Drilling Productivity Report

For key tight oil and shale gas regions

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Anadarko Region

**Drilling Productivity Report**

**May 2020**

Drilling data through April

Projected production through June

- **Oil**
  - Production change: +166 barrels/day
  - Month over month:
    - May: 717 barrels/day
    - June: 551 barrels/day

- **Gas**
  - Production change: +977 thousand cubic feet/day
  - Month over month:
    - May: 4,233 thousand cubic feet/day
    - June: 3,256 thousand cubic feet/day

**New-well oil production per rig**

- Anadarko Region
  - 2011-2020
  - New-well oil production per rig: 800 barrels/day
  - Rig count: 0 to 300

**Legacy oil production change**

- Anadarko Region
  - 2011-2020
  - Legacy oil production change: 0 to 70 thousand barrels/day

**Indicated change in oil production (Jun vs. May)**

- Anadarko Region
  - 2011-2020
  - Indicated change: +16 000 barrels/day

**Natural gas production**

- Anadarko Region
  - 2011-2020
  - Natural gas production: 8,000 thousand cubic feet/day

**Indicated change in natural gas production (Jun vs. May)**

- Anadarko Region
  - 2011-2020
  - Indicated change: +97 000 thousand cubic feet/day

**Oil production**

- Anadarko Region
  - 2011-2020
  - Oil production: 0 to 1,200 thousand barrels/day

**Gas production**

- Anadarko Region
  - 2011-2020
  - Gas production: 0 to 8,000 thousand cubic feet/day
**Appalachia Region**

**Drilling Productivity Report**

**May 2020**

- **Oil production**
  - New-well oil production per rig (barrels/day)
  - Legacy oil production change (thousand barrels/day)
  - Indicated change in oil production (Jun vs. May) (thousand barrels/day)

- **Gas production**
  - New-well gas production per rig (thousand cubic feet/day)
  - Legacy gas production change (million cubic feet/day)
  - Indicated change in natural gas production (Jun vs. May) (million cubic feet/day)

**Projected production through June**

- **Drilling data through April**

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Eagle Ford Region
Drilling Productivity Report

May 2020

Drilling data through April
Projected production through June

Oil
+231
barrels/day
month over month

1,519
June

1,288
May

New-well oil production per rig

Rig count

Eagle Ford Region

New-well oil production per rig

thousand barrels/day

New-well oil production per rig

Rig count

June

5,240
thousand cubic feet/day

May

4,411

Gas
+799
thousand cubic feet/day
month over month

Eagle Ford Region

New-well gas production per rig

Rig count

thousand cubic feet/day

Eagle Ford Region

Legacy oil production change

thousand barrels/day

Eagle Ford Region

Natural gas production

million cubic feet/day

Eagle Ford Region

Legacy gas production change

million cubic feet/day

Indicated change in oil production (Jun vs. May)

thousand barrels/day

Indicated change in natural gas production (Jun vs. May)

million cubic feet/day

Oil -36
thousand barrels/day
month over month

Gas -126
million cubic feet/day
month over month
**Haynesville Region**

**Drilling Productivity Report**

May 2020

- Monthly additions from one average rig:
  - June 2020: 11,196 thousand barrels/day
  - May 2020: 10,976 thousand barrels/day

- Gas production change:
  - May 2020: +220 thousand cubic feet/day

- Oil production change:
  - May 2020: +1 thousand barrels/day

**New-well oil production per rig**
- June 2020: 24 barrels/day
- May 2020: 23 barrels/day

**Legacy oil production change**
- May 2020: (700) thousand barrels/day

**Indicated change in oil production (Jun vs. May)**
- May 2020: +1 thousand barrels/day
- June 2020: -2 thousand barrels/day
- June 2020: -1 thousand barrels/day

**New-well gas production per rig**
- June 2020: 11,196 thousand cubic feet/day
- May 2020: 10,976 thousand cubic feet/day

**Legacy gas production change**
- May 2020: (700) million cubic feet/day

**Indicated change in natural gas production (Jun vs. May)**
- May 2020: +414 million cubic feet/day
- June 2020: -424 million cubic feet/day
- June 2020: -10 million cubic feet/day

**Oil production**
- May 2020: 37 Mmbbl/d

**Natural gas production**
- May 2020: 12,018 MMcf/d
- June 2020: 12,008 MMcf/d

**New-well gas production per rig**
- June 2020: 11,196 thousand cubic feet/day
- May 2020: 10,976 thousand cubic feet/day

**Rig count**
- June 2020: 180 rigs
- May 2020: 160 rigs

**New-well oil production per rig**
- June 2020: 24 barrels/day
- May 2020: 23 barrels/day

**New-well gas production per rig**
- June 2020: 2,000 thousand cubic feet/day
- May 2020: 1,800 thousand cubic feet/day

**Drilling data through April**

- Projected production through June

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Niobrara Region
Drilling Productivity Report

May 2020

Monthly additions from one average rig

- Oil +61 barrels/day month over month
- Gas +214 thousand cubic feet/day month over month

Niobrara Region
New-well oil production per rig
barrels/day

Niobrara Region
New-well gas production per rig
thousand cubic feet/day

Niobrara Region
Legacy oil production change
thousand barrels/day

Niobrara Region
Legacy gas production change
million cubic feet/day

Niobrara Region
Indicated change in oil production (Jun vs. May)
thousand barrels/day

Niobrara Region
Indicated change in natural gas production (Jun vs. May)
million cubic feet/day

Niobrara Region
Oil production
thousand barrels/day

Niobrara Region
Natural gas production
million cubic feet/day

Oil production
Natural gas production

1,274 June
1,213 May

4,497 June
4,283 May

+61
-24
+214

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**Permian Region**

**Drilling Productivity Report**

**May 2020**

- **Oil:** New-well oil production per rig (barrels/day; rig count) from 2011 to 2020.
- **Legacy oil production change:** Thousand barrels/day from 2011 to 2020.
- **Indicated change in oil production (Jun vs. May):** Thousand barrels/day (May 4,377 Mmbbl/d; June 4,290 Mmbbl/d).
- **Oil production:** Thousand barrels/day from 2011 to 2020.

**Gas:**
- New-well gas production per rig (thousand cubic feet/day; rig count) from 2011 to 2020.
- Legacy gas production change (million cubic feet/day) from 2011 to 2020.
- Indicated change in natural gas production (Jun vs. May) (million cubic feet/day).
- Gas production (million cubic feet/day) from 2011 to 2020.

- **Monthly additions from one average rig:**
  - June: 1,585 thousand cubic feet/day.
  - May: 1,428 thousand cubic feet/day.

- **Drilling data through April:** Projected production through June.
The Drilling Productivity Report 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 oil and natural gas wells to provide estimated changes in oil\(^1\) and natural gas\(^2\) production for seven key regions. EIA's approach does not distinguish between oil-directed rigs and gas-directed rigs because once a well is completed it may produce both oil and gas; more than half of the wells do that.

**Monthly additions from one average rig**
Monthly additions from one average rig represent EIA’s estimate of an average rig’s\(^3\) contribution to production of oil and natural gas from new wells.\(^4\) The estimation of new-well production per rig uses several months of recent historical data on total production from new wells for each field divided by the region's monthly rig count, lagged by two months.\(^5\) Current- and next-month values are listed on the top header. The month-over-month change is listed alongside, with +/- signs and color-coded arrows to highlight the growth or decline in oil (brown) or natural gas (blue).

**New-well oil/gas production per rig**
Charts present historical estimated monthly additions from one average rig coupled with the number of total drilling rigs as reported by Baker Hughes.

**Legacy oil and natural gas production change**
Charts present EIA’s estimates of total oil and gas production changes from all the wells other than the new wells. The trend is dominated by the well depletion rates, but other circumstances can influence the direction of the change. For example, well freeze-offs or hurricanes can cause production to significantly decline in any given month, resulting in a production increase the next month when production simply returns to normal levels.

**Projected change in monthly oil/gas production**
Charts present the combined effects of new-well production and changes to legacy production. Total new-well production is offset by the anticipated change in legacy production to derive the net change in production. The estimated change in production does not reflect external circumstances that can affect the actual rates, such as infrastructure constraints, bad weather, or shut-ins based on environmental or economic issues.

**Oil/gas production**
Charts present all oil and natural gas production from both new and legacy wells since 2007. This production is based on all wells reported to the state oil and gas agencies. Where state data are not immediately available, EIA estimates the production based on estimated changes in new-well oil/gas production and the corresponding legacy change.

**Footnotes:**
1. Oil production represents both crude and condensate production from all formations in the region. Production is not limited to tight formations. The regions are defined by all selected counties, which include areas outside of tight oil formations.
2. Gas production represents gross (before processing) gas production from all formations in the region. Production is not limited to shale formations. The regions are defined by all selected counties, which include areas outside of shale formations.
3. The monthly average rig count used in this report is calculated from weekly data on total oil and gas rigs reported by Baker Hughes.
4. A new well is defined as one that began producing for the first time in the previous month. Each well belongs to the new-well category for only one month. Reworked and recompleted wells are excluded from the calculation.
5. Rig count data lag production data because EIA has observed that the best predictor of the number of new wells beginning production in a given month is the count of rigs in operation two months earlier.
The data used in the preparation of this report come from the following sources. EIA is solely responsible for the analysis, calculations, and conclusions.

**Drilling Info** ([http://www.drillinginfo.com](http://www.drillinginfo.com)) Source of production, permit, and spud data for counties associated with this report. Source of real-time rig location to estimate new wells spudded and completed throughout the United States.

**Baker Hughes** ([http://www.bakerhughes.com](http://www.bakerhughes.com)) Source of rig and well counts by county, state, and basin.

**North Dakota Oil and Gas Division** ([https://www.dmr.nd.gov/oilgas](https://www.dmr.nd.gov/oilgas)) Source of well production, permit, and completion data in the counties associated with this report in North Dakota

**Railroad Commission of Texas** ([http://www.rrc.state.tx.us](http://www.rrc.state.tx.us)) Source of well production, permit, and completion data in the counties associated with this report in Texas

**Pennsylvania Department of Environmental Protection** ([https://www.paoilandgasreporting.state.pa.us/publicreports/Modules/Welcome/Welcome.aspx](https://www.paoilandgasreporting.state.pa.us/publicreports/Modules/Welcome/Welcome.aspx)) Source of well production, permit, and completion data in the counties associated with this report in Pennsylvania

**West Virginia Department of Environmental Protection** ([http://www.dep.wv.gov/oil-and-gas/Pages/default.aspx](http://www.dep.wv.gov/oil-and-gas/Pages/default.aspx)) Source of well production, permit, and completion data in the counties associated with this report in West Virginia

**Colorado Oil and Gas Conservation Commission** ([http://cogcc.state.co.us](http://cogcc.state.co.us)) Source of well production, permit, and completion data in the counties associated with this report in Colorado

**Wyoming Oil and Conservation Commission** ([http://wogcc.state.wy.us](http://wogcc.state.wy.us)) Source of well production, permit, and completion data in the counties associated with this report in Wyoming

**Louisiana Department of Natural Resources** ([http://dnr.louisiana.gov](http://dnr.louisiana.gov)) Source of well production, permit, and completion data in the counties associated with this report in Louisiana

**Ohio Department of Natural Resources** ([http://oilandgas.ohiodnr.gov](http://oilandgas.ohiodnr.gov)) Source of well production, permit, and completion data in the counties associated with this report in Ohio

**Oklahoma Corporation Commission** ([http://www.occeweb.com/og/oghome.htm](http://www.occeweb.com/og/oghome.htm)) Source of well production, permit, and completion data in the counties associated with this report in Oklahoma