



## EXECUTIVE SUMMARY

API's primary data for March 2021 suggest that petroleum markets demonstrated a measured recovery following the winter emergency disruptions that affected oil supply, trade and inventories beginning in mid-February.

### Highlights:

- Total U.S. petroleum demand of 19.1 million barrels per day (mb/d) decreased seasonally but showed resounding strength in rural gasoline demand that increased by 632,000 barrels per day over February.
- Refining and petrochemical demand for other oils – naphtha, gasoil, propane/propylene – remained solid and represented 27.3% of total U.S. petroleum demand in March.
- Refining throughput of 14.5 mb/d recovered and increased by 8.1% from February.
- The U.S. remained a petroleum net importer for the month, as imports rose by more than exports.
- Inventories were little-changed in total but reflected lower refined products stocks and higher crude oil stocks, as refineries resumed operations after the February disruptions.
- Leading economic indicators improved broadly in March, and API's Distillate Economic Indicator™ signaled continued industrial production gains (please see the following [chart](#) for details).

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### Demand

- **U.S. petroleum demand (19.1 mb/d) – a typical seasonal monthly decrease.**
  - Rural America drove gasoline demand upwards.
  - Trucking and industrial demand decreased seasonally.
  - Jet fuel deliveries were at their lowest for March since 1986.
  - Residual fuel oil demand doubled versus March 2020.
  - Strong other oils demand continued despite the cold snap disruptions.

### Prices & Macroeconomy

- **With increased crude oil prices, gasoline prices rose to their highest since May 2019.**
- **Strong industrial gains; stimulus checks helped to boost consumer sentiment.**

### Supply

- **U.S. crude oil and natural gas liquids production increased with drilling activity.**

### International trade

- **U.S. petroleum net imports expanded.**

### Industry operations

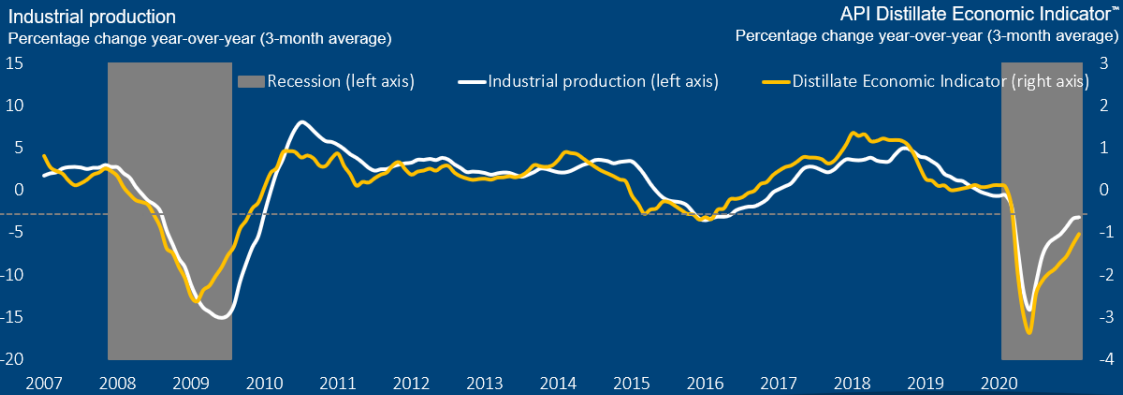
- **Refining activities recovered from winter emergency disruptions in February.**

### Inventories

- **Inventories of crude oil rose, but those of products receded.**

# API's Distillate Economic Indicator™ - March 2021

- The Distillate Economic Indicator™ value of +0.3 for March 2021 and three-month average of -0.5 – improvement in the three-month average for the ninth consecutive month – suggested that industrial production has continued to rise



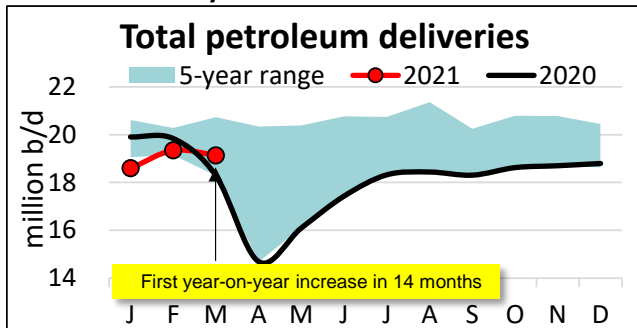
sources: API Monthly Statistical Report; EIA; CME Group; Moody's, Federal Reserve Board; API Team calculations



## Details by section

### Demand

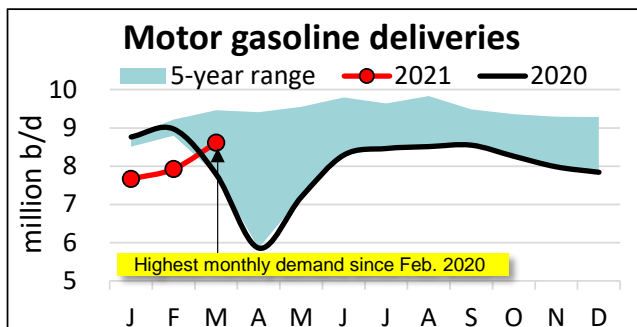
**U.S. petroleum demand (19.1 mb/d) – a typical seasonal monthly decrease**



In March, U.S. petroleum demand, as measured by total domestic petroleum deliveries, was 19.1 mb/d. This reflected a seasonal decrease of 1.1% from February and an increase of 4.6% compared with March 2020, due to last year's onset of the COVID-19 pandemic.

### Gasoline

**Rural America drove gasoline demand upwards**

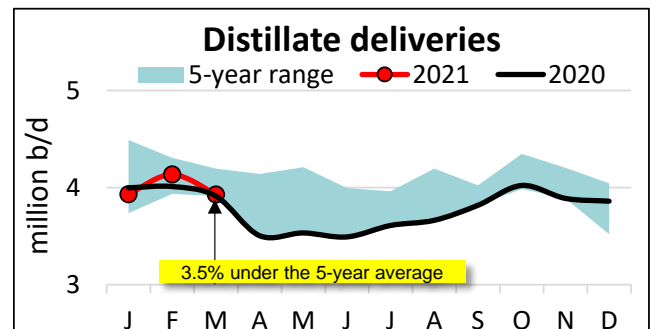


Consumer gasoline demand, measured by motor gasoline deliveries, was 8.6 mb/d in March. This represented increases of 8.7% from February and 10.7% compared with March 2020. Notably, the increase in March 2021 marked the first time since October 2019 that monthly U.S. gasoline demand increased versus the prior year. There's still room for improvement, however, since if we exclude last year the level in March 2021 was the lowest for month of March since 2012.

Deliveries of reformulated-type gasoline (consumed primarily in urban areas) rose by 57 thousand barrels per day (kb/d) or 2.2% from February, while those of conventional gasoline (mainly in rural areas) increased by 632 kb/d (11.8% m/m), suggesting the vast majority of activity increases for the month occurred outside of urban areas.

### Distillate Fuel Oil

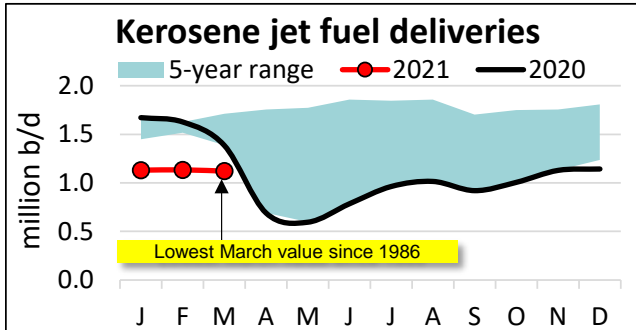
**Trucking and transportation decreased seasonally**



In March, distillate deliveries of 3.9 mb/d decreased seasonally by 5.0% from February but were up by 0.4% y/y. [DAT IQ industry trendlines](#) corroborated growth of spot flatbed, van, and reefer truck loads in March.

**Kerosene Jet Fuel**

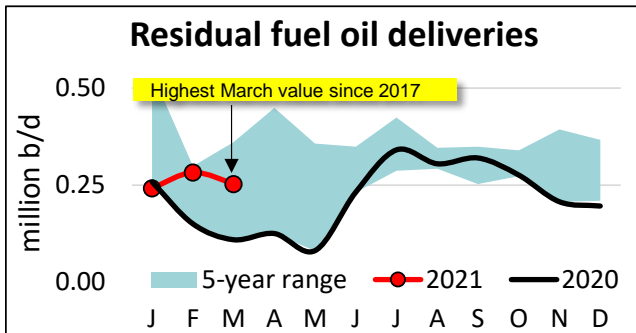
Jet fuel deliveries were at their lowest for March since 1986



'K-Jet' deliveries were 1.1 mb/d in March, a decrease of 1.1% from February and 19.1% y/y. The monthly slowing in March was consistent with [Flightradar24](#) high-frequency data that showed continued weakness in air travel demand.

**Residual Fuel Oil**

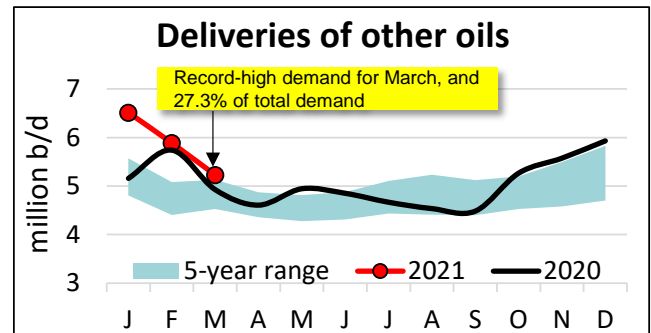
Residual fuel oil demand doubled vs. March 2020



Deliveries of residual fuel oil, which is used in electric power production, space heating, industrial applications and as a marine bunker fuel, were 0.25 mb/d in March. This was a decrease of 10.6% from February but more than double the volume in March 2020, cementing its spot in the five-year range.

**Naphtha & Gasoil "Other Oils"**

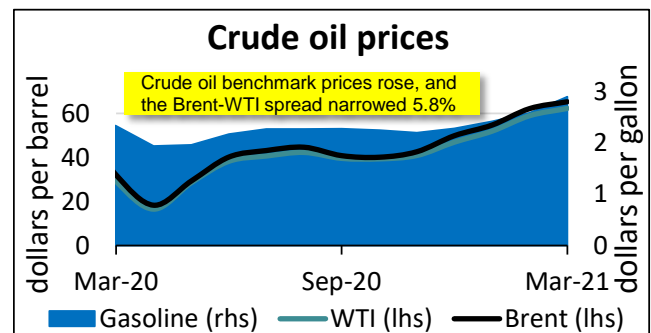
Other oils returned to 27% of total U.S. petroleum demand



Deliveries of liquid feedstocks, such as naphtha, gasoil, and propane/propylene ("other oils") used primarily in refining and petrochemical manufacturing, were 5.2 mb/d in March. This was a decrease of 11.2% from February but an increase of 6.1% y/y. Notably, since API includes propane within "other oils", a spring seasonal decrease in heating demand helped the category return to 27.3% of total petroleum demand following three consecutive months at over 30%.

**Prices**

With increased crude oil prices, gasoline prices rose to their highest since May 2019



In March, West Texas Intermediate (WTI) crude oil prices rose to \$62.33 per barrel, a 5.6% increase m/m to its strongest level since April 2019. By comparison, Brent crude oil spot prices averaged \$65.40 per barrel, and the Brent-WTI price differential narrowed to \$3.07 per barrel. As crude oil remained the top input cost in making gasoline per [EIA](#), the higher crude oil prices corresponded with increased gasoline prices in March and for the fourth consecutive month. The U.S. average conventional gasoline price was \$2.90 per gallon in March, up by 12.0% (\$0.31 per gallon) from

February and 24.4% y/y (\$0.57 per gallon), according to [AAA](#).

### **Macroeconomy**

#### **Strong industrial gains; stimulus checks helped to boost consumer sentiment**

API's Distillate Economic Indicator™, which is based primarily on diesel/distillate supply, demand, and inventories, had a reading of +0.3 in March and a three-month average of -0.5. Improvement in the three-month average for nine consecutive months suggested that industrial production has continued to rise along with broader economic activity.

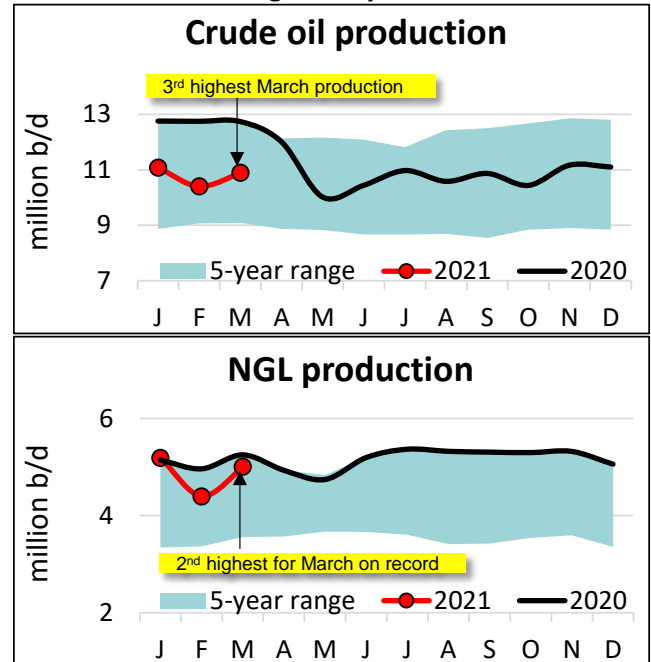
The Institute for Supply Management's Purchasing Managers Index (PMI) had a reading of 64.7 in March, a 3.9 percentage point increase from February for the highest monthly value since December 1983. Index values above 50.0 suggest an expansion, and the manufacturing PMI has held above that threshold since June 2020. Within the index, increases were registered for new orders, production, the backlog of orders, employment, and supplier deliveries. Seventeen of the 18 manufacturing industries surveyed reported growth in March.

The [University of Michigan's consumer sentiment index](#) indicated stronger consumer sentiment in March (84.9) compared with February (76.8). The survey attributed March's increase to the third round of U.S. government direct stimulus payments and progress with vaccination rollouts.

According to the [Bureau of Labor Statistics \(BLS\)](#), non-farm payrolls increased by 916,000, and the unemployment rate fell to 6.0% in March. Despite this progress, [continued weekly claims](#) for unemployment insurance benefits for the week ended March 20 held at a total of 18.1 million.

### **Supply**

#### **U.S. crude oil and natural gas liquids production increased with drilling activity**



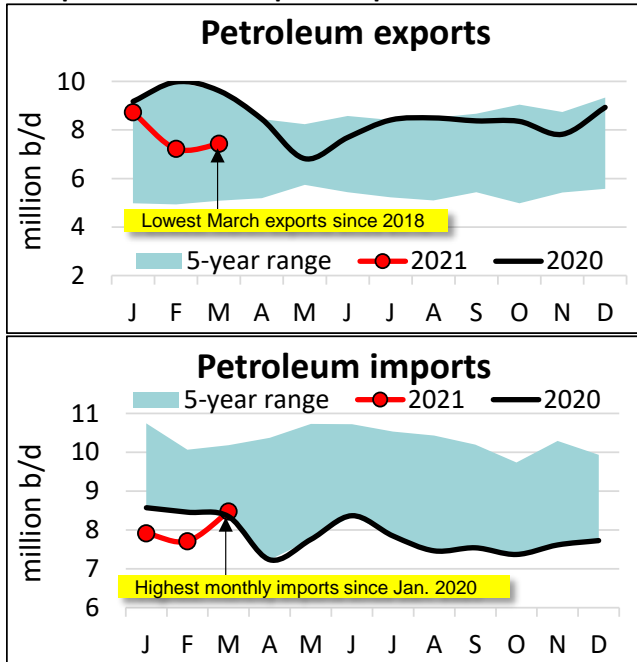
In March, U.S. crude oil production was 10.9 mb/d, a 4.7% (0.5 mb/d) m/m increase on solid [rig productivity](#), increased [drilling activity](#), and resumed production that was shut-in during the February Gulf Coast weather emergency.

[Baker Hughes](#) reported 315 active oil-directed rigs in March, a 3.4% m/m increase (still 52% below the 663 rigs in March 2020). However, production has been supported by relatively solid oil-directed rig productivity per [EIA](#).

By comparison, natural gas-directed drilling in March rose by 0.8% m/m but remained down 13.2% y/y. Rig productivity helped to support natural gas marketed production of about 103 billion cubic feet per day in March per [EIA](#), a 6.2% m/m increase that corresponded with the extraction of 5.0 mb/d of natural gas liquids (NGLs) by API estimates. These figures reflected solid NGL demand through the end of winter as well as increased fractionation amid higher composite NGL and crude oil prices.

**International trade**

**U.S. petroleum net imports expanded**



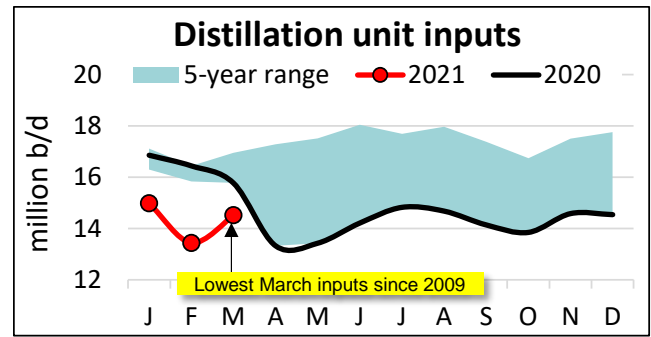
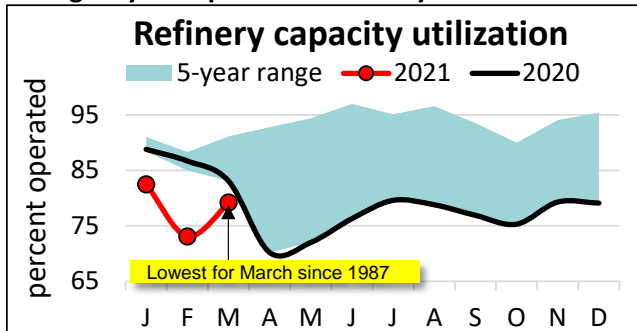
The U.S. expanded its petroleum net imports by 0.5 mb/d to 1.0 mb/d in March. This shift marked the highest total net imports for any month since July 2019, driven by a strong monthly increase in imports which outpaced that of exports.

Specifically, U.S. petroleum exports increased to 7.4 mb/d, compared with 7.2 mb/d in February and 9.6 mb/d in March 2020. The monthly increase was split evenly between crude and refined products.

Meanwhile, March U.S. petroleum imports of 8.5 mb/d – including 5.9 mb/d of crude oil and 2.6 mb/d of refined products – increased by 9.9% m/m to their highest levels since February 2020.

**Industry operations**

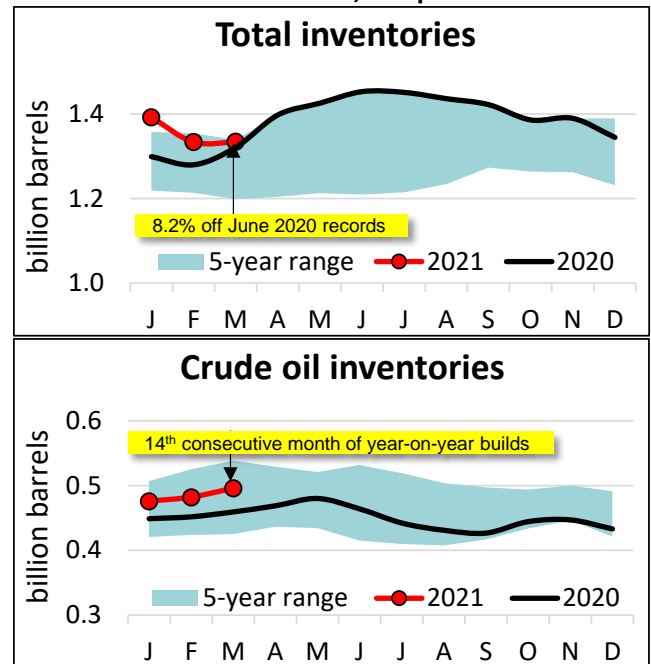
**Refining activities recovered from winter emergency disruptions in February**



U.S. refinery throughput was 14.5 mb/d in March, an 8.1% m/m but a 7.9% y/y decrease. This implied a capacity utilization rate of 79.2% for the month, which grew by 6.1 percentage points from February but was still at its the lowest March since 1987. The increases were mainly a function of units coming back online following Gulf Coast winter emergency shut-ins in February.

**Inventories**

**Inventories of crude oil rose, but products receded**



U.S. total petroleum inventories, including crude oil and refined products (but excluding the Strategic Petroleum Reserve) rose from revised February figures to 1.33 billion barrels in March. The 0.1% m/m increase resulted in the 2<sup>nd</sup> highest inventory level for the month on record but remained 8.2% below the June 2020 highs. Within the total, crude oil stocks of 496.1 million barrels increased by 2.9% m/m, while refined product stocks decreased by 1.5% m/m.

**ESTIMATED UNITED STATES PETROLEUM BALANCE<sup>1</sup>**  
(Daily average in thousands of 42 gallon barrels)

Disposition and Supply	March			Year-to-Date		
	2021 <sup>2</sup>	2020	% Change	2021 <sup>3</sup>	2020	% Change
<b>Disposition:</b>						
Total motor gasoline.....	8,612	7,781	10.7	8,072	8,493	(5.0)
Finished reformulated.....	2,616	2,271	15.2	2,504	2,621	(4.5)
Finished conventional.....	5,996	5,510	8.8	5,568	5,871	(5.2)
Kerosene-jet.....	1,122	1,387	(19.1)	1,129	1,562	(27.7)
Distillate fuel oil.....	3,929	3,913	0.4	3,995	3,973	0.6
≤ 500 ppm sulfur.....	3,908	3,893	0.4	3,963	3,927	0.9
≤ 15 ppm sulfur.....	3,900	3,881	0.5	3,953	3,910	1.1
> 500 ppm sulfur.....	21	20	5.0	33	46	(28.3)
Residual fuel oil.....	253	109	132.1	259	173	49.7
All other oils (including crude losses) .....	5,228	4,925	6.1	5,569	4,989	11.6
Reclassified <sup>4</sup> .....	(16)	168	na	(26)	143	na
Total domestic product supplied.....	19,128	18,284	4.6	18,998	19,332	(1.7)
Exports.....	7,428	9,621	(22.8)	7,811	9,585	(18.5)
Total disposition.....	26,556	27,905	(4.8)	26,808	28,917	(7.3)
<b>Supply:</b>						
Domestic liquids production						
Crude oil (including condensate).....	10,891	12,737	(14.5)	10,803	12,746	(15.2)
Natural gas liquids.....	5,007	5,253	(4.7)	4,879	5,125	(4.8)
Other supply <sup>5</sup> .....	980	1,064	(7.9)	1,003	1,133	(11.5)
Total domestic supply.....	16,878	19,054	(11.4)	16,685	19,003	(12.2)
Imports:						
Crude oil (excluding SPR imports).....	5,909	6,296	(6.1)	5,748	6,406	(10.3)
From Canada.....	3,433	3,766	(8.8)	3,606	3,884	(7.2)
All other.....	2,476	2,530	(2.1)	2,142	2,521	(15.1)
Products.....	2,567	2,049	25.3	2,297	2,052	11.9
Total motor gasoline (incl. blend.comp)....	880	697	26.3	680	570	19.3
All other.....	1,687	1,351	24.8	1,617	1,482	9.1
Total imports.....	8,476	8,345	1.6	8,045	8,458	(4.9)
Total supply.....	25,354	27,399	(7.5)	24,730	27,461	(9.9)
Stock change, all oils.....	(1,202)	(506)	na	(2,078)	(1,455)	na
<b>Refinery Operations:</b>						
Input to crude distillation units.....	14,519	15,772	(7.9)	14,339	16,355	(12.3)
Gasoline production.....	9,137	8,575	6.6	8,730	9,305	(6.2)
Kerosene-jet production.....	1,040	1,359	(23.5)	1,104	1,626	(32.1)
Distillate fuel production.....	4,399	4,951	(11.1)	4,321	4,952	(12.8)
Residual fuel production.....	197	232	(15.1)	187	230	(18.8)
Operable capacity.....	18,340	18,976	(3.4)	18,287	18,975	(3.6)
Refinery utilization <sup>6</sup> .....	79.2%	83.1%	na	78.4%	86.2%	na
Crude oil runs.....	14,055	15,226	(7.7)	13,892	15,773	(11.9)

1. Total supply, i.e., production plus imports adjusted for net stock change is equal to total disposition from primary storage. Total disposition from primary storage less exports equals total domestic products supplied. Information contained in this report is derived from information published in the API *Weekly Statistical Bulletin* and is based on historical analysis of the industry. All data reflect the most current information available to the API and include all previously published revisions.

2. Based on API estimated data converted to a monthly basis.

3. Data for most current two months are API estimates. Other data come from U.S. Energy Information Administration (including any adjustments).

4. An adjustment to avoid double counting resulting from differences in product classifications among different refineries and blenders.

5. Includes unaccounted-for crude oil, withdrawals from the SPR when they occur, processing gain, field production of other hydrocarbons and alcohol, and downstream blending of ethanol.

6. Represents "Input to crude oil distillation units" as a percent of "Operable capacity".

R: Revised. na: Not available.

**ESTIMATED UNITED STATES PETROLEUM BALANCE<sup>1</sup>**  
(Daily average in thousands of 42 gallon barrels)

	March 2021	February 2021	March 2020	% Change From	
				Month Ago	Year Ago
<b>Stocks (at month-end, in millions of barrels):</b>					
Crude oil (excluding lease & SPR stocks).....	496.1	482.1	482.5	2.9	2.8
Unfinished oils.....	95.4	90.5	100.1	5.4	(4.7)
Total motor gasoline.....	233.2	244.9	260.8	(4.8)	(10.6)
Finished reformulated.....	0.0	0.0	0.1	(0.1)	(27.8)
Finished conventional.....	19.2	22.1	22.5	(13.1)	(14.8)
Blending components.....	214.0	222.8	238.3	(3.9)	(10.2)
Kerosene-jet.....	38.8	39.7	39.9	(2.3)	(2.7)
Distillate fuel oil.....	145.9	142.5	126.7	2.4	15.1
≤ 500 ppm sulfur.....	137.4	133.8	116.9	2.7	17.5
≤ 15 ppm sulfur.....	134.0	130.8	113.1	2.4	18.5
> 500 ppm sulfur.....	8.5	8.7	9.8	(2.3)	(13.0)
Residual fuel oil.....	31.7	31.4	34.4	1.0	(7.8)
All other oils.....	293.2	302.0	276.4	(2.9)	6.1
Total all oils.....	1,334.3	1,333.1	1,320.8	0.1	1.0