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**EXECUTIVE SUMMARY**

Historically large shifts – positive and negative – marked U.S. petroleum markets in May.

**Increases**

- U.S. petroleum demand, led by motor gasoline, rebounded by **2.0 million barrels per day (mb/d)** -- the largest monthly increase since December 1975;
- Increased refinery throughput and capacity utilization helped support record naphtha and gasoil demand for the month of May; and,
- Total petroleum (crude oil and refined products, excluding the Strategic Petroleum Reserve) inventories rose but remained within the 5-year range.

**Decreases**

- Jet fuel deliveries (down 72.3% y/y) were the only major refined product to fall for the month;
- Total U.S. petroleum supply (crude oil, natural gas liquids, and other liquids) decreased by **0.4 mb/d** for the month and **2.0 mb/d** since March; and,
- U.S. petroleum exports fell by 1.1 mb/d for the month, returning the U.S. to being a petroleum net importer.

On balance, the shifts demonstrated the flexibility, responsiveness, and resiliency of U.S. petroleum markets, but with total petroleum demand still down 20% y/y May was just a first and much needed step towards an economic recovery that remains uncertain. Leading economic indicators remained weak, including the University of Michigan's consumer sentiment index, the Institute of Supply Management's purchasing managers' index, and API's D-E-I™ (distillate/diesel economic indicator). Please see the following [chart](#) for details.

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- U.S. petroleum demand recovered by 14.0% (2.0 mb/d) between April and May.**
  - Record monthly increase in gasoline deliveries.
  - May distillate deliveries rose with truck freight.
  - Lowest jet fuel deliveries since April 1967.
  - Second lowest monthly residual fuel oil deliveries since 1936.
  - Record refining and petrochemical demand for naphtha and gasoil in May.

**Prices & Macroeconomy**

- Record 72.6% WTI crude oil price rebound in May.**
- Leading economic indicators remained weak.**

**Supply**

- U.S. total liquids supply in May was down 2.0 mb/d since March.**

**International trade**

- The U.S. reverted to being a net petroleum importer in May.**

**Industry operations**

- Refinery throughput at its lowest for May since 1987, but capacity utilization edged up from April.**

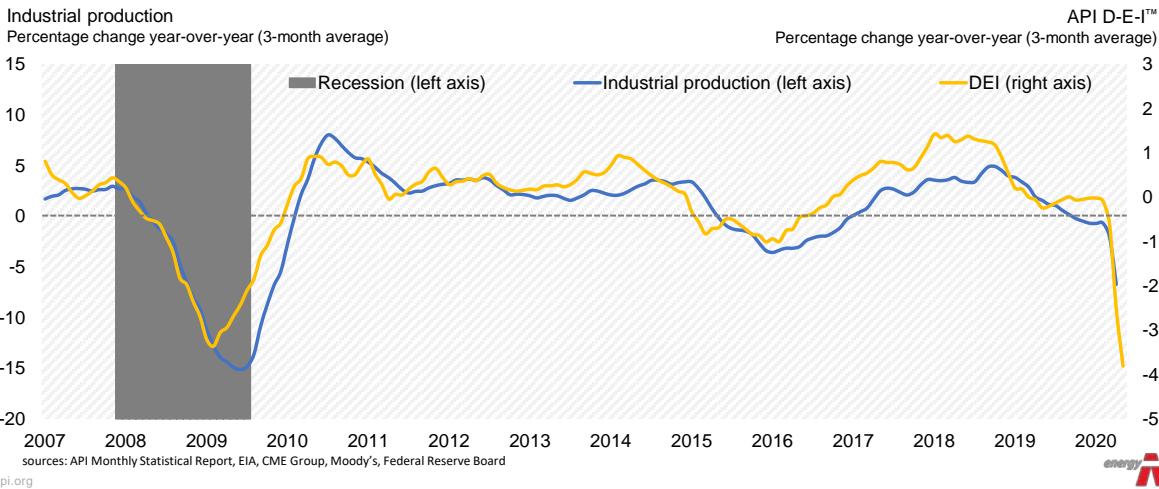
**Inventories**

- Total inventories increased year-on-year for the 19<sup>th</sup> consecutive month.**



# API's economic indicator: The API D-E-I™ - May 2020

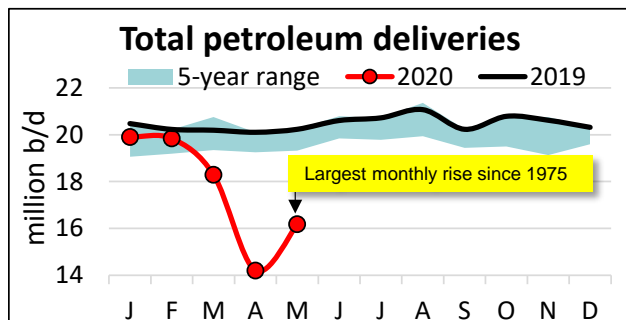
◆ The D-E-I™ value of -4.0 for May 2020 and three-month average of -3.8 suggested further slowing of industrial production



## Details by section

### Demand

**U.S. petroleum demand recovered by 14.0% (2.0 mb/d) between April and May**



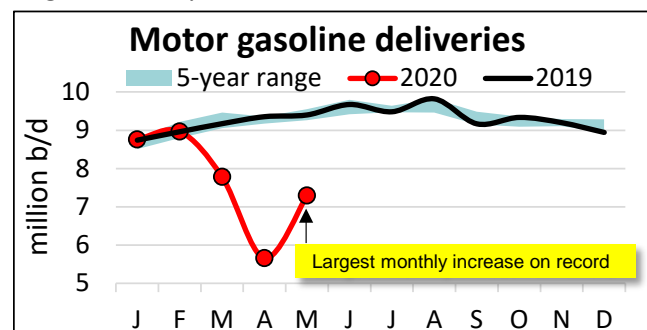
U.S. petroleum demand, as measured by total domestic petroleum deliveries, was 16.2 mb/d in May. This was 20.0% below the May 2019 level but reflected an increase of 14.0% (2.0 mb/d) from April — the largest percentage increase for any month since December 1975. More than eighty percent of the increase was driven by motor gasoline and the gradual loosening of stay-at-home orders to prevent transmission of COVID-19.

### Gasoline

**Record monthly increase in gasoline deliveries**

Consumer gasoline demand, measured by total motor gasoline deliveries, was 7.3 mb/d in May.

This was an increase of 28.9% from April and the largest monthly increase on record since 1945.



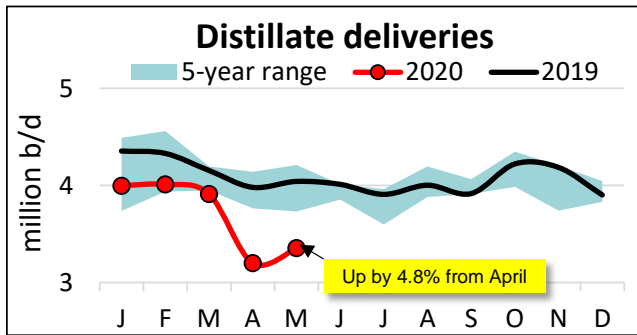
However, gasoline demand was still 22.5% below its level in May 2019 and at its lowest for the month since 1986.

Meanwhile, U.S. average conventional gasoline prices remained low, rising by 1.2% (2.3 cents per gallon) following a 16.8% (39.1 cents per gallon) decrease in April, according to [AAA](#).

The gasoline demand rebound appeared to be consistent across urban and rural areas. Between April and May, reformulated-type gasoline, which is consumed primarily in urban areas, increased by 27.3% m/m, while demand for conventional gasoline that is mainly consumed in rural areas increased by 29.7% m/m.

**Distillate Fuel Oil**

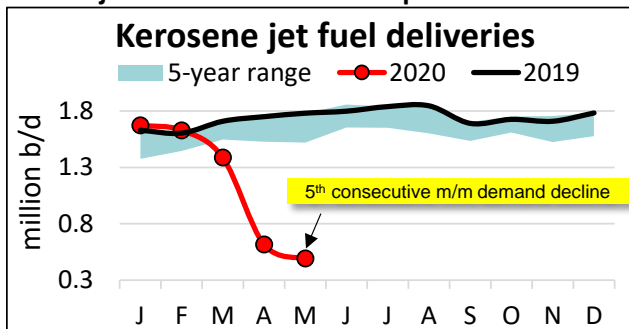
**May distillate deliveries rose with truck freight**



In May, distillate deliveries of 3.4 mb/d were down 17.0% compared with May 2019 but up 4.8% from April. Compared with gasoline, distillates demand did not drop as much through COVID-19 and also increased more gradually in May along with a rise in [truck freight](#) due to state economies reopening and a [seasonal uptick](#) in freight shipping volumes.

**Kerosene Jet Fuel**

**Lowest jet fuel deliveries since April 1967**

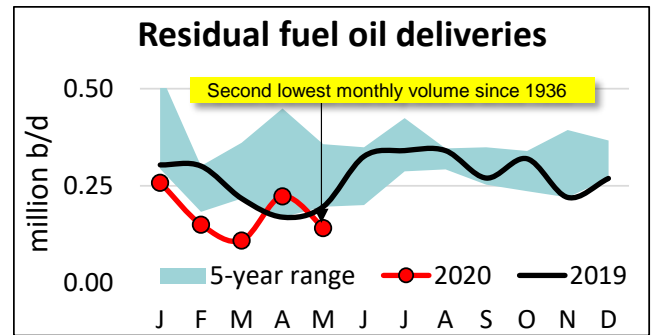


Kerosene jet fuel deliveries were 0.5 mb/d in May, a decrease of 20.0% from April and 72.3% versus May 2019 – and the lowest deliveries since April 1967.

Jet fuel was the only major refined product with deliveries that fell in May as COVID-19 air travel recovery remained elusive. U.S. scheduled flights in May remained down by 48% compared with January per [Flightradar24](#). The International Air Transport Association ([IATA](#)) reported that “April was the cruelest month” and with “evaporated passenger demand” projected airline financial losses of [\\$84 billion](#) in 2020.

**Residual Fuel Oil**

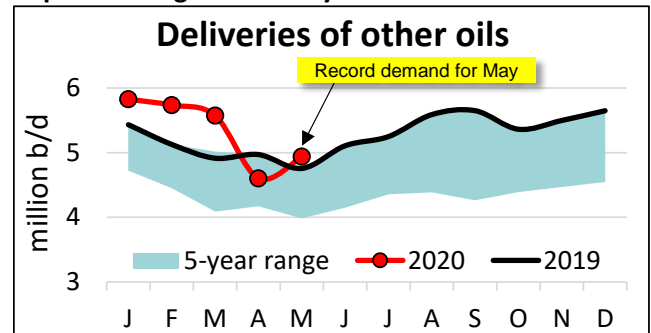
**2<sup>nd</sup> lowest residual fuel oil deliveries since 1936**



Deliveries of residual fuel oil, which is used in electric power production, space heating, industrial applications and as a marine bunker fuel, were 141 thousand barrels per day (kb/d) in May. This was the second lowest volume on record for any month since 1936.

**Naphtha & Gasoil “Other Oils”**

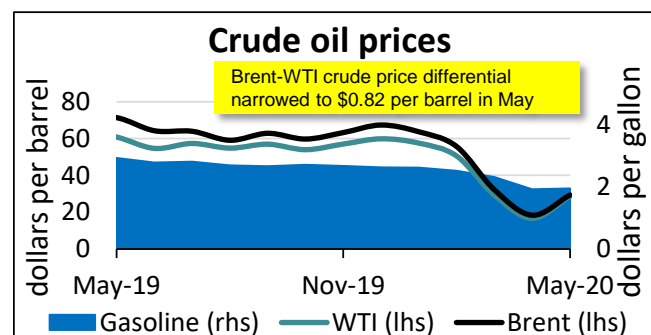
**Record refining and petrochemical demand for naphtha and gasoil in May**



Deliveries of liquid feedstocks, such as naphtha and gasoil (“other oils”) used in refining and petrochemical manufacturing, were 4.9 mb/d in May. This was a rebound of 7.3% (0.3 mb/d) from April and also a record high for the month of May – and a potential sign of resilience in refining and petrochemical manufacturing.

**Prices**

**Record 72.6% WTI crude oil price rebound in May**



In May, West Texas Intermediate (WTI) crude oil prices rose by \$12.01 per barrel to \$28.56 per barrel. Although this was a record 72.6% monthly crude price increase, it was still the lowest price for May since 2003 (\$28.11).

By comparison, international Brent crude oil spot prices averaged \$29.38 per barrel in May, up by \$11.00 from \$18.38 per barrel from April. With the May oil price rebound, the Brent-WTI price differential narrowed to \$0.82 per barrel in May – a slight discount for domestic U.S. prices.

In futures markets, there appeared to be optimism that oil demand and therefore prices could rise, provided [reasonable compliance with and an extension of OPEC+ cuts](#), plus further stimulus pumped into the global economy by U.S., European, and Japanese central banks. WTI price futures in May anticipated a 21% increase within 12 months per data from [CME Group](#).

**Macroeconomy**

**Leading economic indicators remained weak**

API’s economic indicator, The D-E-I™, based primarily on diesel / distillate supply, demand and inventories, had a reading of -4.0 in May and a three-month average reading of -3.8, a record low value that historically corresponds with slower U.S. industrial production.

The [Institute for Supply Management’s Purchasing Managers Index \(PMI\)](#), came in with a reading of 43.1 in May. Index values below 50.0 suggest a contraction. The reading reflected weaker production, new orders, and employment; decelerated slowing of supplier deliveries; prices decreasing; and, a contraction in international trade. Among the 18 manufacturing industries covered, only six reported an expansion in May.

Furthermore, consumer sentiment remained weak in May as measured by the [University of Michigan’s consumer sentiment index](#). The index readings since February have fallen from 101.0 (Feb.) to 89.1 (Mar.), 71.8 (Apr.), and 72.3 (May) with the latter indicating a marginal increase from the previous month’s record decline. The survey noted that the

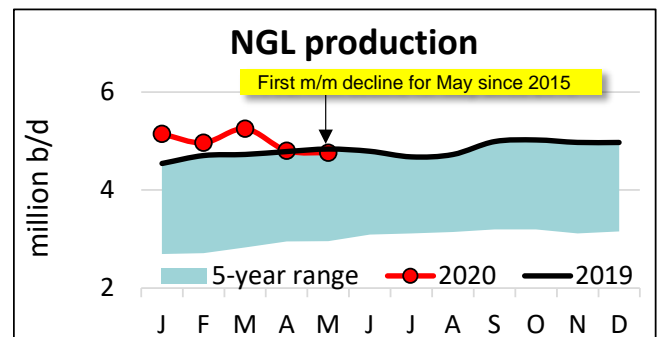
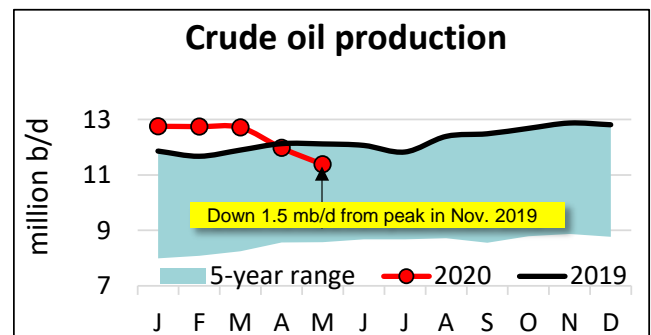
readings suggest an ongoing recession and the anticipated cycle of COVID-19.

Potential glimpses of an economic recovery and lower COVID-19 new case rates reflected positively on the U.S. employment situation in May.

According to the [Bureau of Labor Statistics \(BLS\)](#), the unemployment rate declined to 13.3% in May from 14.7% in April, suggesting some economic recovery and successful COVID-19 containment measures. Non-farm payrolls rose 2.5 million in May, though [sources claim](#) that a statistical error may in fact imply a 5 million non-farm payroll decline for the month.

**Supply**

**U.S. total liquids supply in May was down 2.0 mb/d since March**



In May, U.S. crude oil production fell to 11.4 mb/d, which was a decrease of 0.6 mb/d from April and 1.5 mb/d from the peak in November 2019. May marked the 6<sup>th</sup> consecutive monthly decline and largest year-on-year decline for any month since September 2016. The drop was consistent with lower drilling activity in response to low oil prices.

Furthermore, May was the 4<sup>th</sup> largest monthly decrease in U.S. crude oil production over the past 100 years. The only larger decreases were last

month, September 2008 (Great Financial Crisis) and May 1952 (U.S. refinery [workers strike](#)).

By contrast, U.S. natural gas liquids (NGL) production held relatively steady at 4.8 mb/d in May, down 0.8% m/m. NGLs are a co-product of natural gas production that [EIA](#) estimates fell by 2.4% in May.

For U.S. crude oil, NGLs, and other liquids (refinery gain), the total supply fell by a combined 0.4 mb/d in May and 2.0 mb/d since March.

These production decreases corresponded with a record fall in U.S. drilling activity per [Baker Hughes](#), which reported oil-targeted drill rig activity of 206 rigs for the week ended June 5, down by 63% over the past two months and the lowest U.S. rig count on record since 1987

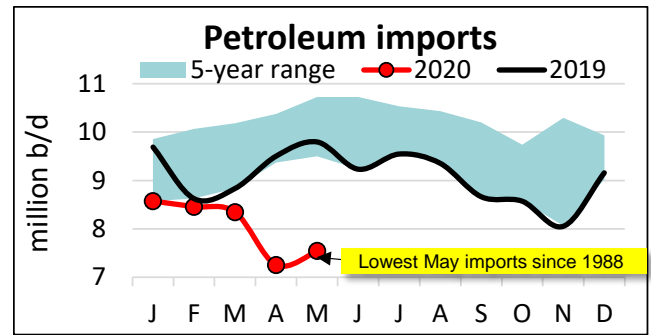
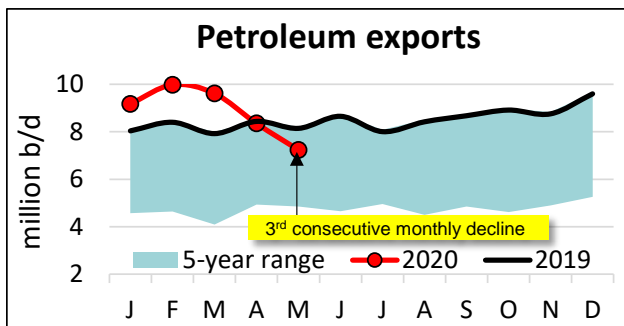
**International trade**

**The U.S. reverted to being a net petroleum importer in May**

In May, U.S. petroleum exports of crude oil and refined products were 7.2 mb/d. This represented decreases of 13.3% (1.1 mb/d) from April and 11.2% (0.9 mb/d) compared with May 2019.

Within the total exports, 4.0 mb/d was refined products and 3.2 mb/d was crude oil. Although exports declined for three consecutive months, this was the first time since 2006 that exports fell y/y during the month of May.

By contrast, U.S. petroleum imports were 7.5 mb/d in May, up 0.3 mb/d from April. On net, the U.S. reverted to being a net importer of petroleum for the month.

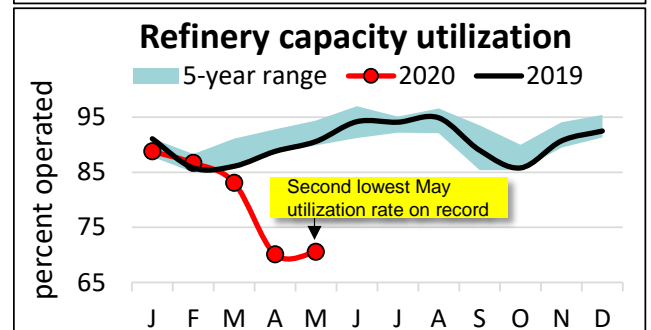
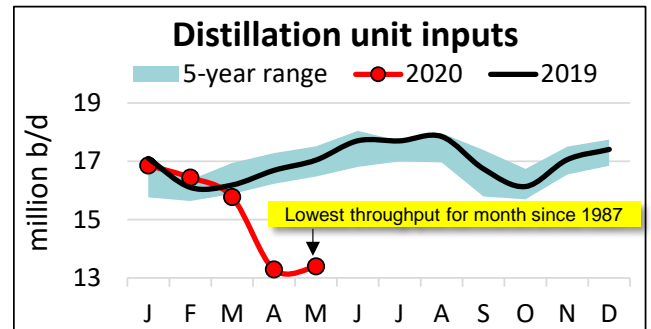


**Industry operations**

**Refinery throughput at its lowest for May since 1987, but capacity utilization edged up from April**

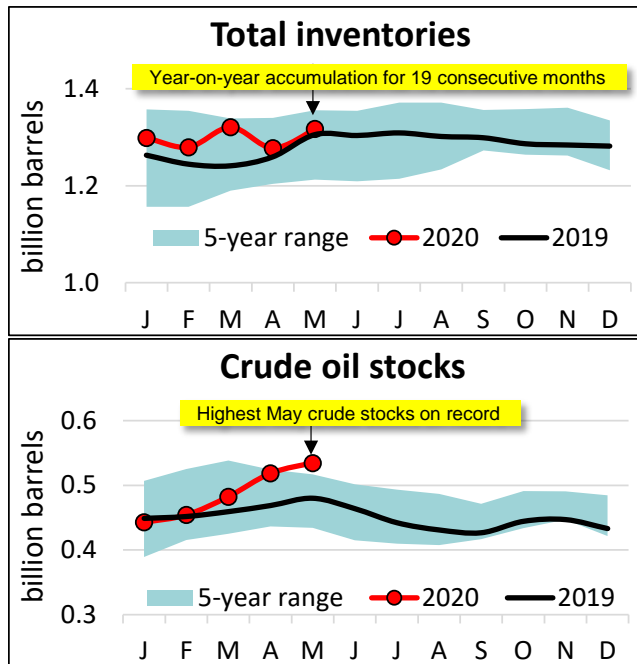
With petroleum demand having rebounded and export levels steady in May, U.S. refinery throughput of 13.4 mb/d increased by 0.1 mb/d, which was the first monthly increase so far in 2020.

This throughput implied a capacity utilization rate of 70.6%, which was an increase of 0.5 percentage points from April, but also the second lowest rate for May on record since 1985.



## Inventories

Total inventories increased year-on-year for the 19<sup>th</sup> consecutive month.



U.S. total petroleum inventories, including crude oil and refined products but excluding the Strategic Petroleum Reserve, were 1.3 billion barrels in May and accumulated y/y for the 19<sup>th</sup> consecutive month, but within the 5-year range.

Within the total, as refinery throughput and finished product demand rebounded from record lows in April, crude oil stocks rose by 3.1% between April and May to their second highest amount on record (March 2017). In May, crude oil stocks were 4.0 million barrels below the record 538.6 million barrels.

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

Disposition and Supply	May			Year-to-Date		
	2020 <sup>2</sup>	2019	% Change	2020 <sup>3</sup>	2019	% Change
<b>Disposition:</b>						
Total motor gasoline.....	7,290	9,401	(22.5)	7,687	9,129	(15.8)
Finished reformulated.....	2,210	2,986	(26.0)	2,363	2,922	(19.1)
Finished conventional.....	5,080	6,415	(20.8)	5,324	6,207	(14.2)
Kerosene-jet.....	493	1,781	(72.3)	1,157	1,696	(31.8)
Distillate fuel oil.....	3,354	4,041	(17.0)	3,694	4,170	(11.4)
≤ 500 ppm sulfur.....	3,330	3,928	(15.2)	3,652	4,077	(10.4)
≤ 15 ppm sulfur.....	3,312	3,926	(15.6)	3,635	4,059	(10.4)
> 500 ppm sulfur.....	24	112	(78.6)	42	93	(54.8)
Residual fuel oil.....	141	196	(28.1)	176	237	(25.7)
All other oils (including crude losses).....	4,943	4,654	6.2	4,904	4,976	(1.5)
Reclassified <sup>4</sup> .....	(40)	156	na	58	36	na
Total domestic product supplied.....	16,181	20,229	(20.0)	17,676	20,244	(12.7)
Exports.....	7,240	8,149	(11.2)	8,864	8,187	8.3
Total disposition.....	23,421	28,379	(17.5)	26,540	28,432	(6.7)
<b>Supply:</b>						
Domestic liquids production						
Crude oil (including condensate).....	11,384	12,113	(6.0)	12,311	11,935	3.2
Natural gas liquids.....	4,764	4,838	(1.5)	4,988	4,721	5.7
Other supply <sup>5</sup> .....	907	1,165	(22.1)	1,048	1,137	(7.8)
Total domestic supply.....	17,055	18,116	(5.9)	18,347	17,792	3.1
Imports:						
Crude oil (excluding SPR imports).....	5,814	7,158	(18.8)	6,076	7,030	(13.6)
From Canada.....	3,510	3,785	(7.3)	3,747	3,800	(1.4)
All other.....	2,304	3,373	(31.7)	2,329	3,230	(27.9)
Products.....	1,730	2,638	(34.4)	1,957	2,272	(13.9)
Total motor gasoline (incl. blend.comp)....	468	1,030	(54.6)	457	715	(36.1)
All other.....	1,262	1,608	(21.5)	1,500	1,557	(3.7)
Total imports.....	7,544	9,796	(23.0)	8,034	9,302	(13.6)
Total supply.....	24,599	27,912	(11.9)	26,381	27,094	(2.6)
Stock change, all oils.....	1,178	(466)	na	(160)	(1,338)	na
<b>Refinery Operations:</b>						
Input to crude distillation units.....	13,396	17,041	(21.4)	15,146	16,635	(8.9)
Gasoline production.....	7,406	10,217	(27.5)	8,590	9,884	(13.1)
Kerosene-jet production.....	498	1,729	(71.2)	1,388	1,730	(19.8)
Distillate fuel production.....	4,829	5,213	(7.4)	4,968	5,047	(1.6)
Residual fuel production.....	182	363	(49.9)	218	363	(40.1)
Operable capacity.....	18,976	18,802	0.9	18,973	18,788	1.0
Refinery utilization <sup>6</sup> .....	70.6%	90.6%	na	79.8%	88.5%	na
Crude oil runs.....	13,035	16,719	(22.0)	14,636	16,333	(10.4)

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)

	May 2020	April 2020	May 2019	% Change From	
				Month Ago	Year Ago
<b>Stocks (at month-end, in millions of barrels):</b>					
Crude oil (excluding lease & SPR stocks).....	534.6	518.6	480.2	3.1	11.3
Unfinished oils.....	90.5	93.0	97.9	(2.7)	(7.6)
Total motor gasoline.....	258.2	259.1	235.7	(0.3)	9.5
Finished reformulated.....	0.0	0.0	0.0	0.4	4.3
Finished conventional.....	23.4	22.7	22.5	3.1	3.9
Blending components.....	234.8	236.4	213.2	(0.7)	10.2
Kerosene-jet.....	40.6	39.0	39.4	4.1	3.2
Distillate fuel oil.....	173.1	146.6	130.0	18.1	33.2
≤ 500 ppm sulfur.....	163.5	137.3	119.3	19.1	37.0
≤ 15 ppm sulfur.....	160.5	133.9	113.2	19.9	41.8
> 500 ppm sulfur.....	9.6	9.3	10.7	3.2	(10.2)
Residual fuel oil.....	38.7	35.1	30.0	10.3	28.9
All other oils.....	181.5	226.9 R	292.2	(20.0)	(37.9)
Total all oils.....	1,317.2	1,318.3 R	1,305.4	(0.1)	0.9