

Supply-Demand Analysis & Outlook

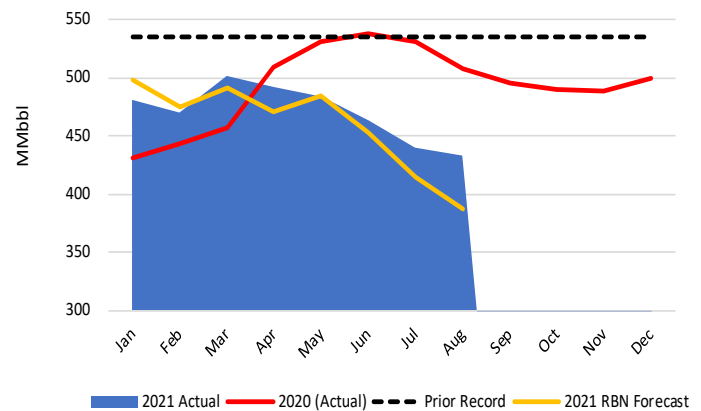
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U.S. Total Crude Oil Supply and Demand

Mb/d	U.S. Total Crude Oil Supply and Demand				Table: A
	Previous Week 9/10/21	Current Week 9/17/21	Weekly Change 9/17/21	Previous Estimate 9/17/21	Forecast Estimate 9/24/21
Production	10,100	10,600	500	10,243	10,943
Imports	5,761	6,465	704	5,918	6,665
Stock Withdrawal	917	497	(420)	836	848
SPR Withdrawal	75.6	172	96.4	50	50
Unaccounted (Positive)		265	265	-	-
Supply	16,854	17,999	1,145	17,047	18,506
Refinery Input	14,387	15,347	960	14,419	15,604
Exports	2,624	2,809	185	2,642	2,902
Stock Injection			-	-	-
SPR Injection			-	-	-
Unaccounted (Negative)	(459)		459	-	-
Demand	16,552	18,156	1,604	17,061	18,506
Weekly Stock Change	(6,422)	(3,481)	2,941	(5,850)	(5,936)
Weekly Stocks Excluding SPR	417,445	413,964	(3,481)	411,595	408,028

Figure: 1

U.S. Commercial Crude Inventories (Actual and Forecast)



Weekly Highlights

- » US Commercial Crude Inventories ↓ 3.481 MMbbl
- » Cushing Oil Inventories ↓ 1.476 MMbbl
- » Total Motor Gasoline Inventories ↑ 3.474 MMbbl
- » Distillate Fuel Oil Inventories ↓ 2.554 MMbbl
- » SPR Oil Inventories ↓ 1.204 MMbbl

Daily Highlights

- » Domestic Oil Production ↑ 0.5 MMb/d to 10.6 MMb/d
- » Crude Oil Imports ↑ 0.704 MMb/d to 6.465 MMb/d
- » Crude Oil Exports ↑ 0.185 MMb/d to 2.809 MMb/d
- » Refinery Input ↑ 0.96 MMb/d to 15.347 MMb/d

Highlights

- Crude Production Recovers After Hurricane Ida to Almost 50%
- Demand Recovery Expected to Outpace Supply
- SPR Draws Another 1.2 MMbbl in Ida Exchange

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QUICK HITS

Recovery from Ida picked up pace last week as crude production rose by 500 Mb/d, regaining almost half the total amount that was shut-in ahead of the hurricane. Refineries came back online and input rose by nearly 1 MMb/d to nearly 60% of the amount that had gone offline. Both imports and exports are back above the 2021 average, and prices climbed steadily over the past week. Another 1.2 MMbbl of crude was released from the Strategic Petroleum Reserve as part of the Hurricane Ida exchange, and 3.5 MMbbl of commercial stocks were drawn to shore up the supply shortage.

Mb/d	U.S. Crude Oil Supply and Demand Outlook									Table: B
	2/2021	3/2021	4/2021	5/2021	6/2021	7/2021	8/2021	9/2021	10/2021	
Production	10,440	11,020	10,970	11,090	11,115	11,365	11,440	11,240	11,440	
Imports	5,711	5,711	5,911	6,211	6,561	6,661	6,476	6,176	6,376	
Total Supply	16,151	16,731	16,881	17,301	17,676	18,026	17,916	17,416	17,816	
Refinery Runs	13,930	13,730	14,930	15,180	16,080	16,130	15,965	15,165	15,765	
Exports	3,060	2,760	2,760	2,860	2,810	3,135	2,835	2,735	2,535	
Total Demand	16,990	16,490	17,690	18,040	18,890	19,265	18,800	17,900	18,300	
SPR +/-	-	-	(112)	(140)	(150)	-	-	-	-	
Net Storage	(839)	241	(697)	(599)	(1,064)	(1,239)	(884)	(484)	(484)	
Per week	(5,873)	1,687	(4,879)	(4,193)	(7,448)	(8,673)	(6,188)	(3,388)	(3,388)	
Per Month	(23,492)	7,471	(20,910)	(18,569)	(31,920)	(38,409)	(27,404)	(14,520)	(15,004)	
Crude Storage	474,399	491,870	470,960	484,391	452,471	414,062	386,658	404,138	389,134	
Last Year	423,339	420,067	427,507	419,137	399,337	386,937	372,367	356,617	367,653	
Surplus/Deficit	38,001	11,167	6,087	16,209	60,529	96,624	140,865	146,365	131,786	

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INVENTORY RECAP

For the week ending September 17, the American Petroleum Institute (API) reported a draw of 6.1 MMbbl on U.S. crude stocks, above the 2.4 MMbbl that analysts had predicted. The Energy Information Administration's (EIA) Weekly Petroleum Status Report released on Wednesday showed a draw of 3.5 MMbbl on commercial crude stocks. PADD 2 inventories dropped by 2.7 MMbbl (1.5 MMbbl at Cushing), which made up the bulk of the U.S. drawdown. PADD 3 stocks only dropped by 250 Mbbl as regional supplies have rebounded and when combined with pulls from nearby SPR sites, have been able to keep up with increased local demand following Hurricanes Ida and Nicholas.

SUPPLY

Production: Lower 48 crude oil production jumped up 500 Mb/d to 10.2 MMb/d last week, still well below the 11.1 MMb/d before Hurricane Ida. Alaskan production was mostly flat at 400 Mb/d, pushing up total U.S. output to 10.6 MMb/d. The Bureau of Safety and Environmental Enforcement (BSEE) reported that nearly 5 MMbbl (715 Mb/d) of offshore crude production remained shut-in last week due to recent storms, but that only 320 Mb/d remained offline as of September 21. Temporarily shut-in production continues to come back online and should boost Lower 48 production to near 400 Mb/d this week. The EIA Drilling Productivity report released September 13, showed that the Permian Basin now accounts for 41% of total crude production, more than all other unconventional basins that combined accounted for just 30%.

Rig Count: The total number of active oil rigs in the U.S. rose by 10 last week to 411. The Permian added five rigs, the Eagle Ford added three, the Cana Woodford added one, and all other smaller basins added two.

Imports: U.S. crude oil imports rebounded last week, rising by 700 Mb/d to 6.5 MMb/d. Hurricane Nicholas hit Texas on Tuesday last week but caused only minor disruption in the region. PADD 3 imports along the Gulf Coast increased by 620 Mb/d, while PADD 1 imports rose by 180 Mb/d. Imports into the remaining PADDs were down by a total of 100 Mb/d. Imports from Canada were nearly flat at 3.14 MMb/d, which is below the annual average of 3.45 MMb/d. Imports from Mexico were up 300 Mb/d, while Brazil delivered an additional 230 Mb/d last week. Imports from Saudi Arabia were nearly flat at 400 Mb/d, while volumes from Russia were down 120 Mb/d to 140 Mb/d.

SPR: Strategic Petroleum Reserve volumes decreased by 1.2 MMbbl last week as the DOE increased the volumes drawn related to the Hurricane Ida exchange to supply crude to refineries in Louisiana. These volumes are in addition to the upcoming 20 MMbbl sale of SPR crude with deliveries scheduled to take place between October 1 and December 15, 2021.

DEMAND

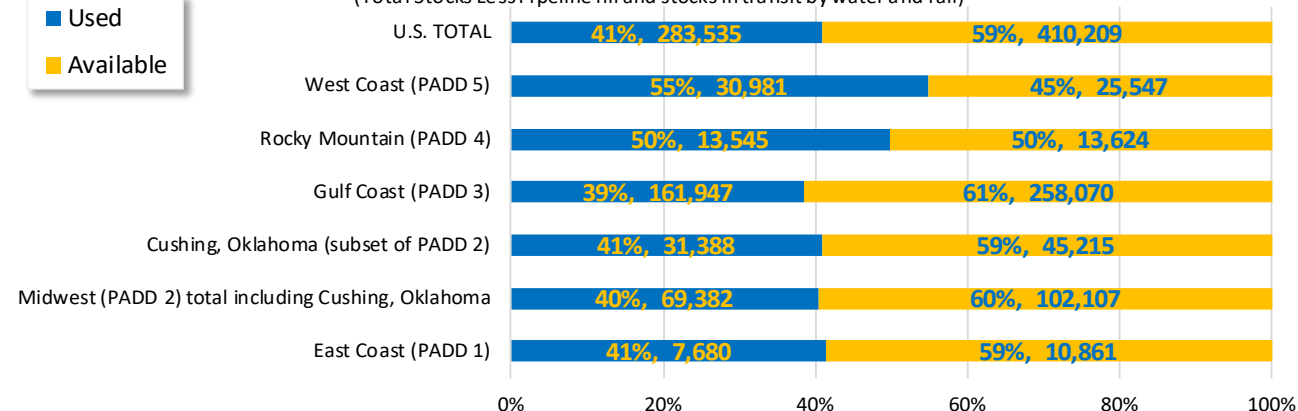
Refinery Input: Refinery input increased by 960 Mb/d to 15.35 MMb/d last week, 600 Mb/d below pre-Ida levels. Gross refined input was up 980 Mb/d to 15.9 MMb/d, which pushed up total capacity utilization by 5.4 percentage points to 87.5%. Several

Mb/d	U.S. Total Crude Oil and Products Inventory				Table: C
	Prev. Wk 9/10/21	Curr Wk 9/17/21	Wkly Chg 9/17/21	Previous Year	Year/ Year
Crude Oil	417,445	413,964	(3,481)	494,406	(80,442)
Cushing Oil	35,316	33,840	(1,476)	54,281	(20,441)
Mogas	218,142	221,616	3,474	227,499	(5,883)
Distillate	131,897	129,343	(2,554)	175,942	(46,599)

Figure: 12

Net Stocks of Working Storage Capacity Utilization (Non-SPR): %, Mbbl

(Total Stocks Less Pipeline fill and stocks in transit by water and rail)



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refineries are still carrying out repairs and should be back online soon. However, P66's 255 Mb/d Alliance refinery is rumored to be still shut instead of undergoing repairs. Implied gasoline demand held steady at 8.9 MMB/d last week as the summer driving season comes to a close. Even though demand was down, gasoline stocks were up 3.5 MMbbl, the largest build since June 4. Most of the build came from increased stocks in PADD 3 and 5 of 1.5 MMbbl and 1.4 MMbbl respectively. Distillate stocks fell by 2.5 MMbbl, with PADD 1 inventory down 2.85 MMbbl, PADD 2 down 900 Mbbl, and PADD 4 down 140 Mbbl. PADD 3 stocks rose by 1.4 MMbbl.

Exports: Crude oil exports were up 185 Mb/d to 2.8 MMB/d last week, just 200 Mb/d short of pre-Ida levels. This volume would have been higher but for Hurricane Nicholas causing temporary closures at the Ports of Houston, Freeport, Texas City and Corpus Christi, according to RBN's Crude Voyager.

PRICES AND NEWS OF NOTE

Prompt-month WTI was trading at \$72.01/bbl (\$72.58/bbl last week) and Brent at \$75.91/bbl (\$75.56/bbl last week) at the time of writing. WTI prices rose \$0.75 to \$70.45/bbl on Monday last week and held steady on Tuesday before jumping by \$2 on Wednesday amid bullish EIA data and continued signs of market tightness. Recent storm activity in the Gulf of Mexico supported higher prices and surging natural gas prices also contributed to optimism in crude markets.

OUTLOOK

Hurricane Nicholas did not cause much damage or delays to Gulf of Mexico supplies as some market sources had feared. Regional supplies are ramping up, although at a much slower pace than initially expected. OPEC+ was scheduled to increase global crude output by 400 Mb/d, but a few member countries have been unable to meet the higher quotas due to maintenance and underinvestment. Overall, news, both domestic and from abroad, has been bullish for crude markets as optimism around growing demand recovery outpaced supply. With two more months of hurricane season remaining, increasing supply concerns, and related energy commodity prices soaring, there are plenty of reasons to support that optimism.

Figure: 2 **U.S. Crude Inventories (2020 vs. 2021)**

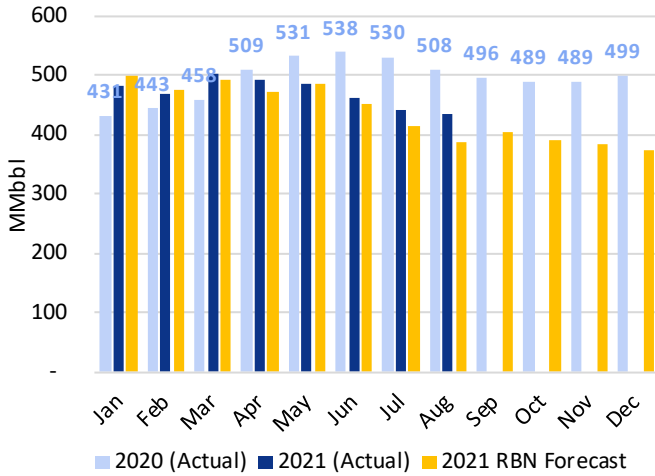


Figure: 5 **U.S. Refinery Inputs (2020 vs. 2021)**

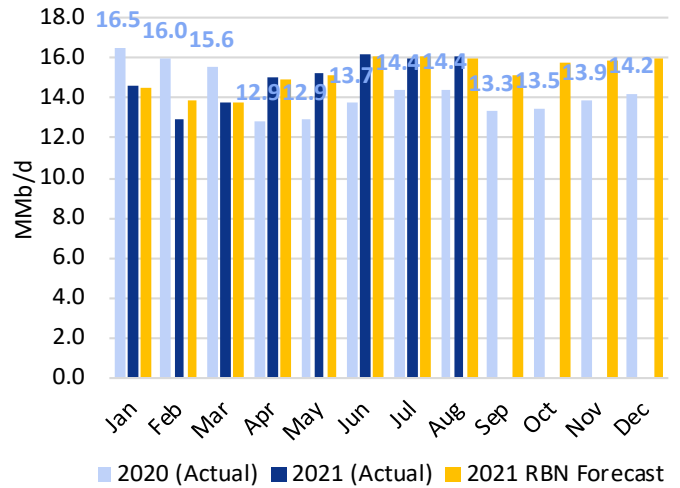


Figure: 3 **U.S. Crude Imports (2020 vs. 2021)**

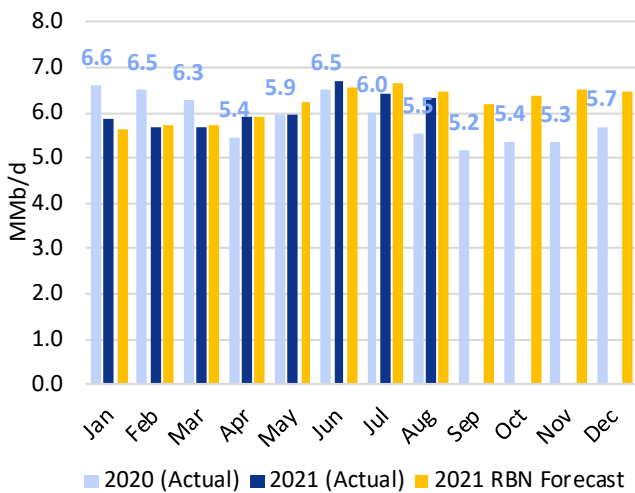


Figure: 6 **U.S. Crude Exports (2020 vs. 2021)**

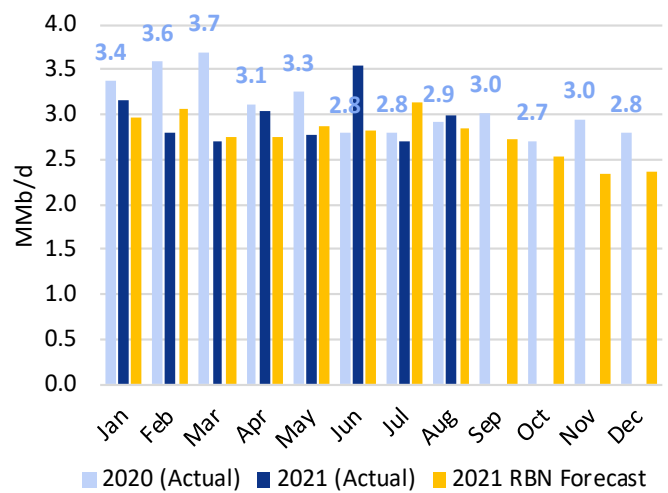


Figure 4 **3-2-1 Crackspread**



Figure: 7 **U.S. Crude Production (2020 vs. 2021)**

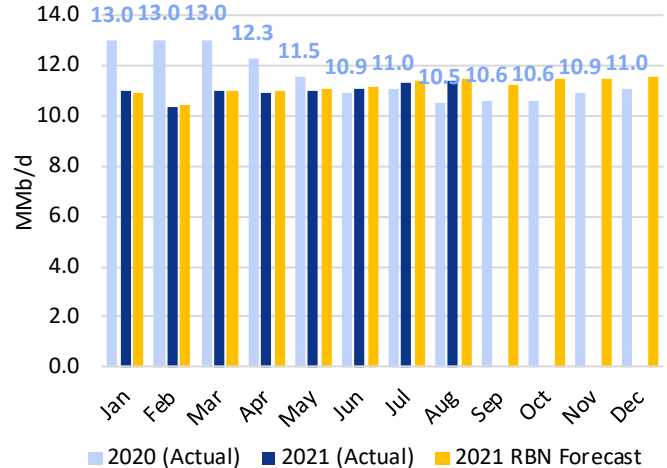
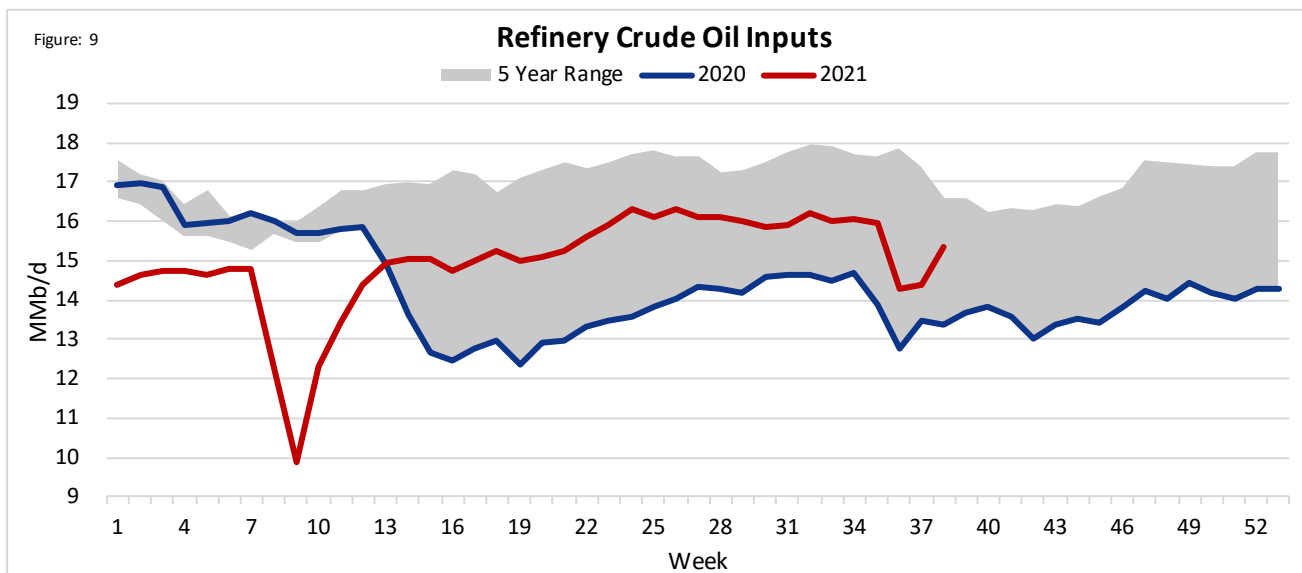
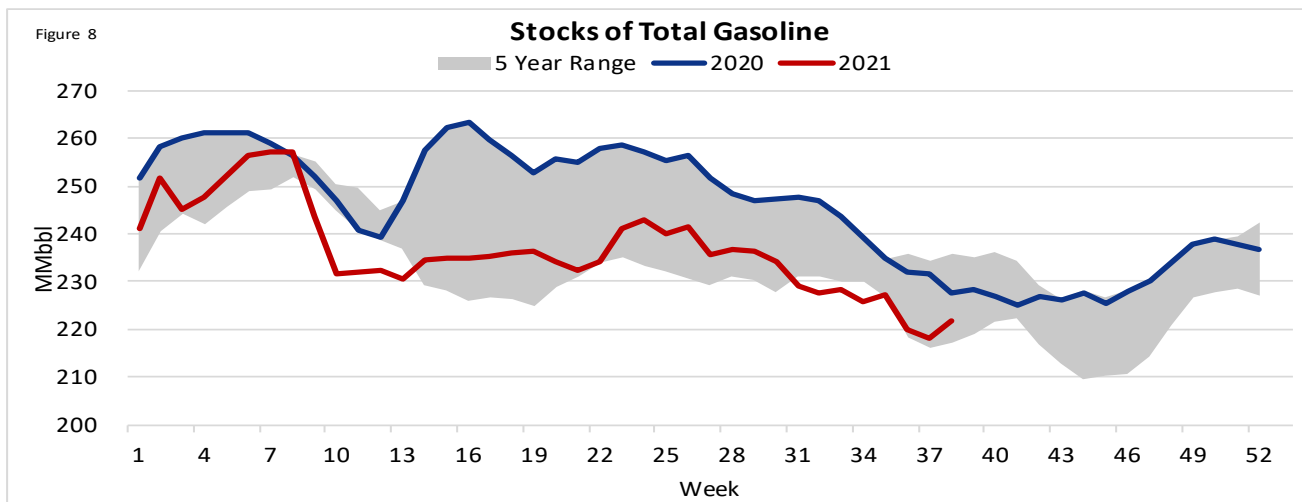


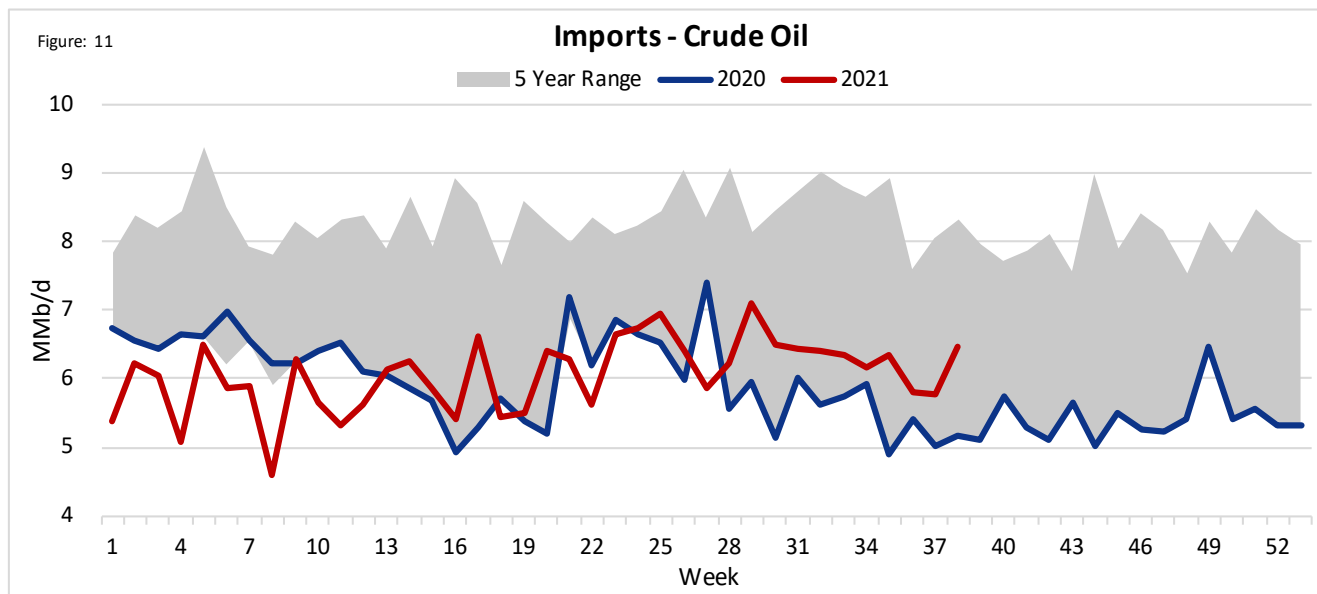
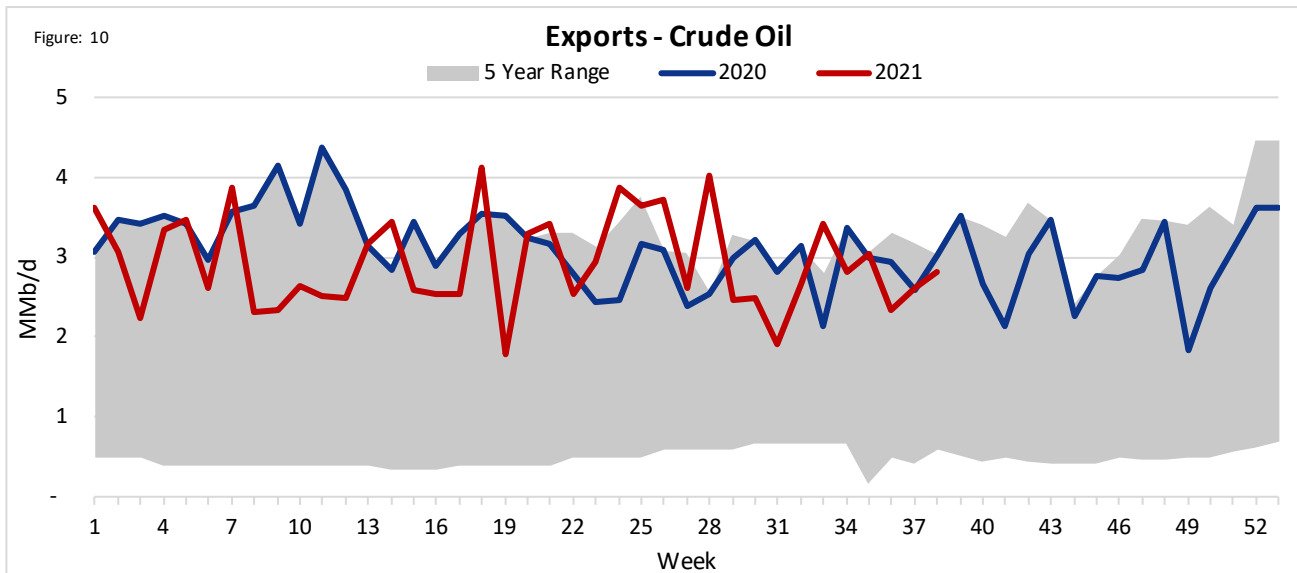
Table: D	Current	Yr Ago	1 Yr Avg
WTI Prices			
Prompt	\$72.01	\$39.60	\$58.40
cal21	\$70.40	\$41.80	\$54.26
cal22	\$66.81	\$43.38	\$55.22
cal23	\$61.60	\$44.52	\$52.69
cal24	\$57.84	\$45.61	\$51.06

			Table: F
Brent Prices	Current	Yr Ago	1 Yr Avg
Prompt	\$75.91	\$41.72	\$61.19
cal21	\$72.97	\$44.80	\$57.61
cal22	\$68.92	\$47.01	\$58.09
cal23	\$64.86	\$48.75	\$56.42
cal24	\$61.73	\$50.16	\$55.31

WTI/ Brent Spreads	Current	Yr Ago	1 Yr Avg
Prompt	(\$3.87)	(\$1.92)	(\$2.79)
cal21	(\$2.57)	(\$3.01)	(\$3.35)
cal22	(\$2.12)	(\$3.63)	(\$2.86)
cal23	(\$3.26)	(\$4.23)	(\$3.73)
cal24	(\$3.90)	(\$4.55)	(\$4.25)

			Table: G
Crude Differentials	Current	Yr Ago	1 Yr Avg
Midland	\$0.48	\$0.10	\$0.43
Magellan East Houston	\$1.41	\$0.68	\$0.92
Louisiana Light Sweet	(\$2.01)	\$1.36	\$1.09
Bakken (Clearbrook)	\$0.05	(\$1.90)	(\$0.65)
W. Canada Select	(\$11.55)	(\$10.54)	(\$12.21)





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