price by a certain volume of crude oil. In this case, the weighting factors are the volumes of crude oil imported into the U.S. from pertinent countries. Import volumes from a number of smaller producing/exporting countries, not listed in the table, are included in the weighting factors.

Note 2

The spot prices that are shown in Tables 11 and 12 are calculated by taking an unweighted average of the daily closing spot prices for a given product over a specified time period, such as a week or month.

Note 3

The futures prices shown in Table 13 are the official daily closing prices at 2:30 p.m. from the trading floor of the New York Mercantile Exchange (NYMEX) for a specific delivery month for each product listed.

Note 4

The futures price differentials shown in Figure 9 show the market premium for the first NYMEX delivery month contract over the second. For example, the data for September show the difference between October and November futures contract prices for crude oil and petroleum products, indicating the relative values placed by markets on commodities to be delivered during those two months. This differential, if negative and large enough, provides incentive for refiners and traders to hold product in storage, and if positive, to defer purchases until some future point in time.

Note 5

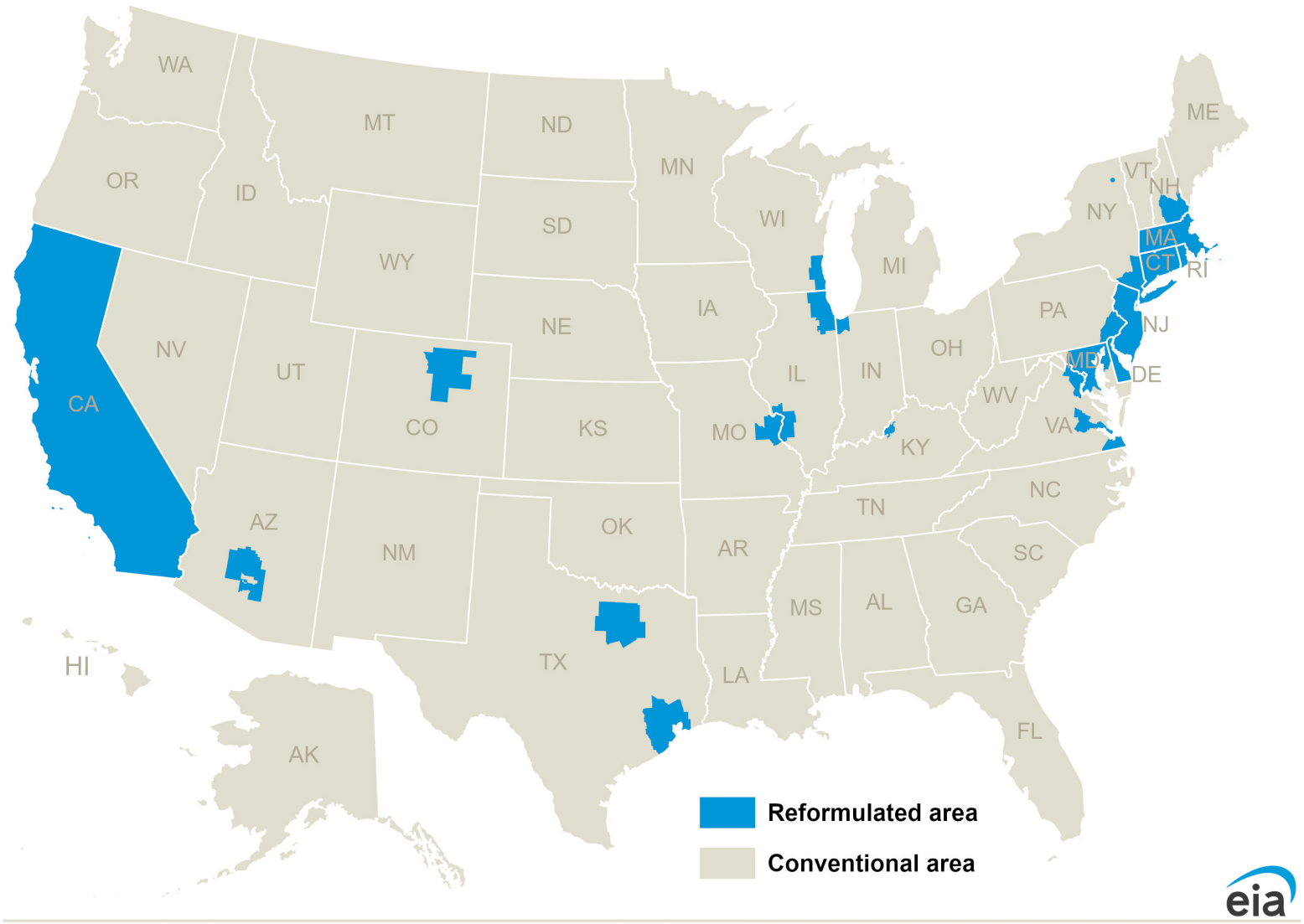
The retail gasoline prices shown in Table 14 reflect sales of reformulated gasoline (RFG) in those areas where required by Federal or State law and conventional gasoline elsewhere (see Figure B1). Areas requiring RFG may change over time due to the ozone non¬attainment status of an area being re-designated by the Environmental Protection Agency (EPA), a State opting in or out of an EPA clean fuel program, or a State adopting its own specific clean fuel program. EIA reclassifies the outlets reporting retail gasoline prices each time an area shifts in or out of a reformulated gasoline program. Conventional areas include areas where oxygenated gasoline may be required for all or part of the year.

Note 6

As a result of a processing error, we underestimated export quantities for most products (including crude oil, finished motor gasoline, distillate fuel oil, propane and propylene, and other oils) in WPSR for November 2021 through February 2022. Data users should exercise caution when using these export and product supplied estimates from WPSR as the basis for annual comparisons in their analyses. However, we believe that the corresponding PSM export and product supplied estimates for November 2021 through February 2022, which reflect official U.S. export statistics published by the U.S. Census Bureau, are accurate and should be used as the basis for annual comparisons involving export and product supplied data.

Figure B1. Gasoline Formulation Required by Area as of November 2023

Reformulated gasoline areas



Data source: U.S. Environmental Protection Agency and State environmental offices.

Appendix C
Northeast Reserves

Reserves inventories are not considered to be in the commercial sector and are excluded from EIA's commercial motor gasoline and distillate fuel oil supply and disposition statistics, such as those reported in the *Weekly Petroleum Status Report*, *Petroleum Supply Monthly*, and *This Week In Petroleum*.

Northeast Home Heating Oil Reserve classified as ultra-low sulfur distillate (15 parts per million)

Terminal Operator	Location	Thousand Barrels
Buckeye Partners LP	Port Reading, NJ	300
Buckeye Partners LP	Groton, CT	300
Global Companies LLC	Revere, MA	100
Global Companies LLC	Chelsea, MA	101
Gulf Oil LP	Chelsea, MA	0
Gulf Oil LP	South Portland, ME	200

Data source: U. S. Energy Information Administration

Northeast Regional Refined Petroleum Product Reserve motor gasoline products

Terminal Operator	Location	Thousand Barrels
Buckeye Terminals LLC	Port Reading, NJ	900
Global Companies LLC	Revere, MA	0
South Portland Terminal LLC	South Portland, ME	99

Data source: U. S. Energy Information Administration

Other reserves information from the U.S. Department of Energy, Office of Petroleum Reserves can be found at http://energy.gov/fe/services/petroleum-reserves/

State of New York's Strategic Fuels Reserve Program

State reserve inventories are also not considered to be in the commercial sector and are excluded from EIA's commercial inventories and are excluded from supply and disposition statistics, such as those reported in the *Weekly Petroleum Status Report*, *Petroleum Supply Monthly*, and *This Week In Petroleum*.

Product	Location	Thousand Barrels
Motor Gasoline Blending Components	NY	83
Fuel Ethanol	NY	9
Distillate Fuel Oil, 15 ppm Sulfur and Under	NY	34

Data source: New York State Energy Research & Development Authority

Definitions of Petroleum Products and Other Terms

(Revised May 2010)

Alcohol. The family name of a group of organic chemical compounds composed of carbon, hydrogen, and oxygen. The series of molecules vary in chain length and are composed of a hydrocarbon plus a hydroxyl group; CH3-(CH2)n-OH (e.g., methanol, ethanol, and tertiary butyl alcohol).

Alkylate. The product of an alkylation reaction. It usually refers to the high octane product from alkylation units. This alkylate is used in blending high octane gasoline.

Alkylation. A refining process for chemically combining isobutane with olefin hydrocarbons (e.g., propylene, butylene) through the control of temperature and pressure in the presence of an acid catalyst, usually sulfuric acid or hydrofluoric acid. The product, alkylate, an isoparaffin, has high octane value and is blended with motor and aviation gasoline to improve the antiknock value of the fuel.

All Other Motor Gasoline Blending Components. See Motor Gasoline Blending Components.

API Gravity. An arbitrary scale expressing the gravity or density of liquid petroleum products. The measuring scale is calibrated in terms of degrees API; it may be calculated in terms of the following formula:

$$Degrees\ API = \frac{141.5}{sp.\ gr.\ @\ 60^{o}F} - 131.5$$

The higher the API gravity, the lighter the compound. Light crudes generally exceed 38 degrees API and heavy crudes are commonly labeled as all crudes with an API gravity of 22 degrees or below. Intermediate crudes fall in the range of 22 degrees to 38 degrees API gravity.

Aromatics. Hydrocarbons characterized by unsaturated ring structures of carbon atoms. Commercial petroleum aromatics are benzene, toluene, and xylene (BTX).

Asphalt. A dark-brown-to-black cement-like material containing bitumens as the predominant constituent obtained by petroleum processing; used primarily for road construction. It includes crude asphalt as well as the following finished products: cements, fluxes, the asphalt content of emulsions (exclusive of water), and petroleum distillates blended with asphalt to make cutback asphalts. Note: The conversion factor for asphalt is 5.5 barrels per short ton.

ASTM. The acronym for the American Society for Testing and Materials.

Atmospheric Crude Oil Distillation. The refining process of separating crude oil components at atmospheric pressure by heating to temperatures of about 600 degrees Fahrenheit to 750 degrees Fahrenheit (depending on the nature of the crude oil and desired products) and subsequent condensing of the fractions by cooling.

Aviation Gasoline (Finished). A complex mixture of relatively volatile hydrocarbons with or without small quantities of additives, blended to form a fuel suitable for use in aviation reciprocating engines. Fuel specifications are provided in ASTM Specification D 910 and Military Specification MIL-G-5572. Note: Data on blending components are not counted in data on finished aviation gasoline.

Aviation Gasoline Blending Components. Naphthas which will be used for blending or compounding into finished aviation gasoline (e.g., straight-run gasoline, alkylate, reformate, benzene, toluene, and xylene). Excludes oxygenates (alcohols, ethers), butane, and pentanes plus. Oxygenates are reported as other hydrocarbons, hydrogen, and oxygenates.

Barrel. A unit of volume equal to 42 U.S. gallons.

Barrels Per Calendar Day. The amount of input that a distillation facility can process under usual operating conditions. The amount is expressed in terms of capacity during a 24-hour period and reduces the maximum processing capability of all units at the facility under continuous operation (see **Barrels per Stream Day**) to account for the following limitations that may delay, interrupt, or slow down production:

the capability of downstream facilities to absorb the output of crude oil processing facilities of a given refinery. No reduction is made when a planned distribution of intermediate streams through other than downstream facilities is part of a refinery's normal operation;

the types and grades of inputs to be processed;

the types and grades of products expected to be manufactured;

the environmental constraints associated with refinery operations;

the reduction of capacity for scheduled downtime due to such conditions as routine inspection, maintenance, repairs, and turnaround; and

the reduction of capacity for unscheduled downtime due to such conditions as mechanical problems, repairs, and slowdowns.

Barrels Per Stream Day. The maximum number of barrels of input that a distillation facility can process within a 24-hour period when running at full capacity under optimal crude and product slate conditions with no allowance for downtime.

Benzene (C_6H_6). An aromatic hydrocarbon present in small proportion in some crude oils and made commercially from petroleum by the catalytic reforming of naphthenes in petroleum naphtha. Also made from coal in the manufacture of coke. Used as a solvent, in manufacturing detergents, synthetic fibers, and petrochemicals and as a component of high-octane gasoline.

Biomass-Based Diesel Fuel. Biodiesel and other renewable diesel fuel or diesel fuel blending components derived from biomass, but excluding renewable diesel fuel coprocessed with petroleum

feedstocks.

Blending Components. See Motor or Aviation Gasoline Blending Components.

Blending Plant. A facility which has no refining capability but is either capable of producing finished motor gasoline through mechanical blending or blends oxygenates with motor gasoline.

Bonded Petroleum Imports. Petroleum imported and entered into Customs bonded storage. These imports are not included in the import statistics until they are: (1) withdrawn from storage free of duty for use as fuel for vessels and aircraft engaged in international trade; or (2) withdrawn from storage with duty paid for domestic use.

BTX. The acronym for the commercial petroleum aromatics benzene, toluene, and xylene. See individual categories for definitions.

Bulk Station. A facility used primarily for the storage and/or marketing of petroleum products which has a total bulk storage capacity of less than 50,000 barrels and receives its petroleum products by tank car or truck.

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.

Butane (C_4H_{10}). A normally gaseous straight-chain or branch-chain hydrocarbon extracted from natural gas or refinery gas streams. It includes normal butane and refinery-grade butane and is designated in ASTM Specification D1835 and Gas Processors Association Specifications for commercial butane.

> ***Normal Butane (C_4H_{10}).*** A normally gaseous straight-chain hydrocarbon that is a colorless paraffinic gas which boils at a temperature of 31.1 degrees Fahrenheit and is extracted from natural gas or refinery gas streams.
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> ***Refinery-Grade Butane (C_4H_{10}).*** A refinery-produced stream that is composed predominantly of normal butane and/or isobutane and may also contain propane and/or natural gasoline. These streams may also contain significant levels of olefins and/or fluorides contamination.

Butylene (C_4H_8). An olefinic hydrocarbon recovered from refinery processes.

Captive Refinery Oxygenate Plants. Oxygenate production facilities located within or adjacent to a refinery complex.

Catalytic Cracking. The refining process of breaking down the larger, heavier, and more complex hydrocarbon molecules into simpler and lighter molecules. Catalytic cracking is accomplished by the use of a catalytic agent and is an effective process for increasing the yield of gasoline from crude oil. Catalytic cracking processes fresh feeds and recycled feeds.

> ***Fresh Feeds.*** Crude oil or petroleum distillates which are being fed to processing units for the first time.
> ***Recycled Feeds.*** Feeds that are continuously fed back for additional processing.

Catalytic Hydrocracking. A refining process that uses hydrogen and catalysts with relatively low temperatures and high pressures for converting middle boiling or residual material to high-octane gasoline, reformer charge stock, jet fuel, and/or high grade fuel oil. The process uses one or more catalysts, depending upon product output, and can handle high sulfur feedstocks without prior desulfurization.

Catalytic Hydrotreating. A refining process for treating petroleum fractions from atmospheric or vacuum distillation units (e.g., naphthas, middle distillates, reformer feeds, residual fuel oil, and heavy gas oil) and other petroleum (e.g., cat cracked naphtha, coker naphtha, gas oil, etc.) in the presence of catalysts and substantial quantities of hydrogen. Hydrotreating includes desulfurization, removal of substances (e.g., nitrogen compounds) that deactivate catalysts, conversion of olefins to paraffins to reduce gum formation in gasoline, and other processes to upgrade the quality of the fractions.

Catalytic Reforming. A refining process using controlled heat and pressure with catalysts to rearrange certain hydrocarbon molecules, thereby converting paraffinic and naphthenic type hydrocarbons (e.g., low-octane gasoline boiling range fractions) into petrochemical feedstocks and higher octane stocks suitable for blending into finished gasoline. Catalytic reforming is reported in two categories. They are:

> ***Low Pressure.*** A processing unit operating at less than 225 pounds per square inch gauge (PSIG) measured at the outlet separator.
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> ***High Pressure.*** A processing unit operating at either equal to or greater than 225 pounds per square inch gauge (PSIG) measured at the outlet separator.

Charge Capacity. The input (feed) capacity of the refinery processing facilities.

Coal. A readily combustible black or brownish-black rock whose composition, including inherent moisture, consists of more than 50 percent by weight and more than 70 percent by volume of carbonaceous material. It is formed from plant remains that have been compacted, hardened, chemically altered, and metamorphosed by heat and pressure over geologic time.

Commercial Kerosene-Type Jet Fuel. See ***Kerosene-Type Jet Fuel.***

Conventional Blendstock for Oxygenate Blending (CBOB). See ***Motor Gasoline Blending Components.***

Conventional Gasoline. See ***Motor Gasoline (Finished).***

Crude Oil. A mixture of hydrocarbons that exists in liquid phase in natural underground reservoirs and remains liquid at atmospheric pressure after passing through surface separating facilities. Depending upon the characteristics of the crude stream, it may also include:

> Small amounts of hydrocarbons that exist in gaseous phase in natural underground reservoirs but are liquid at atmospheric pressure after being recovered from oil well (casinghead) gas in lease separators and are subsequently commingled with the crude stream without being separately measured.

Lease condensate recovered as a liquid from natural gas wells in lease or field separation facilities and later mixed into the crude stream is also included;

Small amounts of nonhydrocarbons produced from oil, such as sulfur and various metals;

Drip gases, and liquid hydrocarbons produced from tar sands, oil sands, gilsonite, and oil shale.

Liquids produced at natural gas processing plants are excluded. Crude oil is refined to produce a wide array of petroleum products, including heating oils; gasoline, diesel and jet fuels; lubricants; asphalt; ethane, propane, and butane; and many other products used for their energy or chemical content.

Crude oil is considered as either domestic or foreign, according to the following:

Domestic. Crude oil produced in the United States or from its Aouter continental shelf' as defined in 43 USC 1331.

Foreign. Crude oil produced outside the United States. Imported Athabasca hydrocarbons (tar sands from Canada) are included.

Crude Oil, Refinery Receipts. Receipts of domestic and foreign crude oil at a refinery. Includes all crude oil in transit except crude oil in transit by pipeline. Foreign crude oil is reported as a receipt only after entry through customs. Crude oil of foreign origin held in bonded storage is excluded.

Crude Oil Losses. Represents the volume of crude oil reported by petroleum refineries as being lost in their operations. These losses are due to spills, contamination, fires, etc. as opposed to refinery processing losses.

Crude Oil Production. The volume of crude oil produced from oil reservoirs during given periods of time. The amount of such production for a given period is measured as volumes delivered from lease storage tanks (i.e., the point of custody transfer) to pipelines, trucks, or other media for transport to refineries or terminals with adjustments for (1) net differences between opening and closing lease inventories, and (2) basic sediment and water (BS&W).

Crude Oil Qualities. Refers to two properties of crude oil, the sulfur content and API gravity, which affect processing complexity and product characteristics.

Delayed Coking. A process by which heavier crude oil fractions can be thermally decomposed under conditions of elevated temperatures and pressure to produce a mixture of lighter oils and petroleum coke. The light oils can be processed further in other refinery units to meet product specifications. The coke can be used either as a fuel or in other applications such as the manufacturing of steel or aluminum.

Desulfurization. The removal of sulfur, as from molten metals, petroleum oil, or flue gases. Petroleum desulfurization is a process that removes sulfur and its compounds from various streams during the refining process. Desulfurization processes include catalytic hydrotreating and other chemical/physical processes such as adsorption. Desulfurization processes vary based on the type of stream treated (e.g., naphtha, distillate, heavy gas oil, etc.) and the amount of sulfur removed (e.g., sulfur reduction to 10 ppm). See ***Catalytic Hydrotreating.***

Disposition. The components of petroleum disposition are stock change, crude oil losses, refinery inputs, exports, and products supplied for domestic consumption.

Distillate Fuel Oil. A general classification for one of the petroleum fractions produced in conventional distillation operations. It includes diesel fuels and fuel oils. Products known as No. 1, No. 2, and No. 4 diesel fuel are used in on-highway diesel engines, such as those in trucks and automobiles, as well as off-highway engines, such as those in railroad locomotives and agricultural machinery. Products known as No. 1, No. 2, and No. 4 fuel oils are used primarily for space heating and electric power generation.

No. 1 Distillate. A light petroleum distillate that can be used as either a diesel fuel or a fuel oil.

No. 1 Diesel Fuel. A light distillate fuel oil that has a distillation temperature of 550 degrees Fahrenheit at the 90-percent recovery point and meets the specifications defined in ASTM Specification D 975. It is used in high speed diesel engines generally operated under frequent speed and load changes, such as those in city buses and similar vehicles. See ***No. 1 Distillate.***

No. 1 Fuel Oil. A light distillate fuel oil that has distillation temperatures of 400 degrees Fahrenheit at the 10-percent recovery point and 550 degrees Fahrenheit at the 90-percent recovery point and meets the specifications defined in ASTM Specification D 396. It is used primarily as fuel for portable outdoor stoves and portable outdoor heaters. See ***No. 1 Distillate.***

No. 2 Distillate. A petroleum distillate that can be used as either a diesel fuel or a fuel oil.

No. 2 Diesel Fuel. A distillate fuel oil that has a distillation temperature of 640 degrees Fahrenheit at the 90-percent recovery point and meets the specifications defined in ASTM Specification D 975. It is used in high-speed diesel engines that are generally operated under uniform speed and load conditions, such as those in railroad locomotives, trucks, and automobiles. See ***No. 2 Distillate.***

Ultra-Low Sulfur No. 2 Diesel Fuel. Diesel fuel oil having sulfur content of 15 ppm or lower. Ultra-low sulfur diesel fuel oil that will be shipped by pipeline must satisfy the sulfur specification of the shipping pipeline if the pipeline specification is below 15 ppm. Diesel fuel oil intended for pipeline shipment that fails to meet a pipeline sulfur specification that is below 15 ppm will be classified as low-sulfur diesel fuel oil.

Low Sulfur No. 2 Diesel Fuel. No. 2 diesel fuel that has a sulfur level no higher than 0.05 percent by weight. It is used primarily in motor vehicle diesel engines for on-highway use.

High Sulfur No. 2 Diesel Fuel. No. 2 diesel fuel that has a sulfur level above 0.05 percent by weight.

No. 2 Fuel Oil (Heating Oil). A distillate fuel oil that has a distillation temperature of 640 degrees Fahrenheit at the 90-percent recovery point and meets the specifications defined in ASTM Specification D 396. It is used in atomizing type burners for domestic heating or for moderate capacity commercial/industrial burner units. See ***No. 2 Distillate***.

No. 4 Fuel. A distillate fuel oil made by blending distillate fuel oil and residual fuel oil stocks. It conforms to ASTM Specification D 396 or Federal Specification VV-F-815C and is used extensively in industrial plants and in commercial burner installations that are not equipped with preheating facilities. It also includes No. 4 diesel fuel used for low- and medium-speed diesel engines and conforms to ASTM Specification D 975.

No. 4 Diesel Fuel. See ***No. 4 Fuel.***

No. 4 Fuel Oil. See ***No. 4 Fuel.***

Electricity (Purchased). Electricity purchased for refinery operations that is not produced within the refinery complex.

Ending Stocks. Primary stocks of crude oil and petroleum products held in storage as of 12 midnight on the last day of the month. 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.

ETBE (Ethyl tertiary butyl ether) $(CH_3)_3COC_2H_5$. An oxygenate blend stock formed by the catalytic etherification of isobutylene with ethanol.

Ethane (C_2H_6). A normally gaseous straight-chain hydrocarbon. It is a colorless paraffinic gas that boils at a temperature of - 127.48 degrees Fahrenheit. It is extracted from natural gas and refinery gas streams.

Ether. A generic term applied to a group of organic chemical compounds composed of carbon, hydrogen, and oxygen, characterized by an oxygen atom attached to two carbon atoms (e.g., methyl tertiary butyl ether).

Ethylene (C_2H_4). An olefinic hydrocarbon recovered from refinery processes or petrochemical processes. Ethylene is used as a petrochemical feedstock for numerous chemical applications and the production of consumer goods.

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

Field Production. Represents crude oil production on leases, natural gas liquids production at natural gas processing plants, new supply of other hydrocarbons/oxygenates and motor gasoline blending components, and fuel ethanol blended into finished motor gasoline.

Flexicoking. A thermal cracking process which converts heavy hydrocarbons such as crude oil, tar sands bitumen, and distillation residues into light hydrocarbons. Feedstocks can be any pumpable hydrocarbons including those containing high concentrations of sulfur and metals.

Fluid Coking. A thermal cracking process utilizing the fluidized-solids technique to remove carbon (coke) for continuous conversion of heavy, low-grade oils into lighter products.

Fresh Feed Input. Represents input of material (crude oil, unfinished oils, natural gas liquids, other hydrocarbons and oxygenates or finished products) to processing units at a refinery that is being processed (input) into a particular unit for the first time.

Examples:

(1.) Unfinished oils coming out of a crude oil distillation unit which are input into a catalytic cracking unit are considered fresh feed to the catalytic cracking unit.

(2.) Unfinished oils coming out of a catalytic cracking unit being looped back into the same catalytic cracking unit to be reprocessed are not considered fresh feed.

Fuel Ethanol (C_2H_5OH). An anhydrous alcohol (ethanol with less than 1% water) intended for gasoline blending as described in Oxygenates definition.

Fuels Solvent Deasphalting. A refining process for removing asphalt compounds from petroleum fractions, such as reduced crude oil. The recovered stream from this process is used to produce fuel products.

Gas Oil. A liquid petroleum distillate having a viscosity intermediate between that of kerosene and lubricating oil. It derives its name from having originally been used in the manufacture of illuminating gas. It is now used to produce distillate fuel oils and gasoline.

Gasohol. A blend of finished motor gasoline containing alcohol (generally ethanol but sometimes methanol) at a concentration of 10 percent or less by volume. Data on gasohol that has at least 2.7 percent oxygen, by weight, and is intended for sale inside carbon monoxide nonattainment areas are included in data on oxygenated gasoline. See ***Oxygenates***.

Gasoline Blending Components. Naphthas which will be used for blending or compounding into finished aviation or motor gasoline (e.g., straight-run gasoline, alkylate, reformate, benzene, toluene, and xylene). Excludes oxygenates (alcohols, ethers), butane, and pentanes plus.

Gasoline Treated as Blendstock (GTAB). See ***Motor Gasoline***

Blending Components.

Gross Input to Atmospheric Crude Oil Distillation Units. Total input to atmospheric crude oil distillation units. Includes all crude oil, lease condensate, natural gas plant liquids, unfinished oils, liquefied refinery gases, slop oils, and other liquid hydrocarbons produced from tar sands, gilsonite, and oil shale.

Heavy Gas Oil. Petroleum distillates with an approximate boiling range from 651 degrees Fahrenheit to 1000 degrees Fahrenheit.

High-Sulfur Distillate Fuel Oil. Distillate fuel oil having sulfur content greater than 500 ppm.

Hydrogen. The lightest of all gases, occurring chiefly in combination with oxygen in water; exists also in acids, bases, alcohols, petroleum, and other hydrocarbons.

Idle Capacity. The component of operable capacity that is not in operation and not under active repair, but capable of being placed in operation within 30 days; and capacity not in operation but under active repair that can be completed within 90 days.

Imported Crude Oil Burned As Fuel. The amount of foreign crude oil burned as a fuel oil, usually as residual fuel oil, without being processed as such. Imported crude oil burned as fuel includes lease condensate and liquid hydrocarbons produced from tar sands, gilsonite, and oil shale.

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

Isobutane (C_4H_{10}). A normally gaseous branch-chain hydrocarbon. It is a colorless paraffinic gas that boils at a temperature of 10.9 degrees Fahrenheit. It is extracted from natural gas or refinery gas streams.

Isobutylene (C_4H_8). An olefinic hydrocarbon recovered from refinery processes or petrochemical processes.

Isohexane (C_6H_{14}). A saturated branch-chain hydrocarbon. It is a colorless liquid that boils at a temperature of 156.2 degrees Fahrenheit.

Isomerization. A refining process which alters the fundamental arrangement of atoms in the molecule without adding or removing anything from the original material. Used to convert normal butane into isobutane (C_4), an alkylation process feedstock, and normal pentane and hexane into isopentane (C_5) and isohexane (C_6), high-octane gasoline components.

Isopentane. See ***Natural Gasoline and Isopentane.***

Kerosene. A light petroleum distillate that is used in space heaters, cook stoves, and water heaters and is suitable for use as a light source when burned in wick-fed lamps. Kerosene has a maximum distillation temperature of 400 degrees Fahrenheit at the 10-percent recovery point, a final boiling point of 572 degrees Fahrenheit, and a minimum flash point of 100 degrees Fahrenheit. Included are No. 1-K and No. 2-K, the two grades recognized by ASTM Specification D 3699 as well as all other grades of kerosene called range or stove oil, which have properties similar to those of No. 1 fuel oil. See ***Kerosene-Type Jet Fuel.***

Kerosene-Type Jet Fuel. A kerosene-based product having a maximum distillation temperature of 400 degrees Fahrenheit at the 10-percent recovery point and a final maximum boiling point of 572 degrees Fahrenheit and meeting ASTM Specification D 1655 and Military Specifications MIL-T-5624P and MIL-T-83133D (Grades JP-5 and JP-8). It is used for commercial and military turbojet and turboprop aircraft engines.

> ***Commercial.*** Kerosene-type jet fuel intended for use in commercial aircraft.
>
> ***Military.*** Kerosene-type jet fuel intended for use in military aircraft.

Lease Condensate. A mixture consisting primarily of pentanes and heavier hydrocarbons which is recovered as a liquid from natural gas in lease separation facilities. This category excludes natural gas liquids, such as butane and propane, which are recovered at downstream natural gas processing plants or facilities. See ***Natural Gas Liquids.***

Light Gas Oils. Liquid Petroleum distillates heavier than naphtha, with an approximate boiling range from 401 degrees Fahrenheit to 650 degrees Fahrenheit.

Liquefied Petroleum Gases (LPG). A group of hydrocarbon-based gases derived from crude oil refining or natural gas fractionation. They include: ethane, ethylene, propane, propylene, normal butane, butylene, isobutane, and isobutylene. For convenience of transportation, these gases are liquefied through pressurization.

Liquefied Refinery Gases (LRG). Liquefied petroleum gases fractionated from refinery or still gases. Through compression and/or refrigeration, they are retained in the liquid state. The reported categories are ethane/ethylene, propane/propylene, normal butane/butylene, and isobutane/isobutylene. Excludes still gas.

Low-Sulfur Distillate Fuel Oil. Distillate fuel oil having sulfur content greater than 15 ppm to 500 ppm. Low sulfur distillate fuel oil also includes product with sulfur content equal to or less than 15 ppm if the product is intended for pipeline shipment and the pipeline has a sulfur specification below 15 ppm.

Lubricants. Substances used to reduce friction between bearing surfaces or as process materials either incorporated into other materials used as processing aids in the manufacture of other products, or used as carriers of other materials. Petroleum lubricants may be produced either from distillates or residues. Lubricants include all grades of lubricating oils from spindle oil to cylinder oil and those used in greases.

Merchant Oxygenate Plants. Oxygenate production facilities that are not associated with a petroleum refinery. Production from these facilities is sold under contract or on the spot market to refiners or other gasoline blenders.

Methanol (CH_3OH). A light, volatile alcohol intended for gasoline blending as described in Oxygenate definition.

Middle Distillates. A general classification of refined petroleum products that includes distillate fuel oil and kerosene.

Military Kerosene-Type Jet Fuel. See ***Kerosene-Type Jet Fuel.***

Miscellaneous Products. Includes all finished products not classified elsewhere (e.g., petrolatum, lube refining byproducts (aromatic extracts and tars), absorption oils, ram-jet fuel, petroleum rocket fuels, synthetic natural gas feedstocks, and specialty oils). Note: Beginning with January 2004 data, naphtha-type jet fuel is included in Miscellaneous Products.

Motor Gasoline (Finished). A complex mixture of relatively volatile hydrocarbons with or without small quantities of additives, blended to form a fuel suitable for use in spark-ignition engines. Motor gasoline, as defined in ASTM Specification D 4814 or Federal Specification VV-G-1690C, is characterized as having a boiling range of 122 to 158 degrees Fahrenheit at the 10 percent recovery point to 365 to 374 degrees Fahrenheit at the 90 percent recovery point. "Motor Gasoline" includes conventional gasoline; all types of oxygenated gasoline, including gasohol; and reformulated gasoline, but excludes aviation gasoline. Volumetric data on blending components, such as oxygenates, are not counted in data on finished motor gasoline until the blending components are blended into the gasoline. Note: E85 is included only in volumetric data on finished motor gasoline production and other components of product supplied.

Conventional Gasoline. Finished motor gasoline not included in the oxygenated or reformulated gasoline categories. Note: This category excludes reformulated gasoline blendstock for oxygenate blending (RBOB) as well as other blendstock.

Ed 55 and Lower. Finished conventional motor gasoline blended with a maximum of 55 volume percent denatured fuel ethanol.

Greater than Ed55. Finished conventional motor gasoline blended with denatured fuel ethanol where the volume percent of denatured fuel ethanol exceeds 55%.

OPRG. "Oxygenated Fuels Program Reformulated Gasoline" is reformulated gasoline which is intended for use in an oxygenated fuels program control area.

Oxygenated Gasoline (Including Gasohol). Oxygenated gasoline includes all finished motor gasoline, other than reformulated gasoline, having oxygen content of 2.0 percent or higher by weight. Gasohol containing a minimum 5.7 percent ethanol by volume is included in oxygenated gasoline. Oxygenated gasoline was reported as a separate product from January 1993 until December 2003 inclusive. Beginning with monthly data for January 2004, oxygenated gasoline is included in conventional gasoline. Historical data for oxygenated gasoline excluded Federal Oxygenated Program Reformulated Gasoline (OPRG). Historical oxygenated gasoline data also excluded other reformulated gasoline with a seasonal oxygen requirement regardless of season.

Reformulated Gasoline. Finished gasoline formulated for use in motor vehicles, the composition and properties of which meet the requirements of the reformulated gasoline regulations promulgated by the U.S. Environmental Protection Agency under Section 211(k) of the Clean Air Act. It includes gasoline produced to meet or exceed emissions performance and benzene content standards of federal-program reformulated gasoline even though the gasoline may not meet all of the composition requirements (e.g., oxygen content) of federal-program reformulated gasoline. Note: This category includes Oxygenated Fuels Program Reformulated Gasoline (OPRG). Reformulated gasoline excludes Reformulated Blendstock for Oxygenate Blending (RBOB) and Gasoline Treated as Blendstock (GTAB).

Reformulated (Blended with Alcohol). Reformulated gasoline blended with an alcohol component (e.g., fuel ethanol) at a terminal or refinery to raise the oxygen content.

Reformulated (Blended with Ether). Reformulated gasoline blended with an ether component (e.g., methyl tertiary butyl ether) at a terminal or refinery to raise the oxygen content.

Reformulated (Non-Oxygenated). Reformulated gasoline without added ether or alcohol components.

Motor Gasoline Blending. Mechanical mixing of motor gasoline blending components, and oxygenates when required, to produce finished motor gasoline. Finished motor gasoline may be further mixed with other motor gasoline blending components or oxygenates, resulting in increased volumes of finished motor gasoline and/or changes in the formulation of finished motor gasoline (e.g., conventional motor gasoline mixed with MTBE to produce oxygenated motor gasoline).

Motor Gasoline Blending Components. Naphthas (e.g., straight-run gasoline, alkylate, reformate, benzene, toluene, xylene) used for blending or compounding into finished motor gasoline. These components include reformulated gasoline blendstock for oxygenate blending (RBOB) but exclude oxygenates (alcohols, ethers), butane, and pentanes plus. Note: Oxygenates are reported as individual components and are included in the total for other hydrocarbons, hydrogens, and oxygenates.

Conventional Blendstock for Oxygenate Blending (CBOB). Conventional gasoline blendstock intended for blending with oxygenates downstream of the refinery where it was produced. CBOB must become conventional gasoline after blending with oxygenates. Motor gasoline blending components that require blending other than with oxygenates to become finished conventional gasoline are reported as All Other Motor Gasoline Blending Components. Excludes reformulated blendstock for oxygenate blending (RBOB).

Gasoline Treated as Blendstock (GTAB). Non-certified Foreign Refinery gasoline classified by an importer as blendstock to be either blended or reclassified with respect to reformulated or conventional gasoline. GTAB was classified on EIA surveys as either reformulated or conventional

based on emissions performance and the intended end use in data through the end of December 2009. Designation of GTAB as reformulated or conventional was discontinued beginning with data for January 2010. GTAB was reported as a single product beginning with data for January 2010. GTAB data for January 2010 and later months is presented as conventional motor gasoline blending components when reported as a subset of motor gasoline blending components.

Reformulated Blendstock for Oxygenate Blending (RBOB). Specially produced reformulated gasoline blendstock intended for blending with oxygenates downstream of the refinery where it was produced. Includes RBOB used to meet requirements of the Federal reformulated gasoline program and other blendstock intended for blending with oxygenates to produce finished gasoline that meets or exceeds emissions performance requirements of Federal reformulated gasoline (e.g., California RBOB and Arizona RBOB). Excludes conventional gasoline blendstocks for oxygenate blending (CBOB).

RBOB for Blending with Alcohol. Motor gasoline blending components intended to be blended with an alcohol component (e.g., fuel ethanol) at a terminal or refinery to raise the oxygen content. RBOB product detail by type of oxygenate was discontinued effective with data for January 2010. Beginning with data for January 2010, RBOB was reported as a single product.

RBOB for Blending with Ether. Motor gasoline blending components intended to be blended with an ether component (e.g., methyl tertiary butyl ether) at a terminal or refinery to raise the oxygen content. RBOB product detail by type of oxygenate was discontinued effective with data for January 2010. Beginning with data for January 2010, RBOB was reported as a single product.

All Other Motor Gasoline Blending Components. Naphthas (e.g., straight-run gasoline, alkylate, reformate, benzene, toluene, xylene) used for blending or compounding into finished motor gasoline. Includes receipts and inputs of Gasoline Treated as Blendstock (GTAB). Excludes conventional blendstock for oxygenate blending (CBOB), reformulated blendstock for oxygenate blending, oxygenates (e.g. fuel ethanol and methyl tertiary butyl ether), butane, and pentanes plus.

MTBE (Methyl tertiary butyl ether) $(CH_3)_3COCH_3$. An ether intended for gasoline blending as described in Oxygenate definition.

Naphtha. A generic term applied to a petroleum fraction with an approximate boiling range between 122 degrees Fahrenheit and 400 degrees Fahrenheit.

Naphtha Less Than 401° F. See ***Petrochemical Feedstocks.***

Naphtha-Type Jet Fuel. A fuel in the heavy naphtha boiling range having an average gravity of 52.8 degrees API, 20 to 90 percent distillation temperatures of 290 degrees to 470 degrees Fahrenheit, and meeting Military Specification MIL-T-5624L (Grade JP-4). It is used primarily for military turbojet and turboprop aircraft engines because it has a lower freeze point than other aviation fuels and meets engine requirements at high altitudes and speeds. Note: Beginning with January 2004 data, naphtha-type jet fuel is included in ***Miscellaneous Products.***

Natural Gas. A gaseous mixture of hydrocarbon compounds, the primary one being **methane**.

Natural Gas Field Facility. A field facility designed to process natural gas produced from more than one lease for the purpose of recovering condensate from a stream of natural gas; however, some field facilities are designed to recover propane, normal butane, pentanes plus, etc., and to control the quality of natural gas to be marketed.

Natural Gas Liquids. Those hydrocarbons in natural gas that are separated from the gas as liquids through the process of absorption, condensation, adsorption, or other methods in gas processing or cycling plants. Generally such liquids consist of propane and heavier hydrocarbons and are commonly referred to as lease condensate, natural gasoline, and liquefied petroleum gases. Natural gas liquids include natural gas plant liquids (primarily ethane, propane, butane, and isobutane; see ***Natural Gas Plant Liquids***) and lease condensate (primarily pentanes produced from natural gas at lease separators and field facilities; see ***Lease Condensate***).

Natural Gas Plant Liquids. Those hydrocarbons in natural gas that are separated as liquids at natural gas processing plants, fractionating and cycling plants, and, in some instances, field facilities. Lease condensate is excluded. Products obtained include ethane; liquefied petroleum gases (propane, butanes, propane-butane mixtures, ethane-propane mixtures); isopentane; and other small quantities of finished products, such as motor gasoline, special naphthas, jet fuel, kerosene, and distillate fuel oil.

Natural Gas Processing Plant. Facilities designed to recover natural gas liquids from a stream of natural gas that may or may not have passed through lease separators and/or field separation facilities. These facilities control the quality of the natural gas to be marketed. Cycling plants are classified as gas processing plants.

Natural Gasoline and Isopentane. A mixture of hydrocarbons, mostly pentanes and heavier, extracted from natural gas, that meets vapor pressure, end-point, and other specifications for natural gasoline set by the Gas Processors Association. Includes isopentane which is a saturated branch-chain hydrocarbon, (C_5H_{12}), obtained by fractionation of natural gasoline or isomerization of normal pentane.

Net Receipts. The difference between total movements into and total movements out of each PAD District by pipeline, tanker, and barge.

Normal Butane. See ***Butane***.

OPEC. An intergovernmental organization whose stated objective is to coordinate and unify petroleum policies of member countries. It was created at the Baghdad Conference on September 10–14, 1960. Current members (with years of membership) include Algeria (1969-present), Angola (2007-present), Ecuador (1973-1992 and 2007-present), Iran (1960-present), Iraq (1960-present), Kuwait

(1960-present), Libya (1962-present), Nigeria (1971-present), Qatar (1961-present), Saudi Arabia (1960-present), United Arab Emirates (1967-present), and Venezuela (1960-present). Countries no longer members of OPEC include Gabon (1975-1994) and Indonesia (1962-2008).

Operable Capacity. The amount of capacity that, at the beginning of the period, is in operation; not in operation and not under active repair, but capable of being placed in operation within 30 days; or not in operation but under active repair that can be completed within 90 days. Operable capacity is the sum of the operating and idle capacity and is measured in barrels per calendar day or barrels per stream day.

Operable Utilization Rate. Represents the utilization of the atmospheric crude oil distillation units. The rate is calculated by dividing the gross input to these units by the *operable* refining capacity of the units.

Operating Capacity. The component of operable capacity that is in operation at the beginning of the period.

Operating Utilization Rate. Represents the utilization of the atmospheric crude oil distillation units. The rate is calculated by dividing the gross input to these units by the *operating* refining capacity of the units.

Other Hydrocarbons. Materials received by a refinery and consumed as a raw material. Includes hydrogen, coal tar derivatives, gilsonite, and natural gas received by the refinery for reforming into hydrogen. Natural gas to be used as fuel is excluded.

Other Oils Equal To or Greater Than 401º F. See ***Petrochemical Feedstocks.***

Other Oxygenates. Other aliphatic alcohols and aliphatic ethers intended for motor gasoline blending (e.g., isopropyl ether (IPE) or n-propanol).

Oxygenated Gasoline. See ***Motor Gasoline (Finished).***

Oxygenates. Substances which, when added to gasoline, increase the amount of oxygen in that gasoline blend. Fuel Ethanol, Methyl Tertiary Butyl Ether (MTBE), Ethyl Tertiary Butyl Ether (ETBE), and methanol are common oxygenates.

> ***Fuel Ethanol.*** Blends of up to 10 percent by volume anhydrous ethanol (200 proof) (commonly referred to as the "gasohol waiver").
>
> ***Methanol.*** Blends of methanol and gasoline-grade tertiary butyl alcohol (GTBA) such that the total oxygen content does not exceed 3.5 percent by weight and the ratio of methanol to GTBA is less than or equal to 1. It is also specified that this blended fuel must meet ASTM volatility specifications (commonly referred to as the "ARCO" waiver).
>
> Blends of up to 5.0 percent by volume methanol with a minimum of 2.5 percent by volume cosolvent alcohols having a carbon number of 4 or less (i.e., ethanol, propanol, butanol, and/or GTBA). The total oxygen must not exceed 3.7 percent by weight, and the blend must meet ASTM volatility specifications as well as phase separation and alcohol purity specifications (commonly referred to as the "DuPont" waiver).
>
> ***MTBE (Methyl tertiary butyl ether).*** Blends up to 15.0 percent by volume MTBE which must meet the ASTM D4814 specifications. Blenders must take precautions that the blends are not used as base gasolines for other oxygenated blends (commonly referred to as the "Sun" waiver).

Pentanes Plus. A mixture of hydrocarbons, mostly pentanes and heavier, extracted from natural gas. Includes isopentane, natural gasoline, and plant condensate.

Persian Gulf. The countries that comprise the Persian Gulf are: Bahrain, Iran, Iraq, Kuwait, Qatar, Saudi Arabia, and the United Arab Emirates.

Petrochemical Feedstocks. Chemical feedstocks derived from petroleum principally for the manufacture of chemicals, synthetic rubber, and a variety of plastics. The categories reported are "Naphtha Less Than 401º F" and "Other Oils Equal To or Greater Than 401º F."

> ***Naphtha Less Than 401º F.*** A naphtha with a boiling range of less than 401 degrees Fahrenheit that is intended for use as a petrochemical feedstock.
>
> ***Other Oils Equal To or Greater Than 401º F.*** Oils with a boiling range equal to or greater than 401 degrees Fahrenheit that are intended for use as a petrochemical feedstock.

Petroleum Administration for Defense (PAD) Districts. Geographic aggregations of the 50 States and the District of Columbia into five districts by the Petroleum Administration for Defense in 1950. These districts were originally defined during World War II for purposes of administering oil allocation.

Petroleum Coke. A residue high in carbon content and low in hydrogen that is the final product of thermal decomposition in the condensation process in cracking. This product is reported as marketable coke or catalyst coke. The conversion is 5 barrels (of 42 U.S. gallons each) per short ton. Coke from petroleum has a heating value of 6.024 million Btu per barrel.

> ***Catalyst Coke.*** In many catalytic operations (e.g., catalytic cracking) carbon is deposited on the catalyst, thus deactivating the catalyst. The catalyst is reactivated by burning off the carbon, which is used as a fuel in the refining process. This carbon or coke is not recoverable in a concentrated form.
>
> ***Marketable Coke.*** Those grades of coke produced in delayed or fluid cokers which may be recovered as relatively pure carbon. This "green" coke may be sold as is or further purified by calcining.

Petroleum Products. Petroleum products are obtained from the processing of crude oil (including lease condensate), natural gas, and other hydrocarbon compounds. Petroleum products include unfinished oils, liquefied petroleum gases, pentanes plus, aviation gasoline, motor gasoline, naphtha-type jet fuel, kerosene-type jet fuel, kerosene, distillate fuel oil, residual fuel oil, petrochemical feedstocks,

special naphthas, lubricants, waxes, petroleum coke, asphalt, road oil, still gas, and miscellaneous products.

Pipeline (Petroleum). 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.

Plant Condensate. One of the natural gas liquids, mostly pentanes and heavier hydrocarbons, recovered and separated as liquids at gas inlet separators or scrubbers in processing plants.

Processing Gain. The volumetric amount by which total output is greater than input for a given period of time. This difference is due to the processing of crude oil into products which, in total, have a lower specific gravity than the crude oil processed.

Processing Loss. The volumetric amount by which total refinery output is less than input for a given period of time. This difference is due to the processing of crude oil into products which, in total, have a higher specific gravity than the crude oil processed.

Product Supplied, Crude Oil. Crude oil burned on leases and by pipelines as fuel.

Production Capacity. The maximum amount of product that can be produced from processing facilities.

Products 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 (C_3H_8). A normally gaseous straight-chain hydrocarbon. It is a colorless paraffinic gas that boils at a temperature of - 43.67 degrees Fahrenheit. 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 (C_3H_6). An olefinic hydrocarbon recovered from refinery processes or petrochemical processes.

> ***Propylene (C_3H_6) (nonfuel use).*** Propylene that is intended for use in nonfuel applications such as petrochemical manufacturing. Nonfuel use propylene includes chemical-grade propylene, polymer-grade propylene, and trace amounts of propane. Nonfuel use propylene also includes the propylene component of propane/propylene mixes where the propylene will be separated from the mix in a propane/propylene splitting process. Excluded is the propylene component of propane/propylene mixes where the propylene component of the mix is intended for sale into the fuel market.

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

Refinery-Grade Butane. See ***Butane.***

Refinery Input, Crude Oil. Total crude oil (domestic plus foreign) input to crude oil distillation units and other refinery processing units (cokers, etc.).

Refinery Input, Total. The raw materials and intermediate materials processed at refineries to produce finished petroleum products. They include crude oil, products of natural gas processing plants, unfinished oils, other hydrocarbons and oxygenates, motor gasoline and aviation gasoline blending components and finished petroleum products.

Refinery Production. Petroleum products produced at a refinery or blending plant. Published production of these products equals refinery production minus refinery 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. Refinery production of unfinished oils, and motor and aviation gasoline blending components appear on a net basis under refinery input.

Refinery Yield. Refinery yield (expressed as a percentage) represents the percent of finished product produced from input of crude oil and net input of unfinished oils. It is calculated by dividing the sum of crude oil and net unfinished input into the individual net production of finished products. Before calculating the yield for finished motor gasoline, the input of natural gas liquids, other hydrocarbons and oxygenates, and net input of motor gasoline blending components must be subtracted from the net production of finished motor gasoline. Before calculating the yield for finished aviation gasoline, input of aviation gasoline blending components must be subtracted from the net production of finished aviation gasoline.

Reformulated Blendstock for Oxygenate Blending (RBOB). See ***Motor Gasoline Blending Components.***

Reformulated Gasoline. See ***Motor Gasoline (Finished).***

Renewable Diesel Fuel (Other). Diesel fuel and diesel fuel blending components produced from renewable sources that are coprocessed with petroleum feedstocks and meet requirements of advanced biofuels.

Renewable Fuels (Other). Fuels and fuel blending components, except biomass-based diesel fuel, renewable diesel fuel, and fuel ethanol, produced from renewable biomass.

Residual Fuel Oil. A general classification for the heavier oils, known as No. 5 and No. 6 fuel oils, that remain after the distillate fuel oils and lighter hydrocarbons are distilled away in refinery operations. It conforms to ASTM Specifications D 396 and D 975 and Federal Specification VV-F-815C. No. 5, a residual fuel oil of medium viscosity, is also known as Navy Special and is defined in Military Specification MIL-F-859E, including Amendment 2 (NATO Symbol F-770). It is used in steam-powered vessels in government service and inshore power plants. No. 6 fuel oil includes Bunker C fuel oil and is used for the production of electric power, space heating, vessel

bunkering, and various industrial purposes.

Residuum. Residue from crude oil after distilling off all but the heaviest components, with a boiling range greater than 1000 degrees Fahrenheit.

Road Oil. Any heavy petroleum oil, including residual asphaltic oil used as a dust palliative and surface treatment on roads and highways. It is generally produced in six grades from 0, the most liquid, to 5, the most viscous.

Shell Storage Capacity. The design capacity of a petroleum storage tank which is always greater than or equal to working storage capacity.

Special Naphthas. All finished products within the naphtha boiling range that are used as paint thinners, cleaners, or solvents. These products are refined to a specified flash point. Special naphthas include all commercial hexane and cleaning solvents conforming to ASTM Specification D1836 and D484, respectively. Naphthas to be blended or marketed as motor gasoline or aviation gasoline, or that are to be used as petrochemical and synthetic natural gas (SNG) feedstocks are excluded.

Steam (Purchased). Steam, purchased for use by a refinery, that was not generated from within the refinery complex.

Still Gas (Refinery Gas). Any form or mixture of gases produced in refineries by distillation, cracking, reforming, and other processes. The principal constituents are methane, ethane, ethylene, normal butane, butylene, propane, propylene, etc. Still gas is used as a refinery fuel and a petrochemical feedstock. The conversion factor is 6 million BTU's per fuel oil equivalent barrel.

Stock Change. The difference between stocks at the beginning of the reporting period and stocks at the end of the reporting period. Note: A negative number indicates a decrease (i.e., a drawdown) in stocks and a positive number indicates an increase (i.e., a buildup) in stocks during the reporting period.

Strategic Petroleum Reserve (SPR). Petroleum stocks maintained by the Federal Government for use during periods of major supply interruption.

Sulfur. A yellowish nonmetallic element, sometimes known as "brimstone." It is present at various levels of concentration in many fossil fuels whose combustion releases sulfur compounds that are considered harmful to the environment. Some of the most commonly used fossil fuels are categorized according to their sulfur content, with lower sulfur fuels usually selling at a higher price. Note: No. 2 Distillate fuel is currently reported as having either a 0.05 percent or lower sulfur level for on-highway vehicle use or a greater than 0.05 percent sulfur level for off- highway use, home heating oil, and commercial and industrial uses. Residual fuel, regardless of use, is classified as having either no more than 1 percent sulfur or greater than 1 percent sulfur. Coal is also classified as being low-sulfur at concentrations of 1 percent or less or high-sulfur at concentrations greater than 1 percent.

Supply. The components of petroleum supply are field production, refinery production, imports, and net receipts when calculated on a PAD District basis.

TAME (Tertiary amyl methyl ether) $(CH_3)_2(C_2H_5)COCH_3$. An oxygenate blend stock formed by the catalytic etherification of isoamylene with methanol.

Tank Farm. An installation used by gathering and trunk pipeline companies, crude oil producers, and terminal operators (except refineries) to store crude oil.

Tanker and Barge. Vessels that transport crude oil or petroleum products. Data are reported for movements between PAD Districts; from a PAD District to the Panama Canal; or from the Panama Canal to a PAD District.

TBA (Tertiary butyl alcohol) $(CH_3)_3COH$. An alcohol primarily used as a chemical feedstock, a solvent or feedstock for isobutylene production for MTBE; produced as a co-product of propylene oxide production or by direct hydration of isobutylene.

Thermal Cracking. A refining process in which heat and pressure are used to break down, rearrange, or combine hydrocarbon molecules. Thermal cracking includes gas oil, visbreaking, fluid coking, delayed coking, and other thermal cracking processes (e.g., flexicoking). See individual categories for definition.

Toluene ($C_6H_5CH_3$). Colorless liquid of the aromatic group of petroleum hydrocarbons, made by the catalytic reforming of petroleum naphthas containing methyl cyclohexane. A high-octane gasoline-blending agent, solvent, and chemical intermediate, base for TNT.

Unaccounted for Crude Oil. Represents the arithmetic difference between the calculated supply and the calculated disposition of crude oil. The calculated supply is the sum of crude oil production plus imports minus changes in crude oil stocks. The calculated disposition of crude oil is the sum of crude oil input to refineries, crude oil exports, crude oil burned as fuel, and crude oil losses.

Unfinished Oils. All oils requiring further processing, except those requiring only mechanical blending. Unfinished oils are produced by partial refining of crude oil and include naphthas and lighter oils, kerosene and light gas oils, heavy gas oils, and residuum.

Unfractionated Streams. Mixtures of unsegregated natural gas liquid components excluding, those in plant condensate. This product is extracted from natural gas.

United States. The United States is defined as the 50 States and the District of Columbia.

Vacuum Distillation. Distillation under reduced pressure (less the atmospheric) which lowers the boiling temperature of the liquid being distilled. This technique with its relatively low temperatures prevents cracking or decomposition of the charge stock.

Visbreaking. A thermal cracking process in which heavy atmospheric or vacuum-still bottoms are cracked at moderate temperatures to increase production of distillate products and reduce viscosity of the distillation residues.

Wax. A solid or semi-solid material at 77 degrees Fahrenheit consisting of a mixture of hydrocarbons obtained or derived from petroleum fractions, or through a Fischer-Tropsch type process, in which the straight-chained paraffin series predominates. This includes all marketable wax, whether crude or refined, with a congealing point (ASTM D 938) between 80 (or 85) and 240 degrees Fahrenheit and a maximum oil content (ASTM D 3235) of 50 weight percent.

Working Storage Capacity. The difference in volume between the maximum safe fill capacity and the quantity below which pump suction is ineffective (bottoms).

Xylene ($C_6H_4(CH_3)_2$). Colorless liquid of the aromatic group of hydrocarbons made the catalytic reforming of certain naphthenic petroleum fractions. Used as high-octane motor and aviation gasoline blending agents, solvents, chemical intermediates. Isomers are metaxylene, orthoxylene, paraxylene.