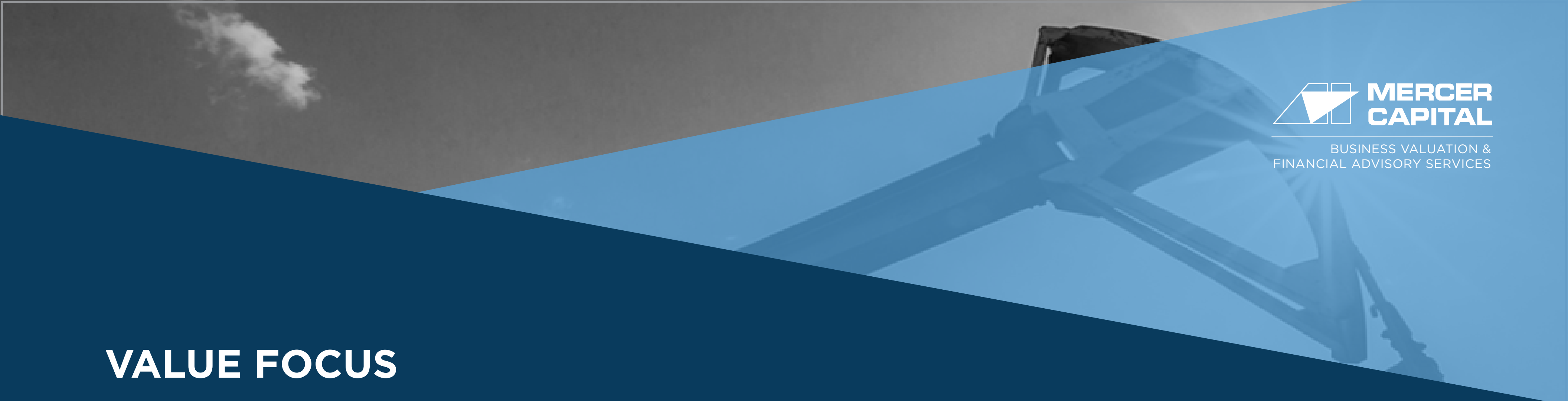

MERCER CAPITAL

BUSINESS VALUATION & FINANCIAL ADVISORY SERVICES

VALUE FOCUS

Exploration & Production

Fourth Quarter 2020 // Region Focus: Appalachian Basin

EXECUTIVE SUMMARY

The fourth quarter of 2020 experienced an increasing price environment compared to the volatile prices seen in the majority of 2020. WTI increased from approximately $40/bbl to $49/bbl during the fourth quarter. Natural gas was volatile but started and ended the quarter at approximately $2.50/mmbtu. The fourth quarter was a bit of a relief after experiencing (i) discord created by the OPEC / Russian rift and resulting supply surge; and (ii) the drop in demand due to COVID-19 related issues. However, the impacts of COVID-19 continue to play a role in the industry heading into 2021 as a full recovery is yet to be seen. In addition, the industry's outlook will be impacted by the Biden Administration's policies after being declared the winner of the 2020 presidential election. In this newsletter, we will examine the macroeconomic factors that have affected the industry in the fourth quarter and peek behind the curtain on what 2021 might hold.

MERCER CAPITAL

Oil and Gas Industry Services

Mercer Capital provides business valuation and financial advisory services to companies in the energy industry.

Services Provided

- Valuation of oil & gas companies
- Transaction advisory for acquisitions and divestitures
- Valuations for purchase accounting and impairment testing
- Fairness and solvency opinions
- Litigation support for economic damages and valuation and shareholder disputes

Industry Segments

Mercer Capital serves the following industry segments:

- Exploration & Production
- Oil Field Services
- Midstream Operations
- Alternative Energy
- Downstream
- Retail

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In This Issue

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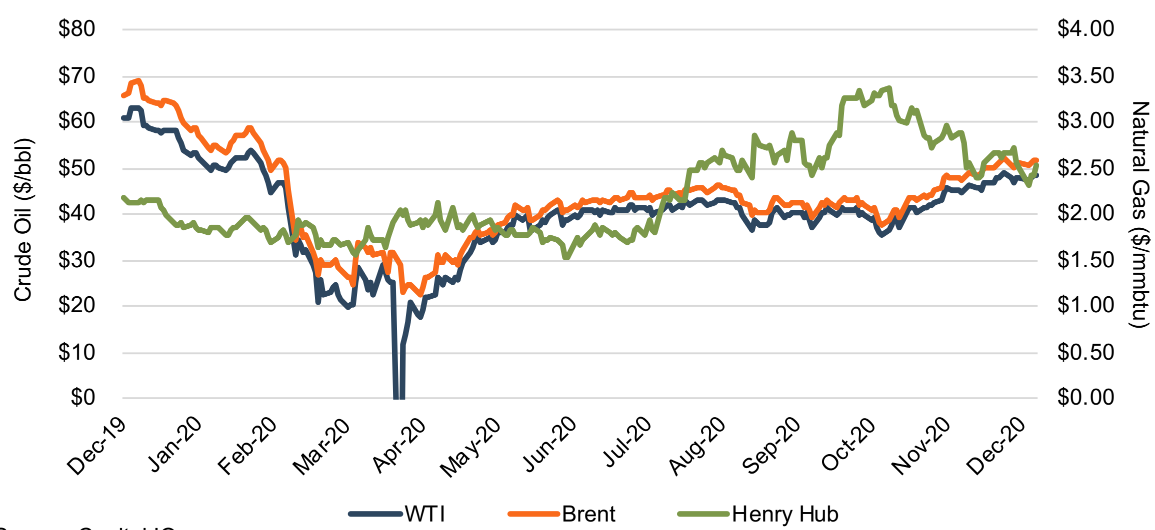
Oil and Gas Commodity Prices

Crude prices gradually increased during the quarter, with WTI starting October at approximately $40/bbl and ending December at nearly $49/bbl. Brent followed the same pattern as WTI and ended the year at approximately $52/bbl. In December 2020's ***Short Term Energy Outlook***, the U.S. Energy Information Administration ("EIA") cited positive news regarding COVID-19 vaccines as a potential driver for the increase, as well as market expectations that OPEC+ would delay or limit production increases planned for January 2021.

Natural gas prices were much more volatile starting and ending the quarter at approximately $2.50/mmbtu. Prices rose in October and early November as seasonal demand for heating increased but moderated later in the quarter as warmer-than-normal temperatures reduced heating demand.

We note that Capital IQ has revised the default futures contracts utilized for historical commodity pricing. As such, the information shown may not tie to the analysis below.

Crude Oil and Natural Gas Prices



Source: Capital IQ

Macro Update

OPEC+

On June 6, 2020, OPEC+ members reached an agreement to continue cutting 9.7 million b/d, or about 10% of global output under normal circumstances, through July. The extended supply cuts helped oil prices continue their recovery from their drastic drop in April due to the demand issues caused by COVID-19. The original agreement that OPEC+ reached on April 12 stated that production was set to increase gradually after June, but members refined that plan and continued their supply cuts for another month. On July 15, OPEC + members agreed to loosen existing production caps by roughly 1.6 million b/d amid further economic recovery.

The next production increase was scheduled for January 2021. Originally slated for ~2 million b/d, OPEC+ agreed to a much smaller increase of 500,000 b/d in their **December 3 meeting**. Perceived cohesion among OPEC+ members and a smaller than anticipated increase led to rising crude prices in December.

U.S. Production

The EIA estimates that U.S. crude oil production was 11.1 million b/d in December 2020, down 14% year-over-year. However, December's production level was essentially flat relative to the prior month, and up 2% relative to September 2020.

Going forward, the EIA expects total U.S. crude production for 2021 to average 11.1 million b/d (in line with current levels). However, the EIA expects production to decline over the next several months, as production declines from existing wells exceed new production from new wells. During the latter part of 2021, the EIA expects additional drilling activity in light of higher oil prices.

Macro Update (cont.)

Bankruptcy

According to Haynes and Boone's ***Oil Patch Bankruptcy Monitor***, the pace of new bankruptcies slowed in the fourth quarter of 2020. Only six North American E&P companies filed for bankruptcy in Q4, compared to 18 in Q2 and 17 in Q3. The largest of the Q4 bankruptcy filers was Gulfport Energy, with nearly $2.3 billion of unsecured debt. According to Gulfport's **Restructuring Support Agreement**, the company expects to shed $1.25 billion of debt and substantially reduce interest expense.

Biden Elected President

As of year-end 2020, Joe Biden had been elected President of the United States, but would not assume the role until inauguration in January 2021. While Biden's platform has certain statements regarding oil & gas policies, there will likely be considerable uncertainty until Biden assumes office.

The greatest domestic impact could come from Biden's plans to oppose fracking on federal lands and waters. Biden denied claims that he would ban fracking outright, instead stating that his platform would favor a ban on new fracking on federal lands and waters. According to ***S&P Global Platts Analytics***, eliminating the issuance of drilling permits for federal lands has the potential to shrink U.S. production by up to 1.1 million b/d of oil and 3.7 bcf/d of gas by 2025. In response, producers have accelerated permitting or shifted development plans to state or private lands.

Macro Update (cont.)

Biden Elected President (cont.)

It is also possible that Biden may deny the **570,000 b/d** Dakota Access Pipeline a new permit, a move **initiated by the Obama administration**, leaving Bakken producers without capacity to transport roughly **300,000 b/d** to market. U.S. crude exports that rely on certain pipelines will be affected by these future build-out decisions.

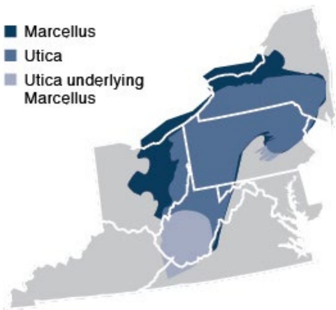
During the final presidential debate, Joe Biden called for the U.S. to transition away from oil to address the environmental harm of climate change. The Biden administration would look to re-enter the Paris Climate Agreement, which Trump pulled out of during his term, in order to prioritize the movement away from fossil fuel energy sources.

Interest Rates

The U.S. Federal Reserve cut interest rates twice in the month of March. On March 3, 2020, the Fed made an emergency decision to cut interest rates by 0.5% in response to the foreseeable economic slowdown due to the spread of the coronavirus. This cut was anticipated and largely shrugged off by the markets as interest rates continued their precipitous decline. Benchmark rates were again cut on March 15 by a full percent to near zero. The Federal Reserve's latest forecast suggest that rates will remain close to zero for the foreseeable future until inflation increases.

Appalachian Basin

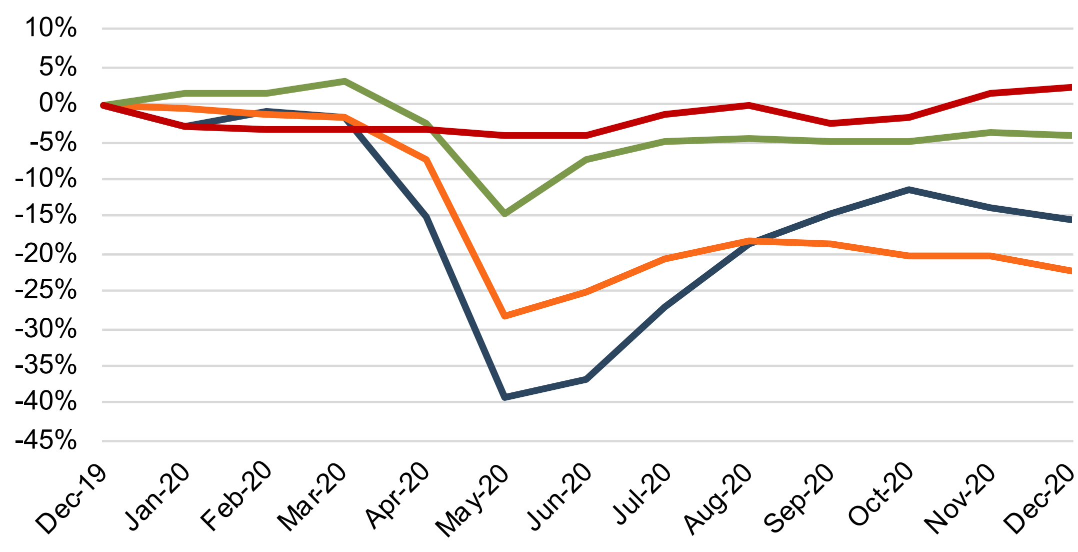
Production and Activity Levels



The economics of oil and gas production varies by region. Mercer Capital focuses on trends in the Eagle Ford, Permian, Bakken, and Appalachia plays. The cost of producing oil and gas depends on the geological makeup of the reserve, depth of reserve, and cost to transport the raw crude to market. We can observe different costs in different regions depending on these factors. This quarter we take a closer look at the Bakken.

Estimated Appalachian production increased approximately 2% year-over-year through December. Appalachia was the only one of Mercer Capital's coverage areas which saw an increase in production, with Bakken, Eagle Ford, and Permian production declining 16%, 22%, and 4%, respectively. While natural gas prices have been depressed for the past several years (largely rangebound between $1.50 and $3.00/mmbtu), they have not been nearly as volatile as (**or negative like**) crude oil prices. In fact, slowing oil production is somewhat bullish for natural gas prices, as that removes a significant amount of associated natural gas (i.e., natural gas produced from oil-focused wells) from the market.

1-Year Change in Production

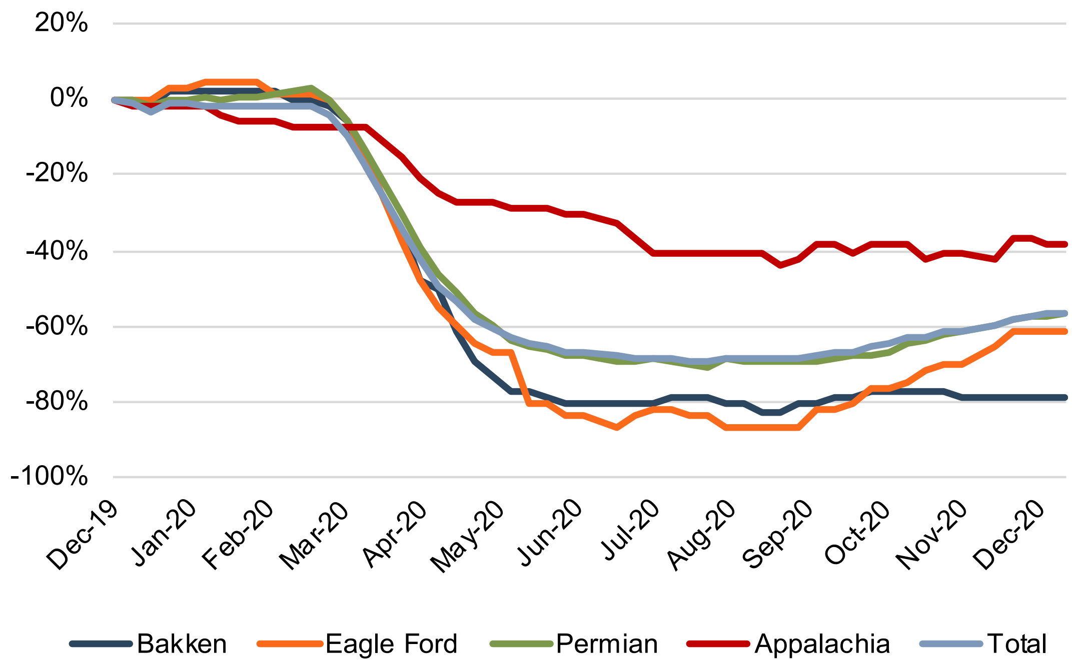


Source: EIA

Production and Activity Levels (cont.)

The rig count in Appalachia stood at 32 as of year-end 2020, down 38% from the prior year. While significant, Appalachia's decline in rig count (both in absolute and relative terms) was the smallest of Mercer Capital's coverage areas, with rig counts in the Bakken, Eagle Ford, and Permian down 79%, 61%, and 57%, respectively. Over the past year, Appalachia shed 20 rigs, relative to 230 in the Permian and 41 in each of the Bakken and Eagle Ford. However, with rising commodity prices, rig counts in the Permian and Eagle Ford are up materially from their troughs in August. Appalachia and Bakken producers have been more circumspect, holding rig counts largely flat. E&P management teams have been preaching capital discipline, though it remains to be seen whether they **remain disciplined** in a higher commodity price environment.

1-Year Change in Rig Count



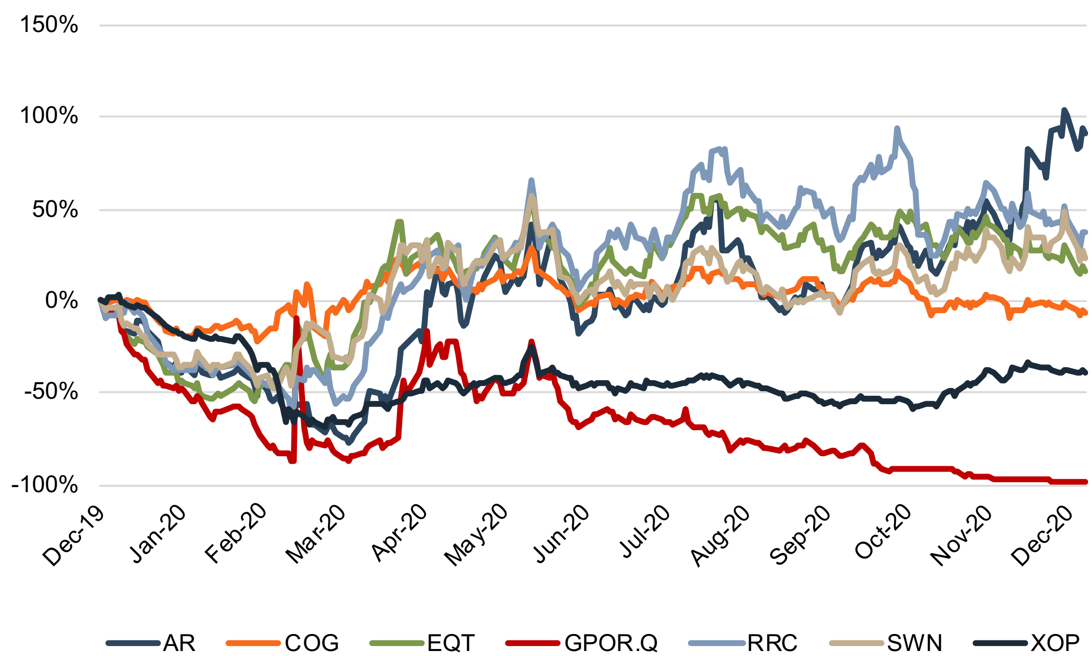
Source: Baker Hughes

Financial Performance

All Appalachia companies, with the exception of Gulfport (which is currently navigating the Chapter 11 bankruptcy process), handily outperformed the broader E&P market (as proxied by the SPDR S&P Oil & Gas Exploration & Production ETF, XOP). This is largely a function of the relative strength of natural gas prices compared to crude.

The best performer in the Appalachia peer group for 2020 was Antero, though after declining 70% during 2019, it had the lowest base from which to grow. Cabot, which has historically been one Appalachia's best performers, was the basin's laggard.

1-Year Change in Stock Price



Source: Capital IQ

Market Valuations & Transaction History

Transaction Activity Spurred by a Number of Variables

Transaction activity in the Appalachia over the last year has picked up **relative** to 2019. The increase in deals was driven in part by the relative price stability of natural gas as compared to oil in 2020, which would naturally tend to favor M&A activity in these gas heavy basins. Another observation is that companies are making critical decisions on where they choose to operate moving forward. Companies, like Shell, are standing firm on their stance to divest their Appalachia assets, while other companies, like EQT, are adding to their basin footprint. A table detailing transaction activity in the Appalachia over the last twelve months is shown below. **Relative to activity in 2019**, deal count increased by fourteen and average deal size increased by roughly $40 million year-over-year.

Transactions in the Applachian Basin

Announced Date	Buyer	Seller	Deal Value ($MM)	$ / Acre	$ / Boepd
11/17/20	Rising Phoenix Royalties	Undisclosed Seller	Undisclosed	nm	nm
11/6/20	Undisclosed Buyer	EOG Resources, Inc.	130	2,826	2,321
10/27/20	EQT Corp	Cheveron Corp	735	2,194	1,633
9/18/20	Smart Sand Inc	Eagle Materials Inc.	2	nm	nm
9/11/20	Pin Oak Midstream LLC	Laurel Mountain Energy LLC	Undisclosed	nm	nm
9/4/20	Rising Phoenix Royalties	CNX Resources	Undisclosed	nm	nm
8/31/20	Rising Phoenix Royalties	Undisclosed Seller	Undisclosed	nm	nm
8/12/20	Southwestern Energy Co.	Montage Resources Corp.	857	2,641	1,475
8/11/20	JP Morgan Securities	Antero Resources	220	nm	3,667
7/27/20	CNX Resources	CNX Midstream Partners	357	nm	nm
7/8/20	Undisclosed Buyer	Harvest Oil & Gas Corp	21	29	700
6/15/20	Sixth Street Partners LLC	Antero Resources	402	nm	nm
5/14/20	Diversified Gas & Oil	EQT Corp	125	nm	14
5/4/20	National Fuel Gas Co.	Royal Dutch Shell	541	1,353	2,437
4/14/20	Diversified Gas & Oil	Carbon Energy Corp.	110	nm	2
1/24/20	KeyBank	EdgeMarc Energy	70	2,188	1,489
12/19/19	Undisclosed Buyer	Gulfport Energy Corp.	29	nm	nm
10/22/19	Nextera Energy Partners LP	Ares Management LP, Meade Pipeline Co LLC	286	nm	nm
10/21/19	Undisclosed Buyer	Range Resources Corp	150	nm	nm
9/30/19	Nextera Energy Partners LP	Meade Pipeline Co LLC	1,370	nm	nm
Median			**$8**	**$2,191**	**$1,489**
Average			**$38**	**$1,872**	**$1,526**

Source: Shale Experts

**Does not include every transaction in the region for 2019-2020*

Market Valuations & Transaction History

EQT Corporation Adds to Core Marcellus Asset Base

In October 2020, EQT Corporation **announced** that the company planned to acquire Chevron's upstream and midstream assets located in the Appalachia for $735 million, subject to closing in late fourth quarter of 2020. EQT intends to finance the acquisition with cash on hand, drawings under its revolving credit facility, and/or one or more capital markets transactions. The asset is comprised of approximately 125,000 core acres and 210,000 acres in the surrounding area. Current net production is approximately 450 MMcfe per day, 74% gas and 25% liquids, with approximately 100 work-in progress wells. The transaction also includes a **31% ownership interest** in Laurel Mountain Midstream and two water pipeline systems, one in Pennsylvania and one in West Virginia. The midstream component accounted for approximately $15 million of LTM EBITDA as of June 30, 2020. Toby Rice, President and CEO of EQT, **stated** that the acquisition is a natural bolt-on extension of the company's position in the basin. He also mentioned that the purchase price was underpinned by PDP value, the work-in-progress well inventory, core undeveloped acreage, and water assets, which all provide material upside from their perspective. The purchase price was comprised of approximately $635 million in PDP value at PV-17, $100 million for the midstream component (6.5x LTM EBITDA) and supported by the potential upside afforded by the work-in-progress wells and 70,000 core net undeveloped Marcellus acres.

Southwestern Energy Co. Expanding Appalachia Footprint

On August 12, 2020, Southwestern Energy Co. announced that they agreed to acquire Montage Resources in an all-stock transaction. Montage Resources shareholders received 1.8656 shares of Southwestern for each Montage Resources share. The deal **closed** on November 13, 2020 with an implied transaction value of $857 million at announcement, including $670 million of debt. Montage's asset base consisted of 324,500 net acres across Southeast Ohio, Northwest West Virginia, and Northeast Pennsylvania. The pro forma overview is shown in the table to the right.

Pro Forma Metrics	SWN + MR
Market Cap	$1.9 Billion
Enterprise Value	$5.0 Billion
Net Debt / Adjusted EBITDA	3.0x
2019 Proved Reserved	15.5 Tcfe
Natural Gas	79%
Oil	5%
NGL	17%
2019 Proved Reserves PV-10	$5.2 Billion
YTD June 2020 Production	2.8 Bcfe/d
Natural Gas	79%
Oil	4%
NGL	17%
Net Acres	786,000
Total Locations	5,150

Source: Southwestern Energy Investor Presentation

Market Valuations & Transaction History

Shell States Strategy to Divest Appalachia Position

On May 4, 2020, National Fuel Gas Co. **announced** that it was going to acquire Shell's upstream and midstream gathering assets in Pennsylvania for $541 million ($500 million after closing adjustments). The all-cash transaction **closed** on July 31, 2020 with an effective date of January 1, 2020. The deal included 400,000 total net acres across Pennsylvania (200,000 are contiguous to National Fuel's existing acreage), 710 Bcf of net P90 proved reserves (100% developed producing), 215-230 Mmcf/d net production, and 142 miles of gathering pipelines, compression, and related facilities. Wael Sawan, Upstream Director at Shell, **stated**, "Divesting our Appalachia position is consistent with our desire to focus our shales portfolio. It is a core part of our upstream portfolio along with the deep water and conventional oil and gas businesses."

After adjusting for the value of the midstream assets acquired as part of the transaction, management indicated that the effective multiple on the upstream component was approximately $1,250/ flowing mcfe. Based on the hedge portfolio and NYMEX strip at the acquisition date, NFG's CEO David Bauer stated that the PDP assets were acquired at "better than PV-20."

M&A transaction activity in the Appalachia increased as company's made decisions whether to add to their core basin acreage or divest and focus on other basins. Companies also seemed to indicate their optimistic outlook on natural gas. It will be interesting to follow whether companies choose to divest their gas positions or increase the asset's weight in their portfolios.

Appendix A

Selected Public Company Information

Mercer Capital tracks the performance of Exploration and Production companies across different mineral reserves in order to understand how the current pricing environment affects operators in each region. We created an index of seven groups to better understand performance trends across reserves and the industry. The current pricing multiples of each company in the index are summarized below.

					as of 12/31/2020		
Company Name	**Ticker**	**12/31/2020 Enterprise Value**	**YoY % Change in Stock Price**	**EBITDAX Margin**	**EV/ EBITDAX**	**Daily Production (mboe/d)**	**Price per Flowing Barrel***
Global Integrated							
Exxon Mobil Corp	XOM	$212,334	-50.80%	10.7%	10.1x	3,777	$56,216
Royal Dutch Shell PLC	RDS/A	$172,436	-57.32%	16.3%	4.8x	3,541	$48,699
Chevron Corp	CVX	$162,625	-40.25%	13.2%	11.9x	3,084	$52,727
BP PLC	BP	$123,665	-53.74%	6.5%	9.2x	3,553	$34,802
Equinor ASA	EQNR	$61,453	-29.38%	22.9%	5.5x	2,234	$27,504
Group Median			**-50.80%**	**13.2%**	**9.2x**	**3,541**	**$48,699**
Global E&P							
Marathon Oil Corp	MRO	$8,155	-69.88%	52.4%	4.4x	340	$23,962
Hess Corp	HES	$21,197	-38.74%	2.1%	nm	320	$66,170
ConocoPhillips	COP	$44,088	-49.50%	32.6%	6.4x	1,193	$36,944
Occidental Petroleum Corp	OXY	$57,617	-75.71%	-22.3%	nm	1,178	$48,930
APA Corp	APA	$14,171	-62.99%	-104.0%	nm	na	na
Murphy Oil Corp	MUR	$5,095	-66.72%	5.5%	40.6x	162	$31,381
Group Median			**-64.85%**	**3.8%**	**6.4x**	**340**	**$36,944**

Source: Bloomberg L.P.

- Price per Flowing Barrel is EV/daily production ($/boe/d)
- We review 10-K's and annual reports from guideline companies to ensure companies continue to operate in the regions and groups we have identified.

Appendix A

Selected Public Company Information

Company Name	Ticker	12/31/2020 Enterprise Value	YoY % Change in Stock Price	EBITDAX Margin	EV/ EBITDAX (as of 12/31/2020)	Daily Production (mboe/d) (as of 12/31/2020)	Price per Flowing Barrel* (as of 12/31/2020)
North American E&P							
Devon Energy Corp	DVN	$6,589	-63.57%	-13.8%	nm	341	$19,318
QEP Resources Inc	QEP	$1,858	-79.94%	61.9%	3.2x	78	$23,735
WPX Energy Inc	WPX	$5,779	-64.34%	11.8%	nm	208	$27,736
Group Median			**-64.34%**	**11.8%**	**3.2x**	**208**	**$23,735**
Bakken							
Continental Resources Inc/OK	CLR	$10,476	-52.48%	55.2%	6.4x	299	$35,017
Whiting Petroleum Corp	WLL	$1,325	na	33.8%	5.3x	88	$15,127
Oasis Petroleum Inc	OAS	$1,539	na	-331.7%	nm	60	$25,603
Group Median			**-52.48%**	**33.8%**	**5.9x**	**88**	**$25,603**
Appalachia							
Range Resources Corp	RRC	$4,814	36.49%	-106.3%	nm	369	$13,047
EQT Corp	EQT	$8,022	18.62%	-29.0%	nm	677	$11,847
Cabot Oil & Gas Corp	COG	$8,116	-0.29%	52.7%	10.5x	404	$20,083
Antero Resources Corp	AR	$6,874	-3.51%	22.0%	6.8x	566	$12,136
Southwestern Energy Co	SWN	$3,918	-2.89%	-45.6%	nm	489	$8,012
Group Median			**-0.29%**	**-29.0%**	**8.6x**	**489**	**$12,136**

Source: Bloomberg L.P.

- Price per Flowing Barrel is EV/daily production ($/boe/d)
- We review 10-K's and annual reports from guideline companies to ensure companies continue to operate in the regions and groups we have identified.

Appendix A

Selected Public Company Information

Company Name	Ticker	12/31/2020 Enterprise Value	YoY % Change in Stock Price	EBITDAX Margin	EV/ EBITDAX (as of 12/31/2020)	Daily Production (mboe/d) (as of 12/31/2020)	Price per Flowing Barrel* (as of 12/31/2020)
Permian Basin							
Concho Resources Inc	CXO	$12,133	-49.62%	-183.2%	nm	314	$38,656
Parsley Energy Inc	PE	$6,947	-50.50%	-166.1%	nm	183	$37,917
Diamondback Energy Inc	FANG	$11,639	-67.56%	-97.6%	nm	287	$40,597
Centennial Resource Development Inc/DE	CDEV	$1,259	-86.96%	53.0%	3.7x	54	$23,493
Callon Petroleum Co	CPE	$3,420	-0.21%	-153.4%	nm	93	$36,717
Laredo Petroleum Inc	LPI	$1,320	241.46%	-33.4%	nm	81	$16,387
Pioneer Natural Resources Co	PXD	$16,301	-43.19%	26.3%	8.0x	361	$45,181
Cimarex Energy Co	XEC	$4,483	-53.65%	-104.1%	nm	232	$19,294
Group Median			**-50.06%**	**-100.9%**	**5.8x**	**208**	**$37,317**
Eagle Ford							
EOG Resources Inc	EOG	$23,836	-57.09%	44.2%	4.4x	795	$29,993
Magnolia Oil & Gas Corp	MGY	$1,547	-58.90%	-160.7%	nm	59	$26,366
SilverBow Resources Inc	SBOW	$500	-60.30%	-121.4%	nm	30	$16,595
Penn Virginia Corp	PVAC	$651	-67.55%	-40.5%	nm	24	$26,729
Group Median			**-59.60%**	**-80.9%**	**4.4x**	**44**	**$26,547**
OVERALL MEDIAN			**-53.06%**	**3.8%**	**6.4x**	**320**	**$27,504**

Source: Bloomberg L.P.

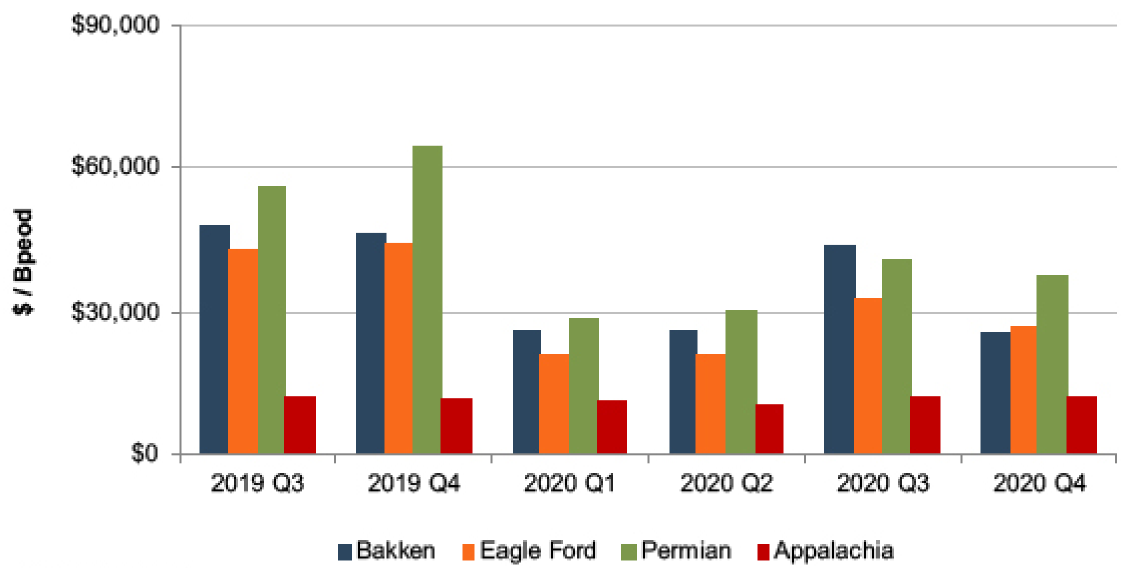
- Price per Flowing Barrel is EV/daily production ($/boe/d)
- We review 10-K's and annual reports from guideline companies to ensure companies continue to operate in the regions and groups we have identified.

Appendix A

Selected Public Company Information

The following graph depicts the median of EV/production multiples, also known as price per flowing barrel, at the end of the past six quarters. As has been the case for some time now, operators in the Permian continue to lead the other regions in terms of valuation, although this margin is decreasing. The Permian, Eagle Ford, Bakken, and Appalachia saw a decrease in their price per flowing barrel in the fourth quarter of 8%, 19%, 19%, and 0.5%, respectively. Low commodity prices, relative to years past, have negatively impacted operators regardless of region, as three of the four basins have seen a decline in price per flowing barrel in the range of 25% to 40% since Q4 2019.

Price per Flowing Barrel



Source: Bloomberg

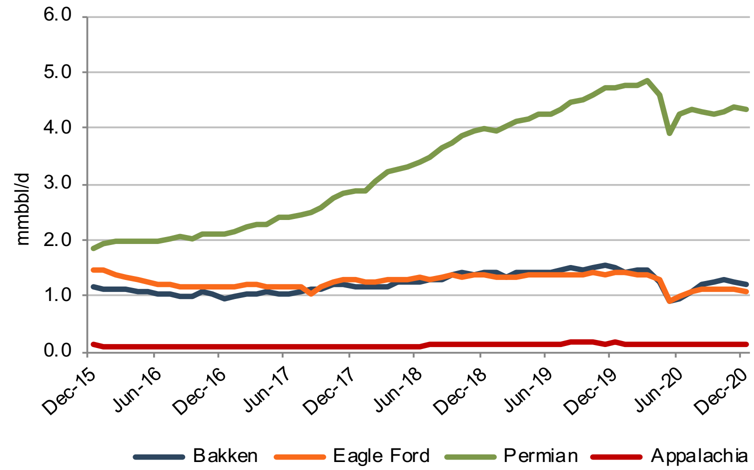
- Price per Flowing Barrel is EV/ daily production ($/boe/d)
- This is simply a graphic depiction of median figures of our selected public companies for each region. This should be interpreted solely in the context of relative valuation between the various basins over time. Bloomberg aggregates this raw data, and Mercer Capital does not represent or warrant these figures as indicative of valuation multiples attributable to E&P companies or other interests.

Appendix B

Production

Daily Production of Crude Oil

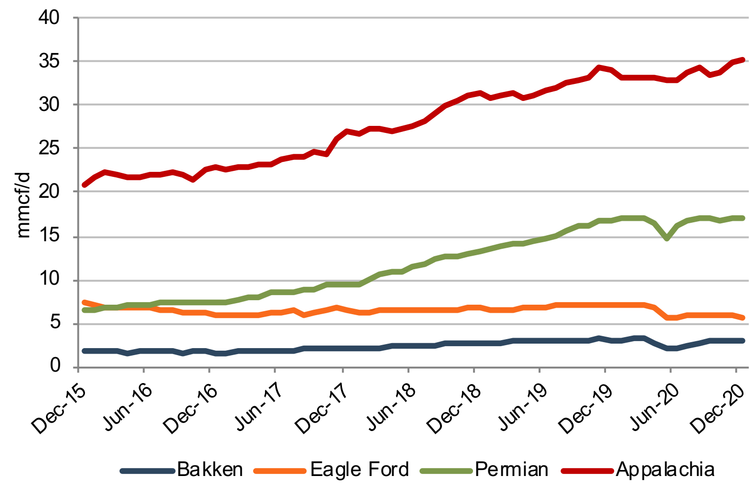
Oil production in the Permian, Eagle Ford, Bakken, and Appalachia all experienced negative production growth over the last year, 7.8%, 24.2%, 18.9%, and 17.6% respectively.



Source: EIA

Daily Production of Natural Gas

Natural gas production in the Appalachia has increased 2.8% over the last year, whereas Permian production has grown 1.8% in the same time frame. Growth in the Eagle Ford decreased 20.5% year-over-year, and growth in the Bakken decreased 6.1%.



Source: EIA

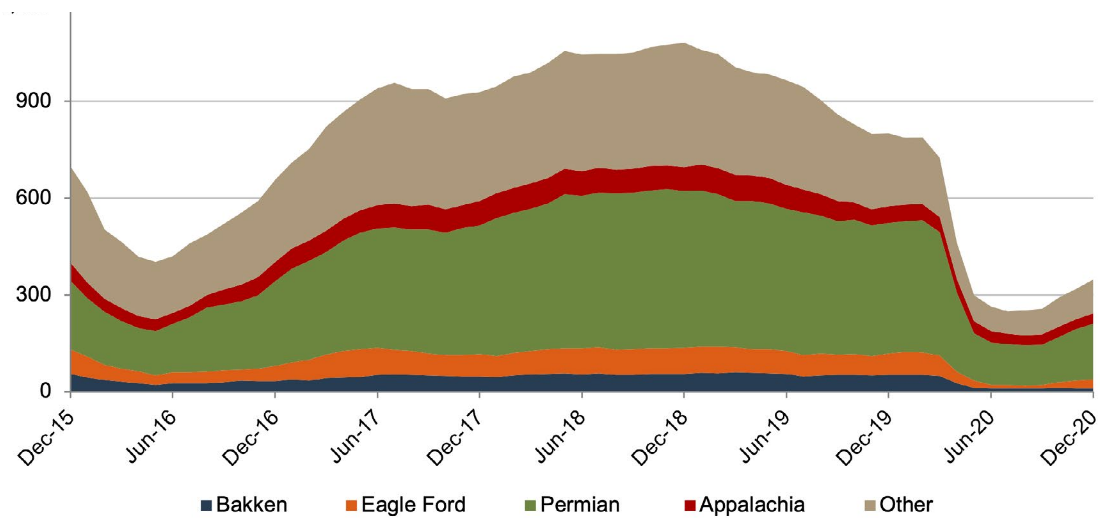
Appendix C

Rig Count

Baker Hughes collects and publishes information regarding active drilling rigs in the United States and internationally. The number of active rigs is a key indicator of demand for oilfield services & equipment. Factors influencing rig counts include energy prices, investment climate, technological changes, regulatory activity, weather, and seasonality.

The number of active rigs in the United States as of December 31, 2020 stood at 347, a 34.5% increase from September 30, 2020, and a 56.7% decrease from December 2019. The rig count in the Appalachia decreased from 52 to 32 rigs in over the last year as E&P operators are cutting rigs in light of recent issues.

Rig Count by Region



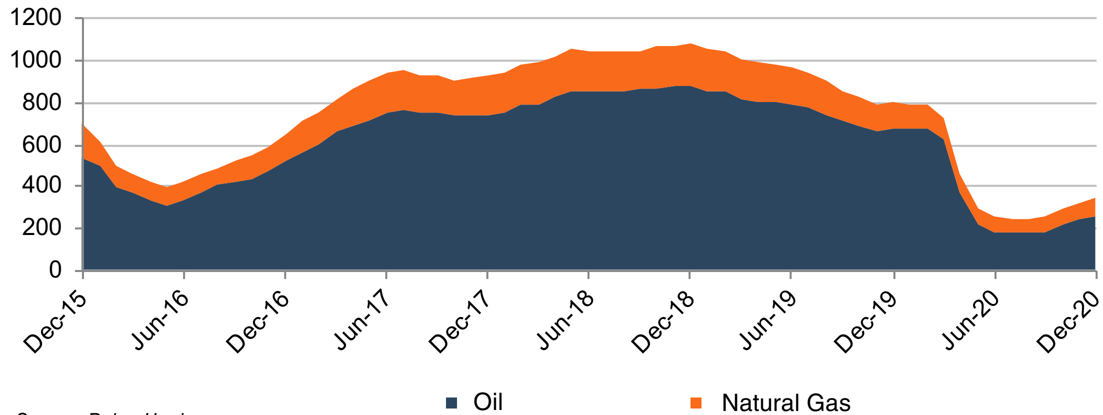
Source: Baker Hughes

[1] Calculations based on monthly crude oil and gas production and EIA drilling report by region.

Appendix C

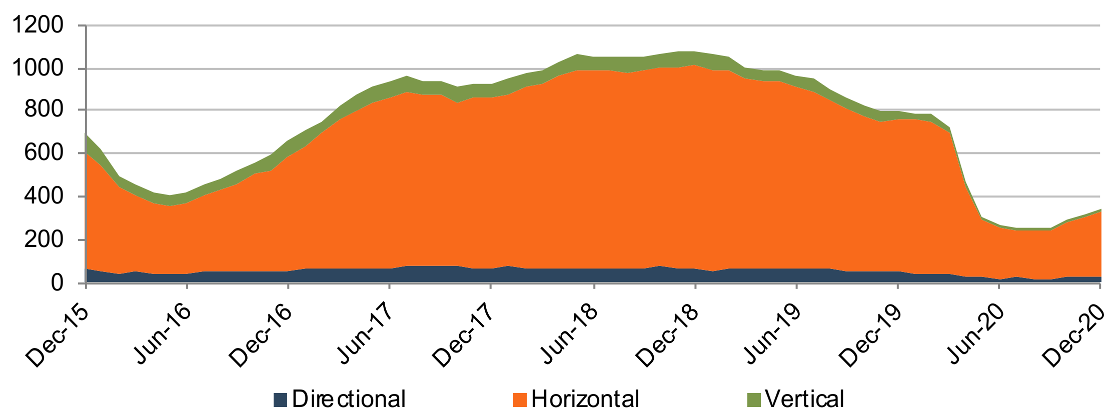
Rig Count

U.S. Rig Count by Oil vs. Natural Gas



Source: Baker Hughes

U.S. Rig Count by Trajectory



Source: Baker Hughes

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