

**OUTLOOK**

## EIA Modeling June Oil Production Growth on Strength of Permian Output

Driven by the Permian Basin, oil production out of seven key U.S. onshore regions is set to grow from May to June, while natural gas production is on track to decline, according to the updated projections from the Energy Information Administration (EIA).

In its latest [Drilling Productivity Report \(DPR\)](#), EIA said it expects the Anadarko, Appalachia and Permian basins, as well as the Bakken, Eagle Ford, Haynesville and Niobrara shales, to produce a combined 7.733 million b/d in June, up slightly from an estimated 7.707 million b/d in May.

The Permian, by far the most active U.S. ...cont' pg. 2

**BAKKEN SHALE**

## North Dakota Reports Higher Natural Gas Production, Lower Flaring in March

Natural gas production outpaced oil in North Dakota's Bakken Shale during March, according to the state Dakota Department of Mineral Resources (DMR).

Gas production was 89.2 Bcf (2.8 Bcf/d), compared to 75.7 Bcf (2.7 Bcf/d) in February. Oil production totaled 34.3 million bbl (1.1 million b/d) from 30.3 million bbl (1.08 million b/d).

The state also set a new high of 94% for gas capture, up 2% from February.

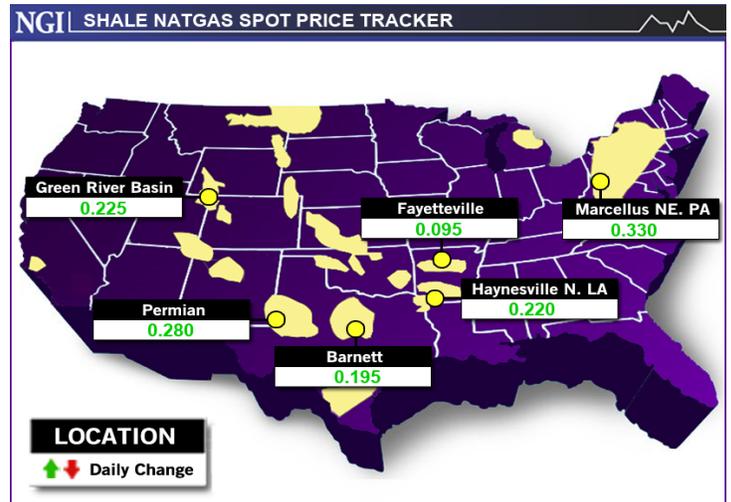
"It's a testimony to the \$20 billion that has been invested to get gas flaring under control in the Bakken," said DMR chief Lynn Helms last Friday. "We're back in the cycle of rapidly increasing gas production, so ...cont' pg. 4

**ANALYSIS**

## U.S. Oil, Gas Drilling Permitting Jumps by Double Digits in April, with Strength in DJ, Marcellus

The U.S. onshore drilling permit count bounced up during April, both month/month (m/m) and compared with a year earlier, with double-digit growth in many major plays.

According to the monthly compilation by Evercore



Trade Date: May 17; Flow Date(s): May 18

Basin/Region	Range	Avg	Chg	Vol	Deals
<b>Gulf Coast</b>					
Barnett	2.800-2.800	2.800	0.195	4	2
Eagle Ford	2.900-3.010	2.960	0.105	279	56
Haynesville - E. TX	2.740-2.920	2.830	0.165	692	100
Haynesville - N. LA	2.820-2.890	2.865	0.220	118	18
Permian1	2.690-2.805	2.780	0.280	666	123
Tuscaloosa Marine Shale	2.900-2.970	2.945	0.140	799	111
<b>Midcontinent</b>					
Arkoma - Woodford	2.810-2.830	2.820	0.180	48	8
Canva - Woodford	2.820-2.850	2.835	0.155	85	16
Fayetteville	2.700-2.855	2.805	0.095	114	14
Granite Wash*	2.780-2.830	2.805	0.180	118	26
<b>Northeast</b>					
Marcellus - NE PA2	2.000-2.310	2.170	0.330	277	71
Marcellus - NE PA: Other3	2.050-2.310	2.220	0.345	202	53
Marcellus - NE PA: Tenn4	2.000-2.050	2.030	0.285	75	18
Marcellus - SW PA/WV	2.300-2.650	2.450	0.245	1,456	278
Utica5	2.330-2.400	2.345	0.110	224	35
<b>Rocky Mountains / West</b>					
Bakken	2.690-2.690	2.690	--	10	1
Green River Basin*	2.800-2.870	2.845	0.225	772	154
Niobrara-DJ6	2.780-2.860	2.795	0.155	295	44
Piceance Basin*	2.775-2.855	2.815	0.195	127	29
Uinta Basin*	2.770-2.775	2.775	0.190	64	14
San Juan Basin*	2.740-2.860	2.780	0.190	569	98

*Notes: Table represents fixed-price delivered-to pipeline transactions in USD/MMBtu. These data are comprised of deals that NGI believe represent trading activity in the respective resource plays and may contain gas that was produced from conventional formations. \* Denotes a tight sands formation. Volumes may not total due to rounding. For more information, please see NGI's Shale Price Methodology.*

**REGULATORY****North Dakota Governor Sets Carbon-Neutral Goal by 2030**

North Dakota, the nation's second largest oil-producing state, will strive to become carbon-neutral by decade's end, Gov. Doug Burgum said Wednesday.

At the Williston Basin Petroleum Conference in Bismarck, Burgum cited the global energy sustainability effort that North Dakota intends to join. He encouraged the oil and gas industry representatives in the audience to support the initiative.

Reiterating a slogan of "innovation, not regulation," Burgum said North Dakota is facing a global challenge embodied in environmental, social and governance (ESG) initiatives.

"ESG has become a major topic for everyone, and if you're a public company it doesn't matter if you make software or produce oil and gas, this is a board room topic around the world. And if you're a company trying to raise capital, I'm sure this topic has hit you head on, but this challenge also represents a great opportunity for North Dakota."

The governor said the state is pursuing produced water recycling in oilfields and enhanced oil recovery. Research is underway at the University of North Dakota's Energy and Environmental Research Center (EERC). The state also is working on reducing carbon dioxide (CO<sub>2</sub>) emissions, salt caverns, hydrogen storage and plastics manufacturing using excess and flared natural gas.

***[On the go? Tune in to NGI's Hub & Flow podcast for a quick take on what's moving the markets.]***

"Of all the opportunities, perhaps none has more potential than carbon capture and storage," he said. "Everyone recognizes that carbon is vital for life and it represents an enormous opportunity for oil and gas, and the EERC is going to lead the nation in research using CO<sub>2</sub> from our power plants for enhanced oil recovery."



Source: Energy & Environmental Resource Center

The challenge to become carbon-neutral, he said, "is driving investment and consumer demand for products and services that have no or low-carbon footprints across every single industry."

Burgum said the climate challenges cannot be solved without the innovations and expertise of the oil and gas sector. "We need to drive capital toward this industry so the amount of research and development can be raised." He said he is optimistic about the state's ability to achieve its goals because it has "hit the geologic jackpot."

American Petroleum Institute CEO Mike Sommers told the audience that the country's energy industry is working toward "the most important environmental movement in the world today." The Bakken/Three Forks Shale in the Williston Basin helped America become a global energy superpower, and it will continue in that direction, he said.

"No industry has done more to cut emissions throughout the economy, thanks to voluntary action, not government mandates," Sommers said. "All the vehicles produced today are 99% cleaner than they were in 1970." ■

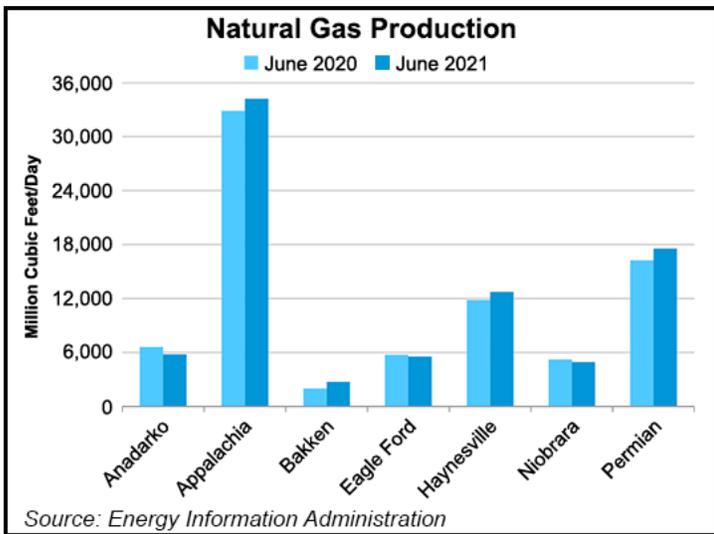
**EIA Modeling June Oil Production Growth on Strength of Permian Output**

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onshore play, is expected to grow output by 54,000 b/d m/m to 4.589 million b/d in June, offsetting projected declines in the Anadarko (down 7,000 b/d), Bakken (down 7,000 b/d), Eagle Ford (down 8,000 b/d) and Niobrara

(down 7,000 b/d).

Natural gas production from the seven regions is expected to total 83.571 Bcf/d in June, down 53 MMcf/d from 83.624 Bcf/d produced in May. The ...cont' pg. 3



Haynesville (up 118 MMcf/d) and the Permian (up 59 MMcf/d) are each expected to grow output month/month, while the Anadarko (down 50 MMcf/d), Appalachia (down 52 MMcf/d), Bakken (down 55 MMcf/d), Eagle Ford (down 32 MMcf/d) and Niobrara (down 41 MMcf/d)

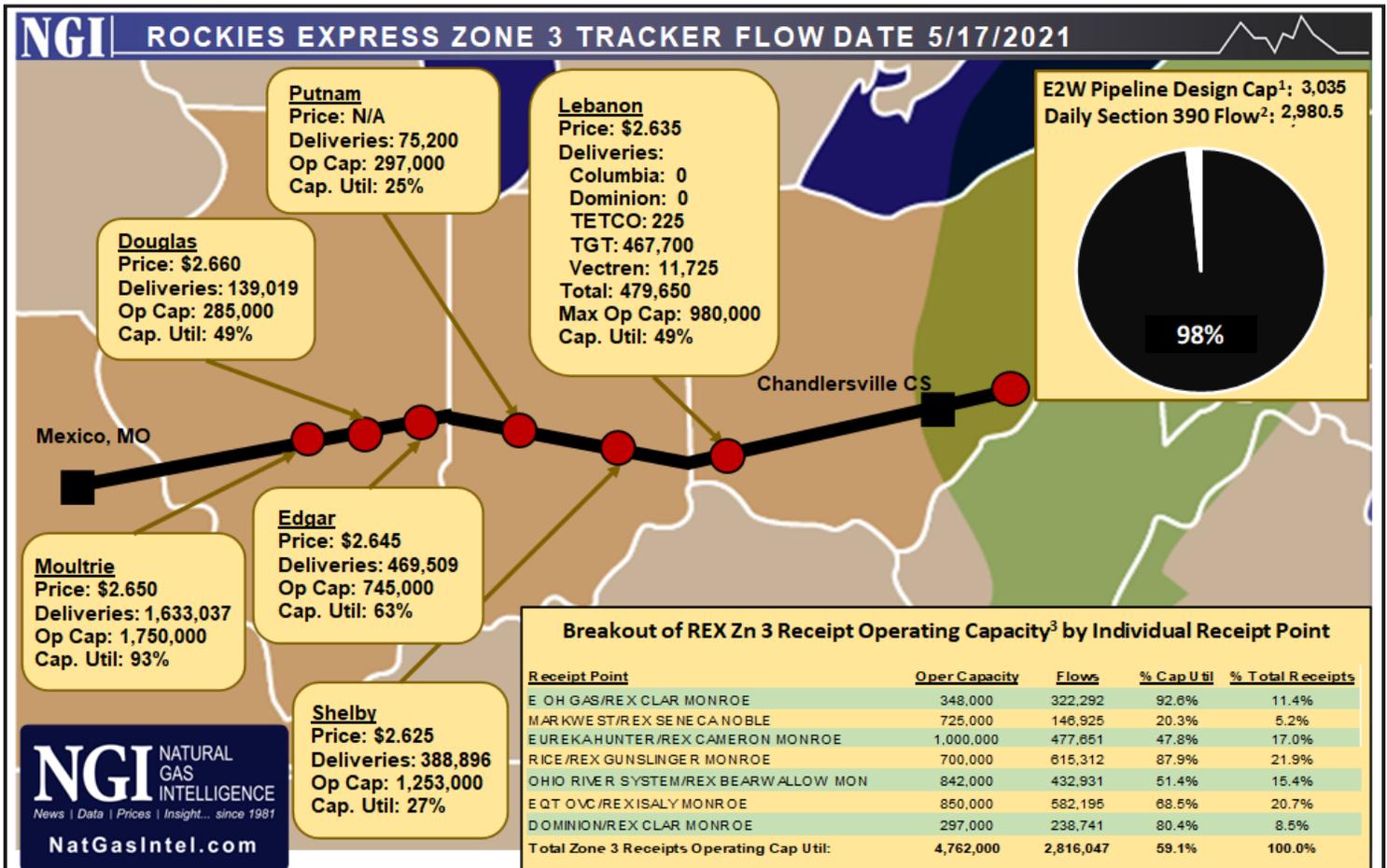
are on track for month/month declines, according to EIA.

The overall backlog of drilled but uncompleted (DUC) wells across the seven regions declined by 241 to 6,857 from March to April, the latest DPR data show. The Permian, with the largest backlog to begin with, posted the largest month/month decline, lowering its DUC total by 121 to 2,932.

The Niobrara (down 39), Bakken (down 26), Eagle Ford (down 23), Anadarko (down 21), Appalachia (down 10) and Haynesville (down 1) all saw their DUC totals decline month/month as well, according to the DPR.

EIA expects new-well oil production per rig to increase by 12 b/d on average from May to June for the seven regions. New-well natural gas production per rig is set to decline by 122 Mcf/d on average.

The DPR uses recent data on the total number of drilling rigs in operation, along with estimates of drilling productivity and estimated changes in production from existing wells to model changes in production from the seven regions. ■



Source: Tallgrass Energy LP, NGI calculations. For more info and daily 10am ET updates of this chart, go to [natgasintel.com/rextracker](http://natgasintel.com/rextracker).

**North Dakota Reports Higher Natural Gas Production, Lower Flaring in March**

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in March production jumped by 174 MMcf/d, equivalent to the capacity of two gas processing plants essentially, or 6.4 %.”

The increased production was accomplished with six hydraulic fracturing crews operating in March. Crews have since increased to nine.

“We expect a nice gentle recovery in terms of oil and gas activity,” said Helms. Drilling rigs now total 18, up by three for the February/March levels.

The price of Bakken sweet crude oil topped off at \$57/ bbl on Friday after averaging \$54.38/bbl in March and \$55.35/bbl in April.

Regarding North Dakota Gov. Doug Burgum’s challenge to make the [state carbon neutral by 2030](#), Helms said he expects the industry to embrace it. He noted efforts to advance carbon capture and storage (CCS), as there may be 250 tons of CCS capacity available in North Dakota.

“Basically, our geology could allow us to take all U.S. energy carbon production for 50 years,” he said. “The governor expects CCS to be a growing industry within the state.” ■

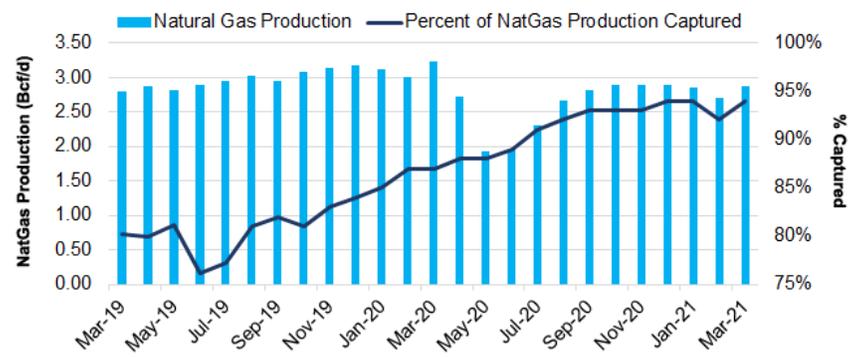
**U.S. Oil, Gas Drilling Permitting Jumps by Double Digits in April, with Strength in DJ, Marcellus**

Continued from Page 1

James West. There also was “notable activity” in the Marcellus Shale, up 67% from March with a 62-permit gain.

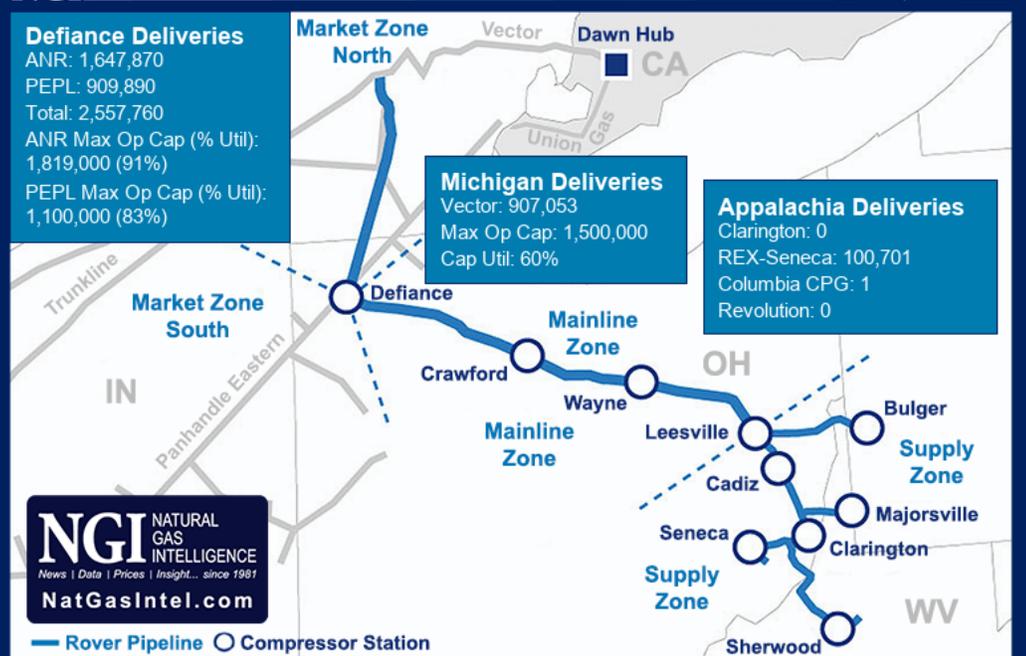
“The Marcellus gets busy, thanks to a plethora of activity in Pennsylvania,” West ...cont’ pg. 5

**North Dakota NatGas Production & Percent of Production Captured Mar 2019–Mar 2021**



Source: North Dakota DMR, NGI calculations

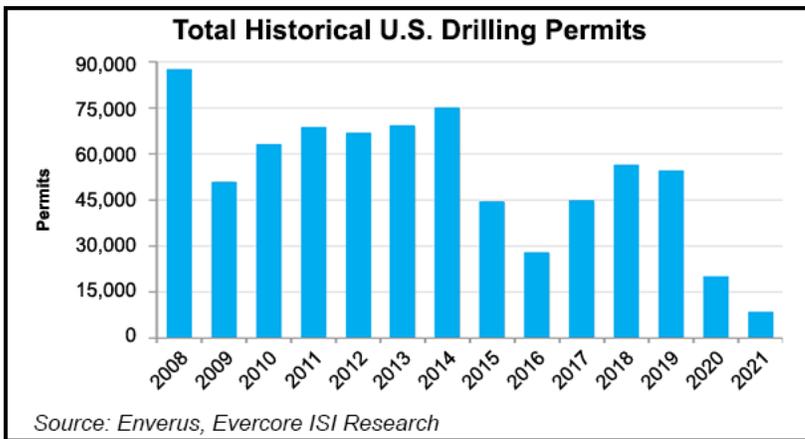
**NGI Rover NatGas Flow Tracker for Gas Day 17-May-2021**



Rover Receipt Points	Op Cap	Receipt Vol	% Util
BERNE	350,000	298,680	85%
CADIZ-MW	300,000	113,248	38%
CADIZ-ORS	1,070,000	581,477	54%
CLARINGTON-EUREKA	350,000	286,348	82%
CLARINGTON-OVC	300,000	225,767	75%
CRAWFORD-UGS	350,000	113,432	32%
HARMON CREEK	400,000	217,000	54%
MADISON	400,000	60,700	15%
MAJORSVILLE	400,000	367,587	92%
REVOLUTION	525,000	69,000	13%
SENECA	800,000	48,000	6%
SHERWOOD	840,000	839,036	100%
SUNDANCE	406,000	279,233	69%
<b>Total Rover Receipts</b>	<b>3,250,000</b>	<b>3,386,076</b>	<b>104%</b>
<b>Total Rover Deliveries</b>	<b>3,250,000</b>	<b>3,565,515</b>	<b>110%</b>

\*Represents stated full system capacity. All units in dekatherms.

Source: Rover EBB, NGI calculations & estimates



Basin’s permit requests were up 55% m/m with 19 requests.

“From a state perspective, New Mexico experienced notable growth as the permit count increased to 323,” a 233% hike m/m. Colorado’s DJ helped send the state’s count to 122 from zero permit requests in March. Utah permitting also increased, up 74% m/m with 20 permits.

Texas overall was “relatively flat” from March’s count of 997, at 1% higher m/m), but overall requests were still higher by 613 year/year.

Texas is the largest oil and gas producing state, and it routinely leads the permit count. However, West noted that in April 2020, as energy demand evaporated amid the coronavirus, a [negative West Texas Intermediate oil price](#) had “reared its ugly head...” The negative prices in turn sharply curtailed activity in the state’s largest oil producing region, the Permian Basin.

Meanwhile, two energy producing states reported a decline in permit requests from March.

California reversed the strong permitting growth to plunge by 40% m/m in April, with 172 permit requests. Ohio permitting, centered in the Utica Shale, also declined m/m by 26% to 42. ■

said. “The state experienced its largest increase in the permit count m/m since 2018, rising to 130 permits (up 57 m/m). West Virginia also experienced a noteworthy uptick in activity, with 24 permits issued during the month (up five m/m), its highest count since April 2020.”

North American Pipelines: [[Check out NGI's 2020 Map of North American Natural Gas Pipelines, LNG Facilities & Shale Plays](#)]

In the Bakken Shale, permitting rose by 42% m/m, with 20 requests. Also showing an increase was the Granite Wash formation, which had 19 more permit requests than in March, with 248% growth. The Powder River

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**Executive Publisher:** Dexter Steis ([dexter.steis@natgasintel.com](mailto:dexter.steis@natgasintel.com)). **Editor-In-Chief:** Alex Steis ([alex.steis@natgasintel.com](mailto:alex.steis@natgasintel.com)).  
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Contact us: **EDITORIAL:** [editorial@natgasintel.com](mailto:editorial@natgasintel.com); **PRICING:** [prices@natgasintel.com](mailto:prices@natgasintel.com); **SUPPORT/SALES:** [info@natgasintel.com](mailto:info@natgasintel.com); **ADVERTISE:** [adv@natgasintel.com](mailto:adv@natgasintel.com).

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