



November 12, 2018

Covering the Week of November 2 to November 8, 2018

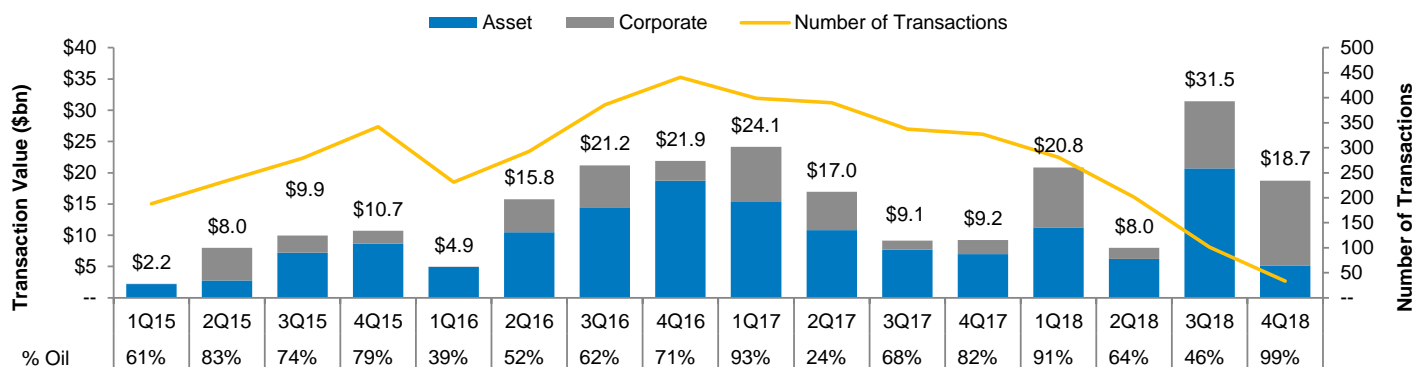
Week in Review

- QEP Resources divested Williston Basin assets to Vantage Energy Acquisition Corp. for up to \$1.725 billion. **BMO Capital Markets acted as financial advisor to QEP and as Joint Lead Arranger and Joint Bookrunner to Vantage Energy on this transaction** (see page 4 for more details)
- Diamondback Energy acquired Midland Basin assets from ExL Petroleum and EnergyQuest II for \$312.5 million
- Devon Energy sold ~100,000 net acres in the Barnett Shale for \$50 million
- Centennial Resource Development closed three acquisitions for a total of 2,900 net acres in the Delaware Basin; 820 net acres in the Northern Delaware Basin were acquired for \$26 million
- SandRidge Energy closed the acquisition of Mississippi Lime and NW STACK assets for \$25.1 million
- SandRidge Energy concurrently sold its Central Basin Platform assets to Avalon Energy for \$14.5 million
- Colorado voters rejected Proposition 112, which would have limited drilling in the state
- The November issue of BMO Calgary's A&D (Canadian) Market Monitor went live last week – read more [here](#)

Key Industry Indicators

Indicator	Current Value	Week's Change	% Change	Direction
Prompt Oil Price (\$/bbl)	\$60.67	(\$3.02)	(4.7%)	↓
Prompt Gas Price (\$/mmbtu)	\$3.54	\$0.30	9.3%	↑
Wkly Trans. Value (\$mm)	\$2,148	(\$11,646)	(84%)	↓
Wkly Trans. Count	9	(1)	(10%)	↓
US Rig Count	1,081	14	1.3%	↑
US Oil Prod'n (mmbbl/d)	11.6	0.4	3.6%	↑
US Gas Prod'n (bcf/d) ⁽¹⁾	102.5	--	--	—
US Oil Storage (mmbbl)	431.8	5.8	1.4%	↑
US Gas Storage (tcf)	3.2	0.1	2.1%	↑

Quarterly Deal Activity



Commodities

- Oil ended last week down as U.S. sanctions on Iran went into effect with partial waivers issued for eight countries. Iran responded with street protests. U.S. total crude inventories grew for the seventh week in a row. It was rumored that OPEC may discuss supply cuts for 2019. There is uncertainty regarding whether OPEC will decide to cut back production or ramp up given Iranian and Venezuelan losses. The near-term contract closed down \$3.02, or 4.7%, at \$60.67
- Natural gas ended last week up on an expectation of colder temperatures this winter. Proposition 112 was struck down and helped the Rockies basis. Gas storage injections increased. The near-term contract closed up \$0.30, or 9.3%, at \$3.54

Equity Markets

- S&P E&P⁽²⁾ underperformed last week 1.1% vs. SPX⁽²⁾ 1.3%
- The major U.S. equity indexes finished slightly higher last week, with generally higher sector performance. Consumer discretionary, consumer staples, financials, health care, industrials, materials, and tech were all up. Real estate ended down 0.3% and Energy was up 1.3%

Debt Markets

- Three issuers priced three tranches for \$1.3 billion in proceeds
- Year-to-date U.S. volume is down 33% year-on-year
- U.S. high yield funds reported an inflow of \$1 billion
- ETFs reported an inflow of \$631 million, while mutual funds reported an inflow of \$409 million
- High yield index yield was 6.73%; high yield energy index yield was 7.53%

Source: BMO Transaction Database, Baker Hughes, BMO Commodity Products Group, Bloomberg, EIA, PLS

Note: Current quarter's data is through the week covered by this issue.

1. EIA U.S. natural gas gross withdrawals and production reported monthly as of August 2018.

2. S&P E&P = S&P Oil & Gas E&P Select Industry, SPX = S&P 500 Index.

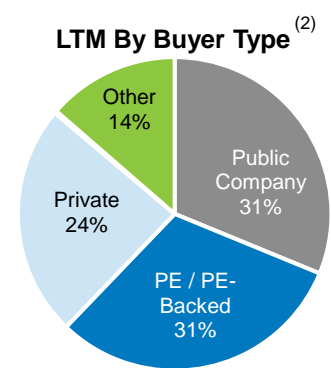
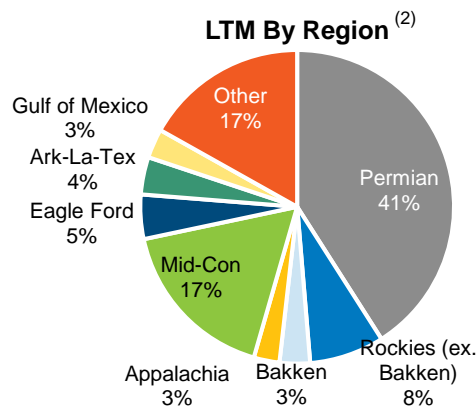
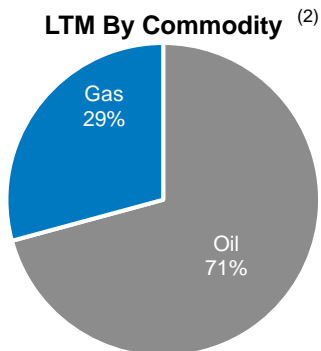


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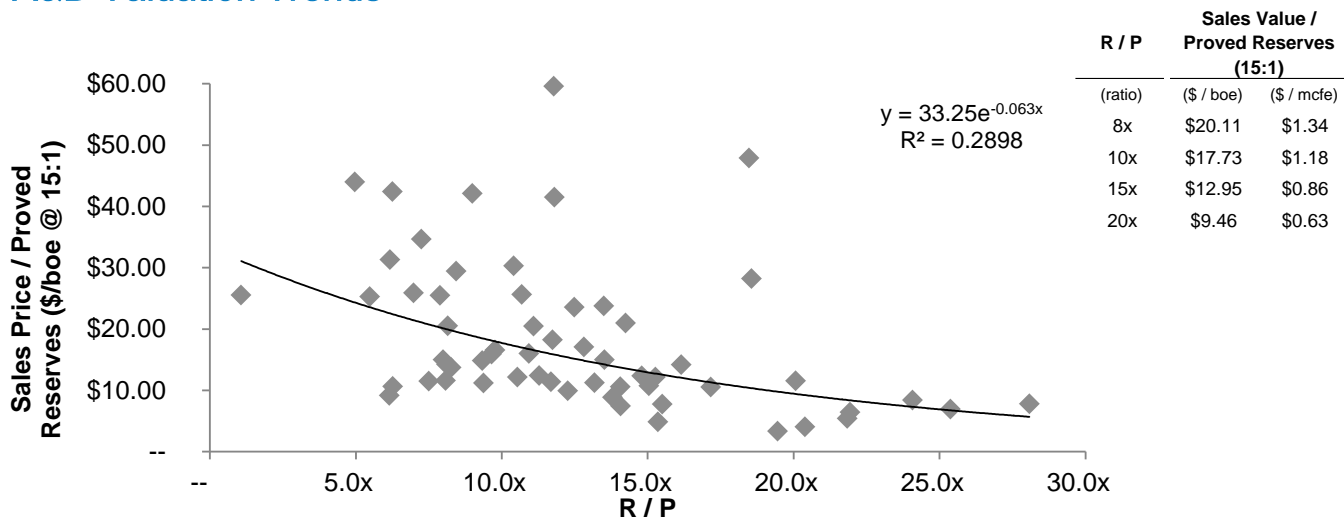
The 10 Most Recent Asset Transactions Over \$20 Million

Ann'd Date	Buyer	Seller	Area	Asset Description	Value ⁽¹⁾ (\$mm)	Proved Multiple (\$/boe)	Prod. Multiple (\$/boe/d)	Net Acres (\$/acre)
07-Nov-18	Vantage Energy Acq. Corp	QEP Resources Inc	Bakken	102,800 net acres in Williston Basin	\$1,725	n.a.	\$37,500	\$16,780
07-Nov-18	Undisclosed Buyer	Devon Energy	Barnett	100,000 net acres in Barnett Shale	\$50	n.a.	\$12,500	\$500
06-Nov-18	Diamondback Energy	ExL Pet.; EnergyQuest	Permian	3,646 net acres in Midland Basin	\$313	n.a.	\$89,286	\$85,710
05-Nov-18	Centennial Resource Dev.	Undisclosed Seller	Permian	820 net acres in Delaware Basin	\$26	n.a.	n.a.	\$31,707
02-Nov-18	SandRidge Energy	Undisclosed Seller	Mid-Continent	Mississippi Lime and NW STACK assets	\$25	n.a.	\$6,649	n.a.
01-Nov-18	Undisclosed Buyer	Parsley Energy LP	Permian	11,850 net acres in Midland Basin	\$170	n.a.	\$141,667	\$14,346
31-Oct-18	Undisclosed Buyer	Newpek	Other	725 net acres in Live Oak Co., TX	\$33	n.a.	\$42,581	\$45,517
31-Oct-18	Undisclosed Buyer	Pioneer	Other	2,900 net acres in Live Oak Co., TX	\$132	n.a.	\$42,581	\$45,517
17-Oct-18	Earthstone Energy Inc	Sabalo Energy	Permian	20,800 net acres in Midland Basin	\$976	\$10.73	\$87,143	\$46,923
15-Oct-18	Undisclosed Buyer	Range Resources Corp	Marcellus/Utica	Overriding royalty interests in Appalachia	\$300	n.a.	\$105,895	nmf

Blue = BMO provided transaction advisory services Green = BMO provided acquisition financing or related services
Purple = BMO provided both transaction advisory services and acquisition financing or related services



A&D Valuation Trends⁽³⁾



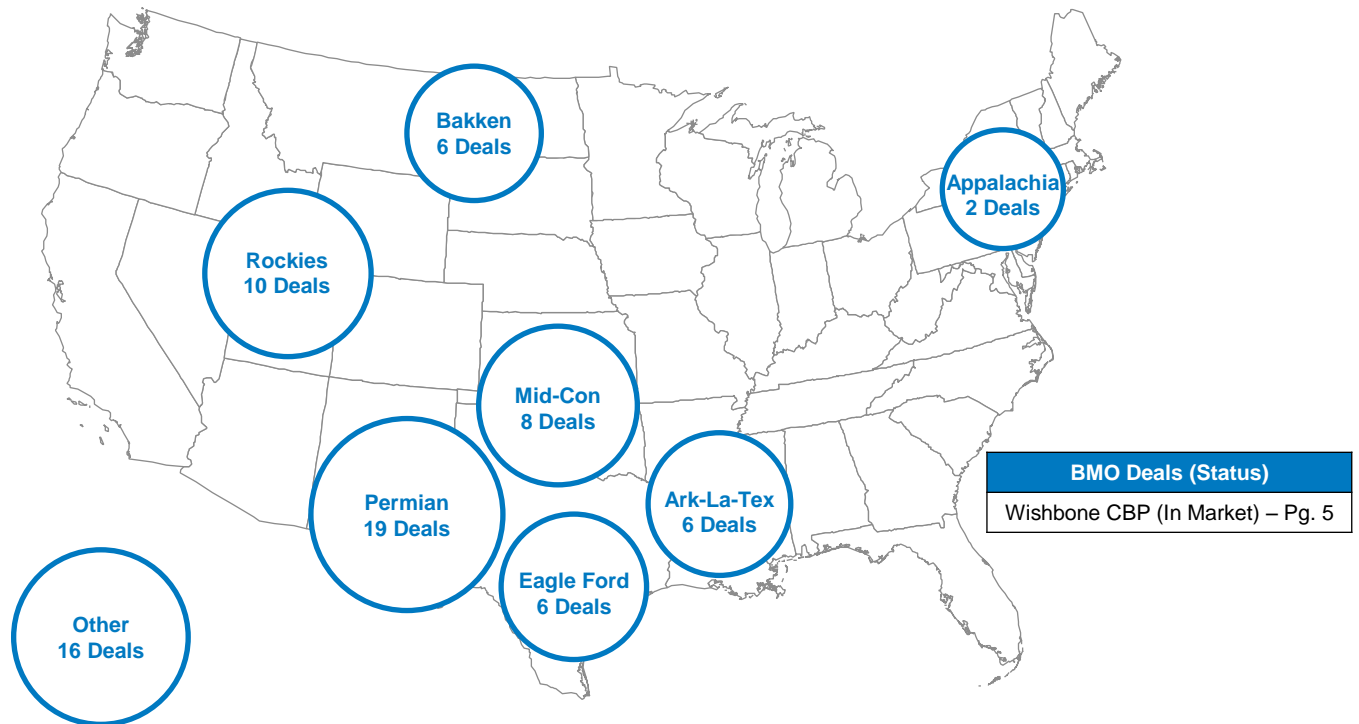
2 Source: BMO Transaction Database, Baker Hughes, BMO Commodity Products Group, Bloomberg, PLS

1. Represents total enterprise value.
2. Calculated as percentage of total LTM transaction count (number of transactions, not dollar value).
3. 59 transactions from January 2015 to 2018YTD with transaction value >\$20mm. Adjusted for changes in price outlooks. Recalculated boe reserves are on a 15:1 (gas:oil) basis. Acreage transactions excluded by using deals with PDP of >= 40% of total proved.



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Select Significant Deals on the Market



A&D Headlines

- [QEP Resources Announces Agreement to Sell Williston Basin Assets for up to \\$1.725 Billion](#)
- [Diamondback Energy, Inc. Announces Third Quarter 2018 Financial and Operating Results \(includes A&D announcement\)](#)
- [Centennial Resource Development Announces Third Quarter 2018 Financial and Operational Results \(includes A&D announcement\)](#)
- [SandRidge Energy Exits Permian Basin Central Basin Platform](#)
- [Blackstone, LLOG Looking to Sell Gulf of Mexico Oil Exploration Venture](#)

Industry Headlines

- [Colorado Voters Reject Drilling Limits in Win for Companies](#)
- [Colorado Proposition 112, Oil and Gas Setback Requirement, Has Failed](#)
- [Colorado Voters Reject Tougher Rules On Oil and Gas Drilling](#)
- [Crude Sinks As Swelling U.S. Inventories Outweigh OPEC's Plans](#)
- [Trump Says "Fragile" Oil Market Behind Decision on Iran Waivers](#)
- [End Is Near for "Frac Holiday" as Permian Readies for 2019 Boom](#)
- [Washington State Carbon Tax Fail After Big Oil Campaign](#)
- [Voters Rejected Most Ballot Measures Aimed at Curbing Climate Change](#)
- [Measure G Failed. Here's What That Means For SLO County's Future](#)

(Click headline to link to the full article)



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Interesting Deal of the Week: QEP Resources Divests Williston Basin Assets to Vantage Energy for \$1.725 Billion

TRANSACTION SUMMARY

- On November 7, 2018, QEP Resources (“QEP”) (NYSE: QEP) announced that it entered into a definitive agreement to divest its Williston Basin assets to Vantage Energy Acquisition Corp (“Vantage”) (NASDAQ: VEAC) for up to \$1.725 billion
 - Consideration includes \$1.65 billion in cash and rights for QEP to receive up to \$75 million in Vantage common shares⁽¹⁾
- The divestiture represents QEP’s full exit from the Williston Basin and represents an important step in QEP’s transition to become a pure play Permian E&P operator
- BMO served as financial advisor to QEP**
- BMO served as Joint Lead Arranger and Joint Bookrunner to Vantage Energy, providing underwritten financing on a \$900 million borrowing base and \$400 million bridge facility**

ASSET SUMMARY

- Net production of 46 mboe/d from 102,800 net acres in the core of the Williston Basin
- Vantage modeled 232 net locations but estimates upside to include a total of 489 net locations through extension, further delineation, and optimization⁽²⁾

ACQUISITION METRICS

Purchase Price (US\$ mm)

Cash	\$1,650
Stock ⁽¹⁾	\$75
Total Consideration	\$1,725

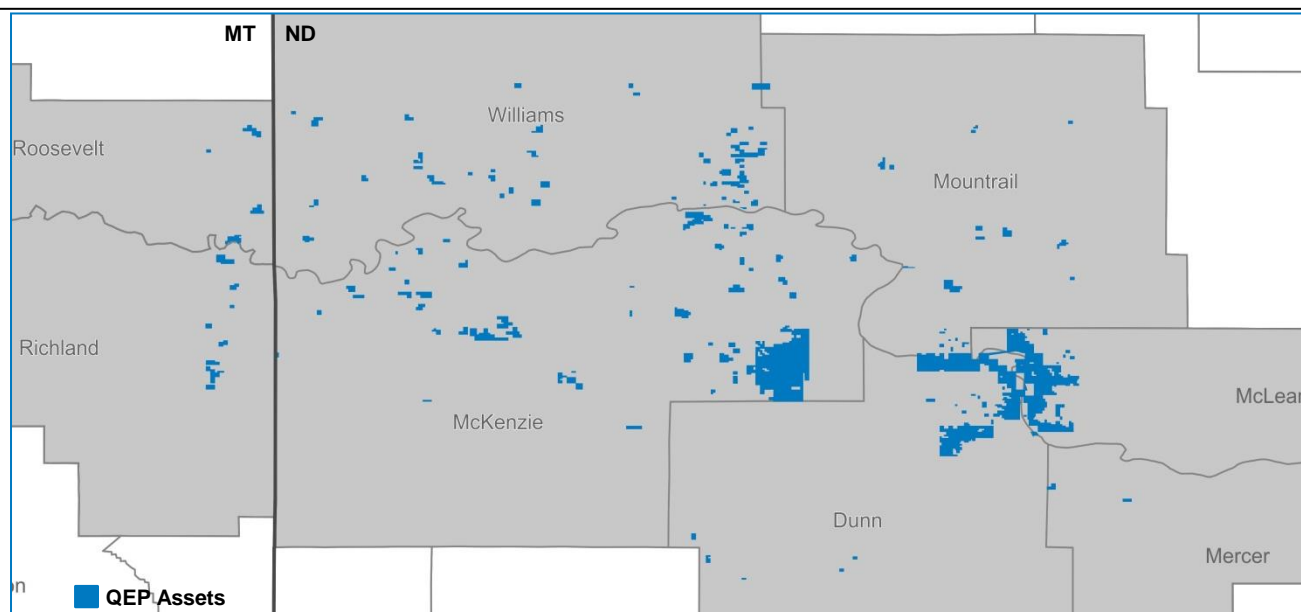
Metrics

Net Production (boe/d)	46,000
Net Acres	102,800
Net Locations	232
2019E Adj. EBITDA (\$mm)	\$427

Multiples

TEV / Net Production (\$/boe/d)	\$37,500
TEV / Net Acre	\$16,780
TEV / Adj. Net Acre ⁽³⁾	\$5,593
TEV / Net Location	\$7,435,345
TEV / Adj. Net Location ⁽³⁾	\$2,478,448
TEV / 2019E Adj. EBITDA	4.0x

ACQUIRED ASSETS



Source: press releases, company presentations

4 | 1. QEP has contractual rights to receive up to \$50 million and \$25 million in Vantage common stock if the daily volume weighted average trading price of Vantage's common stock for 10 out of 20 consecutive trading days is above \$12 per share and \$15 per share, respectively.
2. Locations include new drilling and refrac opportunities.
3. Represents illustrative total value less illustrative PDP value. Illustrative PDP value calculated as net production multiplied by \$25,000/boe/d.



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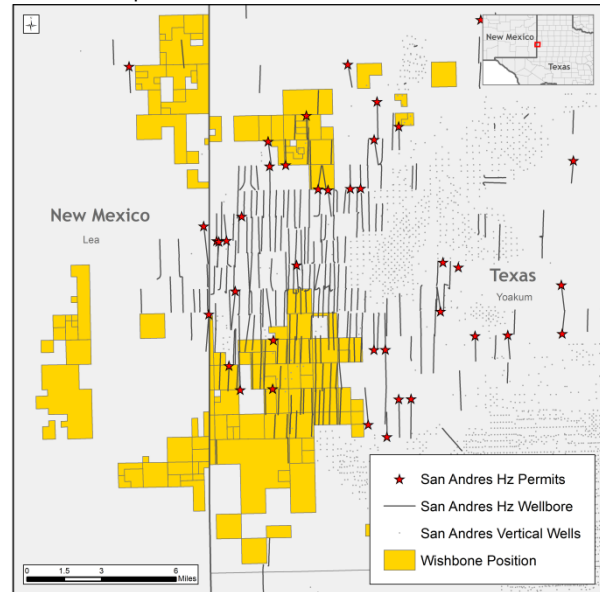
Currently on the Market from CIBC and BMO: Wishbone CBP Divestiture

ASSET OVERVIEW

- Opportunity to acquire ~37,206 net contiguous acres in the core of the San Andres horizontal play in Northern Central Basin Platform
 - Operated average WI/NRI of 77%/58%
 - Approaching 50% HBP with minimal annual drilling commitments
 - 96% operated by production
- Net production of ~8,100 boe/d (November 2018E)
 - 80% oil, 13% NGL
- 100%+ ROR oil play in the highly coveted Permian Basin
 - Future drilling opportunities have reserve models of 385 to 700 Mboe (80% oil)
- Position has largely been de-risked through active development by Wishbone and offset operators
- Extensive inventory of high return drilling remains with over 344 San Andres horizontal drilling locations
 - 5,000' laterals – 323 locations
 - 7,500' laterals – 21 locations
- Controlled surface lands/water infrastructure creates high margins and empowers the buyer to be a play consolidator
- WTS barrels and crude pipeline infrastructure in place with no takeaway issues

PROCESS OVERVIEW

- VDR available now
- Contact Mark Nelson at mark.nelson@cibc.com or 713-452-1595 to request a Confidentiality Agreement, access to the VDR, and/or a data room presentation



ASSET HIGHLIGHTS

Improved Horizontal San Andres Performance	<ul style="list-style-type: none"> • Highly oil-saturated, oil-wet, dolomite reservoir located in the core area of very active development in the horizontal San Andres play • Over the last four years, operators have developed a significant understanding of the reservoir and operational characteristics defining the play • Recent drilling activity has yielded improved well performance <ul style="list-style-type: none"> ■ Time to peak production is less than 60 days ■ Initial peak 30-day rates of 400-700 bo/d • Operators continue to commit significant capital to the play with multiple active drilling rigs and 54 horizontal San Andres permits
Wishbone's Premier Position	<ul style="list-style-type: none"> • Contiguous leasehold, adjacent to the prolific Wasson and Brahaney fields offering the best combination of reservoir quality, quantity, and oil saturations in the core of the horizontal San Andres play • Position has largely been de-risked through active development by Wishbone and offset operators • Most recent quarter (2Q18) annualized cash flow of \$60 MM can easily support a one rig drilling program • Acreage is approaching 50% HBP with minimal annual drilling commitments
High Return Inventory	<ul style="list-style-type: none"> • Extensive inventory of high return drilling remains with over 344 San Andres horizontal drilling locations • Well economics of greater than 100% ROR compete with other top Permian plays • Future drilling opportunities have reserve models of 385 to 700 Mboe (80% oil) • Spacing of 4 to 8 wells per section supported by volumetrics with a recovery factor of 12-15% of OOIP; further supported by an independent Von Gonten report • Stacked potential in San Andres could add additional drilling locations • Successful step-out completion helps prove play continuity in northern area
Integrated Water Infrastructure	<ul style="list-style-type: none"> • Owned and operated SWD system and fresh water source wells keep operating expenses low and enhance well economics • Water infrastructure generates additional income • Infrastructure provides flow assurance for disposal and source water • 1,385 acres of owned surface acreage allows buyer to expand system • Ample existing disposal capacity of 178,000 bw/d with excess available for third-party or commercialization

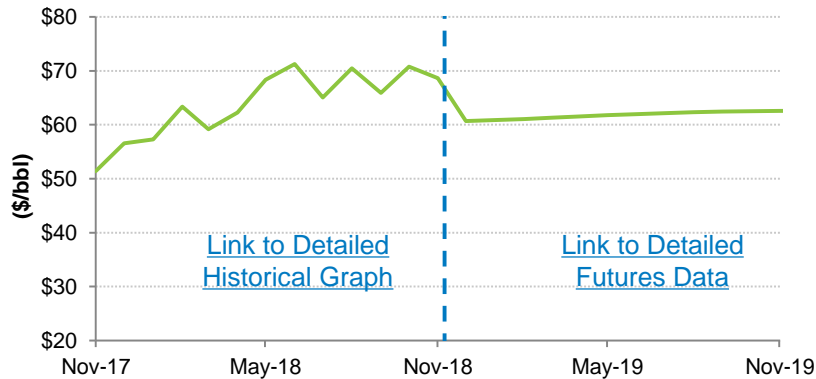
Source: Wishbone CBP Divestiture announcement



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Commodity Prices

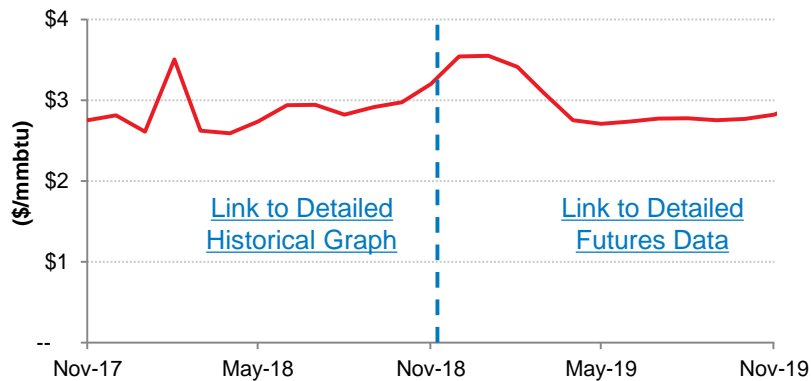
WTI OIL (HISTORICAL / FORECAST)



NYMEX WTI Futures as of 08-Nov-18 Close (\$/bbl)

Period ⁽¹⁾	Current	Last Wk.	6 Mo. Ago	1 Yr. Ago
12 Mo. Strip	\$61.77	\$64.14	\$66.78	\$56.59
2018	\$60.67	\$63.69	\$68.06	\$56.59
2019	\$61.93	\$64.15	\$63.09	\$53.46
2020	\$62.32	\$62.51	\$57.86	\$51.74
2021	\$61.68	\$59.96	\$54.59	\$50.89
2022	\$60.81	\$57.63	\$52.54	\$50.76

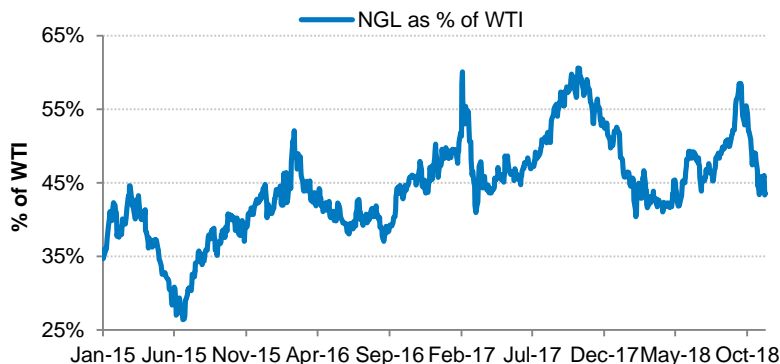
HENRY HUB NATURAL GAS (HISTORICAL / FORECAST)



NYMEX Gas Futures as of 08-Nov-18 Close (\$/mmbtu)

Period ⁽¹⁾	Current	Last Wk.	6 Mo. Ago	1 Yr. Ago
12 Mo. Strip	\$2.98	\$2.85	\$2.77	\$3.08
2018	\$3.54	\$3.24	\$2.78	\$3.08
2019	\$2.93	\$2.83	\$2.67	\$2.91
2020	\$2.70	\$2.67	\$2.65	\$2.86
2021	\$2.64	\$2.61	\$2.67	\$2.87
2022	\$2.78	\$2.74	\$2.83	\$3.02

NGL PRICING⁽²⁾



Historical Prices as of 08-Nov-18 Close (\$/gal)

NGLs	Current	Last Wk.	6 Mo. Ago	1 Yr. Ago
Ethane	\$0.31	\$0.32	\$0.26	\$0.27
Propane	\$0.75	\$0.82	\$0.85	\$0.95
Butane	\$0.82	\$0.93	\$0.84	\$0.98
Iso-butane	\$0.88	\$0.97	\$1.03	\$1.00
Pentane+	\$1.16	\$1.30	\$1.61	\$1.37

Source: BMO Commodity Products Group, Bloomberg, FactSet

1. Future prices are calendar year average unless stated otherwise.
2. Assumes typical Gulf Coast barrel composition.

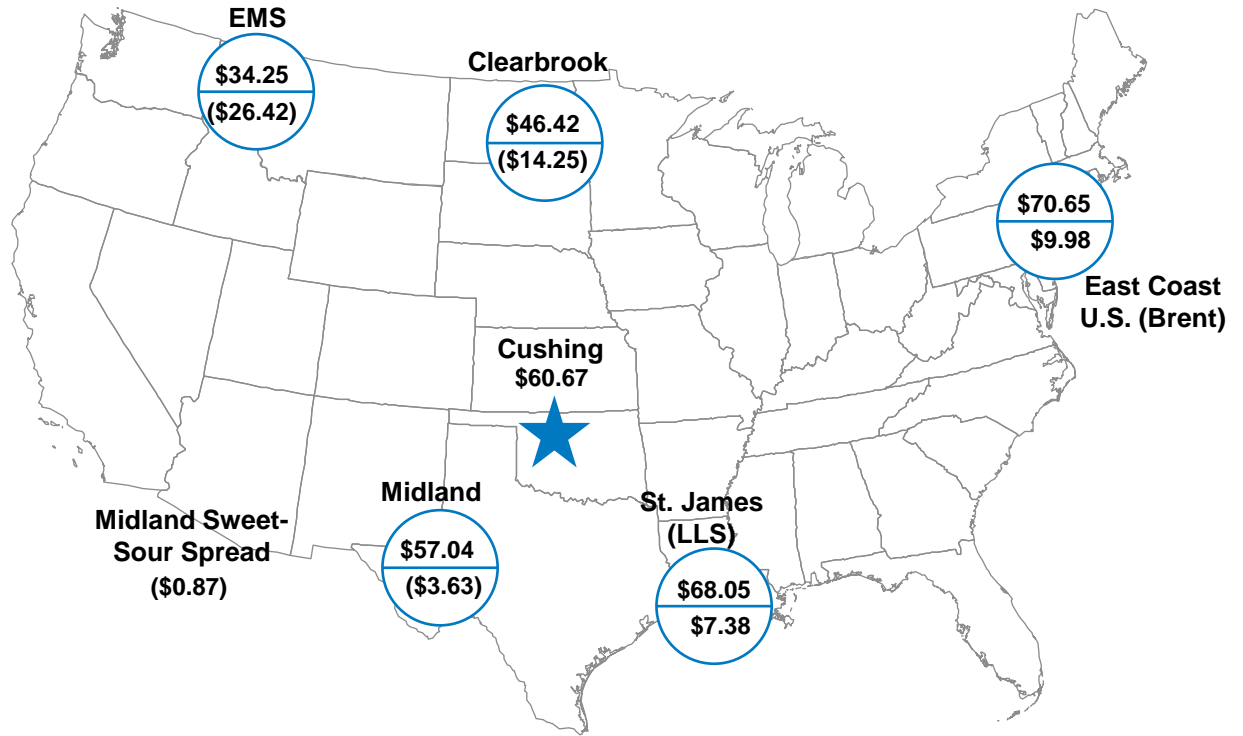


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Commodity Prices (cont'd)

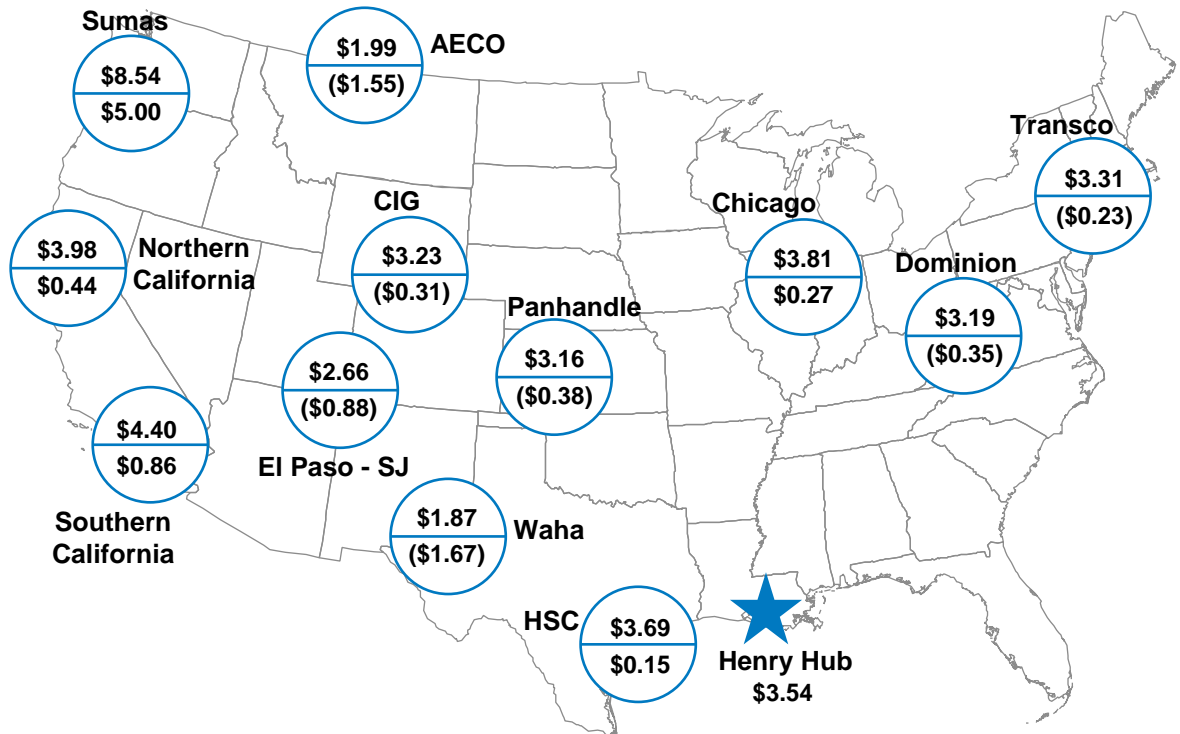
OIL PRICING & DIFFERENTIALS TO CUSHING WTI (\$ / BBL) – AS OF 08-NOV-18

Legend



NATURAL GAS PRICING & DIFFERENTIALS TO HENRY HUB (\$ / MMBTU) – AS OF 08-NOV-18

Legend



Source: BMO Commodity Products Group, Bloomberg

Note: Prices and differentials are for prompt month futures except for Clearbrook which is based on spot prices.



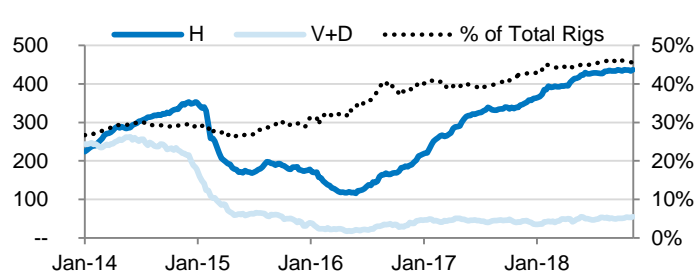
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Permian Snapshot

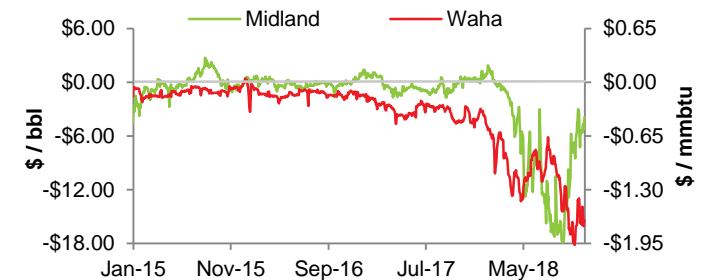
Item	Value	Wkly Change	Last Week
Rig Count	492	↑	487
Permitting Activity	149	↓ (167)	316

Item	Value	Wkly Change	Last Week
Oil Differential	(\$3.90)	↑ \$1.75	(\$5.65)
Gas Differential	(\$1.68)	↓ (\$0.17)	(\$1.51)

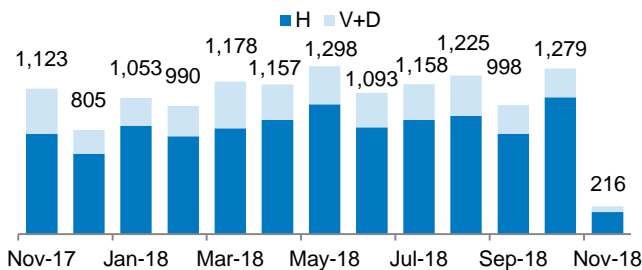
RIG COUNT



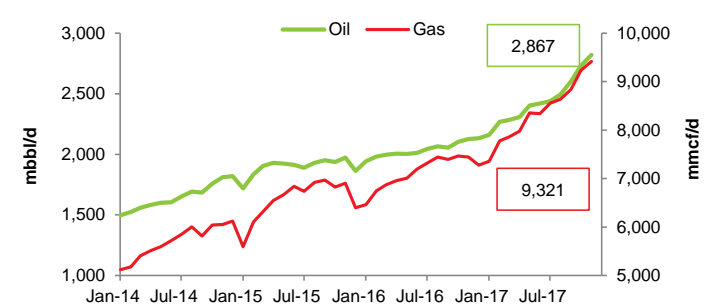
DIFFERENTIALS



PERMITTING ACTIVITY BY MONTH



GROSS PRODUCTION

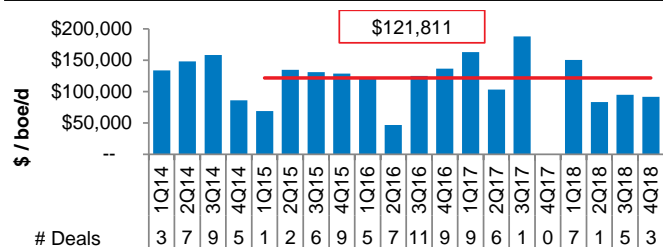


TRANSACTION ACTIVITY (EXCLUDES CORPORATE DEALS)

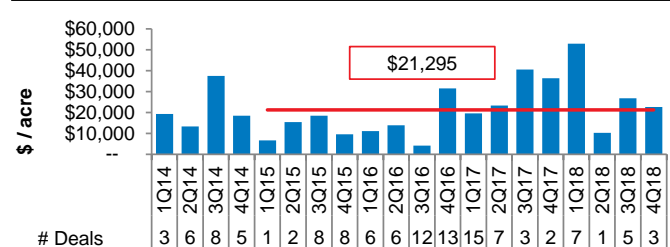
Ann'd Date	Buyer	Seller	Asset Description	Value ⁽¹⁾ (\$mm)	Proved Multiple (\$/boe)	Prod. Multiple (\$/boe/d)	Net Acres (\$/acre) ⁽²⁾
06-Nov-18	Diamondback Energy	ExL Pet.; EnergyQuest	3,646 net acres in Midland Basin	\$313	n.a.	\$89,286	\$85,710
05-Nov-18	Centennial Resource Dev.	Undisclosed Seller	820 net acres in Delaware Basin	\$26	n.a.	n.a.	\$31,707
01-Nov-18	Undisclosed Buyer	Parsley Energy LP	11,850 net acres in Midland Basin	\$170	n.a.	\$141,667	\$14,346
17-Oct-18	Earthstone Energy Inc	Sabalo Energy	20,800 net acres in Midland Basin	\$976	\$10.73	\$87,143	\$46,923
25-Sep-18	Undisclosed Buyer	W&T Offshore	Royalty interests in 25,493 net acres	\$57	n.a.	n.a.	nmf
				Mean	\$308	\$10.73	\$106,032
				Median	\$170	\$10.73	\$89,286

Blue = BMO provided transaction advisory services Green = BMO provided acquisition financing or related services
Purple = BMO provided both transaction advisory services and acquisition financing or related services

TRANSACTION PRODUCTION MULTIPLES⁽³⁾



TRANSACTION ADJUSTED NET ACRE MULTIPLES^(3,4)



Source: BMO Transaction Database, Baker Hughes, BMO Commodity Products Group, Bloomberg, Drilling Info, PLS

Note: Current quarter's data is through the week covered by this issue.

- Represents total enterprise value. Excludes transactions with deal value <\$20 million.
- \$/acre multiple not adjusted for value associated with production.
- Red line denotes average since 10-Jan-15. Calculated as the weighted average of each quarter's transactions.
- Production valued at \$45,000/boepd in 2014, \$30,000/boepd in 2015, \$35,000/boepd in 2016 & 2017, and \$40,000/boepd in 2018.



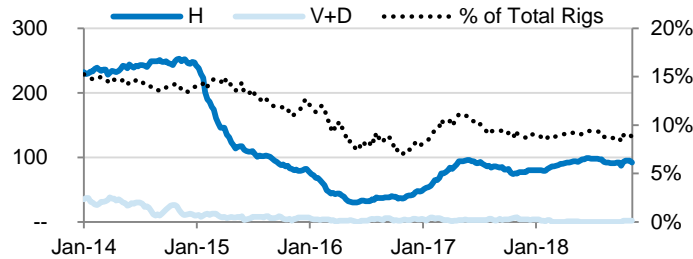
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Eagle Ford Snapshot

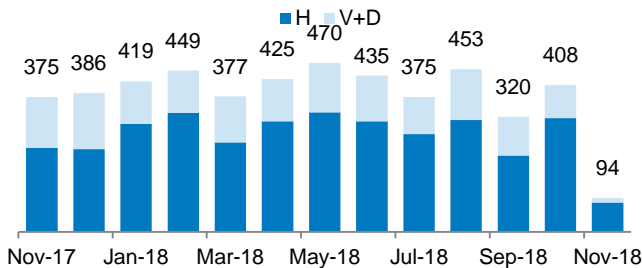
Item	Value	Wkly Change	Last Week
Rig Count	94	↓ (3)	97
Permitting Activity	79	↓ (17)	96

Item	Value	Wkly Change	Last Week
Oil Differential	\$8.15	↑ \$0.30	\$7.85
Gas Differential	\$0.14	↑ \$0.02	\$0.12

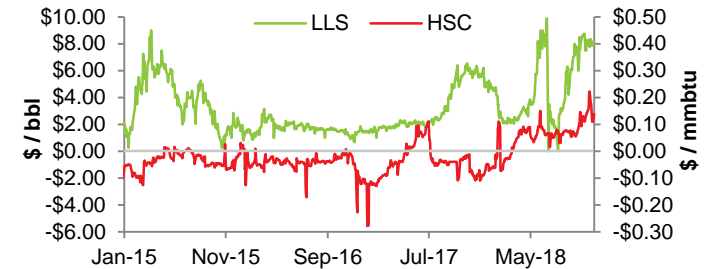
RIG COUNT



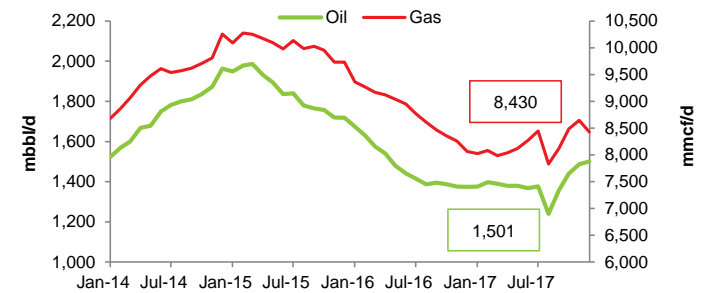
PERMITTING ACTIVITY BY MONTH



DIFFERENTIALS



GROSS PRODUCTION

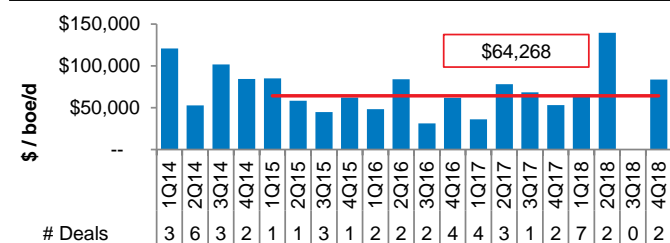


TRANSACTION ACTIVITY (EXCLUDES CORPORATE DEALS)

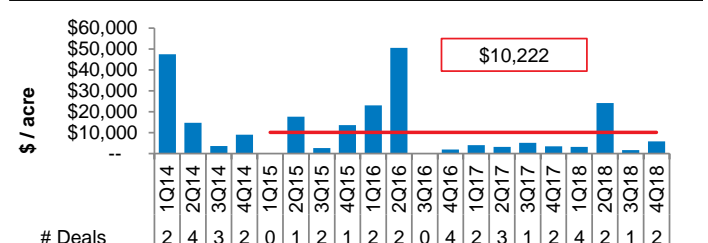
Ann'd Date	Buyer	Seller	Asset Description	Value ⁽¹⁾ (\$mm)	Proved Multiple (\$/boe)	Prod. Multiple (\$/boe/d)	Net Acres (\$/acre) ⁽²⁾	
20-Sep-18	WildHorse	Undisclosed Seller	20,305 net Eagle Ford/Austin Chalk acres	\$35	n.a.	n.a.	\$1,743	
07-Sep-18	Undisclosed Buyer	Viking Minerals LLC	1,191 net royalty acres in Eagle Ford	\$28	n.a.	n.a.	nmf	
26-Jul-18	BP	BHP Billiton	Permian, Eagle Ford, and Haynesville	\$10,500	n.a.	n.a.	n.a.	
03-May-18	Apollo Global Management	EP Energy Corp	Eagle Ford JV in La Salle County, TX	\$38	n.a.	n.a.	n.a.	
02-Apr-18	NextEra Energy Inc	Comstock	9,900 net acres in South TX Eagle Ford	\$125	\$14.12	\$49,466	\$12,626	
				Mean	\$2,145	\$14.12	\$49,466	\$7,185
				Median	\$38	\$14.12	\$49,466	\$7,185

Blue = BMO provided transaction advisory services Green = BMO provided acquisition financing or related services
Purple = BMO provided both transaction advisory services and acquisition financing or related services

TRANSACTION PRODUCTION MULTIPLES⁽³⁾



TRANSACTION ADJUSTED NET ACRE MULTIPLES^(3,4)



Source: BMO Transaction Database, Baker Hughes, BMO Commodity Products Group, Bloomberg, Drilling Info, PLS

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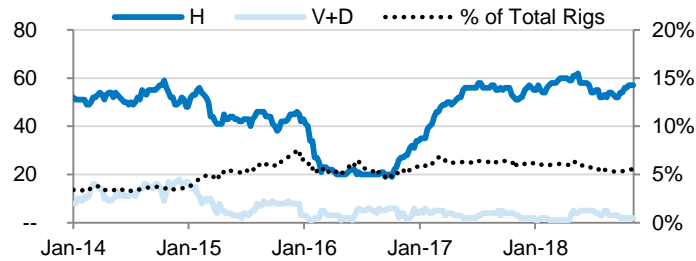
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Ark-La-Tex Snapshot

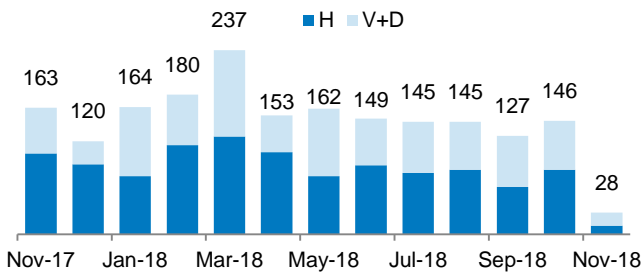
Item	Value	Wkly Change	Last Week
Rig Count	59	█ --	59
Permitting Activity	20	█ ↓ (16)	36

Item	Value	Wkly Change	Last Week
Oil Differential	\$8.15	█ ↑ \$0.30	\$7.85
Gas Differential	--	█ --	--

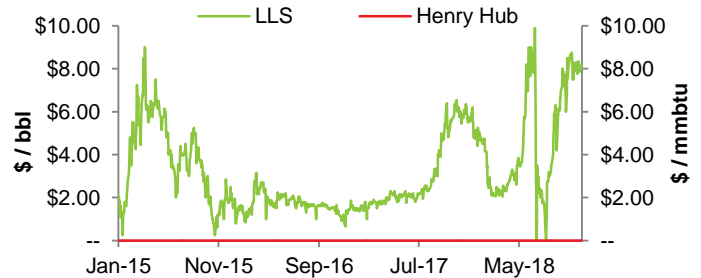
RIG COUNT



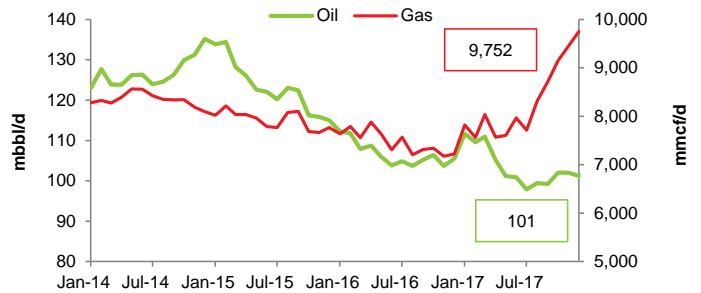
PERMITTING ACTIVITY BY MONTH



DIFFERENTIALS



GROSS PRODUCTION

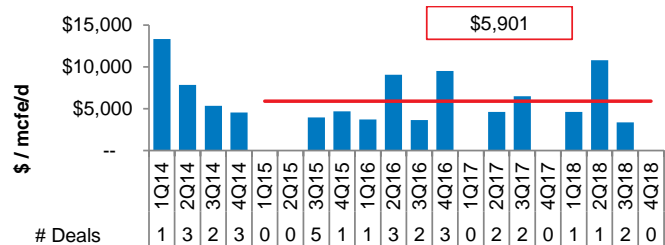


TRANSACTION ACTIVITY (EXCLUDES CORPORATE DEALS)

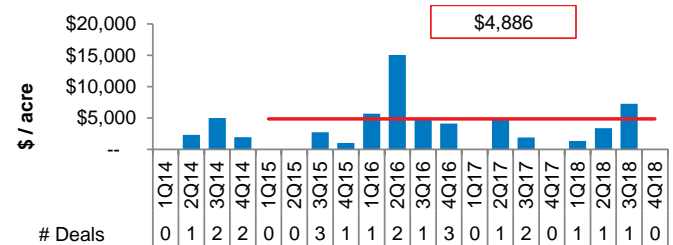
Ann'd Date	Buyer	Seller	Asset Description	Value ⁽¹⁾ (\$mm)	Proved Multiple (\$/mcf)	Prod. Multiple (\$/mcf/d)	Net Acres (\$/acre) ⁽²⁾
05-Sep-18	Viking Energy Group	Multiple Sellers	Texas and Louisiana assets	\$100	n.a.	n.a.	n.a.
05-Sep-18	Equinor	Texegy LLC	60,000 net acres in Austin Chalk	\$75	n.a.	n.a.	\$1,250
06-Aug-18	Mission Creek Resources	Bonanza Creek Energy Inc	11,132 net acres in the Cotton Valley	\$117	\$1.69	\$6,500	\$10,510
26-Jul-18	BP	BHP Billiton	Permian, Eagle Ford, and Haynesville	\$10,500	n.a.	n.a.	n.a.
19-Jul-18	Comstock	Enduro Resource Partners	9,900 net acres in North Louisiana	\$31	\$0.11	\$1,192	\$3,131
				Mean	\$2,165	\$0.90	\$3,846
				Median	\$100	\$0.90	\$3,846

Blue = BMO provided transaction advisory services Green = BMO provided acquisition financing or related services
Purple = BMO provided both transaction advisory services and acquisition financing or related services

TRANSACTION PRODUCTION MULTIPLES⁽³⁾



TRANSACTION ADJUSTED NET ACRE MULTIPLES^(3,4)



Source: BMO Transaction Database, Baker Hughes, BMO Commodity Products Group, Bloomberg, Drilling Info, PLS

Note: Current quarter's data is through the week covered by this issue.

- Represents total enterprise value. Excludes transactions with deal value <\$20 million.
- \$/acre multiple not adjusted for value associated with production.
- Red line denotes average since 01-Jan-15. Calculated as the weighted average of each quarter's transactions.
- Production valued at \$3,000/mcfepd in 2014, and \$2,000/mcfepd in 2015, 2016, 2017, and 2018.



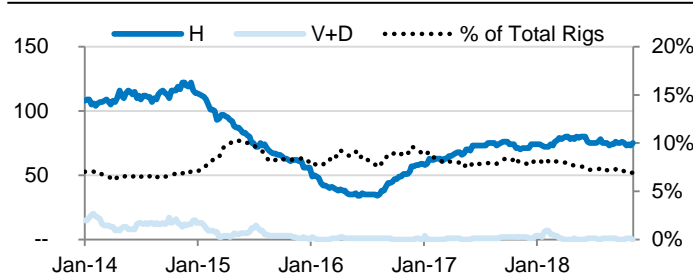
November 12, 2018

Appalachia Snapshot

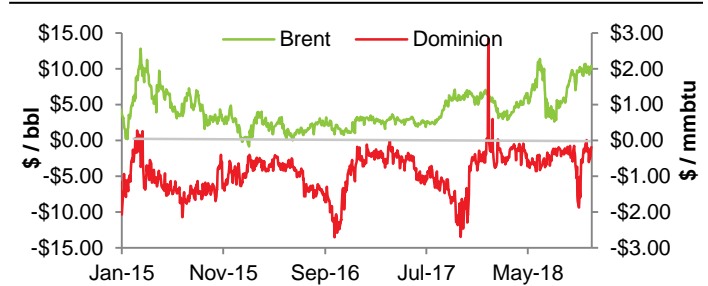
Item	Value	Wkly Change	Last Week
Rig Count	75	↑ 1	74
Permitting Activity	23	↓ (50)	73

Item	Value	Wkly Change	Last Week
Oil Differential	\$9.98	↑ \$0.78	\$9.20
Gas Differential	(\$0.19)	↑ \$0.27	(\$0.47)

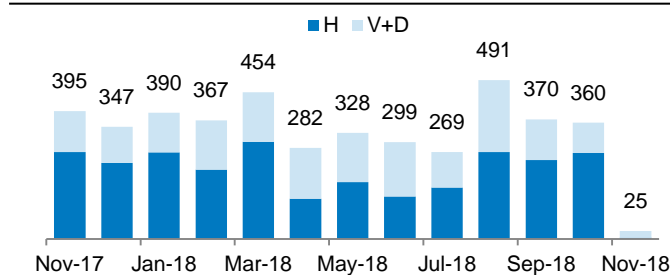
RIG COUNT



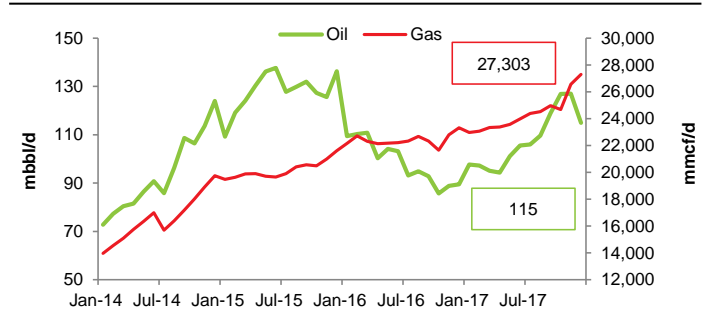
DIFFERENTIALS



PERMITTING ACTIVITY BY MONTH



GROSS PRODUCTION

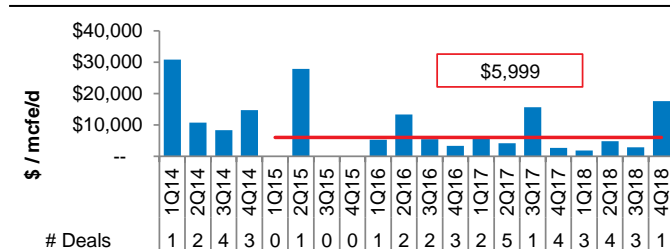


TRANSACTION ACTIVITY (EXCLUDES CORPORATE DEALS)

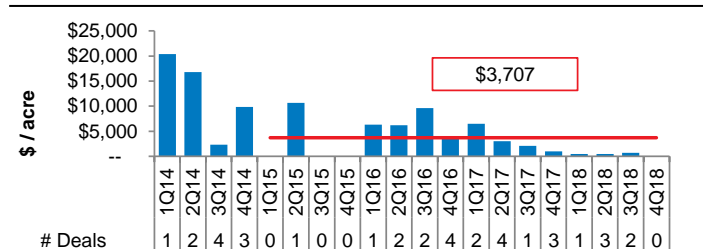
Ann'd Date	Buyer	Seller	Asset Description	Value ⁽¹⁾ (\$mm)	Proved Multiple (\$/mcf)	Prod. Multiple (\$/mcf/d)	Net Acres (\$/acre) ⁽²⁾
15-Oct-18	Undisclosed Buyer	Range Resources Corp	Overriding royalty interests in Appalachia	\$300	n.a.	\$17,649	n/mf
27-Aug-18	PennEnergy Resources	Rex Energy Corp	141,026 net acres in PA and OH	\$601	\$0.58	\$2,781	\$4,258
26-Jul-18	Encino Acquisition Partners	Chesapeake	938,000 net acres in the Utica	\$1,900	\$0.66	\$2,960	\$2,026
29-Jun-18	Ascent Resources LLC	Utica Minerals; Undisclosed	35,400 acres in the Utica	\$700	n.a.	\$15,217	\$19,774
29-Jun-18	Ascent Resources LLC	CNX Resources; Hess	78,000 acres in the Utica	\$800	n.a.	\$4,762	\$10,256
			Mean	\$860	\$0.62	\$8,674	\$9,079
			Median	\$700	\$0.62	\$4,762	\$7,257

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Purple = BMO provided both transaction advisory services and acquisition financing or related services

TRANSACTION PRODUCTION MULTIPLES⁽³⁾



TRANSACTION ADJUSTED NET ACRE MULTIPLES^(3,4)



Source: BMO Transaction Database, Baker Hughes, BMO Commodity Products Group, Bloomberg, Drilling Info, PLS

Note: Current quarter's data is through the week covered by this issue.

1. Represents total enterprise value. Excludes transactions with deal value <\$20 million.
2. \$/acre multiple not adjusted for value associated with production.
3. Red line denotes average since 01-Jan-15. Calculated as the weighted average of each quarter's transactions.
4. Production valued at \$3,000/mcfepd in 2014, and \$2,000/mcfepd in 2015, 2016, 2017, and 2018.



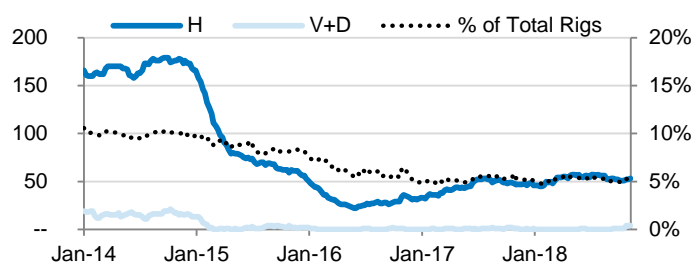
November 12, 2018

Bakken Snapshot

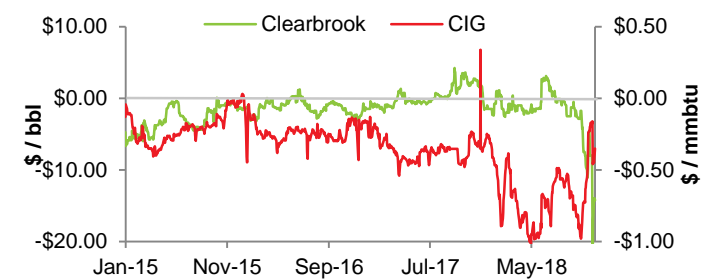
Item	Value	Wkly Change	Last Week
Rig Count	57	↑	56
Permitting Activity	19	↓ (36)	55

Item	Value	Wkly Change	Last Week
Oil Differential	(\$14.25)	↑ \$6.75	(\$21.00)
Gas Differential	(\$0.35)	↑ \$0.11	(\$0.46)

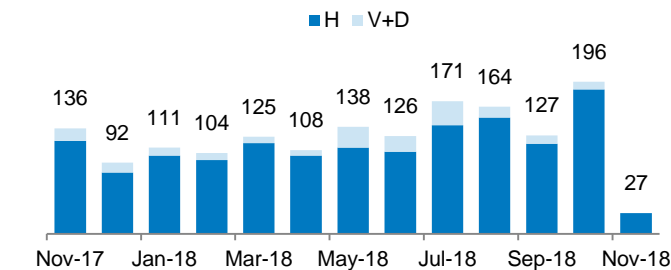
RIG COUNT



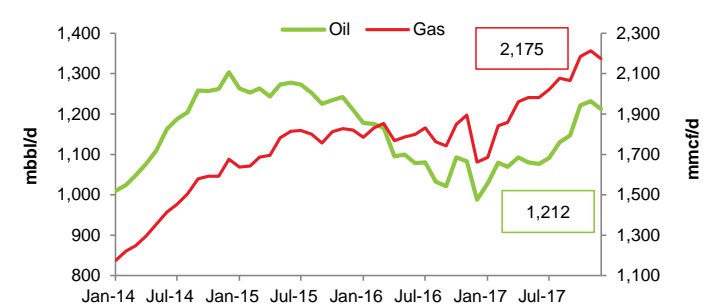
DIFFERENTIALS



PERMITTING ACTIVITY BY MONTH



GROSS PRODUCTION

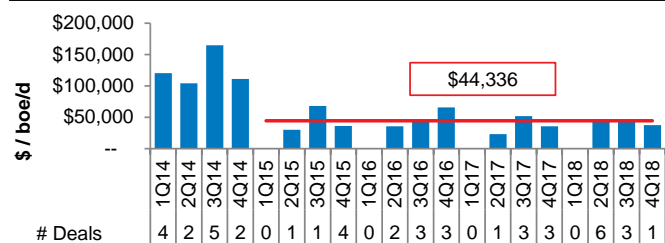


TRANSACTION ACTIVITY (EXCLUDES CORPORATE DEALS)

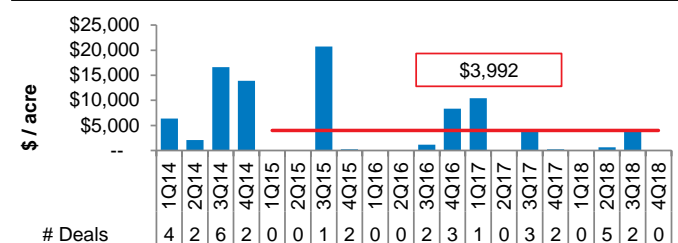
Ann'd Date	Buyer	Seller	Asset Description	Value ⁽¹⁾ (\$mm)	Proved Multiple (\$/boe)	Prod. Multiple (\$/boe/d)	Net Acres (\$/acre) ⁽²⁾
07-Nov-18	Vantage Energy Acq. Corp	QEP Resources Inc	102,800 net acres in Williston Basin	\$1,725	n.a.	\$37,500	\$16,780
31-Jul-18	Northern Oil and Gas	W Energy Partners	10,600 net acres in Williston Basin	\$288	n.a.	\$42,708	\$27,196
18-Jul-18	Northern Oil and Gas	Pivotal Petroleum Partners LP	Producing assets in Williston Basin	\$152	n.a.	\$37,032	n.a.
12-Jul-18	PetroShale Inc	Slawson Exploration Co	1,981 net acres in Williston Basin	\$55	\$6.04	\$100,000	\$27,764
06-Jul-18	Energy Resources 12 LP	Bruin E&P Partners LLC	2.8% non-operated WI in Bakken assets	\$83	n.a.	n.a.	n.a.
			Mean	\$461	\$6.04	\$54,310	\$23,913
			Median	\$152	\$6.04	\$40,104	\$27,196

Blue = BMO provided transaction advisory services Green = BMO provided acquisition financing or related services
Purple = BMO provided both transaction advisory services and acquisition financing or related services

TRANSACTION PRODUCTION MULTIPLES⁽³⁾



TRANSACTION ADJUSTED NET ACRE MULTIPLES^(3,4)



Source: BMO Transaction Database, Baker Hughes, BMO Commodity Products Group, Bloomberg, Drilling Info, PLS

Note: Current quarter's data is through the week covered by this issue.

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- \$/acre multiple not adjusted for value associated with production.
- Red line denotes average since 01-Jan-15. Calculated as the weighted average of each quarter's transactions.
- Production valued at \$45,000/boepd in 2014, \$30,000/boepd in 2015, \$35,000/boepd in 2016 & 2017, and \$40,000/boepd in 2018.



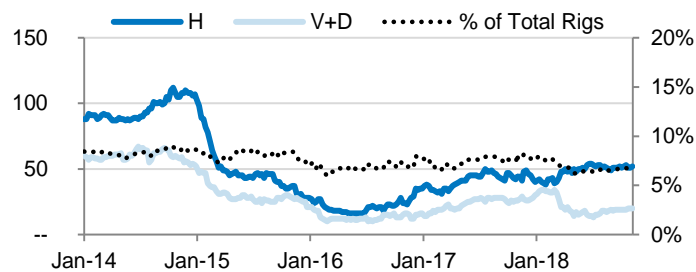
November 12, 2018

Rockies (excl. Bakken) Snapshot

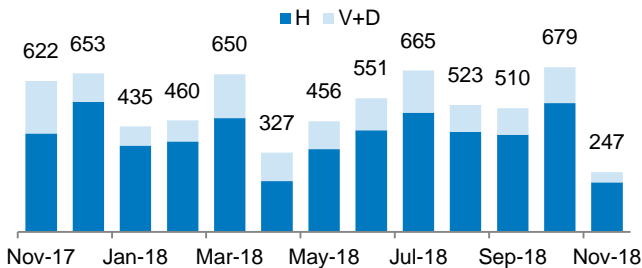
Item	Value	Wkly Change	Last Week
Rig Count	72	↑	71
Permitting Activity	214	↑	211

Item	Value	Wkly Change	Last Week
Oil Differential	(\$14.25)	↑	(\$21.00)
Gas Differential	(\$0.35)	↑	(\$0.46)

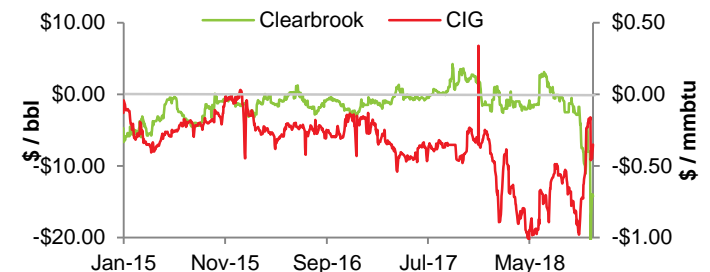
RIG COUNT



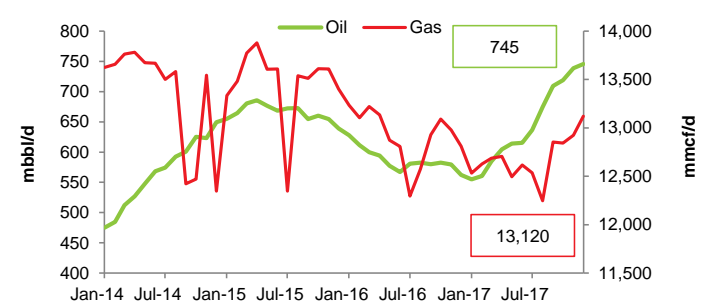
PERMITTING ACTIVITY BY MONTH



DIFFERENTIALS



GROSS PRODUCTION

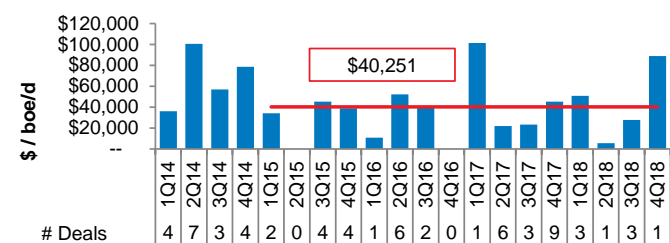


TRANSACTION ACTIVITY (EXCLUDES CORPORATE DEALS)

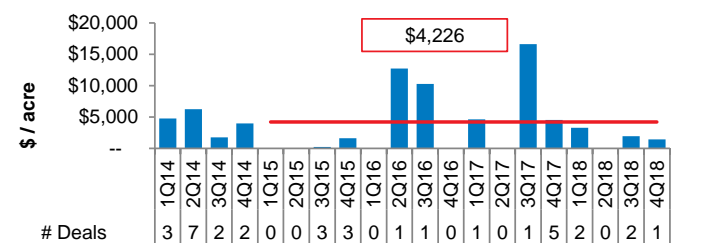
Ann'd Date	Buyer	Seller	Asset Description	Value ⁽¹⁾ (\$mm)	Proved Multiple (\$/boe)	Prod. Multiple (\$/boe/d)	Net Acres (\$/acre) ⁽²⁾
01-Oct-18	DJR Energy LLC	EnCana	182,000 net acres in San Juan Basin	\$480	n.a.	\$88,889	\$2,637
28-Aug-18	Vermilion Energy Inc	Massif Oil & Gas LLC	55,000 acres in Powder River Basin	\$150	n.a.	\$56,604	\$2,727
28-Aug-18	Rebellion Energy II LLC	Liberty Resources II LLC	19,000 net acres in Powder River Basin	\$100	n.a.	n.a.	\$5,263
09-Aug-18	Undisclosed Buyer	Ultra Petroleum	~8,000 net acres in the Uinta	\$75	n.a.	\$37,500	\$9,375
10-Jul-18	Middle Fork Energy Part.	QEP Resources Inc	~230,000 net acres in the Uinta	\$155	\$1.54	\$17,222	\$674
			Mean	\$192	\$1.54	\$50,054	\$4,135
			Median	\$150	\$1.54	\$47,052	\$2,727

Blue = BMO provided transaction advisory services Green = BMO provided acquisition financing or related services
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TRANSACTION PRODUCTION MULTIPLES⁽³⁾



TRANSACTION ADJUSTED NET ACRE MULTIPLES^(3,4)



Source: BMO Transaction Database, Baker Hughes, BMO Commodity Products Group, Bloomberg, Drilling Info, PLS

Note: Current quarter's data is through the week covered by this issue.

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- Production valued at \$45,000/boepd in 2014, \$30,000/boepd in 2015, \$35,000/boepd in 2016 & 2017, and \$40,000/boepd in 2018.



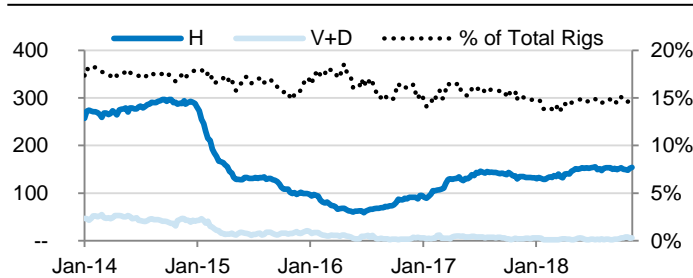
November 12, 2018

Mid-Continent Snapshot

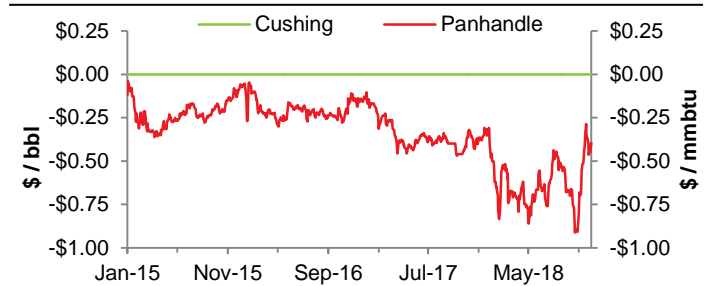
Item	Value	Wkly Change	Last Week
Rig Count	160	↑ 3	157
Permitting Activity	55	↓ (18)	73

Item	Value	Wkly Change	Last Week
Oil Differential	--	█	--
Gas Differential	(\$0.40)	↑ \$0.07	(\$0.46)

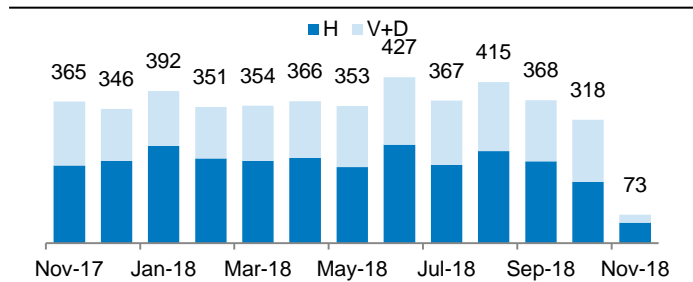
RIG COUNT



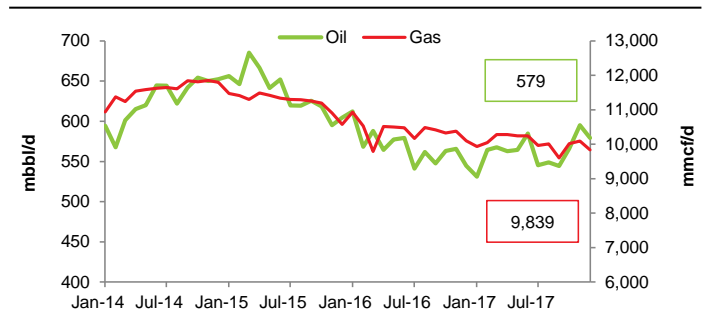
DIFFERENTIALS



PERMITTING ACTIVITY BY MONTH



GROSS PRODUCTION

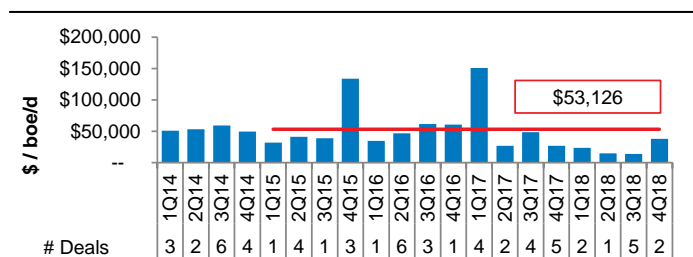


TRANSACTION ACTIVITY (EXCLUDES CORPORATE DEALS)

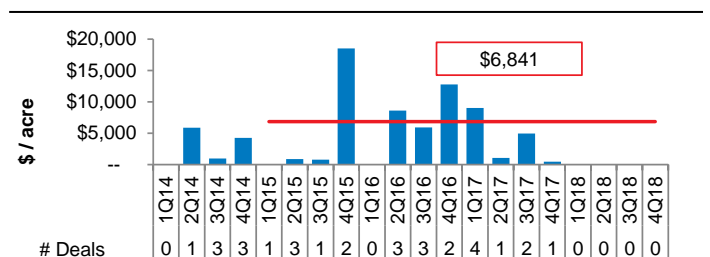
Ann'd Date	Buyer	Seller	Asset Description	Value ⁽¹⁾ (\$mm)	Proved Multiple (\$/boe)	Prod. Multiple (\$/boe/d)	Net Acres (\$/acre) ⁽²⁾	
02-Nov-18	SandRidge Energy	Undisclosed Seller	Mississippi Lime and NW STACK assets	\$25	n.a.	\$6,649	n.a.	
04-Sep-18	Flywheel Energy LLC	Southwestern Energy	915,000 net acres in Fayetteville Shale	\$1,865	\$3.04	\$15,629	\$2,038	
06-Aug-18	Franco Nevada Corp	Continental Resources Inc	Mineral rights JV in the SCOOP/STACK	\$220	n.a.	n.a.	nmf	
02-Aug-18	Sanguine Gas Exploration	Vanguard Natural Res.	9,530 net acres in the Arkoma Basin	\$23	\$4.79	\$24,981	\$2,403	
31-Jul-18	Undisclosed Buyer	Chaparral Energy	Non-core assets in TX and OK	\$27	n.a.	\$19,536	n.a.	
				Mean	\$432	\$3.91	\$16,699	\$2,221
				Median	\$27	\$3.91	\$17,582	\$2,221

Blue = BMO provided transaction advisory services Green = BMO provided acquisition financing or related services
Purple = BMO provided both transaction advisory services and acquisition financing or related services

TRANSACTION PRODUCTION MULTIPLES⁽³⁾



TRANSACTION ADJUSTED NET ACRE MULTIPLES^(3,4)



Source: BMO Transaction Database, Baker Hughes, BMO Commodity Products Group, Bloomberg, Drilling Info, PLS

Note: Current quarter's data is through the week covered by this issue.

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- Production valued at \$45,000/boepd in 2014, \$30,000/boepd in 2015, \$35,000/boepd in 2016 & 2017, and \$40,000/boepd in 2018.



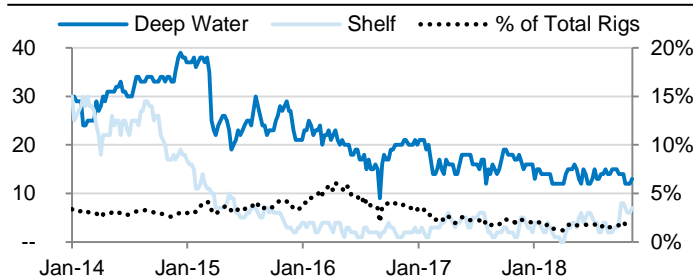
November 12, 2018

Gulf of Mexico Snapshot

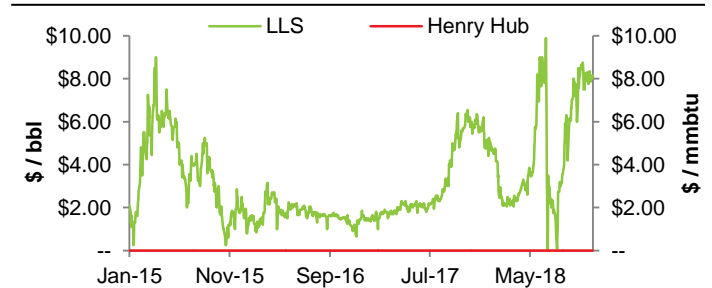
Item	Value	Wkly Change	Last Week
Rig Count	20	↑	18
Permitting Activity	0	↓	6

Item	Value	Wkly Change	Last Week
Oil Differential	\$8.15	↑	\$7.85
Gas Differential	--	—	--

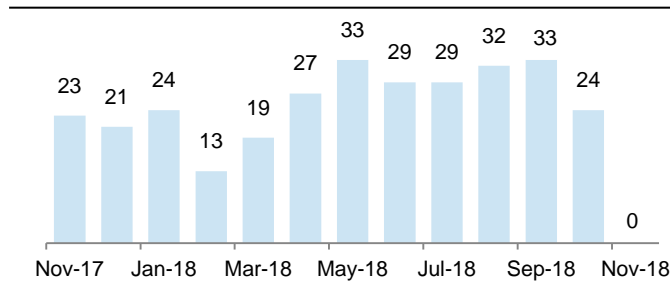
RIG COUNT



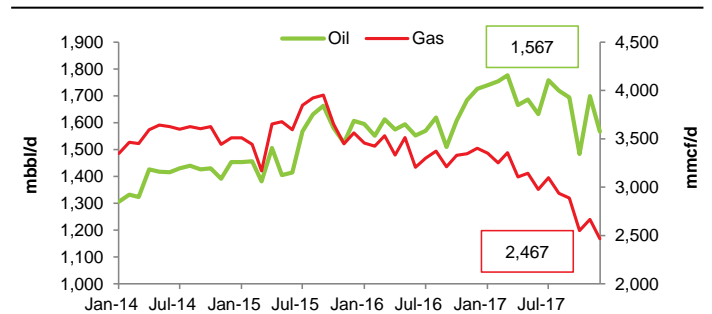
DIFFERENTIALS



PERMITTING ACTIVITY BY MONTH⁽¹⁾



GROSS PRODUCTION

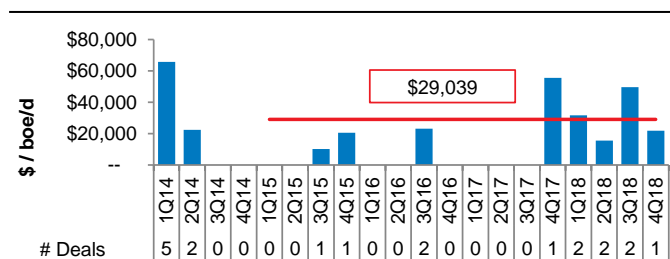


TRANSACTION ACTIVITY (EXCLUDES CORPORATE DEALS)

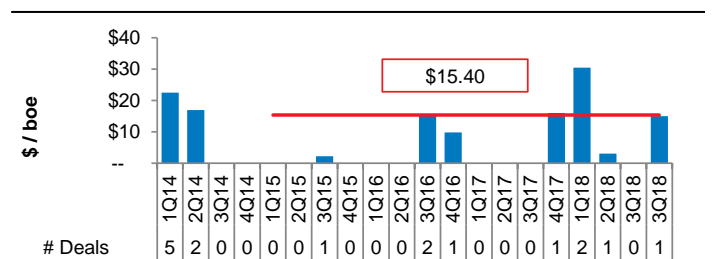
Ann'd Date	Buyer	Seller	Asset Description	Value ⁽²⁾ (\$mm)	Proved Multiple (\$/boe)	Prod. Multiple (\$/boe/d)	Net Acres (\$/acre) ⁽³⁾
10-Oct-18	Murphy	Petrobras	Gulf of Mexico joint venture	\$900	\$15.00	\$21,951	n.a.
04-Sep-18	Talos Energy Inc	Whistler Energy II LLC	Leases in Green Canyon federal waters	\$91	n.a.	\$60,667	n.a.
27-Apr-18	Stone Energy	Shell; ExxonMobil; Anadarko	GOM Ram Powell assets	\$234	n.a.	\$38,361	n.a.
28-Mar-18	W&T Offshore	Cobalt International Energy	9.375% non-op WI in the Heidelberg unit	\$31	\$23.92	\$9,345	n.a.
12-Mar-18	Total	Cobalt International Energy	Non-op interest in 13 blocks	\$25	n.a.	n.a.	n.a.
				Mean	\$256	\$32,581	n.a.
				Median	\$91	\$30,156	n.a.

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Purple = BMO provided both transaction advisory services and acquisition financing or related services

TRANSACTION PRODUCTION MULTIPLES⁽⁴⁾



TRANSACTION PROVED RESERVE MULTIPLES⁽⁴⁾



Source: BMO Transaction Database, Baker Hughes, BMO Commodity Products Group, Bloomberg, Drilling Info, PLS

Note: Current quarter's data is through the week covered by this issue.

- Permits include directional and unidentified drilling permits.
- Represents total enterprise value. Excludes transactions with deal value <\$20 million.
- \$/acre multiple not adjusted for value associated with production.
- Red line denotes average since 01-Jan-15. Calculated as the weighted average of each quarter's transactions.



November 12, 2018

[Click event to open](#)

Upcoming Industry Events

November 2018

Nov 11-13	IPAA Annual Meeting
Nov 11-13	AICPA Oil & Gas Conference
Nov 13-15	DUG Midcontinent
Nov 14	IPAA Leaders in Industry Luncheon
Nov 16	ADAM-Houston Monthly Luncheon
Nov 28	Houston Producers Forum Luncheon

May 2019

May 6-9	Offshore Technology Conference
May 13-17	SPE Electric Submersible Pumps Symposium
May 14-15	DUG Rockies
May 14	Houston Producers Forum Luncheon
May 16	IADC Drilling Onshore Conference & Exhibition
May 17	ADAM-Houston Monthly Luncheon

December 2018

Dec 3-5	Marcellus-Utica Midstream Conference & Exhibition
Dec 12	IPAA Leaders in Industry Luncheon
Dec 18	Houston Producers Forum Luncheon
Dec 21	ADAM-Houston Monthly Luncheon

June 2019

Jun 5-6	Midstream Texas Conference & Exhibition
Jun 18	Houston Producers Forum Luncheon
Jun 18-20	DUG East
Jun 19	IADC World Drilling Conference & Exhibition
Jun 21	ADAM-Houston Monthly Luncheon
Jun 24-26	IPAA Midyear Meeting

January 2019

Jan 15	Houston Producers Forum Luncheon
Jan 18	ADAM-Houston Monthly Luncheon
Jan 24	IPAA Private Capital Conference
Jan 31	SPE M&A Symposium

July 2019

Jul 16	Houston Producers Forum Luncheon
Jul 19	ADAM-Houston Monthly Luncheon

February 2019

Feb 5-7	SPE Hydraulic Fracturing Technology Conference
Feb 11-15	NAPE Summit Week
Feb 15	ADAM-Houston Monthly Luncheon
Feb 19	Houston Producers Forum Luncheon
Feb 19-20	DUG Haynesville

August 2019

Aug 16	ADAM-Houston Monthly Luncheon
Aug 20	IPAA Oil & Gas Overview Course
Aug 20	Houston Producers Forum Luncheon
Aug 21-22	Summer NAPE

March 2019

Mar 5-7	IADC/SPE Drilling Conference
Mar 15	ADAM-Houston Monthly Luncheon
Mar 19	Houston Producers Forum Luncheon
Mar 26-28	International Petroleum Technology Conference

September 2019

Sep 17	Houston Producers Forum Luncheon
Sep 20	ADAM-Houston Monthly Luncheon
Sep 24-26	DUG Eagle Ford
Sep 30-Oct 2	SPE Annual Technical Conference and Exhibition

April 2019

Apr 8-10	IPAA Oil & Gas Investment Symposium
Apr 15-17	DUG Permian
Apr 16	Houston Producers Forum Luncheon
Apr 19	ADAM-Houston Monthly Luncheon

October 2019

Oct 9	IPAA Leaders in Industry Luncheon
Oct 15	Houston Producers Forum Luncheon
Oct 18	ADAM-Houston Monthly Luncheon
Oct 22-23	A&D Strategies and Opportunities Conference

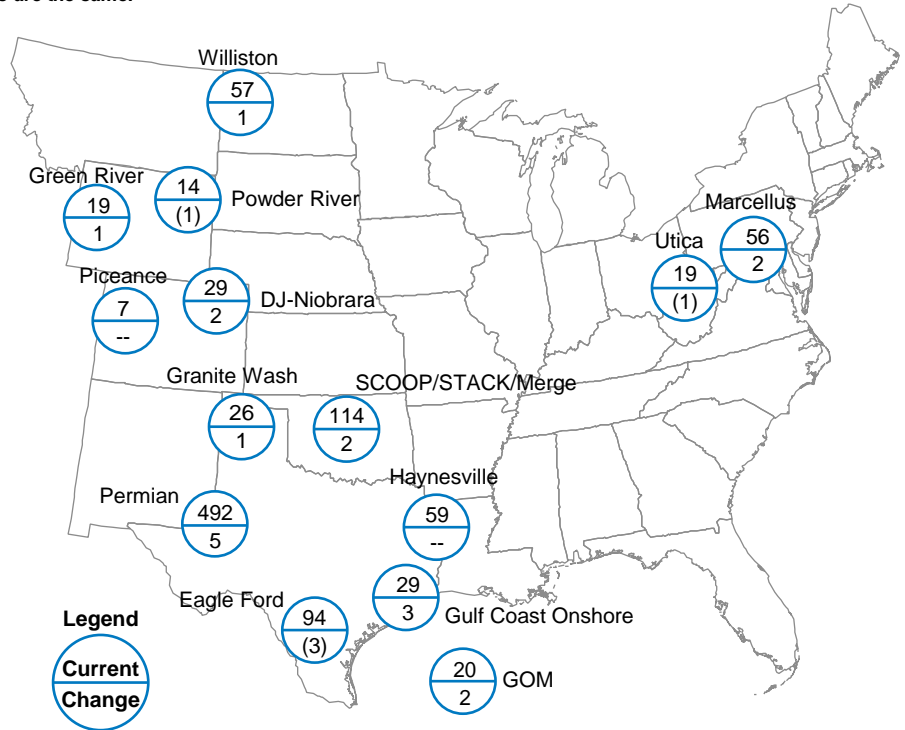


November 12, 2018

Rig Count Summary

BMO uses updated basin outlines, and the resulting rig counts, to more accurately represent current basin knowledge. The data below reflect these changes and is different than those shown by Baker Hughes. The totals are the same.

	This Week	Change	Last Week	Last Year
Total Rigs	1,081	14	1,067	907
Oil	886	12	874	738
Gas	195	2	193	169
Miscellaneous	--	--	--	--
Directional	74	1	73	74
Horizontal	935	6	929	776
Vertical	72	7	65	57
Basin				
Permian	492	5	487	386
SCOOP/STACK/Merge	114	2	112	100
Granite Wash	26	1	25	16
Eagle Ford	94	(3)	97	81
Haynesville	59	--	59	54
Marcellus	56	2	54	42
Utica	19	(1)	20	30
Williston	57	1	56	48
DJ-Niobrara	29	2	27	26
Green River	19	1	18	23
Powder River	14	(1)	15	9
Piceance	7	--	7	8
Gulf Coast Onshore	29	3	26	15
GOM	20	2	18	18
Alaska	6	1	5	6
Other	40	(1)	41	45
Mid-Con	20	--	20	23
Rockies	3	(1)	4	5
Western	15	--	15	14
Eastern	2	--	2	3



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Source of rig count stats: Baker Hughes