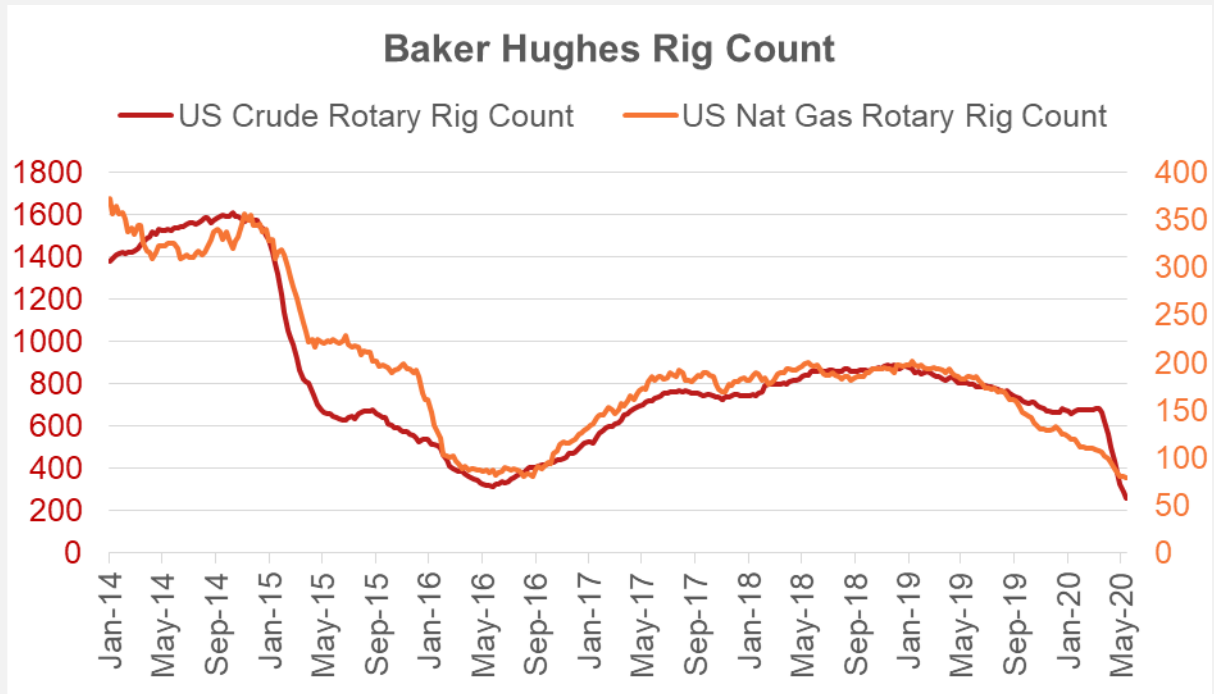


Baker Hughes reported another drop in rig counts on Friday. Total oil rigs fell by 21 to 237 this week, while natural gas rigs stayed flat. The massive drop in rigs has led to oil and natural gas production falling at one of the fastest paces ever observed due to the steep decline rates associated with shale wells.



Here are some stats we compiled on the past 12 weeks.

This takes us back to week ending Mar 6th – pre-covid in North American (major impacts) and before the global oil price war was triggered.

Oil Rigs lower by 445, or 65%

Natural Gas Rigs lower by 30, or 28%

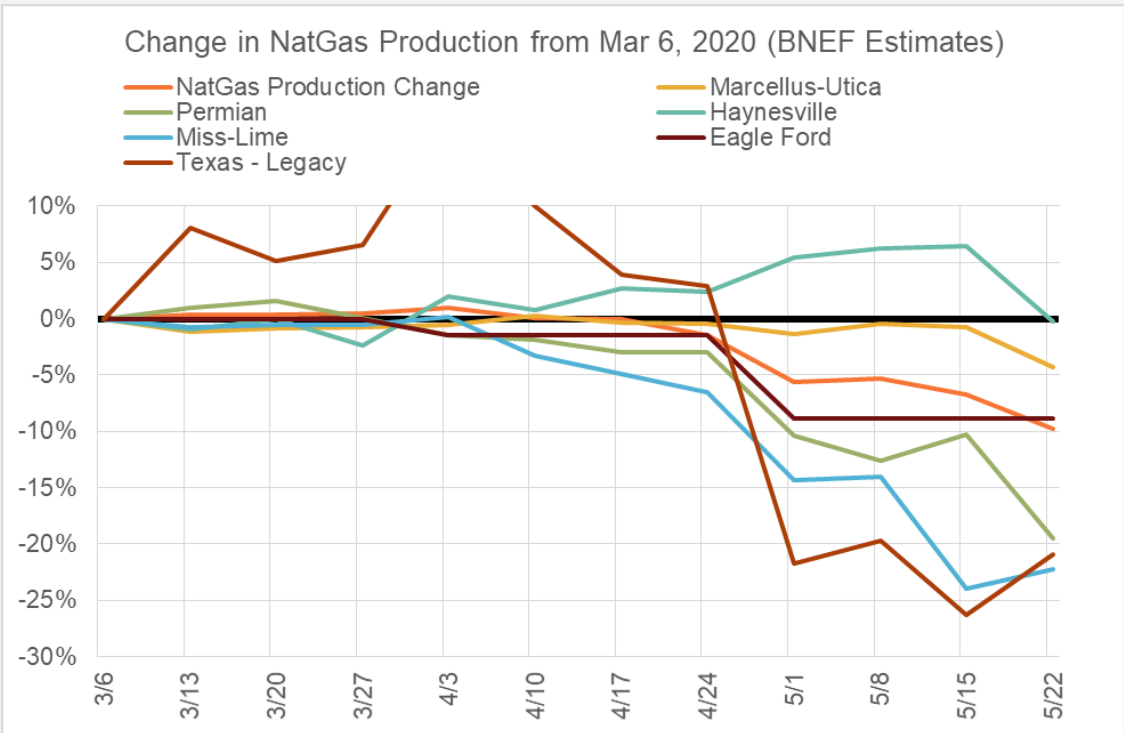
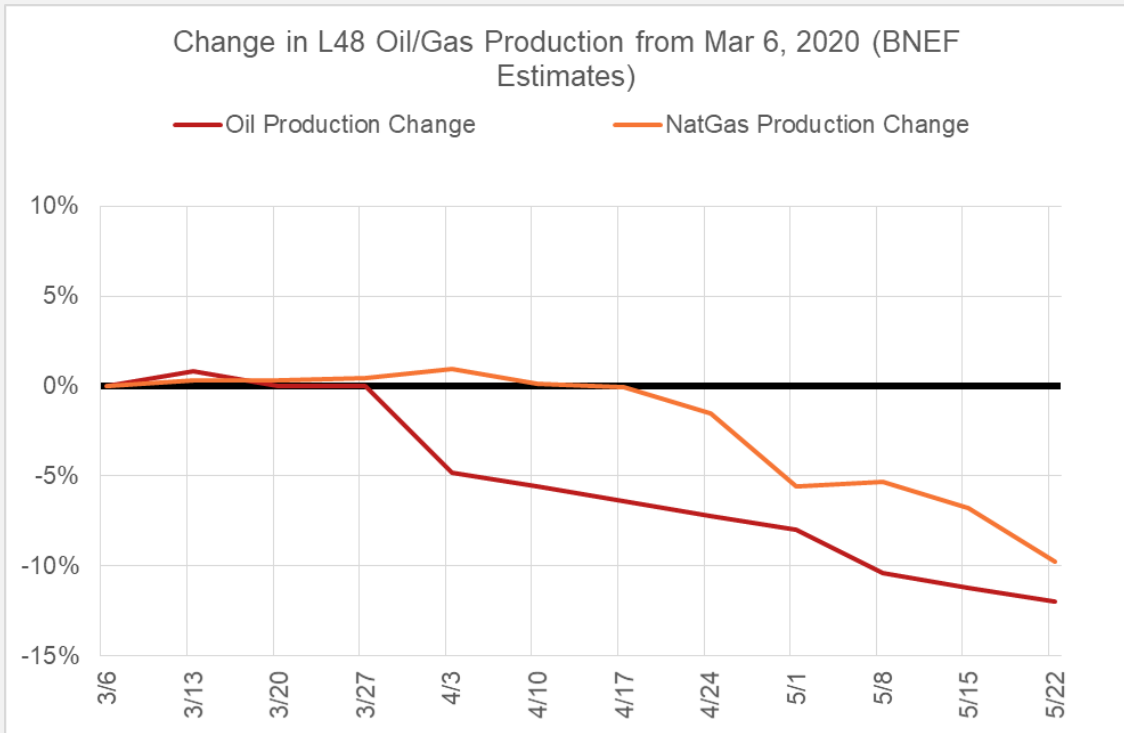
Frac Spread Count lower by 272, or 86%

L48 Oil Production lower by 1.5 mmbbls/d, or 12%

L48 Nat Gas Production lower by 8.92 Bcf/d, or 10% (BNEF estimates)

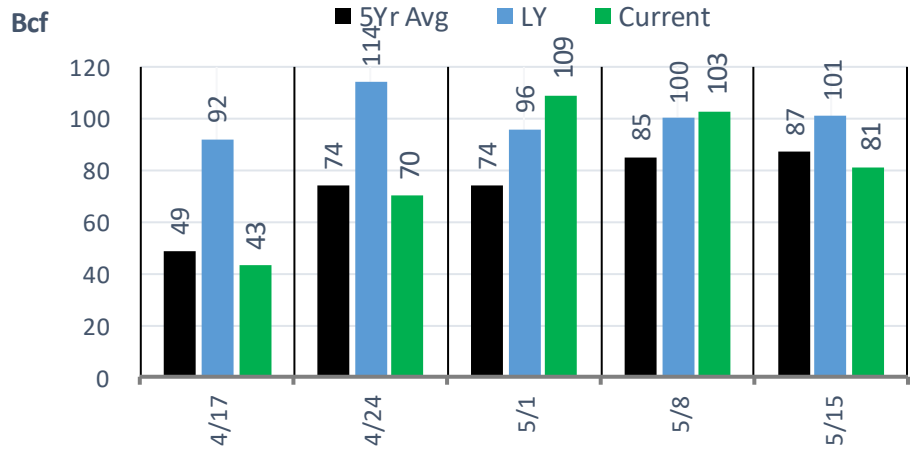
Oil Prices (36 month strip) down by \$7.64/bbl, or 17%

Nat Gas Prices (36 month strip) higher by \$0.23/bbl, or 10%

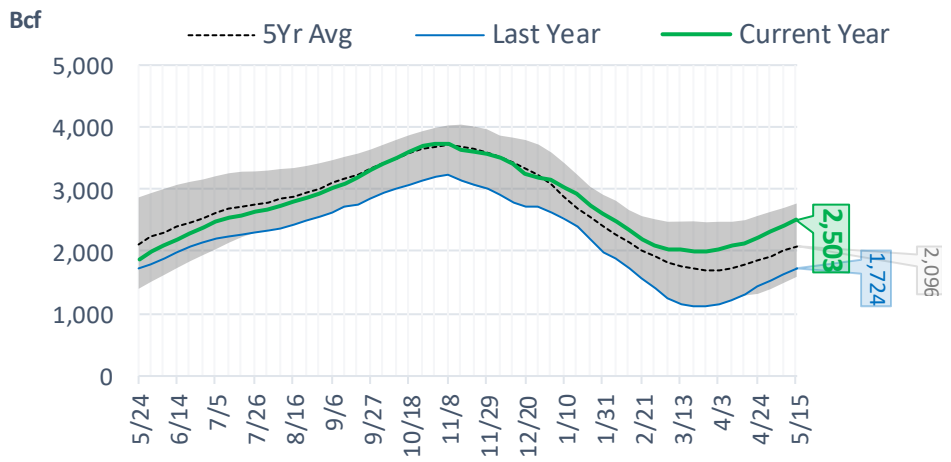


EIA Storage Report

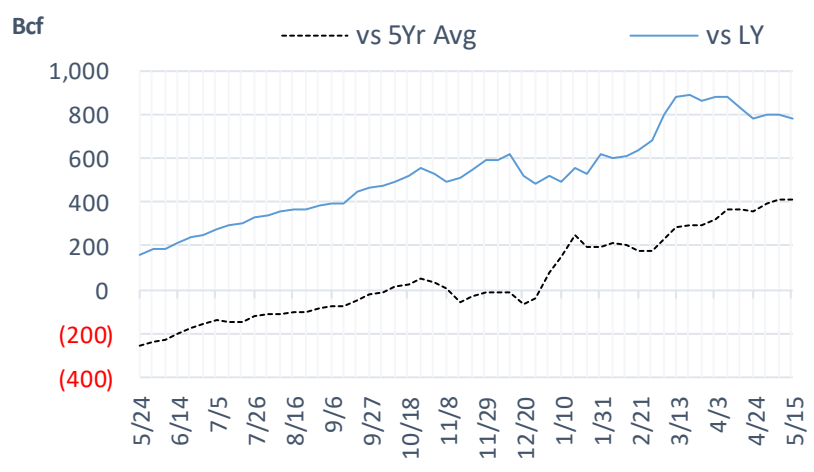
Total Lower 48 YoY Weekly Change



Total Lower 48 Storage Levels



Total Lower 48 LY Surplus/Deficit

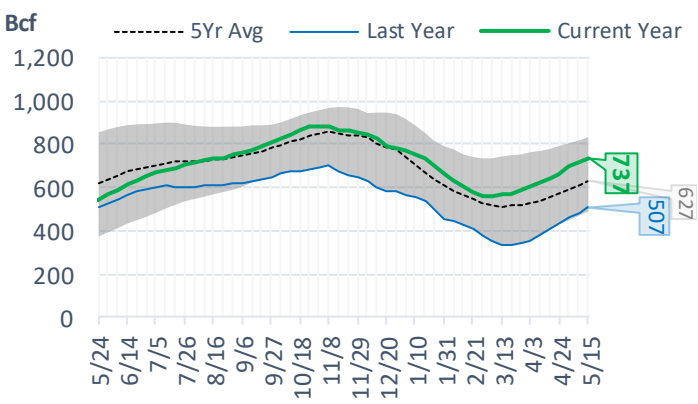


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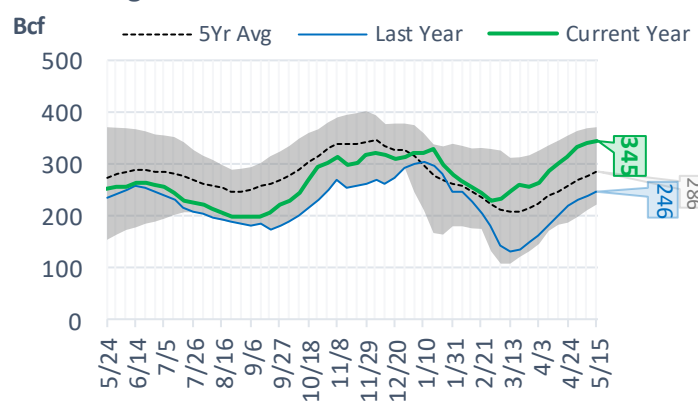
Natural Gas Storage Stats - Last 5 Weeks

Week Ending	Current 15-May	Week - 1 8-May	Week - 2 1-May	Week - 3 24-Apr	Week - 4 17-Apr	Week - 5 10-Apr
Total Lower 48 Storage Level	2503	2422	2319	2210	2140	2097
Weekly Change	+81	+103	+109	+70	+43	+73
vs LY	+779	+799	+796	+783	+827	+876
vs 5Yr Avg	+407	+413	+395	+360	+364	+370
S. Central Salt Storage Level	345	340	331	314	301	286
Weekly Change	+5	+9	+17	+13	+15	+21
vs LY	+99	+102	+100	+96	+102	+105
vs 5Yr Avg	+59	+61	+62	+55	+54	+49
S. Central NonSalt Storage Level	737	719	695	664	640	626
Weekly Change	+18	+24	+31	+24	+14	+19
vs LY	+230	+235	+236	+230	+235	+250
vs 5Yr Avg	+110	+111	+106	+93	+86	+87
Midwest Storage Level	576	554	530	506	493	487
Weekly Change	+22	+24	+24	+13	+6	+12
vs LY	+220	+226	+226	+223	+232	+237
vs 5Yr Avg	+144	+146	+142	+133	+133	+134
East Storage Level	469	452	424	405	400	400
Weekly Change	+17	+28	+19	+5	0	+18
vs LY	+123	+131	+131	+134	+156	+177
vs 5Yr Avg	+93	+101	+98	+99	+115	+126
Mountain Storage Level	124	117	111	103	96	95
Weekly Change	+7	+6	+8	+7	+1	+3
vs LY	+37	+36	+34	+29	+27	+30
vs 5Yr Avg	-5	-7	-9	-14	-18	-17
Pacific Storage Level	253	240	228	218	210	203
Weekly Change	+13	+12	+10	+8	+7	0
vs LY	+70	+69	+69	+70	+75	+78

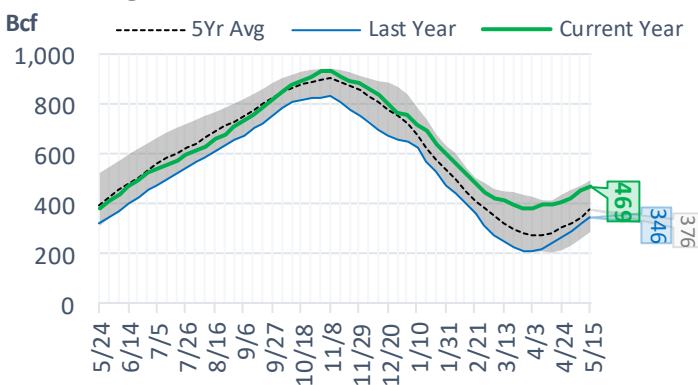
NonSalt Storage Levels



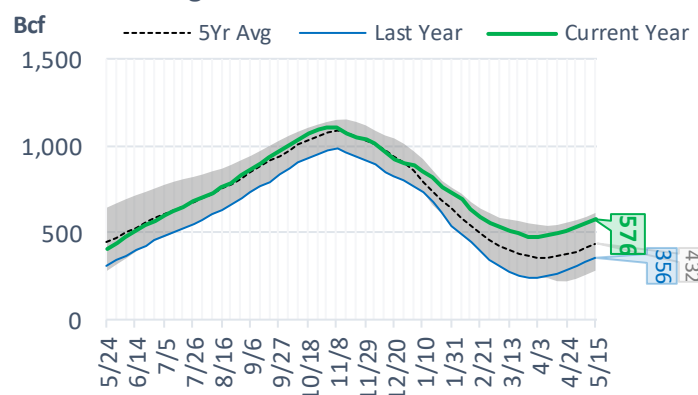
Salt Storage Levels



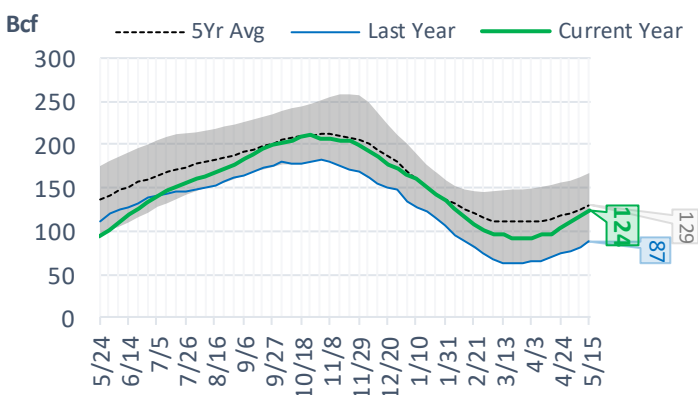
East Storage Levels



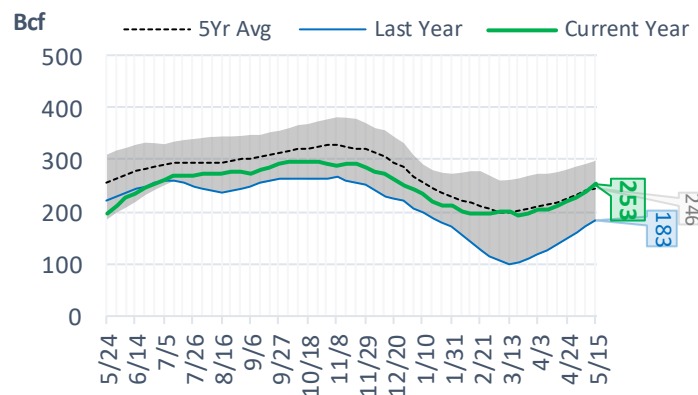
Midwest Storage Levels



Mountain Storage Levels

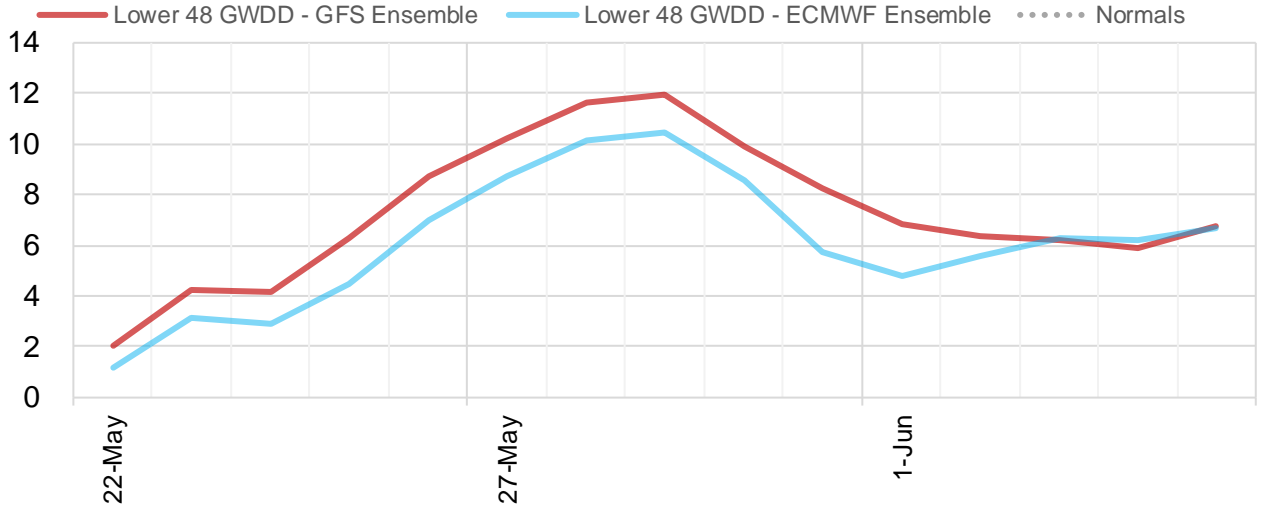


Pacific Storage Levels

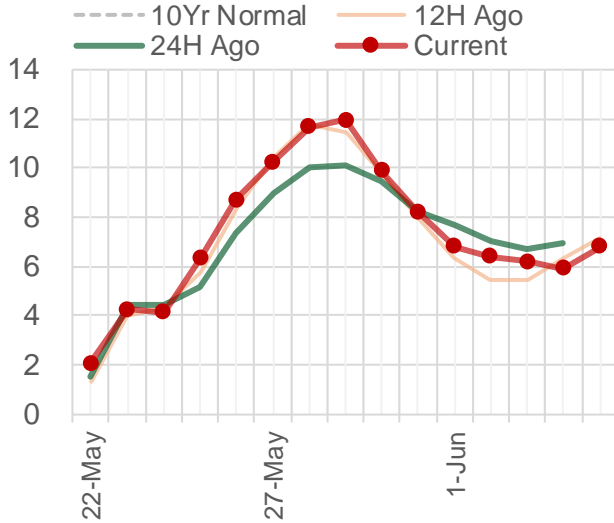


Current Short-term Weather Model Outlooks (00z)

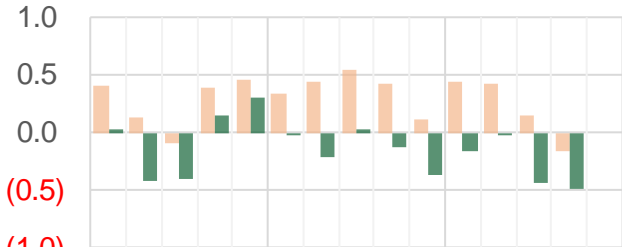
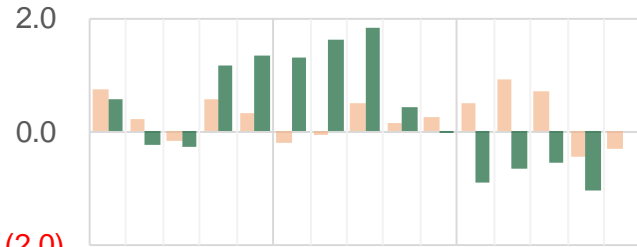
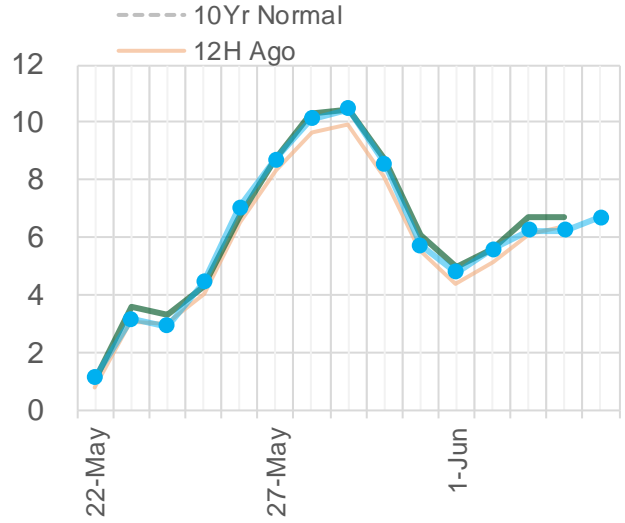
Lower 48 TDD Forecast



Lower 48 GWDD - GFS Ensemble



Lower 48 GWDD - ECMWF Ensemble



(2.0)

(0.5)

(1.0)

Source: WSI, Bloomberg

EIA Storage Week Balances

3.9

	17-Apr	24-Apr	1-May	8-May	15-May	22-May	WoW	vs. 4W
Lower 48 Dry Production	91.4	90.8	89.7	86.5	86.1	83.5	▼ -2.6	▼ -4.8
Canadian Imports	4.4	3.9	3.4	3.6	4.0	4.1	▲ 0.1	▲ 0.4
L48 Power	25.5	24.9	24.5	24.5	24.8	26.5	▲ 1.7	▲ 1.8
L48 Residential & Commercial	26.1	22.7	17.0	14.7	19.5	10.9	▼ -8.6	▼ -7.6
L48 Industrial	18.7	18.3	18.3	18.0	16.5	18.0	▲ 1.5	▲ 0.2
L48 Lease and Plant Fuel	5.2	5.1	5.1	4.8	4.8	4.7	▼ -0.1	▼ -0.3
L48 Pipeline Distribution	2.5	2.3	2.0	1.9	2.2	1.8	▼ -0.3	▼ -0.3
L48 Regional Gas Consumption	77.9	73.3	66.9	64.0	67.9	61.9	▼ -6.0	▼ -6.1
Net LNG Exports	8.6	8.1	7.5	7.7	6.9	6.3	▼ -0.7	▼ -1.3
Total Mexican Exports	4.8	5.0	4.8	4.7	4.7	5.1	▲ 0.4	▲ 0.3
Implied Daily Storage Activity	4.5	8.3	13.8	13.7	10.6	14.3	3.7	
EIA Reported Daily Storage Activity	6.1	10.0	15.6	14.7	11.6			
Daily Model Error	-1.7	-1.7	-1.8	-1.0	-1.0			

Monthly Balances

	2Yr Ago May-18	LY May-19	Jan-20	Feb-20	Mar-20	Apr-20	MTD May-20	MoM	vs. LY
Lower 48 Dry Production	81.2	89.1	92.6	91.9	91.8	91.0	85.1	▼ -5.8	▼ -4.0
Canadian Imports	5.8	4.7	4.8	5.3	4.1	3.9	3.9	▼ 0.0	▼ -0.8
L48 Power	27.3	26.9	30.0	29.9	27.4	25.3	25.5	▲ 0.2	▼ -1.4
L48 Residential & Commercial	10.6	12.8	41.4	40.5	27.9	21.8	14.2	▼ -7.6	▲ 1.5
L48 Industrial	21.7	22.8	24.1	24.7	22.2	18.7	17.7	▼ -1.0	▼ -5.1
L48 Lease and Plant Fuel	4.6	4.9	5.1	5.1	5.2	5.1	4.8	▼ -0.4	▼ -0.2
L48 Pipeline Distribution	1.6	1.8	3.0	3.0	2.4	2.3	2.0	▼ -0.3	▲ 0.2
L48 Regional Gas Consumption	65.8	69.1	103.6	103.2	85.1	73.2	64.1	▼ -9.1	▼ -5.0
Net LNG Exports	3.1	5.6	8.3	8.5	8.5	8.2	6.8	▼ -1.4	▲ 1.2
Total Mexican Exports	4.4	5.1	5.2	5.3	5.6	4.9	4.9	▼ 0.0	▼ -0.2
Implied Daily Storage Activity	13.6	13.9	-19.7	-19.8	-3.3	8.5	13.2		
EIA Reported Daily Storage Activity									
Daily Model Error									

Source: Bloomberg, analytix.ai

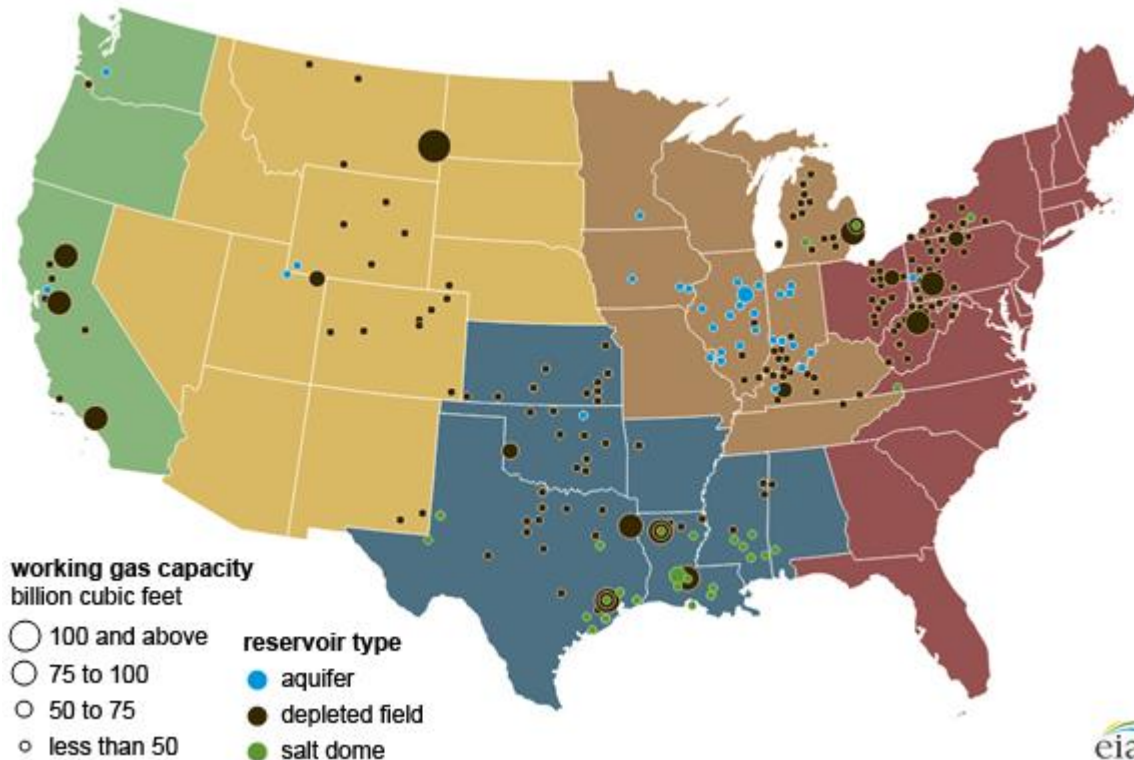
Regional S/D Models Storage Projection

Week Ending 22-May

	Daily Raw Storage	Daily Adjustment Factor	Daily Average Storage Activity (Adjusted) *	Weekly Adjusted Storage Activity
L48	14.1	1.4	15.4	108
East	2.4	2.9	5.2	36
Midwest	3.8	0.8	4.5	32
Mountain	3.0	-1.7	1.3	9
South Central	2.6	0.1	2.7	19
Pacific	2.3	-0.6	1.7	12

*Adjustment Factor is calculated based on historical regional deltas

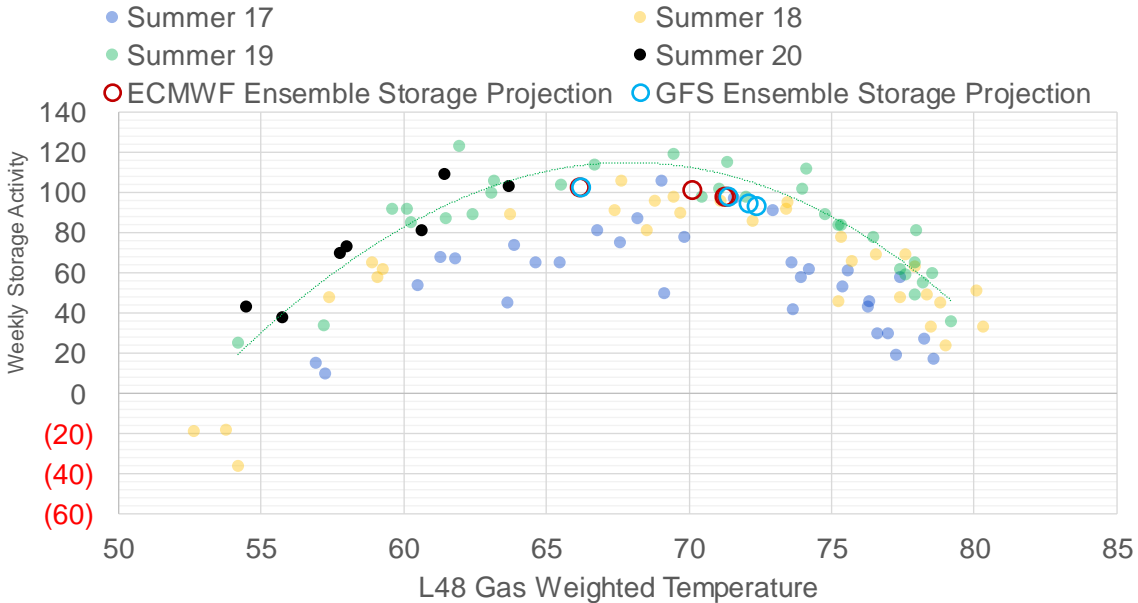
U.S. underground natural gas storage facilities by type (July 2015)



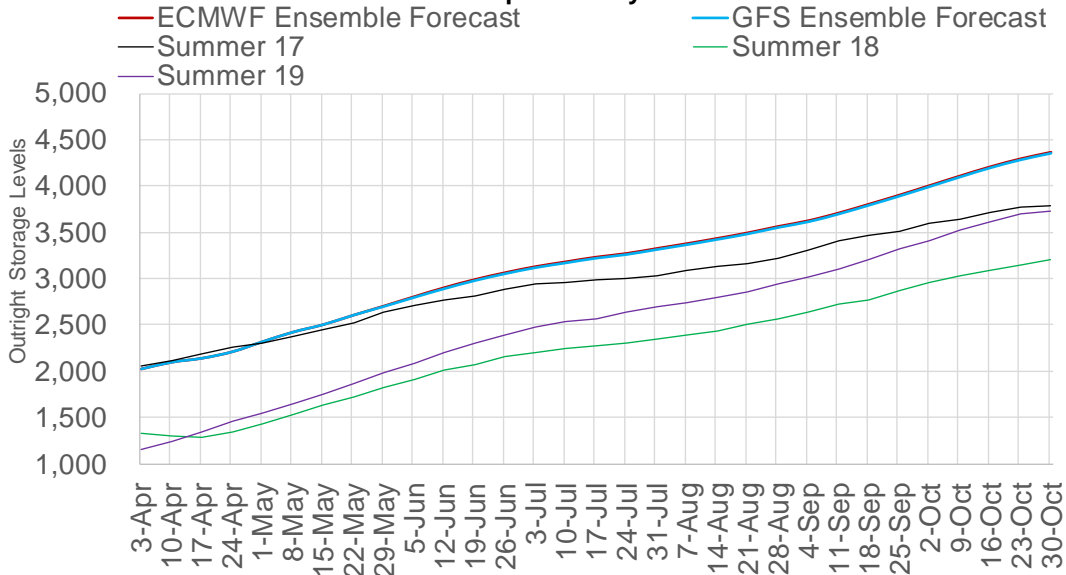
Weather Model Storage Projection

Week Ending	Week Storage Projection
22-May	103
29-May	96
5-Jun	100
12-Jun	96

Weather Storage Model - Next 4 Week Forecast



Weather Based End of Winter Projection (Bcf) 10Y normals past 15 day forecast window



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Weather Model Storage Projection to End of Season

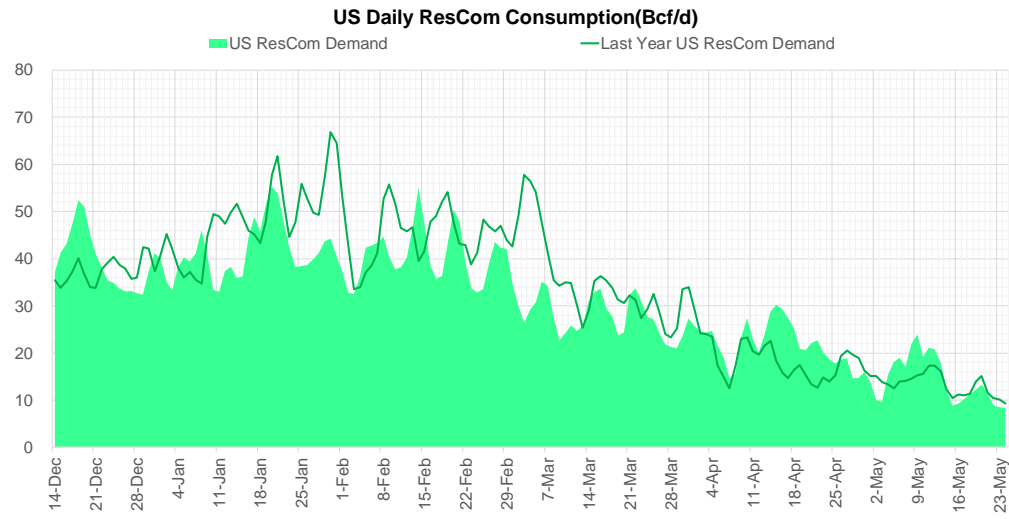
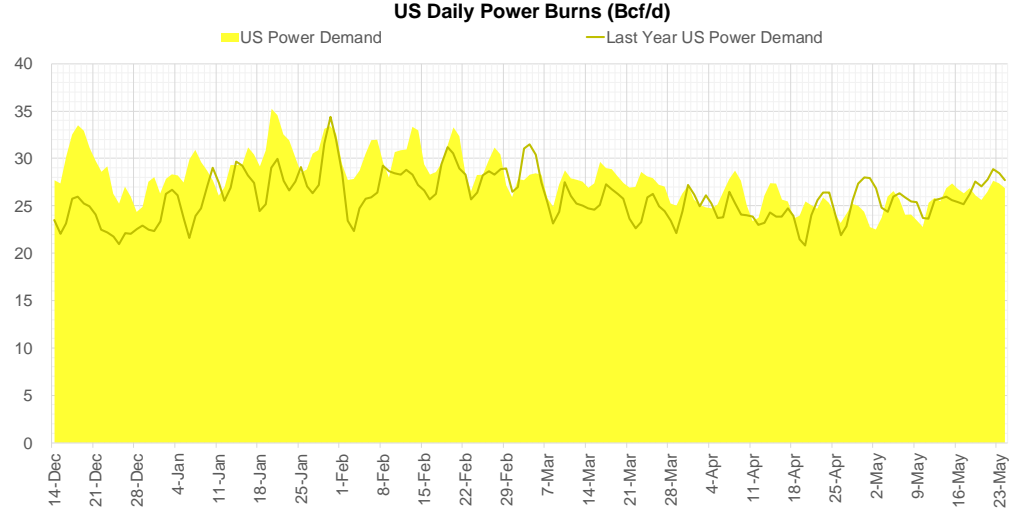
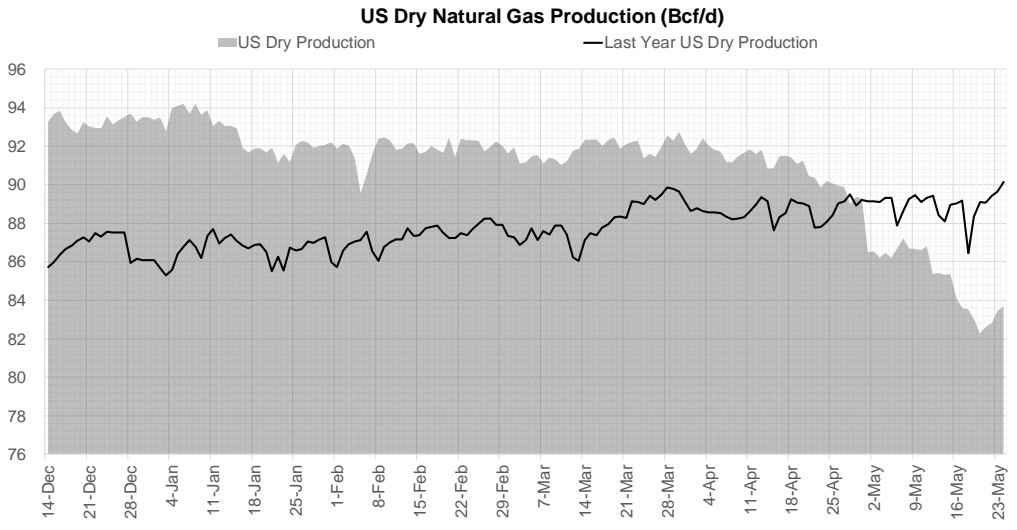
L48 Storage Trajectory from Weather Model

Forecast Storage Levels

	Report		vs 5Yr	Reported	Estimate	Forecast Storage Levels			
	Storage Level	vs. LY	Avg	Chg	Chg *	LY Chg	vs. LY	5Yr Avg Chg	vs. 5Yr
3-Apr-20	2024	876	324	38		25	13	6	32
10-Apr-20	2097	876	370	73		73	0	27	46
17-Apr-20	2140	827	364	43		92	(49)	49	(6)
24-Apr-20	2210	783	360	70		114	(44)	74	(4)
1-May-20	2319	796	395	109		96	13	74	35
8-May-20	2422	799	413	103		100	3	85	18
15-May-20	2503	779	407	81		101	(20)	87	(6)
22-May-20					103	110	(7)	93	10
29-May-20					96	118	(22)	103	(7)
5-Jun-20					100	107	(7)	94	6
12-Jun-20					96	111	(15)	87	9
19-Jun-20					87	103	(16)	73	14
26-Jun-20					74	92	(18)	65	9
3-Jul-20					65	83	(18)	68	(3)
10-Jul-20					52	67	(15)	63	(11)
17-Jul-20					51	44	7	37	14
24-Jul-20					40	56	(16)	33	7
31-Jul-20					54	58	(4)	33	21
7-Aug-20					53	51	2	44	9
14-Aug-20					56	56	0	44	12
21-Aug-20					60	60	(0)	49	11
28-Aug-20					69	77	(8)	66	3
4-Sep-20					62	80	(18)	68	(6)
11-Sep-20					83	82	1	77	6
18-Sep-20					95	97	(2)	80	15
25-Sep-20					98	109	(11)	78	20
2-Oct-20					103	102	1	86	17
9-Oct-20					103	102	1	87	16
16-Oct-20					99	92	7	75	24
23-Oct-20					86	89	(3)	67	19
30-Oct-20					71	49	22	52	19
			2373	2596	(223)	2024	349		

* first 15D change is an average of the GFS Ensemble and ECMWF Ensemble

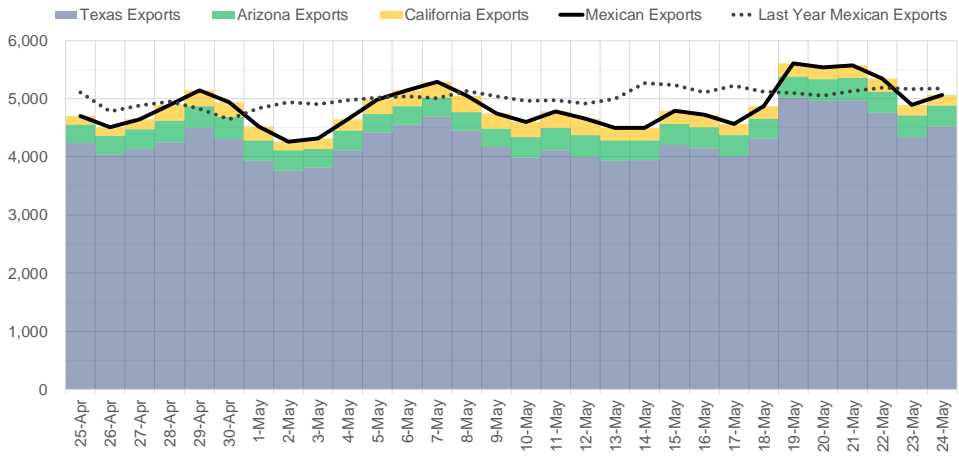
Supply – Demand Trends



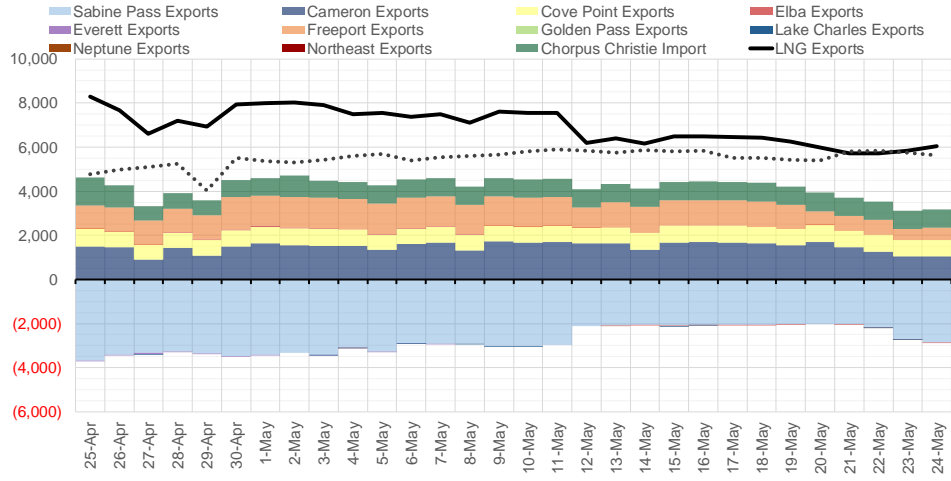
Source: Bloomberg

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Mexican Exports - Last 30 days (MMcf/d)



Net LNG Exports - Last 30 days (MMcf/d)



Source: Bloomberg

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Nat Gas Options Volume and Open Interest CME, ICE and Nasdaq Combined

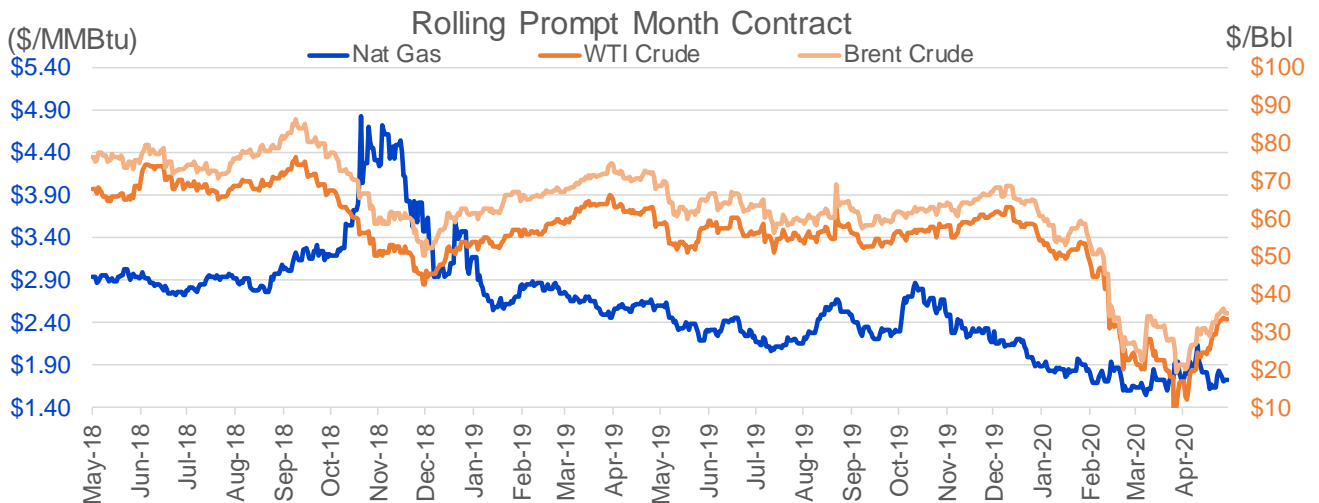
CONTRACT MONTH	CONTRACT YEAR	PUT/CALL	STRIKE	CUMULATIVE VOL	CONTRACT MONTH	CONTRACT YEAR	PUT/CALL	STRIKE	CUMULATIVE OI
6	2020	P	1.60	9741	6	2020	P	1.25	39906
6	2020	P	1.70	5564	10	2020	C	3.00	38825
8	2020	P	1.25	3855	6	2020	C	2.50	37255
8	2020	P	1.40	3444	10	2020	P	1.50	35928
7	2020	P	1.40	3192	6	2020	P	1.50	35064
6	2020	C	2.05	2727	6	2020	C	2.25	34679
6	2020	P	1.50	2613	3	2021	P	2.00	33093
6	2020	C	1.90	2390	10	2020	C	2.75	31184
10	2020	P	2.00	2053	7	2020	P	1.50	30923
6	2020	C	1.75	2033	6	2020	C	2.00	30025
6	2020	C	1.80	1772	10	2020	P	1.60	29869
7	2020	P	1.60	1737	10	2020	P	2.00	28696
6	2020	P	1.75	1709	6	2020	P	1.75	28611
6	2020	P	1.65	1583	7	2020	C	3.00	26139
7	2020	P	1.50	1566	6	2020	P	2.00	25370
9	2020	C	2.75	1486	9	2020	C	2.50	25301
6	2020	C	1.85	1414	7	2020	P	1.75	24566
10	2020	C	2.50	1380	7	2020	C	2.50	23516
10	2020	C	2.75	1365	10	2020	C	2.50	22613
7	2020	C	2.00	1291	9	2020	P	1.50	22260
9	2020	C	3.50	1250	10	2020	P	1.25	21533
10	2020	P	1.50	1226	9	2020	C	2.75	21443
8	2020	C	2.50	1136	6	2020	C	3.00	21358
6	2020	P	1.40	1020	7	2020	P	2.00	20767
7	2020	P	1.70	1010	6	2020	P	1.60	20425
9	2020	C	3.00	1000	10	2020	P	1.75	19760
6	2020	C	1.70	986	1	2021	C	3.00	19622
7	2020	P	1.65	944	7	2020	C	2.25	19362
10	2020	P	1.75	917	6	2020	P	1.70	19211
9	2020	C	2.70	901	8	2020	C	3.00	18920
11	2020	C	2.50	901	1	2021	C	3.50	18867
10	2020	C	2.20	900	7	2020	C	2.75	18713
7	2020	C	2.50	877	8	2020	P	1.50	18327
7	2020	P	1.25	858	7	2020	C	2.30	18264
6	2020	P	1.90	836	10	2020	P	2.10	17892
8	2020	P	1.60	830	11	2020	C	4.00	17814
10	2020	P	1.90	775	9	2020	C	3.00	17439
8	2020	P	1.00	750	10	2020	C	3.25	17417
7	2020	P	1.35	736	8	2020	C	2.50	17257
6	2020	C	2.00	705	10	2020	C	2.25	16795
9	2020	C	2.00	679	6	2020	P	1.00	16758
10	2020	P	0.50	650	6	2020	P	1.40	16588
6	2020	P	1.55	622	4	2021	C	3.00	16319
9	2020	P	1.75	604	9	2020	C	2.25	15674
8	2020	C	2.30	603	8	2020	C	2.75	15265
7	2020	C	2.25	602	7	2020	P	1.25	15044
7	2020	P	1.90	532	6	2020	C	2.75	14552
7	2020	C	2.75	510	3	2021	C	3.00	14398
9	2020	P	1.50	510	3	2021	C	3.50	14243
					10	2020	P	1	14239

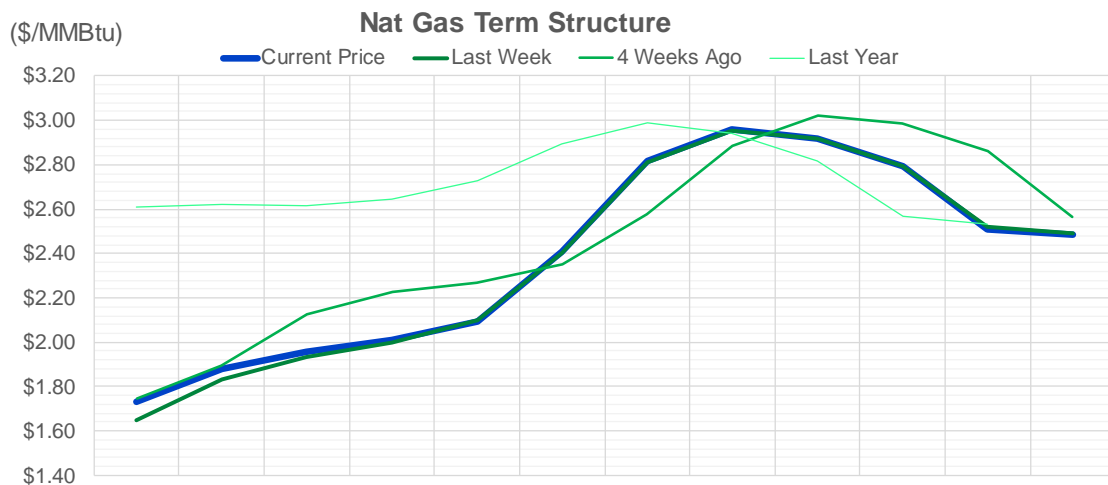
Source: CME, Nasdaq, ICE

Nat Gas Futures Open Interest CME, ICE and Nasdaq Combined

CME Henry Hub Futures (10,000 MMBtu)				ICE Henry Hub Futures Contract Equivalent (10,000 MM				NASDAQ Henry Hub Futures (10,000 MMBtu)			
	Current	Prior	Daily Change		Current	Prior	Daily Change		Current	Prior	Daily Change
JUN 20	27990	35819	-7829	JUN 20	64760	68997	-4236.5	JUN 20	81	81	0
JUL 20	352985	337877	15108	JUL 20	82235	82324	-88.75	JUL 20	80	80	0
AUG 20	72658	70263	2395	AUG 20	68773	67574	1198.75	AUG 20	280	280	0
SEP 20	144988	141055	3933	SEP 20	65560	65316	243.75	SEP 20	81	81	0
OCT 20	101923	101555	368	OCT 20	74976	74282	693.5	OCT 20	760	760	0
NOV 20	44279	44350	-71	NOV 20	59447	58496	951	NOV 20	631	631	0
DEC 20	58262	59302	-1040	DEC 20	57331	57130	200.75	DEC 20	132	132	0
JAN 21	94414	92460	1954	JAN 21	68901	69534	-633	JAN 21	151	151	0
FEB 21	34675	34307	368	FEB 21	43289	43121	167.75	FEB 21	23	23	0
MAR 21	62672	60745	1927	MAR 21	58319	58265	54	MAR 21	1101	1101	0
APR 21	70425	69591	834	APR 21	51148	51753	-604.25	APR 21	775	775	0
MAY 21	26034	26559	-525	MAY 21	44592	44581	10.75	MAY 21	41	41	0
JUN 21	16656	16995	-339	JUN 21	41078	40713	365.5	JUN 21	40	40	0
JUL 21	12077	11981	96	JUL 21	42793	42480	313.25	JUL 21	41	41	0
AUG 21	10263	10238	25	AUG 21	43088	43022	66.25	AUG 21	41	41	0
SEP 21	11612	11549	63	SEP 21	40660	40412	247.75	SEP 21	40	40	0
OCT 21	23919	23875	44	OCT 21	52114	51870	244.25	OCT 21	326	326	0
NOV 21	16507	16125	382	NOV 21	35725	35434	290.5	NOV 21	405	405	0
DEC 21	13367	13120	247	DEC 21	36261	36199	62	DEC 21	5	5	0
JAN 22	11603	11596	7	JAN 22	27433	27437	-4.5	JAN 22	36	36	0
FEB 22	6186	6067	119	FEB 22	24284	24278	5.75	FEB 22	33	33	0
MAR 22	13542	13477	65	MAR 22	26488	26382	106.25	MAR 22	900	900	0
APR 22	10945	10965	-20	APR 22	22606	22535	70.5	APR 22	1035	1035	0
MAY 22	4341	4504	-163	MAY 22	20809	20838	-29	MAY 22	36	36	0
JUN 22	2051	2051	0	JUN 22	20322	20269	52.5	JUN 22	35	35	0
JUL 22	1801	1801	0	JUL 22	21072	21072	0	JUL 22	36	36	0
AUG 22	1255	1255	0	AUG 22	20314	20299	15.5	AUG 22	36	36	0
SEP 22	1320	1320	0	SEP 22	20215	20200	15	SEP 22	35	35	0
OCT 22	1890	1890	0	OCT 22	22765	22779	-13.75	OCT 22	479	479	0
NOV 22	1357	1357	0	NOV 22	18540	18487	52.5	NOV 22	35	35	0

Source: CME, Nasdaq, ICE





	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21
Current Price	\$1.731	\$1.881	\$1.958	\$2.013	\$2.095	\$2.408	\$2.817	\$2.957	\$2.920	\$2.795	\$2.511	\$2.485
Last Week	\$1.646	\$1.833	\$1.935	\$2.000	\$2.098	\$2.402	\$2.808	\$2.955	\$2.915	\$2.793	\$2.519	\$2.492
vs. Last Week	\$0.085	\$0.048	\$0.023	\$0.013	-\$0.003	\$0.006	\$0.009	\$0.002	\$0.005	\$0.002	-\$0.008	-\$0.007
4 Weeks Ago	\$1.746	\$1.895	\$2.128	\$2.224	\$2.268	\$2.350	\$2.574	\$2.883	\$3.022	\$2.987	\$2.862	\$2.562
vs. 4 Weeks Ago	-\$0.015	-\$0.014	-\$0.170	-\$0.211	-\$0.173	\$0.058	\$0.243	\$0.074	-\$0.102	-\$0.192	-\$0.351	-\$0.077
Last Year	\$2.598	\$2.611	\$2.621	\$2.615	\$2.647	\$2.726	\$2.894	\$2.987	\$2.942	\$2.817	\$2.569	\$2.535
vs. Last Year	-\$0.867	-\$0.730	-\$0.663	-\$0.602	-\$0.552	-\$0.318	-\$0.077	-\$0.030	-\$0.022	-\$0.022	-\$0.058	-\$0.050

	Units	Current Price	vs. Last Week	vs. 4 Weeks Ago	vs. Last Year
NatGas Jan/Apr	\$/MMBtu	-0.52	▲ 0.000	▲ 0.000	▼ -0.106
NatGas Mar/Apr	\$/MMBtu	0.187	▲ 0.000	▲ 0.000	▼ -0.061
NatGas Oct/Nov	\$/MMBtu	0.31	▲ 0.009	▲ 0.089	▲ 0.259
NatGas Oct/Jan	\$/MMBtu	0.86	▲ 0.005	▲ 0.190	▲ 0.554
WTI Crude	\$/Bbl	33.25	▲ 3.820	▲ 16.310	▼ -25.380
Brent Crude	\$/Bbl	35.13	▲ 2.630	▲ 13.690	▼ -33.560
Fuel Oil, NY Harbour 1%	\$/Bbl	98.03	▲ 0.000	▲ 0.000	▲ 0.000
Heating Oil	cents/Gallon	98.20	▲ 6.160	▲ 33.530	▼ -98.930
Propane, Mt. Bel	cents/Gallon	0.41	▲ 0.015	▲ 0.084	▼ -0.168
Ethane, Mt. Bel	cents/Gallon	0.22	▼ -0.004	▲ 0.091	▼ -0.005
Coal, PRB	\$/MTon	12.30	▲ 0.000	▲ 0.000	▼ -0.050
Coal, ILB	\$/MTon	31.05	▲ 0.000	▲ 0.000	▼ -10.000

Source: CME, Bloomberg

Baker Hughes Rig Counts

This week we once again see a big change to rig counts. Oil rigs dropped by -21, while nat gas rigs were flat. The weekly changes for the major basins are listed below.

Rotary Rig Count

5/22/2020

Baker Hughes 

U.S. Breakout Information	This Week	+/-	Last Week	+/-	Year Ago
Oil	237	-21	258	-560	797
Gas	79	0	79	-107	186
Miscellaneous	2	0	2	2	0
Directional	25	3	22	-44	69
Horizontal	285	-22	307	-578	863
Vertical	8	-2	10	-43	51
Canada Breakout	This Week	+/-	Last Week	+/-	Year Ago
Oil	8	1	7	-30	38
Gas	13	-3	16	-27	40
Major Basin Variances	This Week	+/-	Last Week	+/-	Year Ago
Ardmore Woodford	2	0	2	-3	5
Arkoma Woodford	0	0	0	-3	3
Barnett	2	0	2	1	1
Cana Woodford	4	0	4	-41	45
DJ-Niobrara	5	-2	7	-24	29
Eagle Ford	22	-2	24	-53	75
Granite Wash	2	0	2	-5	7
Haynesville	32	0	32	-18	50
Marcellus	30	0	30	-32	62
Mississippian	0	0	0	-4	4
Permian	162	-13	175	-289	451
Utica	8	0	8	-11	19
Williston	14	-2	16	-43	57