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Katherine McKenna – Engineer

Karthik Revana – Engineer
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# WEEKLY INDUSTRY UPDATE

### COVERING THE WEEK OF AUGUST 13 – AUGUST 20, 2018

## INDUSTRY METRICS - QUICK SNAPSHOT

| | Current | Last Week | WoW Change | % Change |
|---|---|---|---|---|
| Crude Oil Near-Month Price ($/bbl) | $65.91 | $67.63 | ($1.72) | (2.54%) |
| Natural Gas Near-Month Price ($/MMbtu) | $2.95 | $2.94 | $0.01 | 0.34% |
| Weekly Upstream-Deal Transaction Value ($MM) | $9,443 | $2,902 | $6,541 | 225.40% |
| Weekly Number of Upstream-Deal Transactions | 8 | 9 | (1) | (11.11%) |
| Current Total US Rig Count | 1,057 | 1,057 | - | 0.00% |
| US Field Crude Oil Production (MMbbl/day) | 10.9 | 10.8 | 0.1 | 0.93% |
| US Field Dry Natural Gas Production (Bcf/day) | 82.0 | 81.5 | 0.5 | 0.61% |
| Commercial Crude Oil Stocks - Excluding SPR (MMbbl) | 414.2 | 407.4 | 6.8 | 1.67% |
| Natural Gas Stocks - Working Gas Underground Storage (Bcf) | 2,387 | 2,354 | 33 | 1.40% |
| Total Drilled But Uncompleted Wells (DUC) | 8,033 | 7,943 | 90 | 1.13% |

## FRIDAY'S MARKET CLOSE

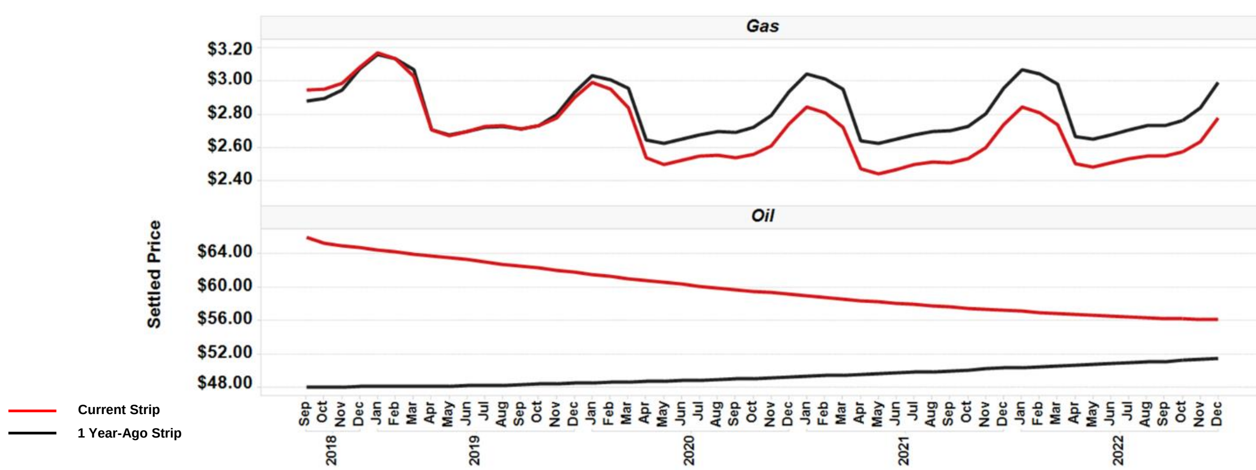
**NYMEX WTI CRUDE OIL FUTURES as of AUGUST 17, 2018 CLOSE ($/bbl)**

| Period | Current | WoW Change | Last Week | 1 Yr Ago |
|---|---|---|---|---|
| 2018 | $ 65.18 | $ (1.65) | $ 66.83 | $ 47.95 |
| 2019 | $ 63.09 | $ (1.28) | $ 64.37 | $ 48.26 |
| 2020 | $ 60.24 | $ (0.74) | $ 60.98 | $ 48.88 |
| 2021 | $ 58.00 | $ (0.31) | $ 58.31 | $ 49.79 |
| 2022 | $ 56.52 | $ 0.01 | $ 56.51 | $ 50.90 |

**NYMEX HH NAT GAS FUTURES as of AUGUST 17, 2018 CLOSE ($/MMBtu)**

| Period | Current | WoW Change | Last Week | 1 Yr Ago |
|---|---|---|---|---|
| 2018 | $ 2.99 | $ - | $ 2.99 | $ 3.00 |
| 2019 | $ 2.83 | $ 0.01 | $ 2.82 | $ 2.84 |
| 2020 | $ 2.66 | $ - | $ 2.66 | $ 2.79 |
| 2021 | $ 2.60 | $ - | $ 2.60 | $ 2.79 |
| 2022 | $ 2.63 | $ - | $ 2.63 | $ 2.82 |

## NYMEX 5 YEAR FUTURES STRIP PRICING




*Source – CME Group / Baker Hughes North America Rotary Rig Count / Energy Information Administration, United States (EIA)*



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## RIG ACTIVITY BY US REGION

| Major Basin Variances | This Week | +/- | Last Week | +/- | Year Ago |
|---|---|---|---|---|---|
| Ardmore Woodford | 2 | 0 | 2 | 0 | 2 |
| Arkoma Woodford | 7 | 1 | 6 | -1 | 8 |
| Barnett | 2 | 0 | 2 | -5 | 7 |
| Cana Woodford | 65 | -3 | 68 | -2 | 67 |
| DJ-Niobrara | 24 | -1 | 25 | -6 | 30 |
| Eagle Ford | 79 | 0 | 79 | 4 | 75 |
| Fayetteville | 0 | 0 | 0 | -1 | 1 |
| Granite Wash | 15 | -2 | 17 | 1 | 14 |
| Haynesville | 48 | -1 | 49 | 3 | 45 |
| Marcellus | 53 | 1 | 52 | 7 | 46 |
| Mississippian | 4 | -2 | 6 | -1 | 5 |
| Permian | 486 | 1 | 485 | 109 | 377 |
| Utica | 23 | -1 | 24 | -6 | 29 |
| Williston | 56 | 0 | 56 | 5 | 51 |
| LAND (INC OTHERS) | 1,034 | -1 | 1,035 | 107 | 927 |
| INLAND WATERS | 2 | 0 | 2 | -1 | 3 |
| OFFSHORE | 21 | 1 | 20 | 5 | 16 |
| US TOTAL | 1,057 | 0 | 1,057 | 111 | 946 |

| U.S. Breakout Information | This Week | +/- | Last Week | +/- | Year Ago |
|---|---|---|---|---|---|
| Oil | 869 | 0 | 869 | 106 | 763 |
| Gas | 186 | 0 | 186 | 4 | 182 |
| Miscellaneous | 2 | 0 | 2 | 1 | 1 |
| | | | | | |
| Directional | 70 | 6 | 64 | -11 | 81 |
| Horizontal | 922 | -2 | 924 | 123 | 799 |
| Vertical | 65 | -4 | 69 | -1 | 66 |

*Source – Baker Hughes North America Rotary Rig Count*



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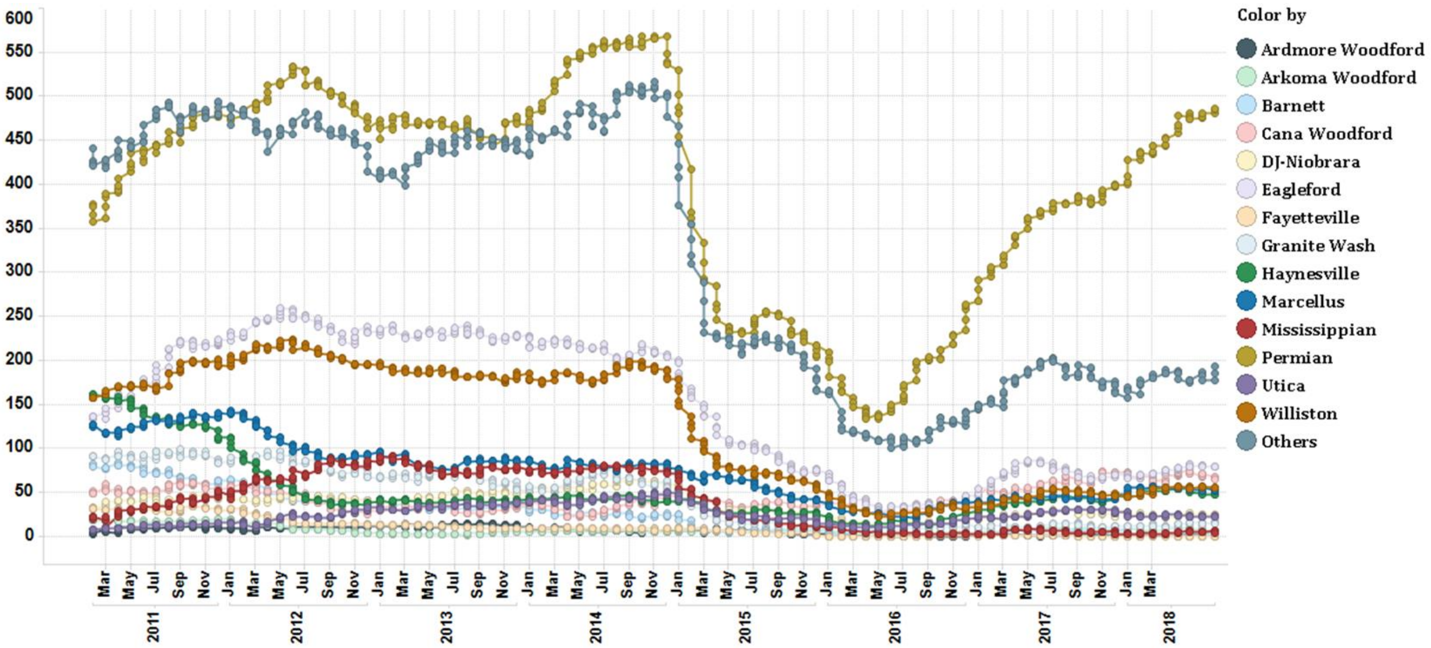
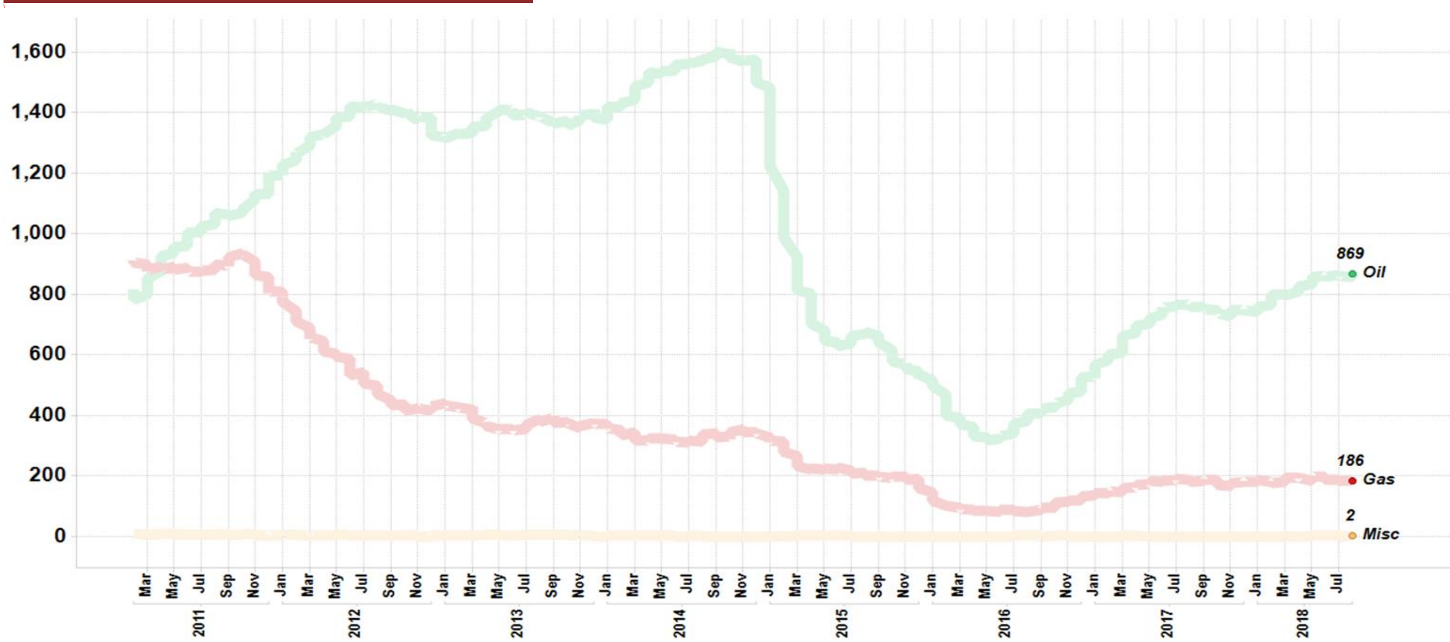
## TOTAL US RIG COUNT BY US REGION




## US RIG COUNT BY PRODUCT




**Source – Baker Hughes North America Rotary Rig Count*



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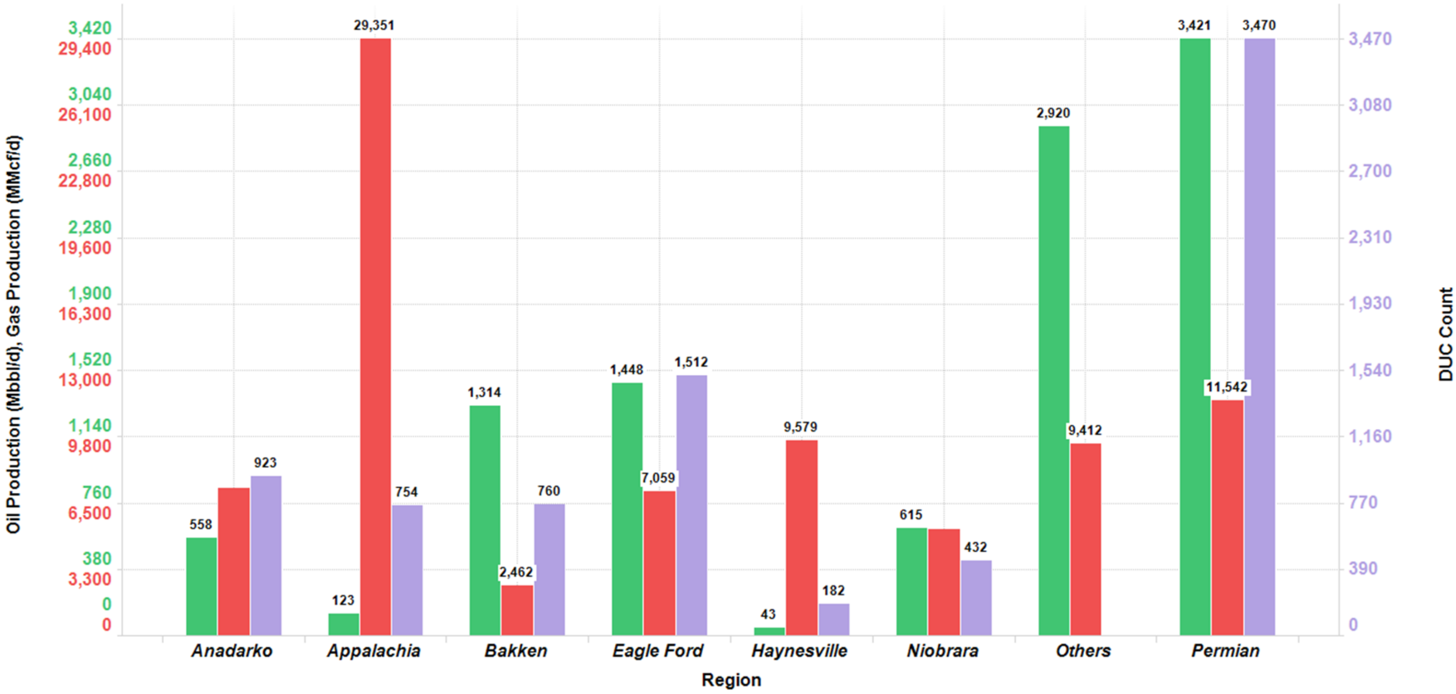
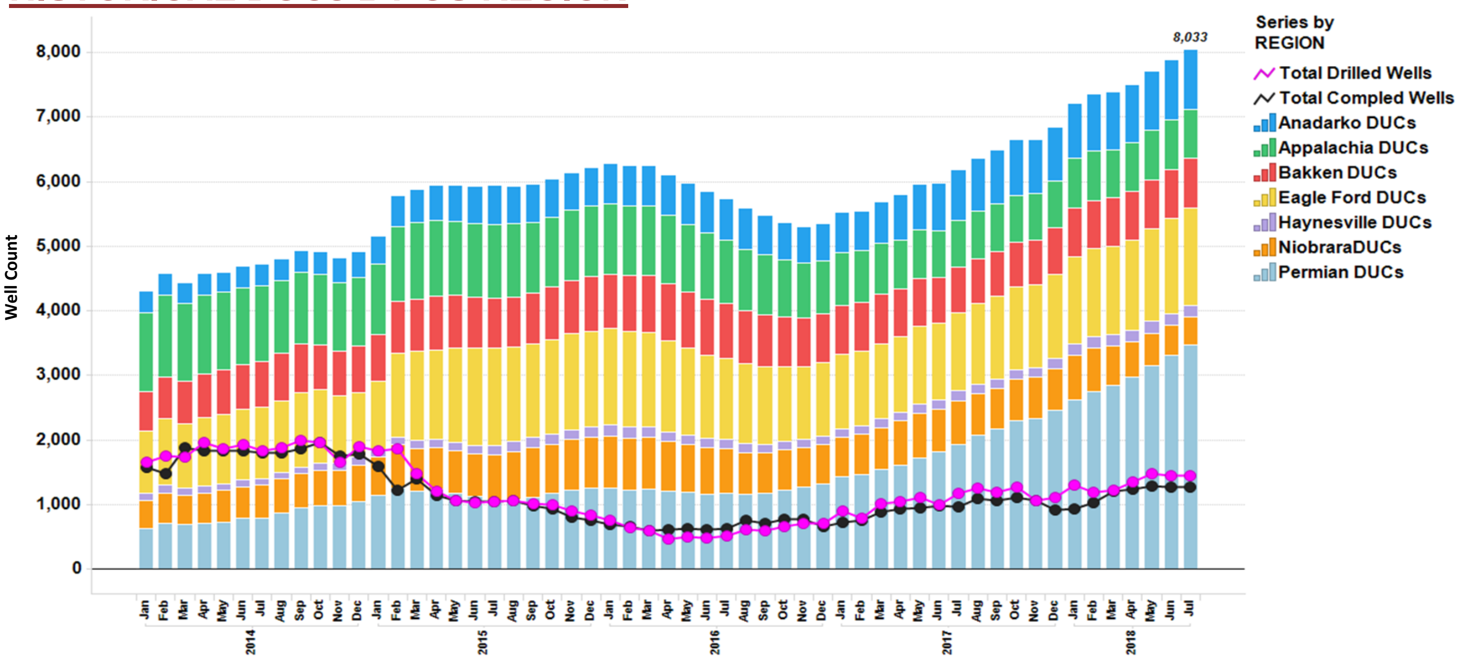
## PRODUCTION & DUCs BY US REGION (1)




(1) *'Others' Region (includes Federal Offshore) is the difference between total daily US crude oil and natural gas production and the summation of the major US shale regions production*

## HISTORICAL DUCs BY US REGION




**Source – Energy Information Administration, United States (EIA)*



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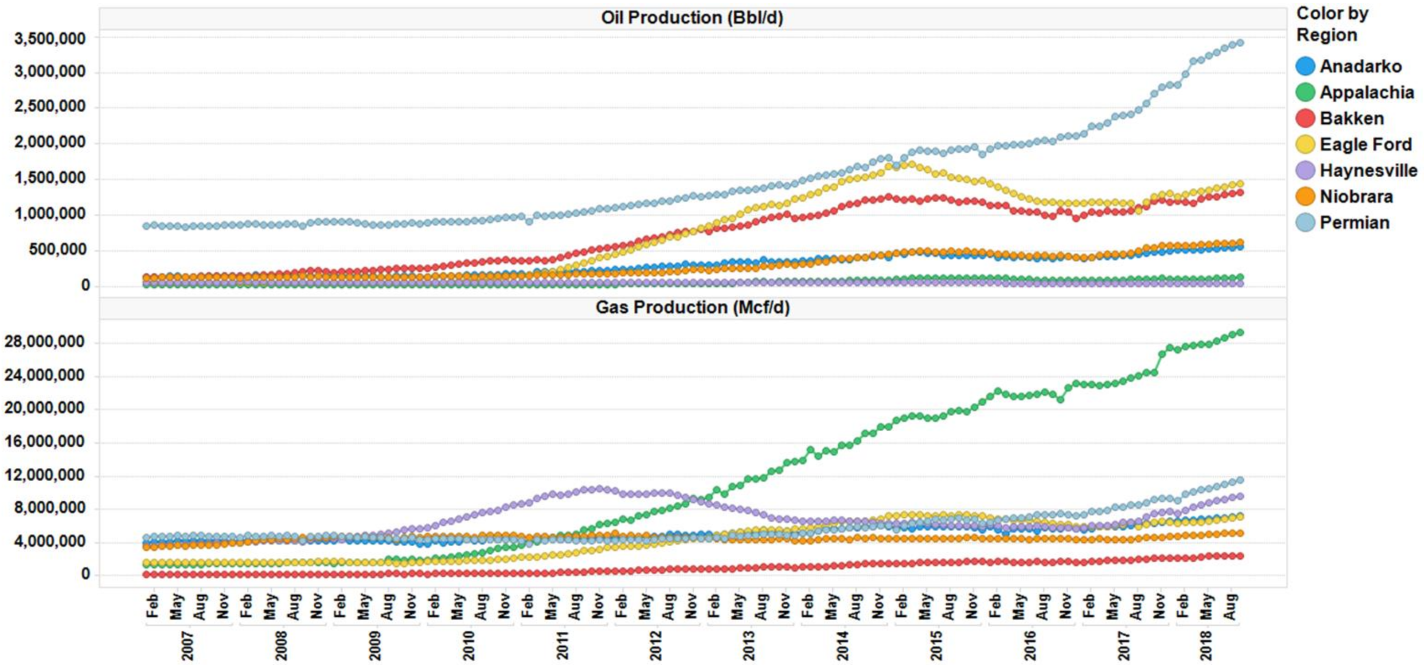
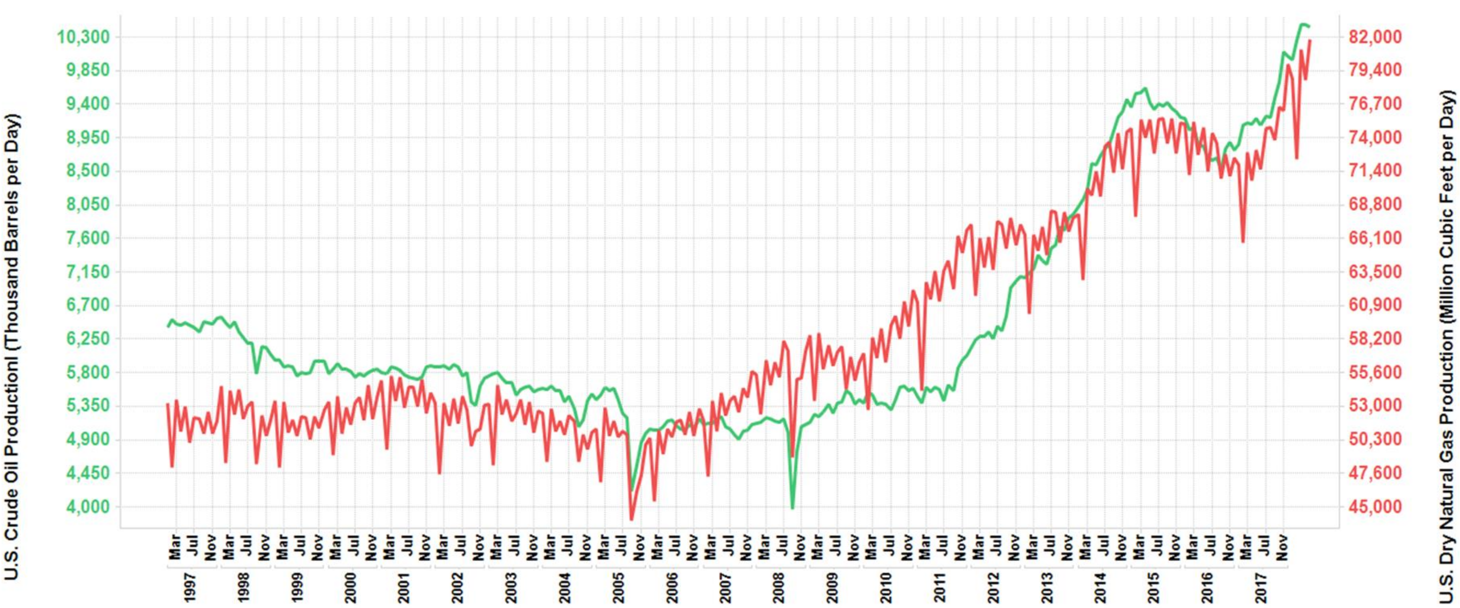
## HISTORICAL PRODUCTION BY US REGION




## US DAILY CRUDE (MBBL) AND DRY NATURAL GAS PRODUCTION (MMCF) (2)




(2) *Official historical monthly field production (average per day units) for crude oil and dry natural gas per EIA as of 5/31/2018, assuming an average of 30.44 days in a month*

**Source – Energy Information Administration, United States (EIA)*



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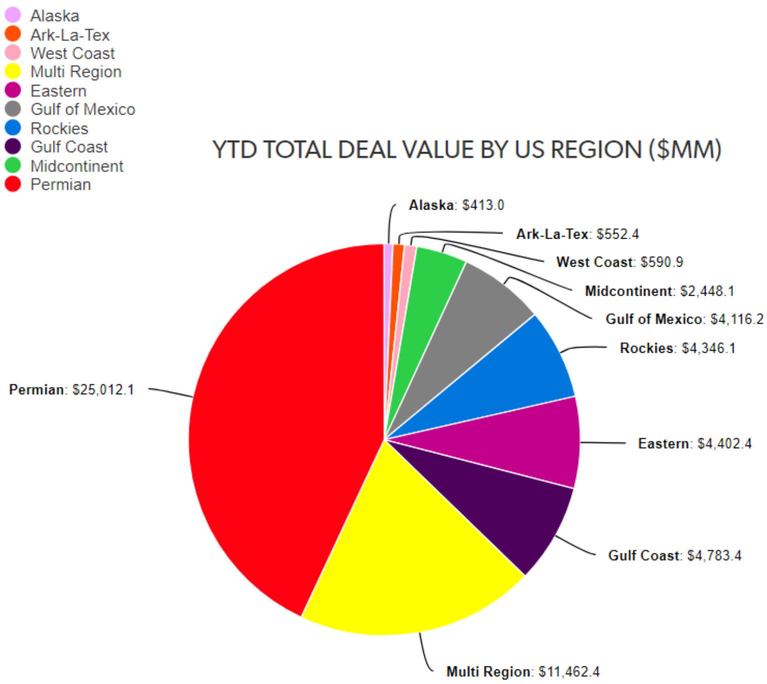
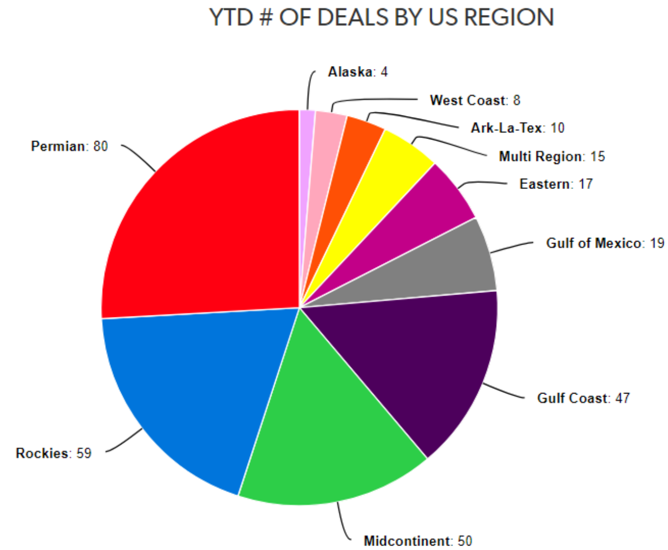
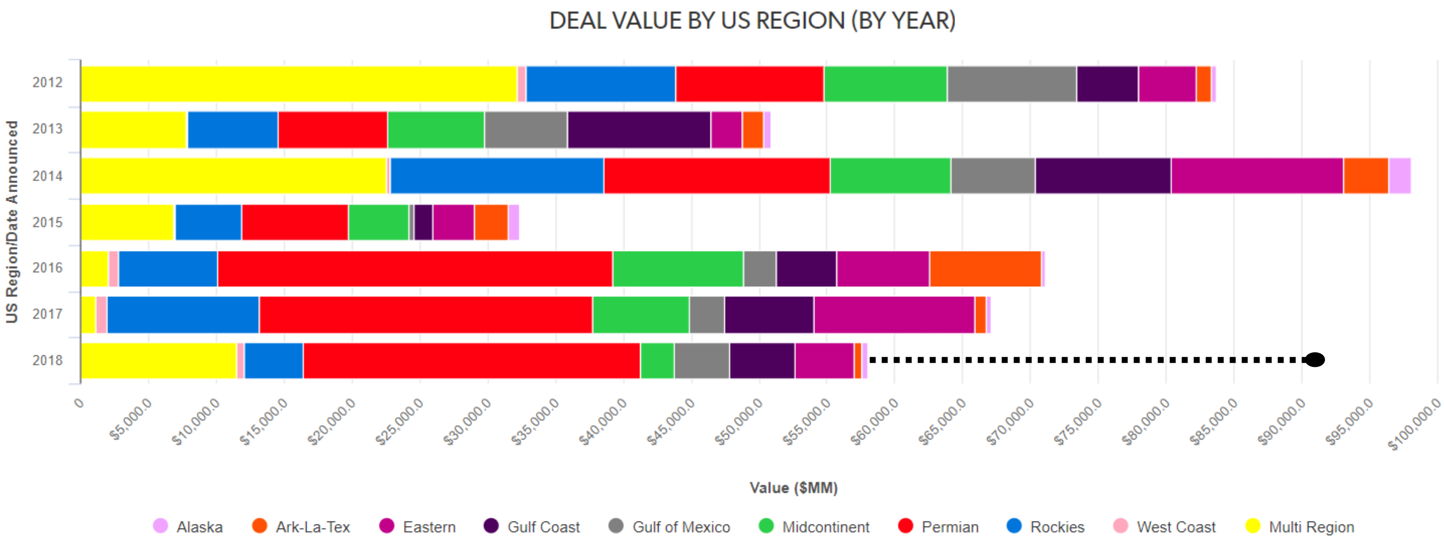
# UPSTREAM YEAR-TO-DATE TRANSACTIONS BY US REGION




***Projected Annualized Total Deals Value for 2018 @ Current Weekly Rate***

**Source – PLS M&A Database*



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## UPSTREAM ACQUISITIONS & DIVESTITURES – LATEST US DEALS

- **Diamondback Energy merges with Energen in all-stock combination of Permian pure-plays ($9,200MM)**
- **Carrizo Oil & Gas buys Delaware Basin assets from Devon Energy ($215MM)**
- **Chaparral Energy divests non-core assets includes properties in the Oklahoma/Texas Panhandle ($28MM)**

## LATEST INDUSTRY NEWS

***EOG Unveils Two New Shale Plays in Powder River Basin***

EOG Resources added two new shale plays—the Mowry and the Niobrara— and an expanded Turner sand inventory to its Powder River Basin opportunity set, catapulting its resource potential for the basin 11-fold to 2.1 Bboe from a previous 190 MMboe estimate for the Turner alone. Companywide, the 1,510 additional net locations hiked EOG's resource potential 18% to 13.3 Bboe. EOG owns 400,000 net acres in what it considers Powder River pressure cell in northeast Wyoming. "We tested many zones over the years and learned that both the Mowry and the Niobrara shales, much like the Eagle Ford, are resource-rich, overpressured source rocks that produce prolific wells when we apply our refined targeting techniques and EOG-style completions," exploration and production EVP David Trice said on a conference call. He added that, as shale formations, the Mowry and Niobrara have greater potential than the Turner sand for downspacing and other efficiencies.

EOG has identified 141,000 net acres prospective for the Mowry shale, which underlies the Turner, with an initial inventory of 875 net premium locations targeting 1.23 Bboe. The company completed two Mowry wells in Q2, the Ballista 204-1102H and Flatbow 423-1720H, with treated laterals averaging 9,100 ft and 30-day rates averaging 2,190 boe/d (35% oil, 23% NGLs). It is targeting Mowry D&C costs of $6.1 million for a 9,500ft lateral and after-royalty recovery of 1.4 MMboe (28% oil) per well. In the Powder River Niobrara, directly overlying the Turner, EOG has identified 89,000 prospective net acres with 555 net premium locations targeting 640 MMboe. EOG has completed five Niobrara horizontals in the basin starting with the Ballista 213-1301H, which came online in June 2016 with a 30-day rate of 2,090 boe/d (56% oil, 15% NGLs) from 9,500 ft of treated lateral and has now produced 225,000 bo and more than 1 Bcf. EOG is targeting Niobrara costs of $5.9 million and after-royalty recovery of 1.15 MMboe (48% oil) per well based on 9,500-ft laterals. EOG also identified an additional 80 net locations in the Turner, increasing its inventory in that play 67% to 200. The company owns 169,000 net acres targeting the Turner and has completed 50 wells in the formation since its last inventory assessment in 2017. During Q2 it completed seven Turner wells with an average well cost of $4.1 million, treated lateral of 6,200 ft and 30-day rate of 915 boe/d (83% oil, 5% NGLs). Among these, the three-well Flatbow package for its high average 30-day rate of 1,325 boe/d (58% oil, 14% NGLs) from just 3,900 ft of treated lateral. These shortlateral wells cost $2.9 million apiece.

**Source – PLS Petroscout*



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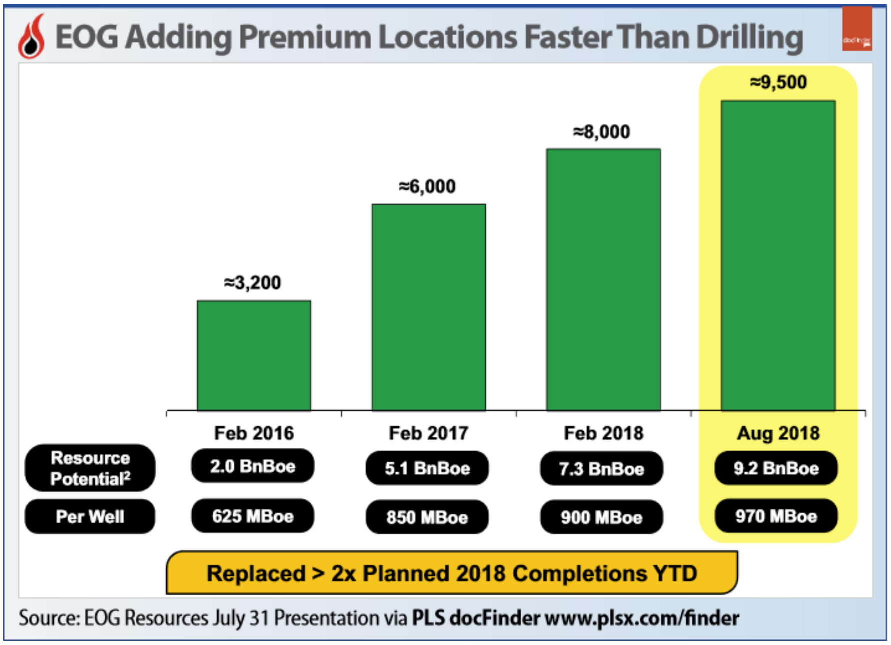
Nonetheless, EOG maintains its Turner targets of $4.5 million well cost and 500,000 boe (46% oil) after-royalty recovery for an 8,000-ft lateral. During 2H18, EOG plans to continue running two rigs and one completion spread to drill its remaining scheduled Turner wells and conduct a few spacing tests in the Mowry and Niobrara. It expects to increase drilling next year as it adds infrastructure and prepares to bring the Powder River into full development.




***Carrizo Moves Rigs From Delaware Basin to Eagle Ford***

In light of the outlook for crude price differentials over the next 18 months, Carrizo Oil & Gas is shifting capital from the Delaware Basin to the Eagle Ford to take advantage of superior returns. The company moved one of its four Delaware rigs to the South Texas play during Q2 and switched another after the quarter's end. It plans to run four rigs in the Eagle Ford and two in the Delaware Basin through year's end, with two to three completion crews working between the two plays. Because of Carrizo's faster cycle times in the Eagle Ford and its decision to maintain six rigs in 2H18 instead of going down to five, the company has increased its operated drilling plan for the year by 30% at midpoint to 123-132 wells from prior guidance of 93-103 wells. Anticipated completions jumped 35% at midpoint to 108-117 wells. As a result, Carrizo boosted 2018 capex guidance to $800-825 million from $750-800 million. This new drilling plan is expected to provide more than 40 drilled-uncompleted Eagle Ford wells by year's end, up from 15 at the end of Q2.

That large DUC inventory will set the company up for strong growth in the play using its new pad drilling strategy in 2019. The company's first large-scale multi-pad in the Eagle Ford, located in the Brown Trust project area, is showing strong performance after more than 120 days online with current production exceeding 14,000 boe/d (88% oil) on restricted chokes. It consists of 16 wells on three pads with laterals averaging 9,100 ft and frac stage spacing of 150-180 ft. Based on strong production and higher than expected commodity prices, Carrizo now expects the multi-pad to pay out during 2H18 instead of early 2019 as originally predicted. Upon payout, Carrizo's average working interest in the wells will decline to 54% from 79%, so the earlier payout is expected to reduce Carrizo's 2018 net production by more than 200 boe/d. Despite that reduction and 650-700 boe/d of lost production from a Delaware Basin non-op divestiture that closed in July, Carrizo maintained the upper end of its previously published 58,500-60,100 boe/d production guidance for 2018 while increasing the lower end to 58,700 boe/d. The 2018 guidance represents more than 30% production growth YOY at midpoint, pro forma to Carrizo's A&D activity in the last year.

**Source – PLS Petroscout*

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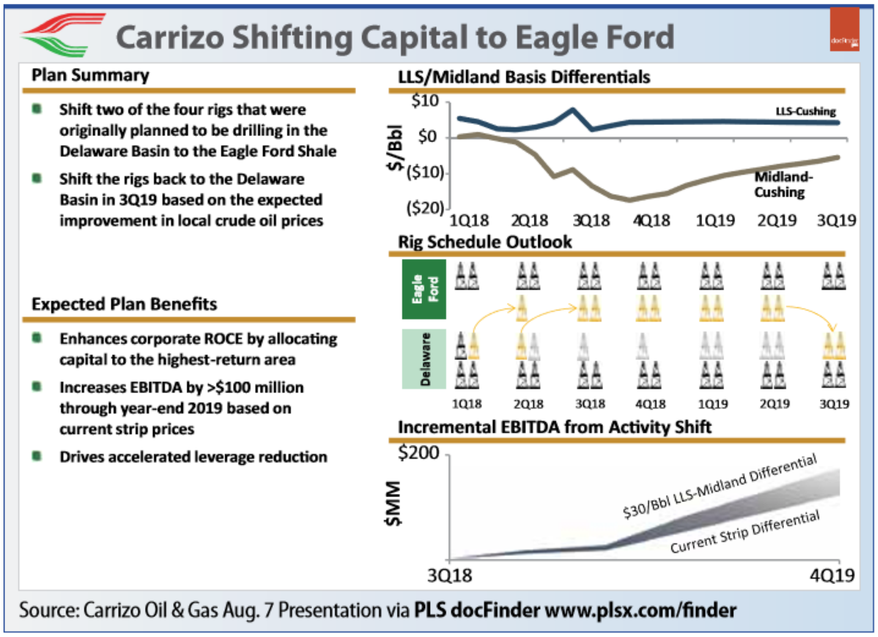
During Q2 the company produced 57,077 boe/d, up 12% YOY and exceeding the high end of guidance by 4%. Carrizo plans to begin shifting activity back to the Delaware Basin in 3Q19 to take advantage of increased Permian pipeline activity that is expected to be operational toward the end of that year. In fact, subsequent to its updated drilling plan, the company announced a $215 million Delaware Basin acquisition mostly adjacent to its existing acreage, which it expects to facilitate future largescale pad development in the play. In the event of pipeline delays, Carrizo has the flexibility and inventory depth to keep activity weighted toward the Eagle Ford.




***Energy Transfer Companies to Merge in $59B Deal***

Energy Transfer Partners LP will become a wholly owned subsidiary of Energy Transfer Equity LP in a $59 billion transaction. Executives' rationale included reduced cost of capital, the drain of individual distribution rights and the value of a simplified corporate structure. Similar reasons were given for other rollups announced this year by Enbridge, Williams, Tallgrass Energy and Archrock as the MLP structure loses favor. ETP unitholders will receive $27 billion in stock at a ratio of 1.28 common units of ETE for each ETP common unit, an 11% premium to the previous day's closing price. ETE's IDRs in ETP will be cancelled. The boards of both companies have approved the transaction, which is expected to close in Q4. The merger had been widely expected as more MLPs were turned into C-Corps. Energy Transfer had said they were looking into its options although many analysts expected an announcement in 2019.

ETE will also issue a new series of Class A units to its general partner, LE GP, which is controlled by Kelcy Warren. The units will have no economic attributes and are just to allow LE GP to keep its current voting rights. LE GP currently owns 31.0% of ETE common units but the merger would dilute that to 13.5%. Under the transaction, ETE will assume $32.2 billion in net debt and intends expects refinance its term loan and revolver, which will make its notes unsecured. ETE will also make an exchange offer of its notes into ETP notes. CFO Tom Long said the merger and the elimination of IDRs would "increase retained cash to accelerate a deleveraging." ETE expects $2.5-3.0 billion in distribution coverage with an expected coverage ratio of 1.6x-1.9x. In Q2, ETP had coverage of 1.23x with cash flow exceeding distribution by $249 million. Q2 earnings report includes plans for Bakken boost— In Q2 earnings, ETP reported net income of $602 million compared with $879 million in Q1 and $296 million in 2Q17. Revenue was $9.41 billion in Q2 compared with $8.28 billion in $6.58 billion in 2Q17.

**Source – PLS Midstream Intelligence*



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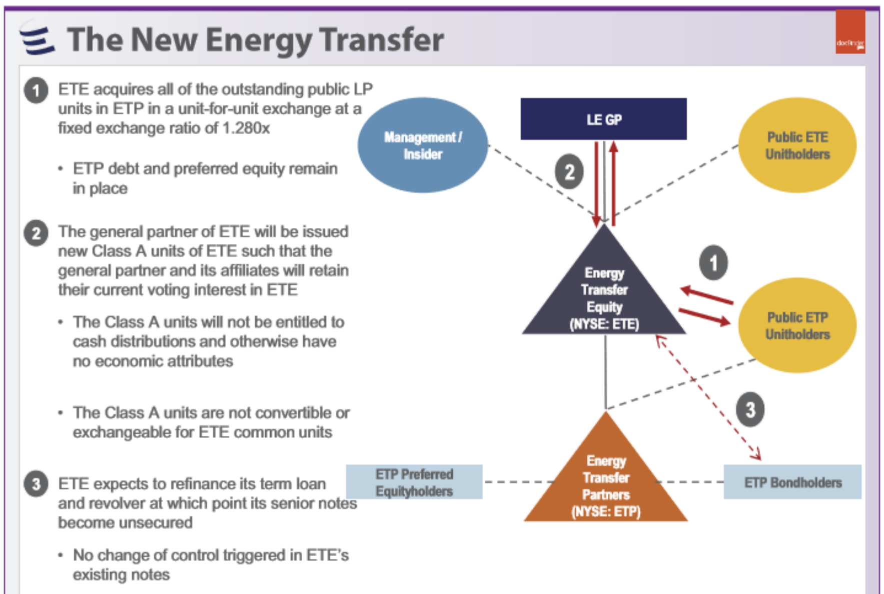
ETP attributed much of the YOY difference in Bakken pipeline, which went into service on June 1, 2017. Volumes on the system, which includes the Dakota Access pipeline, averaged 473,000 bo/d in Q2 and ETP is hoping to add another 100,000 bo/d with drag-reducing agents. "Everywhere we possibly can use DRA across the country, we're using it," said Marshall McCrea, chief commercial officer, who added that it hoped to announce expansions to its three Permian Express crude lines in the near future. CFO Long said ETP was "making significant progress" on a 30-in. newbuild crude pipeline from Midland to Nederland, TX, which it announced in May. The 600,000 bo/d pipeline is now a JV with Magellan Midstream Partners. ETE's net income attributable to partners was $355 million in Q2, compared with $363 million in Q1 and $143 million in 2Q17. Revenue was $14.12 billion in Q2, compared with $11.88 billion in Q1 and $9.43 billion in 2Q17.



Source: Energy Transfer Partners Aug. 2 Presentation via **PLS docFinder www.plsx.com/finder**

***<u>Targa to Operate 2.0 Bcf/d New Permian to Gulf Pipeline</u>***

Targa Resources Corp., NextEra, WhiteWater Midstream and MPLX LP executed a letter of intent for a 2.0 Bcf/d pipeline starting in Waha, Texas. Scheduled for completion in 4Q20, the Whistler pipeline is the second major newbuild announced this year to take Permian Basin gas to the Texas Gulf area.Whistler will consist of 450 miles of 42-in. pipeline from Waha to NextEra's market hub in Agua Dulce, Texas, with an additional 170 miles of 30-in. pipe continuing from Agua Dulce to Wharton County. NextEra will construct the Whistler and Targa will serve as operator. Some gas will come from the 1.4 Bcf/d Agua Blanca, a 72-mile pipeline from Orla to the Waha hub that started operations in April.

The Agua Blanca is a joint venture of Whistler partners WhiteWater, MPLX and Targa as well as WPX Energy. Other sources will come from multiple upstream connections in both the Midland and Delaware basins, including direct connections to Targa plants through a 27-mile, 30-in. lateral. The Whistler Project would have access to the Nueces Header and premium markets at Agua Dulce, as well as along a northern extension through Corpus Christi to the Houston Ship Channel. Targa, NextEra, MPLX and WhiteWater and their respective producer customers would collectively commit volumes in excess of 1.5 Bcf/d to the Whistler project. The project is in negotiations for additional firm transportation commitments and is expected to launch an open season in the coming months.

**Source – PLS Midstream Intelligence*

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In June. a joint venture of Kinder Morgan and Blackstone portfolio company EagleClaw Midstream Ventures announced plans for the Permian Highway. The project to transport 2.0 Bcf/d to Corpus Christi is to be in service in late 2020. Kinder Morgan has started construction for the 1.98 Bcf/d Gulf Coast Express from Waha to Agua Dulce with a Midland lateral with an October 2019 target date. Targa is a partner on that project as well, owning 25% compared with KMI's 50%.

**U.S. Midstream Market Movers—Last 30 Days** PLS

| | Company | Ticker | \$/Share 8/13/18 | \$/Share 7/23/18 | % Change | YOY % Change |
|---|---|---|---|---|---|---|
| Top 10 | TC PipeLines | TCP | \$32.69 | \$27.22 | 20% | -37% |
| | Williams Partners | WPZ | \$47.37 | \$41.05 | 15% | 22% |
| | Energy Transfer Partners | ETP | \$22.16 | \$19.24 | 15% | 13% |
| | Hess Midstream Partners | HESM | \$22.59 | \$19.65 | 15% | 14% |
| | Andeavor Logistics | ANDV | \$48.69 | \$42.81 | 14% | 2% |
| | Delek Logistics Partners | DKL | \$31.70 | \$28.10 | 13% | 4% |
| | Tallgrass Energy | TGE | \$24.19 | \$21.47 | 13% | 1% |
| | The Williams Companies Inc | WMB | \$30.69 | \$27.32 | 12% | 2% |
| | Crestwood Equity Partners | CEQP | \$37.30 | \$33.30 | 12% | 49% |
| | Plains All American Pipeline | PAA | \$26.30 | \$23.53 | 12% | 28% |
| Bottom 10 | American Midstream Partners | AMID | \$5.75 | \$10.45 | -45% | -58% |
| | Sanchez Midstream Partners | SMNP | \$9.90 | \$11.55 | -14% | -7% |
| | Blueknight Energy Partners | BKEP | \$2.80 | \$3.25 | -14% | -49% |
| | EQT GP Holdings | EQGP | \$22.67 | \$25.07 | -10% | -16% |
| | Martin Midstream Partners | MMLP | \$12.50 | \$13.80 | -9% | -30% |
| | Noble Midstream Partners | NBLX | \$47.87 | \$51.59 | -7% | 9% |
| | Overseas Shipholding Group | OSG | \$3.38 | \$3.62 | -7% | 44% |
| | ONEOK Inc | OKE | \$68.04 | \$71.40 | -5% | 30% |
| | Buckeye Partners | BPL | \$35.03 | \$36.28 | -3% | -39% |
| | Shell Midstream Partners | SHLX | \$22.38 | \$22.89 | -2% | -16% |

Note: Includes public, U.S.-based companies operating in the midstream space, limited to >\$1.00/share and market cap >\$500 million. Source: Capital IQ

***Crude Steadies After Longest Run of Weekly Losses in Three Years***

Oil steadied after its longest run of weekly declines in three years, as traders weighed threats to economic activity in emerging markets against risks to supplies around the world. Futures in New York were little changed. Prices fell for a seventh week last week as the currency crisis in Turkey raised fears of contagion, further rattling investors already worried by the ongoing trade dispute between the U.S. and China. At the same time, crude was buoyed by North Sea strikes, stagnant U.S. drilling and continued concern that American sanctions will hurt Iranian sales. Oil has fallen about 11% from the highs of late June as a trade war between the U.S. and China and turmoil in Turkey threaten global economic growth and energy demand. Rising supplies have also weighed on prices, with U.S. output near a record-high and increasing production from the Organization of Petroleum Exporting Countries and its allies.

"The news backdrop on the oil market currently points in no clear direction," said Carsten Fritsch, an analyst at Commerzbank AG in Frankfurt. While the trade dispute and fears of emerging-market spillover from the Turkish crisis are "dampening the demand outlook," the "prospect of oil-supply restrictions is likely to preclude any further price slide."

**Source – PLS Midstream Intelligence/World Oil*

West Texas Intermediate crude for September delivery traded at $65.95/bbl on the New York Mercantile Exchange, up $0.04 in London. The contract climbed $0.45 to $65.91 on Friday. Total volume traded Monday was about 41% below the 100-day average. Brent for October was at $72.20/bbl on the London-based ICE Futures Europe exchange, up $0.37 and traded at a $6.98 premium to WTI for the same month. The global benchmark crude rose $0.40 to $71.83 on Friday.

Rigs searching for oil in the U.S. were unchanged at 869 last week, according to data from Baker Hughes. While working rigs remained at the highest level in more than three years, the count has grown by only 10 since late May, adding to speculation that the shale boom is easing. Pipeline jams and soaring costs are already taking their toll on U.S. explorers as President Donald Trump's tariffs on foreign steel add costs to build pipes. Cabot Oil & Gas has been pushed to stop spending money on exploring the Permian, while ConocoPhillips is considering moving some rigs from the Permian to the less crowded Eagle Ford region of South Texas. "Growth in U.S. crude production is expected to slow down until new pipelines are built in 2019," Mikiko Tate, a senior analyst at Sumitomo Corp. Global Research Co., said by phone from Tokyo. U.S.-China trade tensions and the Turkish crisis "remains a concern. While signs of their impact haven't yet appeared, investors are increasingly becoming cautious."

Hedge funds have trimmed bets on higher Brent prices to the lowest in more than a year as geopolitical turmoil stokes concern about a global economic downturn. Wild swings in the yuan and punitive storage costs are making oil traders think twice about a bet on China's fledgling crude futures that looks highly lucrative on paper. Drilling activity in North Dakota's Bakken play could reach an all-time high in the fourth quarter 2018 because bottlenecks in the Permian will make more workers available to increase output elsewhere, JBC said in an emailed report.

***<u>China Tarrifs Could Mean Bleak Winter Ahead for U.S. LNG</u>***

This winter could be a bleak one for America's natural gas exporters as the fastest-growing buyer of the fuel threatens to halt purchases amid an escalating trade war. PetroChina, a unit of the state-owned China National Petroleum Corp., may suspend its buying of U.S. liquefied natural gas cargoes during the colder months, just as new American LNG terminals start up. The move could force gas suppliers like Cheniere Energy Inc. to cut prices as they seek to lure other buyers during the heating season, when demand peaks. While U.S. LNG companies make the bulk of their money from long-term contracts, Cheniere last winter reaped big earnings from the spot market, which saw Asian prices climb to three-year highs amid booming consumption in China. The world's second-largest economy is boosting its use of the fuel as it cuts pollution from coal-fired plants. But with China eyeing a 25% tariff on U.S. LNG, Cheniere and other U.S. LNG traders may have no choice but to sell spot volumes at a discount, Jason Gabelman, vice president at Cowen and Company, said by telephone Monday. Cheniere didn't immediately respond to a request for comment. The "U.S. is probably going to have more spot LNG available than it would have had otherwise if it had been selling into the Chinese market," Gabelman said, expecting that American sourced spot cargoes that would have gone to China would have to be sold into another market. Other buyers in Asia may look to take advantage of low-cost U.S. gas. Cheniere announced Aug. 10 a binding 25-year contract with Taiwan's state-owned CPC Corp. beginning in 2021. "If you're selling gas in the spot market, you need to find a new place" for cargoes that would have gone to China, said Nikos Tsafos, a senior fellow at the energy and national security program at the Center for Strategic and International Studies in Washington. "And for companies that only have U.S. gas, that's a bigger headache."

***<u>Diamondback - Energen to Combine in Second Largest Permian Deal Ever</u>***

Diamondback Energy (ticker: FANG) continued the recent trend of consolidation in the Permian with the acquisition of Energen (ticker: EGN). This $9.2 billion all-stock deal adds to an active year for large M&A transactions. This deal is the second-largest Permian transaction ever, falling just short of Concho's (ticker: CXO) $9.5 billion acquisition of RSP Permian earlier this year. This deal will allow Diamondback to nearly double many of its key metrics. Energen currently produces 97.4 MBOEPD, compared to Diamondback's 124.7 MBOEPD. Diamondback's net Permian acreage will increase from 211,000 acres to 390,000 acres, an increase of 85%. A significant portion of the added acreage is in the Central Basin Platform, but Diamondback's "Tier One" acreage will still grow by 56%. The largest change for Diamondback will be its drilling inventory, which is expected to increase to roughly 7,100 wells, a jump of 123%.

**Source – World Oil/ Oil and Gas 360*



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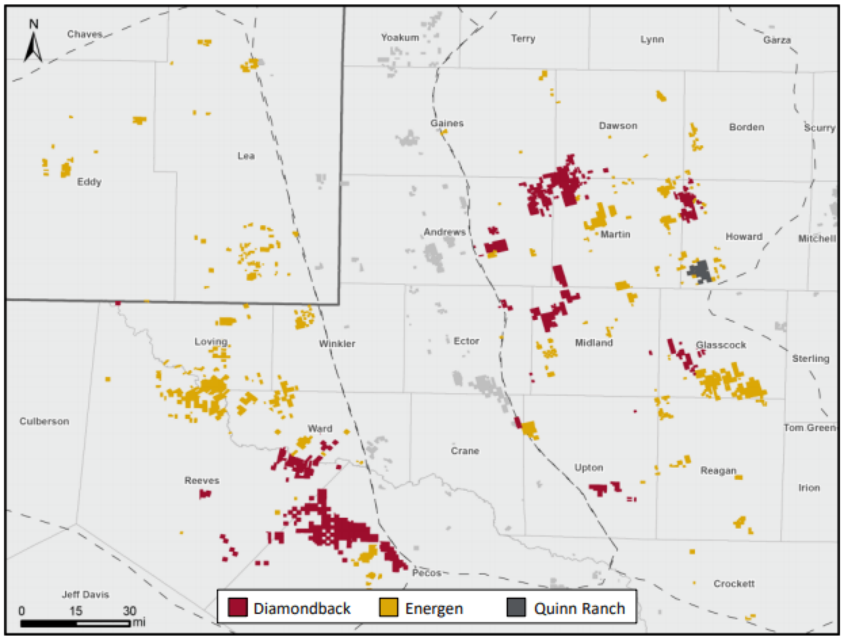


Diamondback expects to realize significant synergies from the deal, as the combined company can better optimize several facets of the business. Synergies in completions, G&A costs and interest expenses are expected to total around $250 million per year, with additional possible savings from lower operating expenses and complimentary acreage, among other synergies.

## Synergy Summary

**Primary Synergies**

| | Annual Value | | Total Value[1] | | | |
|---|---|---|---|---|---|---|
| | Low | High | Low | High | Timing | Implementation |
| Midland Basin Drilling & Completion Cost | ~$150mm | ~$220mm | ~$1,500mm | ~$1,800mm | Begins Q1 2019, fully achieved by early 2020 | • $220 / lateral foot of savings today<br>• Implementation of Diamondback best practices<br>• Local sand sourcing for Midland Basin<br>• Purchasing power of pro forma business |
| General & Administrative | ~$30mm | ~$40mm | ~$270mm | ~$330mm | Begins early 2019, fully achieved by early 2020 | • 100% Midland based company<br>• One management team<br>• Proven track record of integration |
| Interest / Cost of Capital | ~$25mm | ~$50mm | ~$250mm | ~$490mm | Begins 2019, continues as debt becomes callable and/or matures | • Ability to call and refinance capital structure<br>• Pro forma company transitions to unsecured Balance Sheet and debt instruments |
| Total | ~$205mm | ~$310mm | ~$2,020mm | ~$2,620mm | | |

**Secondary Synergies: Up to $1bn**

- Delaware D&C savings (up to $50 / lateral foot at today's costs)
- Improved LOE
- High-graded capital allocation
  - Minimal HBP requirements allow for large scale development
- Portfolio high grading and rationalization: "Grow and Prune" strategy
  - Central Basin Platform and select non-core assets
- Overlapping and adjacent acreage
  - Howard, Martin, Ward counties

**Other Synergies**

- Complementary Permian midstream asset platform
  - More than doubling salt water disposal capacity
- Substantial mineral ownership and drop down inventory
  - 266 owned net royalty acres
  - Significant amount of acreage delivering >75% NRI
  - Estimated company wide ~77% NRI delivering $60-80mm of cash flow related to the >75% NRI at current production

Diamondback expected to deliver ~$2+ bn of primary synergies and up to ~$1bn of secondary synergies

*Source: Management and public filings.*
*(1) Represents PV-10 over the life of Energen's inventory.*

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Diamondback will pay 0.6442 shares of Diamondback stock for each share of Energen stock, representing $84.95 per share at Monday's closing prices. This is a premium of 19%. In total, Diamondback will pay about $8.4 billion in stock to Energen, and will also assume the company's $830 million in net debt. Upon closing, Energen shareholders will own about 38% of the company. Somewhat unusually, however, Diamondback's board and executive team will remain unchanged. In many such M&A deals between similarly-sized companies the resulting board and executive team becomes a combination of members from each company. When Concho acquired RSP Permian it added a board member from RSP's board. Diamondback estimates the sale will close in Q4 2018.

Recent Permian deals mean there are several transactions that can be compared to Diamondback's purchase of Energen. The most similar, of course, is Concho's purchase of RSP Permian, as both are very large corporate deals. More recent deals are also relevant, as Diamondback's acquisition of Ajax Resources and Carrizo's purchase of bolt-on acreage from Devon, announced the same day. In unadjusted price paid per acre this deal is remarkably comparable to Concho's purchase of RSP Permian, both transactions valued acreage at about $103,300 per acre. The smaller Ajax and Carrizo deals involved much lower acreage valuations, $48,800 and $22,400, respectively. If production is valued at $35,000 per flowing BOE, the acreage values in recent Permian deals diverge. The Diamondback-Energen deal has an adjusted value per acre of $67,800, compared to Concho's $82,00, Ajax's $32,200 and Carrizo's $13,300.

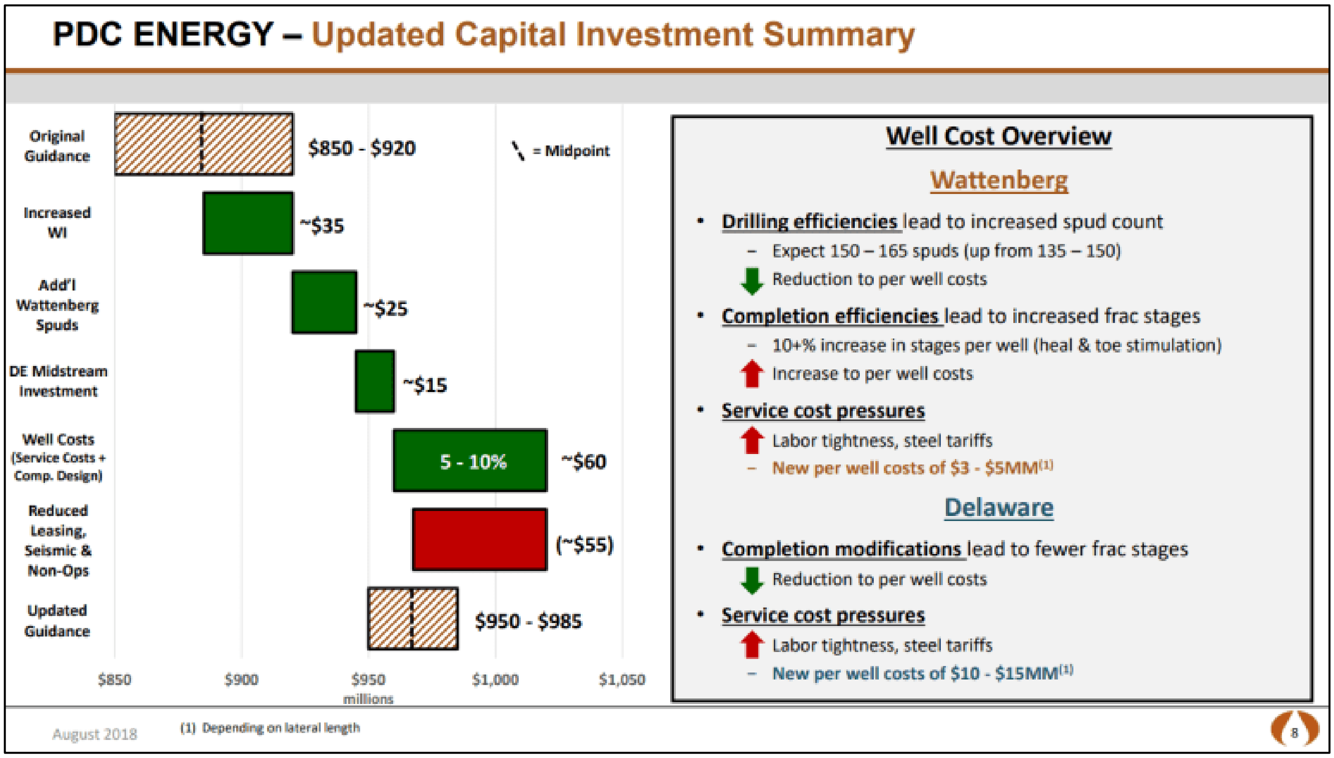
| | FANG-EGN | CXO-RSPP | FANG-Ajax | CRZO-DVN |
|---|---|---|---|---|
| Total Value | $9.2 Billion | $9.5 Billion | $1.245 Billion | $215 Million |
| Acreage | 89,000 | 92,000 | 25,500 | 9,600 |
| Production (MBOEPD) | 90.4 | 56 | 12.1 | 2.5 |
| Value/Acre | $103,371 | $103,261 | $48,824 | $22,396 |
| Adjusted Value/Acre | $67,820 | $81,957 | $32,216 | $13,281 |

If the transaction is simply valued based on production and reserves, Diamondback's purchase price equates to $94,456 per flowing BOE, or $20.72 per proved BOE. These metrics can be used to evaluate other Permian players, as they are clearly a price one company is willing to pay in M&A in the basin. Many Permian players are valued below the price Diamondback paid for production, with only a few companies exceeding this level. Both Jagged Peak and Parsley have enterprise values above $100,000 per BOE, but most other Permian companies are near $50,000 per BOE. The price paid for reserves is much more in line with current valuations in the basin, as Permian companies are currently valued at an average of $22.67 per BOE. Companies with low valuations may become a target for further M&A, as the industry continues to consolidate. Diamondback CEO Travis Stice commented, "The size and scale that the transaction brings forth will further improve Diamondback's long-term strategy of return on, and return of, capital. Our industry has transformed into a manufacturing business and the operator that converts resource into cash flow at the lowest cost will win in the long run. This transaction adds critical mass for Diamondback and enables us to achieve more efficient operations through multiple, clearly defined, deliverable synergies."

**Source – Oil and Gas 360*

***PDC Warns of Well Costs Rise on Steel Tariffs***

PDC Energy (ticker: PDCE) announced second quarter results last week, showing net losses of $160.3 million, or ($2.43) per share. Primarily due to derivative losses and an impairment to non-core acreage, this is well below the company's Q2 2017 results, when PDC earned $41.3 million. PDC produced 103 MBOEPD in Q2, up 20% from last year, primarily due to growth in the company's Delaware position. PDC's production from the basin reached 25 MBOEPD in Q2, up from 10 MBOEPD in Q2 2017. This outperformance has led PDC to increase its full-year production guidance, the company now expects to produce an average of 112.3 MBOEPD in 2018. This increased production will not come without cost, however, and PDC is increasing its expected CapEx to about $970 million, up from previous guidance of $885 million. Several shifts have contributed to the higher spending, but service cost pressures dominate. In addition to the standard pressures of the tightening labor market, PDC mentions that steel costs are contributing to the increase in well costs. This makes PDC unique among major E&P companies, while many have increased yearly CapEx, PDC is the only one to identify increased steel costs as a primary driver of the change.




PDC continues to see benefits from its recent acreage moves, which gave the company a much more consolidated position in the Wattenberg. The company is now able to drill longer wells, meaning it can produce from a larger area for only a small increase in spending. PDC is now also fracturing the heel of its wells, the portion of a well where the wellbore turns from vertical to horizontal. PDC estimates the design changes require $250,000 in incremental capital. For reference, the company reports its long lateral wells cost about $5 million. These two shifts mean PDC is able to complete five extra stages per well, a 10% increase in the average well. When this design is applied through a full pad of long lateral wells, PDC can complete 550 total stages, compared to the previous design's 500 stages. This new design, then, means that over an entire pad, PDC can complete a $5 million well's worth of stages for $2.5 million.

**Source – Oil and Gas 360*

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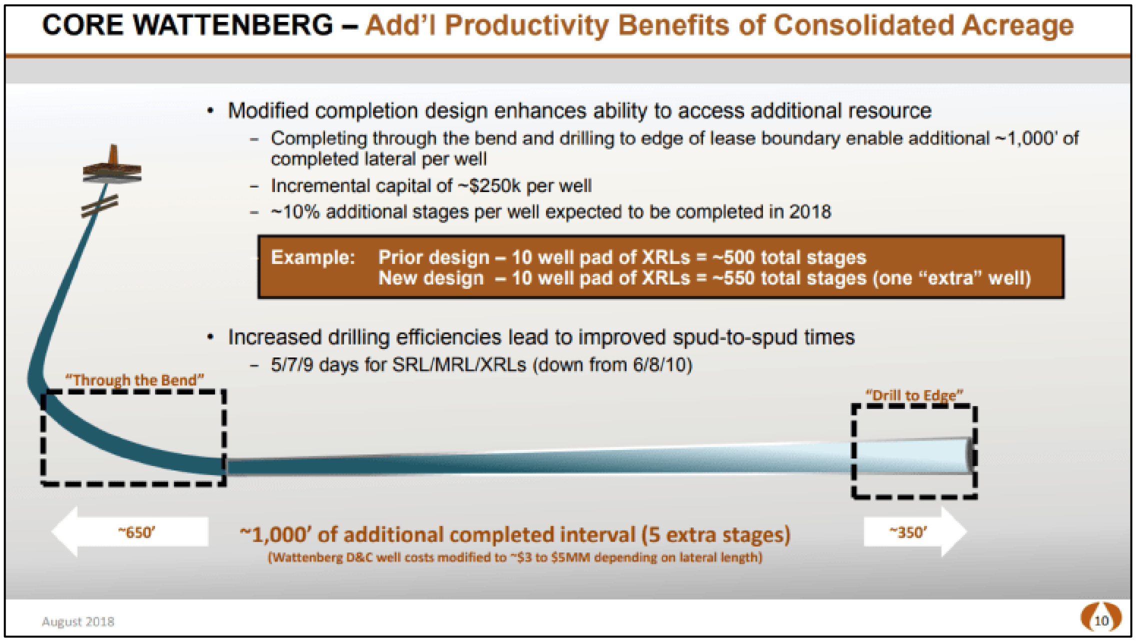
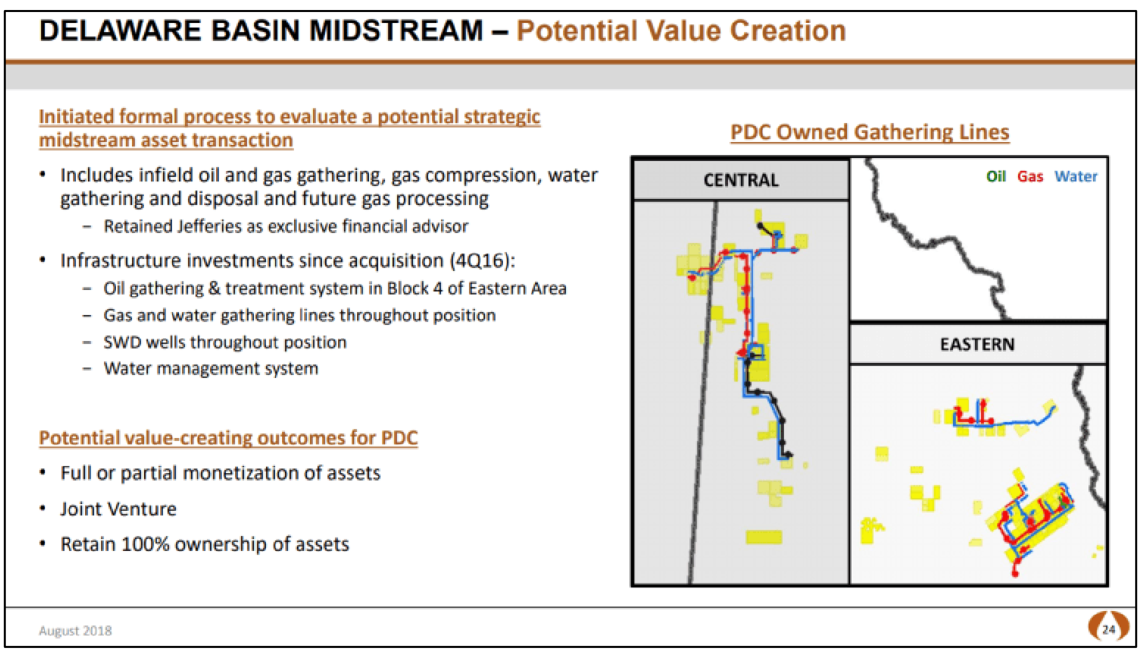



PDC also announced it has begun to evaluate a transaction regarding the company's midstream assets in the Delaware. The company is still considering options, though, and a deal could take many forms.

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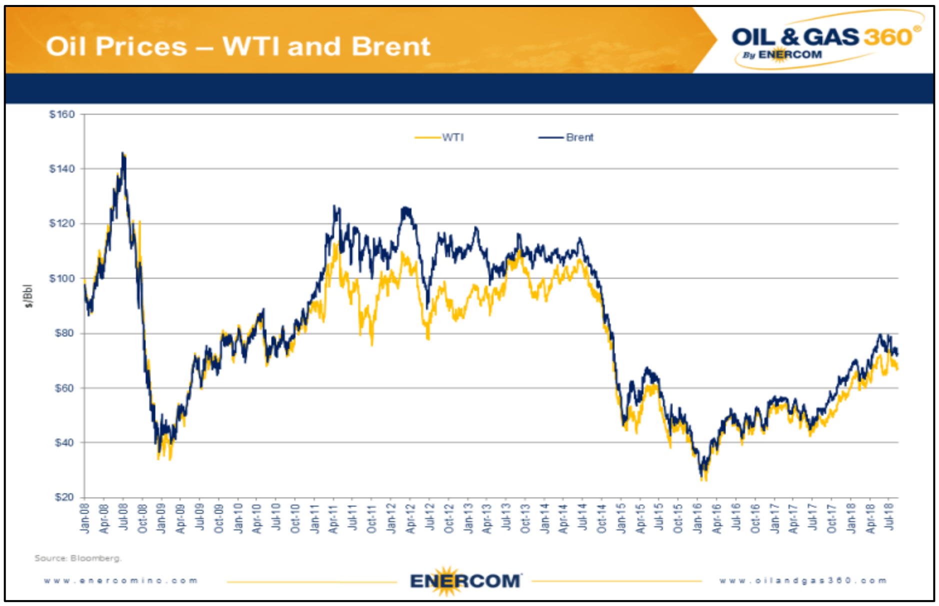
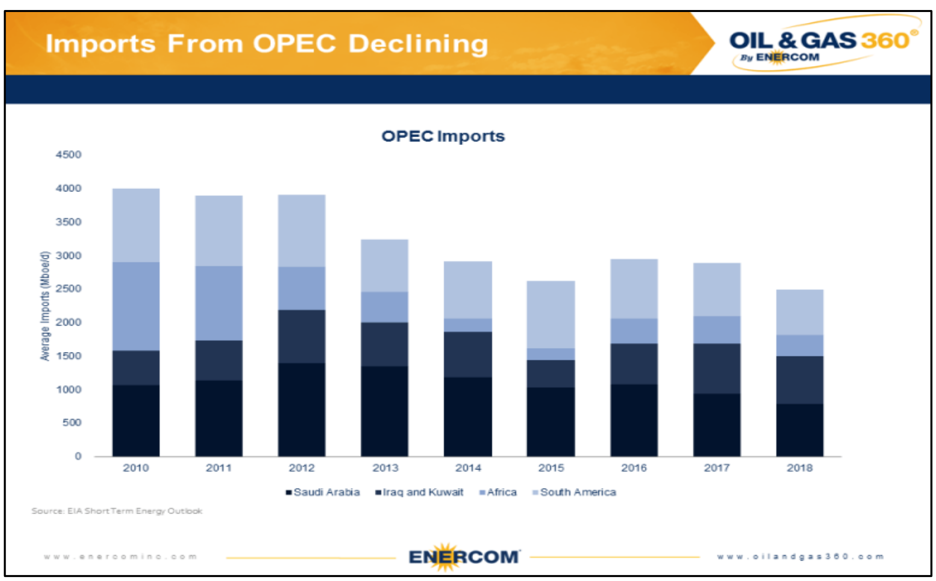
***Weekly Oil Storage: Surprise Large Build***

Crude oil stocks rose by 6,805 MBBL last week to 414,194 MBBL from 407,389 MBBL. This is 11% below the 466,492 MBBL that was in storage at this point last year, and is 1% above the five-year average. This week's build was unexpected, as the average analyst prediction called for a draw of 2,886 MBBL. Gasoline inventories decreased by 0.7 MMBBL this week to 233.1 MMBBL. Fuel oil inventories rose by 3.6 MMBBL to 129.0 MMBBL. Overall, petroleum stocks excluding the SPR increased by 17.4 MMBBL to 1,227.3 MMBBL. Preliminary data suggests over the past four weeks the U.S. produced 10,900 MBOPD, imported 8,116 MBOPD and exported 1,859 MBOPD. The four-week average total crude oil inputs to refineries increased to 17,586 MBOPD, from 17,401 MBOPD. This means refineries are running at 96.2% of capacity. American refineries produced an average of 10,221 MBBLPD of gasoline and 5,222 MBBLPD of distillate fuel oil over the past four weeks.

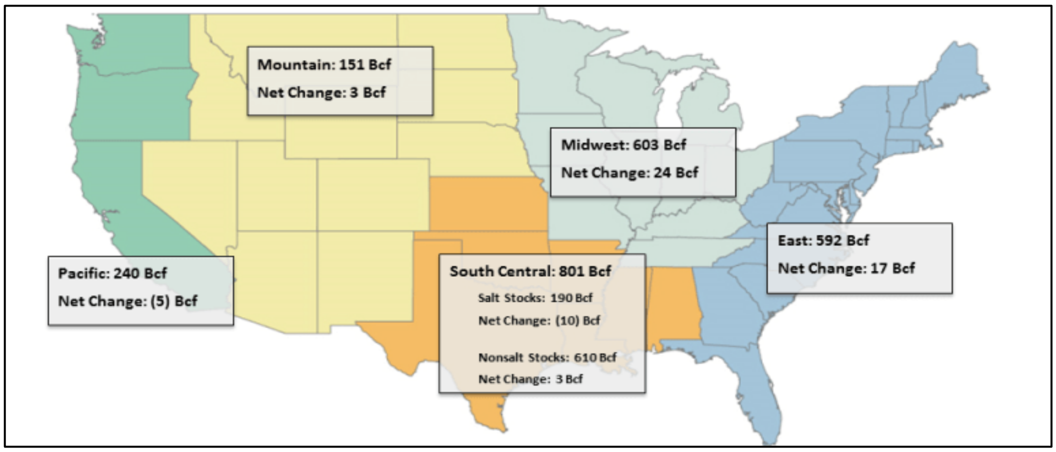


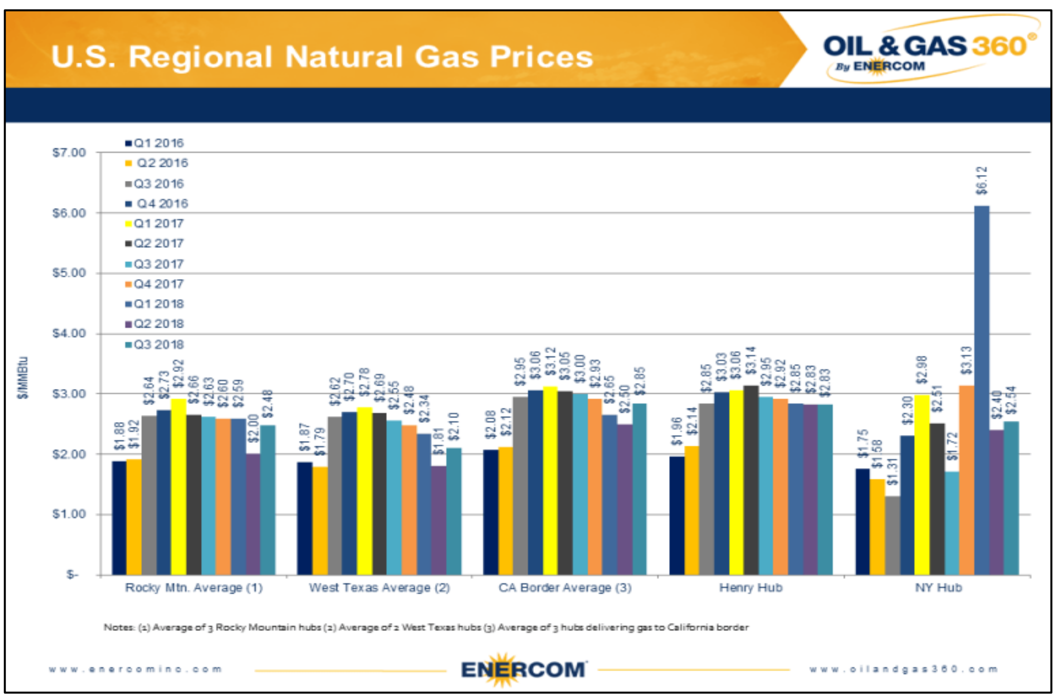




**Source – Oil and Gas 360*

***Weekly Gas Storage: Modest Build***

In total, the EIA reports natural gas stocks rose by 33 Bcf last week, increasing to 2,387 Bcf from 2,354 Bcf. This is 22.3% below the 3,074 Bcf that was in storage at this point last year, and is 20.0% below the five-year average of 2,982 Bcf. This week's storage build was in line with expectations, as analysts predicted a build of 29 Bcf. Several regions saw a draw this week, with inventories decreasing by 10 Bcf in the South Central and 5 Bcf in the Pacific. The largest increases came in the East and Midwest regions, which added 17 Bcf and 24 Bcf, respectively. Stocks in every region are below the five-year average. Gas in storage in salt stocks in the South Central region is the farthest below the five-year average for the area, at 29.9% below the average.

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711 Louisiana Street, Suite 3100 Houston, Texas 77002
Office: 713.622.8955 Fax: 713.490.0355 www.ralphedavis.com
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# BASIN STUDY: APPALACHIAN BASIN

## *Cursory Overview – The Utica (Permit & Well Activity)*

'The Utica' is a stacked play in the Appalachia Basin that includes both the Utica formation and underlying Point Pleasant formation. The Utica and Point Pleasant are both organic rich formations that extend across the Appalachian Basin from New York state to Tennessee however, the most prolific areas for this play are in eastern Ohio and western Pennsylvania.

There are currently 23 rigs operating in the Utica play Region. The Utica Shale accounts for much of the increase in oil and natural gas production in Ohio, The Appalachia Basin is the largest gas producing region in North America with the Utica being one of the main reasons why this is so *(July 2018 production -- Gas:29 Bcfd, Oil:118 Mstbd).*

**Figure 1** depicts the drilling and completion activity from 2015 to present in the Utica play area, It can be observed that most of the wells are being drilled in eastern Ohio in the liquids rich portion of the play.

Review of investor presentations by RED suggests that operators and midstream companies are gearing up for increased activity in the liquids rich window of the Utica in 2018 and beyond. Some of the prominent deals that have closed in 2018 in the Utica play area are Encino acquisition of Chesapeake acreage ($1.9 B) and Ascent resources acquiring CNX ($1.5B)

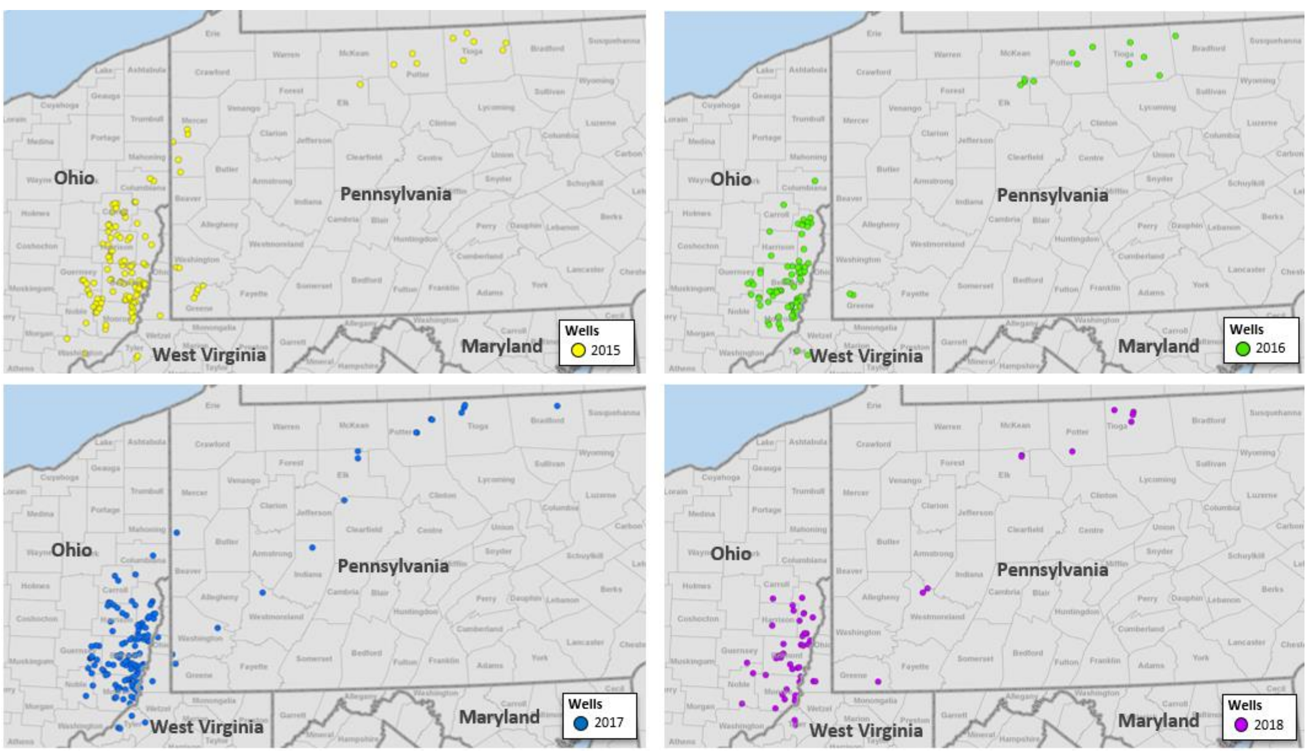


**Figure 1- Horizontal Wells in Utica/Point Pleasant**

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**Figure 2** shows the Appalachian Basin permit activity heat map in the last 30 days coupled with active horizontal wells targeting the Utica/Point Pleasant formations. Over the last four years, permit activity in the Appalachian Basin has been heavily focused on the wet gas window of the West Virginia panhandle to take advantage of the improved liquids pricing. Some of permits were also acquired in the more prolific dry gas window in western Pennsylvania that meet the economic hurdle rate at current gas strip prices.

The activity heat map illustrates permit activity for the entire Appalachian Basin which also is factoring activity in the Marcellus Shale. The Marcellus is more prominent in South Eastern and North Eastern Pennsylvania whereas the Utica/Point Pleasant wells are concentrated heavily in eastern Ohio.

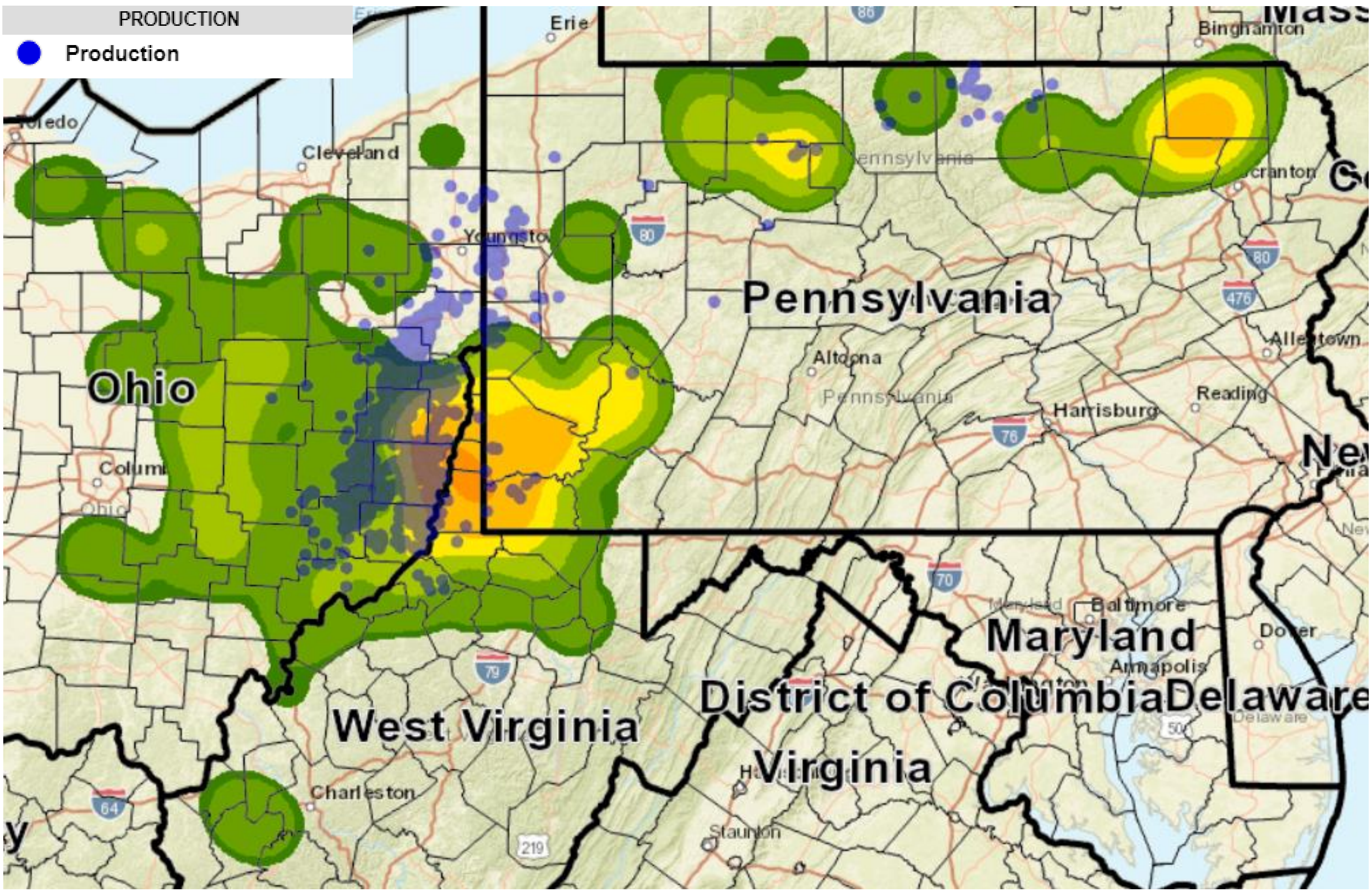


**Figure 2- Appalachian Basin Permit Activity Heat Map (Last 30 Days) and Active Horizontal Utica/Point Pleasant Horizontal Wells**



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