ENVERUS

Upstream Pulse

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Select Stories in This Issue:

Strike delivers 80 MMcf/d peak flow from South Erregulla find

Australian E&P company Strike Energy has announced strong flow test results from its South Erregulla gas discovery onshore Western Australia. The company tested a 15-meter interval across the Kingia sandstone reservoir and produced a peak rate of 80 MMcf/d and a sustained rate of 78 MMcf/d on a 78/64-inch choke with flowing tubing head pressure of 2,590 psi over a five-hour period. No sand or water was observed during the test, and the dry gas stream had low impurities, in line with the Greater Erregulla area.

Also restarted drilling at WE-3, which was suspended because of extreme overpressure early last year.

As of June 2, SE-1 was going through a final flow period before being shut in for a pressure buildup test that will be monitored via downhole gauges. The company will prepare to test the over-pressured Wagina sandstone interval in the same well, which will require a workover rig to isolate and reset the tubing.

Success at South Erregulla bodes well for the company's proposed 1.4 mtpa urea fertilizer facility, Project Haber, which is expected to begin production around mid-decade. *Read more...*

PDC gets green light for 69-well Kenosha development plan

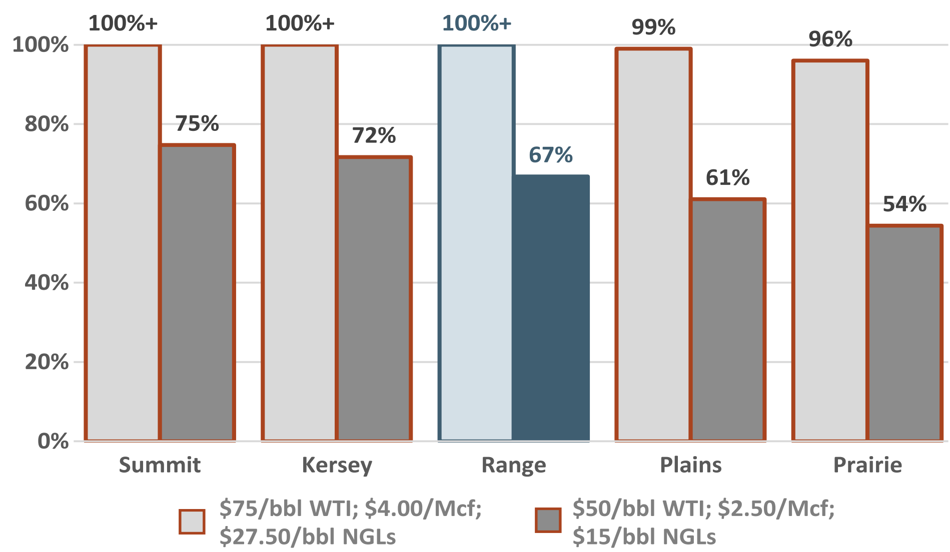
The Colorado Oil and Gas Conservation Commission has approved PDC Energy's Kenosha oil and gas development plan, the company announced June 8. The plan calls for 69 wells on three pads in Weld County. The company said the approval increases its permitted inventory by another rig-year and solidifies its D&C plans into 2024, as it will soon have more than 550 permits and DUCs.

Will soon have 550 drilling permits and DUCs in Colorado, providing a runway into 2024.

"Our team has done a tremendous job working with COGCC leadership and staff, and we appreciate the collaborative relationship we have with them as we permit under the new regulations," PDC operations SVP David Lillo said. "Kenosha is the second OGDP we have had approved, and we look forward to further approvals with our Guanella comprehensive area plan, Broe and other OGDPs."

The 30-well Broe OGDP has a June 29 hearing, while the 450-well Guanella comprehensive area plan is on track for a completeness determination in Q3. *Read more...*

Strong Economics in New 'Range' Area Complement Existing Portfolio



Source: PDC Energy 05/27/22 presentation via **Enverus docFinder**

Activity Index

PLEASE NOTE: REPORT CONSOLIDATION

Beginning July 8, Deal Market Pulse, Capital Pulse and all Regional Scouts will be consolidated into the Upstream Pulse report, putting curated upstream coverage into a single report released once every four weeks. This will reduce significantly the volume of emails that you receive as an Enverus Intelligence client, turning 15 emails into a singular delivery. All regional data elements will still be available as Excel downloads attached to the report. All upstream content will also still be accessible by accessing our Live Feed services.

ABOUT THIS REPORT

Upstream Pulse is published every three weeks by **Enverus** and covers the U.S. E&P sector, including discoveries, drilling and completion activity, well results, development plans, regulatory updates and licensing.

All dollar amounts in this report are in U.S. dollars unless otherwise stated.

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Permian

With inflation twice as high as expected, Callon revises capex

Callon Petroleum increased its 2022 capital budget on June 6 by 10% at midpoint to $790-810 million, from $725 million previously. The company said prices for key drilling and completion items are up 20% versus 2021, doubling the 10% YOY inflation expectation reflected in the company's February outlook. However, the high inflation is being accompanied by high commodity prices, and Callon now forecasts more than $900 million in adjusted free cash flow for 2022, up from prior guidance of over $500 million. Production guidance is unchanged at 101,000-105,000 boe/d (64% oil), and the company still expects to drill 125-130 wells and complete 113-118.

"As we have worked with our oilfield services partners over the last few months to amend and extend several key agreements, visibility into our capital cost structure for the remainder of 2022 has dramatically improved," CEO Joe Gatto said. "We have taken multiple steps to ensure reliable access to top-tier service and consumables providers for all of 2022 and are extending these contracts into 2023."

To ensure market access for its natural gas coming out of the Permian, Callon has entered multiple agreements totaling 75,000 MMBtu/d for firm transportation to the Gulf Coast. The contracts will commence starting in mid-2023. Callon plans to use this capacity for its "take-in-kind" residue gas volumes, providing additional flow assurance and reduced pricing exposure to Waha basis.

APA boosts output with long laterals, plans Alpine High return

APA Corp.'s U.S. production exceeded expectations in Q1 thanks to outperformance of its Permian wells, driven by longer laterals and enhanced completions. At 210,953 boe/d (33% oil, 29% NGLs), U.S. volumes were down 8% sequentially but relatively flat YOY. Production is expected to bottom out in Q2 before rising in H2 as the company's D&C activity increases.

APA has been running two rigs in the southern Midland Basin, primarily drilling 2- and 3-mile laterals. The company's average lateral length in the basin increased to nearly 10,000 ft in 2021 from about 8,000 ft in 2019 and 2020, according to Enverus Foundations data. In Q1, it had two Wolfcamp B completions in Midland County, Texas, stretching more than 15,000 ft, the Diamond Cutter West A 1H and B 2H. These two completions, averaging 15,488 ft, featured high proppant loads of 3,427 lb/ft and delivered 24-hour rates averaging 1,716 boe/d (91% oil), or 110 boe/d per 1,000 ft.

Newly active Delaware rig is finishing a 6-well pad at DXL field before moving to Alpine High.

Prior to the Diamond Cutter wells, APA had completed five 3-mile laterals in the Wolfcamp A last summer, on the Godspeed lease in Glasscock County. The Godspeed wells averaged 15,156-ft laterals stimulated with 1,666 lb/ft of proppant and 51 bbl/ft of fluid and generated IP24s of 1,056 boe/d (85% oil), or 70 boe/d per 1,000 ft. They went on to deliver IP90s of 672 boe/d and IP180s of 801 boe/d. One, the Godspeed A 2HM, delivered 238,125 boe or 1,323 boe/d in the first six months from its 15,203-ft lateral, the company's highest IP180 in Glasscock County and its third highest in the Midland Basin.

In all, APA turned four wells to sales in the southern Midland Basin during Q1 along with a three-well pad in the Austin Chalk, where it was running one rig. A fourth rig was mobilized in early April to DXL field in the Delaware Basin, where it returned to an unfinished six-well pad in Reeves County that is now expected to come online in Q3. The new rig will move to Alpine High to resume gas and NGL development drilling this summer.

Once in Alpine High, the rig will operate close to the Willow 101 AH well, which APA said has produced 9 Bcf to date after reaching initial flowback in January 2021. According to Enverus Foundations data, the Willow well was completed in or below the Woodford with a 9,867-ft lateral fractured with 2,800 lb/ft of proppant and 68 bbl/ft of fluid. It delivered an IP24 of 20.1 MMcfe/d and went on to produce cumulative 12-month output of 6.65 Bcfe, or 18.2 MMcfe/d.

Callon drives improvements on new southern Delaware position

Callon Petroleum established a new southern Delaware Basin position with its acquisition of acreage in Reeves County, Texas, from Primexx Energy last October, and the company says integration of these assets into its existing Delaware Basin program has been "seamless." It brought online three wells within seven days of the Oct. 1 closing, and by February it had completed and brought online two large pads targeting the Wolfcamp A and B, which it says are exceeding expectations.

The Kesey Unit 10-7E 3H-8H pad, brought online in January, delivered 30-day initial rates of 1,312 boe/d (71% oil), or 136 boe/d per 1,000 ft, from four wells targeting the Wolfcamp A and two the Wolfcamp B, with laterals averaging 9,633 ft. Just to the east, the Campbell Unit 9-8W 2H-6H in February delivered IP30s averaging 1,199 boe/d (70% oil), or 131 boe/d per 1,000 ft, from three Wolfcamp A laterals and two Wolfcamp B laterals averaging 9,120 ft.

After focusing all Q1 completion activity on Delaware, 50% of Q2 TILs to be in the Eagle Ford.

Callon plans to bring online three additional wells on the Primexx acreage in Q2. The company also plans to upgrade electrical systems and facilities on the new position this year. It expects LOEs to be reduced by the overlay of its operating and purchasing programs for chemicals and a transition to increased use of ESPs. The company is testing lateral rotary steerable applications, with initial results indicating a 15-20% improvement in drilling footage per day. Fluid intensity has been reduced by 10 bbl/ft while maintaining proppant placement. The efforts led to a 23% reduction in LOEs per boe in Q1 versus Q4.

Q2 output is forecast at 100,000-102,000 boe/d (64% oil). A total of 32-35 wells will be turned online in Q2, with 50% in the Eagle Ford. The company will continue to increase its DUC inventory to more than 50 by the quarter's end compared to 42 at the end of Q1. An additional workover crew will be added to work on ESP conversions, and Callon plans to test increased proppant loadings in the Delaware Basin.

Permian

Laredo hikes capex on more inflation, takes steps to offset

Although Laredo Petroleum assumed 15% inflation in its original capital budget for 2022, increased costs have led the Midland Basin-focused E&P company to increase its full-year spending outlook to $550 million from $520 million. To blunt the impact of rising prices, the company has secured pricing and supply for 85% of its required goods and services through the remainder of the year.

During Q1, Laredo's LOEs rose to $5.34/boe from $4.27/boe in Q4, driven by inflation and recently acquired assets. Higher costs included generators and fuel for ESPs in Howard County, Texas, and higher compression and fuel costs for gas-lifted wells in western Glasscock County. To offset some of these costs going forward, the company is reallocating power generation systems to high-line power as it become available, switching to LNG generator systems and consolidated production in Howard County to company-built and upgraded facilities.

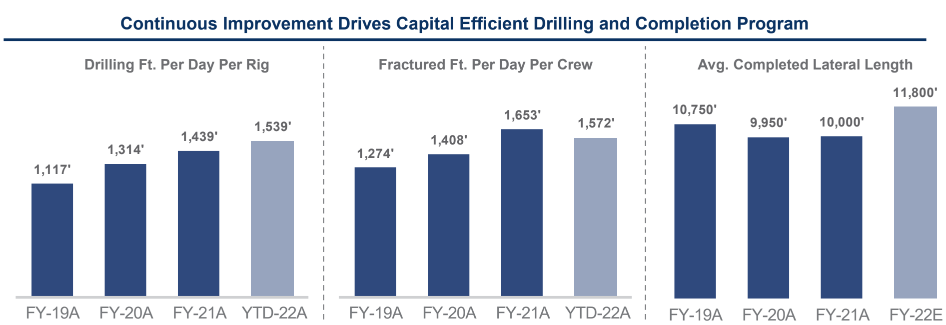
Cost cutting steps include high-line power, switching to LNG generators, 3-mile laterals.

During Q1, Laredo turned 18 wells to sales and produced sales volumes of 85,118 boe/d (47% oil), up 8% YOY. The company noted strong well performance, including wells in the Middle Spraberry and Wolfcamp D. On its northern acreage in Howard County, the company added eight Middle Spraberry wells to its 2022 plans after encouraging results by two recent wells in the formation, while keeping its overall well count for the year unchanged. The company also began drilling 3-mile laterals in the area.

"As we transition to more of the North Howard area, we're integrating in more 15,000-ft laterals into the program. … There's certainly cost savings on a per foot basis. So that's really the driver for drilling the longer laterals, and we're seeing that work into our overall program on a cost basis based on the capital numbers that have been provided," COO T. Karen Chandler said on a May 5 earnings call.

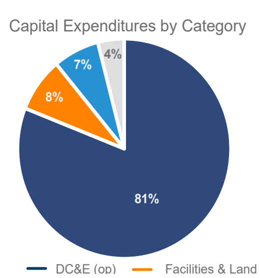
Laredo also announced that it became the first Permian operator to achieved Project Canary's TrustWell certification for responsibly sourced production. It said 73 of its wells have the TrustWell gold rating, with cumulative gross production of 31,500 boe/d.

Capital Program Maintains Prior-Year Activity Levels



2022E Capital Program

	FY-22 Guidance
Capital Expenditures ($MM)	~$550
Avg. Rig Count (Op)	~2.3
Avg. Frac Crews (Op)	~1.2
Spuds	65 Gross (62.9 Net)
Completions	55 Gross (53.1 Net)
Turn-in-Lines	55 Gross (53.1 Net)
Production (MBOE/d)	82.0 – 86.0



Source: Laredo Petroleum 06/06/22 presentation via **Enverus docFinder**

PDC's U-lateral pilot wells track EURs of 1.5 MMboe or more

PDC Energy brought online its first U-lateral pilot project during Q1 and, in a May 26 update, said the three U-laterals on the six-well Old Monarch State 12 pad in Reeves County, Texas, are trending at or above EURs of 1.5 MMboe after three months of production. In comparison, three standard-reach laterals on the pad are tracking toward EURs of 700,000 boe. The 1-mile SRLs and 2-mile U-laterals target the Wolfcamp A and B and are upspaced to the equivalent of eight to 10 wells per section. PDC had already reported in early May that early productivity from the pilot was exceeding expectations.

$76MM spent in Delaware in Q1; full-year budget for the basin increased to $175MM from $150MM.

"We are proud of the team's use of technology to drill these types of wells. … And we continue to look for other ways on our acreage to apply this technology to organically expand our inventory," operations SVP David Lillo said on a May 5 earnings call.

PDC is also drilling the Second Bone Spring tests on its acreage this year and recently started flowback on its initial wells. It plans to drill 16 Delaware Basin wells and complete 20 in 2022 on eight-to-10-well spacing per section; the company averaged 14-16 wells per section in its 2021 D&C program. In Q1, PDC drilled six wells and brought online nine. Q1 production from the basin was 28,000 boe/d (39% oil), down 3% sequentially. PDC, which also operates in Colorado's DJ Basin, spent $76 million in the Delaware Basin during the quarter. The company increased its 2022 capex for the basin May 26 to $175 million from the $150 million announced in February and added $50 million to the low end of its overall capex for a new range of $950 million to $1 billion.

See Also...
PDC hiking shareholder returns on higher FCF outlook of $1.7B

Eastern

Repsol returns to Marcellus with 2 rigs & longer laterals

Repsol took a 22-month drilling hiatus from its operated Marcellus assets that lasted from November 2019 until last September. Since November, the company has sustained a two-rig program in Tioga County, Pennsylvania, and it intends to keep both rigs active in the Marcellus this year. From 2021 through 2025, Repsol plans to spend $600 million in the play as part of a strategy of transitioning from exploration to development of its most productive basins.

Available state data for Repsol's 2021 completion program is thin, or there simply weren't many completions. The data includes three completions from December in Bradford County, two of which had the longest laterals the company has ever completed in the Marcellus. The Alderson (05-269-05) V 5H flowed an initial 90-day production rate of 9.3 MMcf/d from its 16,428-ft lateral, or 564 Mcf/d per 1,000 ft, and the Alderson (05-269-07) V 7H produced an IP90 of 8.6 MMcf/d from its 15,373-ft lateral, or 956 Mcf/d per 1,000 ft.

Completed a Marcellus well in December with a company-record 16,428-ft lateral.

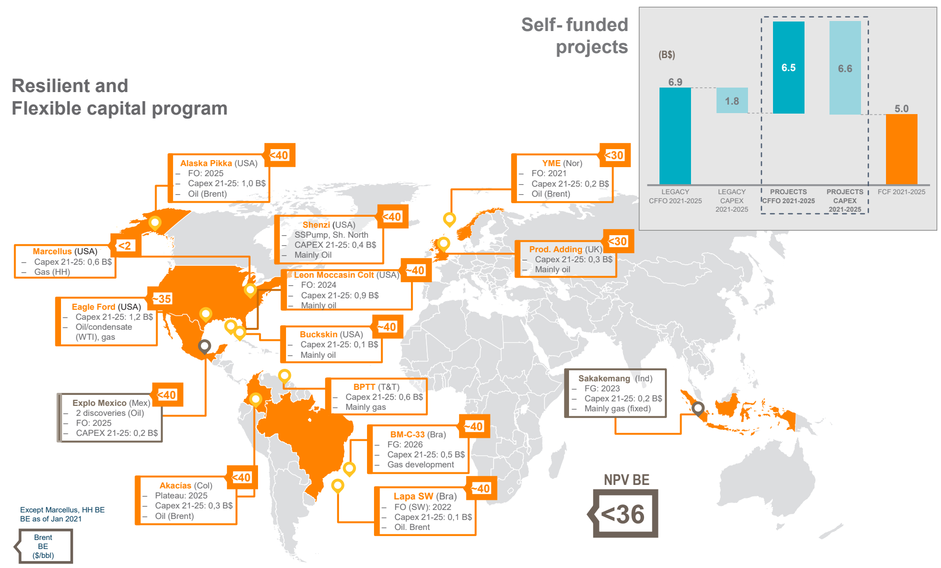
For comparison, 63 Repsol wells from 2019 with production data averaged 5.7 MMcf/d from 8,729-ft laterals, or 648 Mcf/d per 1,000 ft. The industry average for IP90s in 2021 on Tier 1 acreage in the northeast Pennsylvania dry gas portion of the Marcellus, which is where Repsol's assets lie, was 11.3 MMcf/d from 10,887-ft laterals, or 1.0 MMcf/d per 1,000 ft.

Repsol has nine additional Marcellus wells being drilled and DUCs with laterals exceeding 15,000 ft. Three that were spudded in May are expected to stretch around 18,000 ft. The average lateral length for wells that spudded in 2021 and in 2022 so far is 9,879 ft.

The return of Repsol's D&C program in the Marcellus was accompanied by an expanded inventory when the company bought the assets of Rockdale Marcellus LLC for $221.9 million in January after successfully bidding in the private company's Section 363 bankruptcy auction in December. The deal gave Repsol a highly contiguous 43,000 net acres across Bradford, Tioga and Lycoming counties, with net production around 79 MMcf/d from 63 wells (97% operated). The assets complemented Repsol's existing 171,000 net acres in Tioga, Bradford and Susquehanna counties.

Repsol is also active in the Eagle Ford, where it has two rigs running and a third being added ahead of schedule sometime later this year. In its five-year plan, Repsol plans to spend $1.2 billion in the Eagle Ford.

Repsol's Self-Funded Upstream Projects 2021-2025



Source: Repsol 03/07/22 presentation via **Enverus docFinder**

CNX expands airport alliance into Utica with new tech

CNX Resources and Pittsburgh International Airport are working together to lower costs and reduce emissions in the aviation industry. CNX, which already produces natural gas from Marcellus wells on the airport's grounds, has developed proprietary technology to convert on-site dry gas into LNG, CNG and electricity for various uses, including as a hydrogen feedstock. These technologies will reduce local emissions and further reduce operating costs at the airport. The partnership also envisions creation of a sustainable fuel hub that will provide LNG and CNG to airlines, transit, cargo, fleet, military and other energy-intensive businesses.

All of CNX's prior wells on Pittsburgh International Airport grounds targeted the Marcellus.

"CNX views its innovative public-private partnership with PIT as the beachhead market to showcase this technology, and the associated economic development opportunities, through on-site development of low-cost and lower-carbon intensity natural gas derivative products," CNX CEO Nick Deluliis said. "We will produce, process and consume these natural gas-based products locally first, and, in doing so, unleash countless downstream economic opportunities and help jumpstart the hydrogen economy, leverage the region's unrivaled work ethic, create family-sustaining jobs, better the region's underserved communities and revitalize Appalachia's middle class in a new, lower-carbon economic ecosystem."

CNX's D&C activities on the airport grounds in Allegheny County, Pennsylvania, began in 2014, with the first wells coming online in 2016. The two parties have a revenue-sharing agreement for the output. Around 14 wells are currently producing, according to Enverus Prism data, with output in March averaging 24.1 MMcf/d. Under the new agreement, CNX will develop Allegheny County's first Utica wells on the airport property. CNX noted that the dry gas from this part of the Utica will be more easily converted into LNG and CNG alternative fuel and hydrogen.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