Anadarko Region

**Oil**

- **New-well oil production per rig**
  - **Average rig** performance.

- **Legacy oil production change**
  - **Month over month**

- **Indicated change in oil production (Oct vs. Sep)**
  - **Month over month**

- **Oil production**
  - **Month over month**

**Gas**

- **New-well gas production per rig**
  - **Average rig** performance.

- **Legacy gas production change**
  - **Month over month**

- **Indicated change in natural gas production (Oct vs. Sep)**
  - **Month over month**

- **Gas production**
  - **Month over month**

**Drilling data through August**

**Projected production through October**

**September 2018**
### Bakken Region

#### Drilling Productivity Report

**September 2018**  
drilling data through August  
projected production through October

**Oil**  
month over month  
+10 barrels/day

**Gas**  
month over month  
+37 thousand cubic feet/day

**Bakken Region**  
New-well oil production per rig  
barrels/day

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Production per rig</td>
<td>1,318 Mbbl/d</td>
<td>1,491 Mbbl/d</td>
<td>1,501 Mbbl/d</td>
<td>1,491 Mbbl/d</td>
<td>2,499 MMcf/d</td>
<td>2,522 MMcf/d</td>
<td>3,057 MMcf/d</td>
<td>3,132 MMcf/d</td>
<td>3,600 MMcf/d</td>
<td>3,711 MMcf/d</td>
</tr>
</tbody>
</table>

**Bakken Region**  
Legacy oil production change  
thousand barrels/day

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Production change</td>
<td>0</td>
<td>(10)</td>
<td>(20)</td>
<td>(30)</td>
<td>(40)</td>
<td>(50)</td>
<td>(60)</td>
<td>(70)</td>
<td>(80)</td>
<td>(80)</td>
</tr>
</tbody>
</table>

**Bakken Region**  
Indicated change in oil production (Oct vs. Sep)  
thousand barrels/day

<table>
<thead>
<tr>
<th>Month</th>
<th>Sep 1,318 Mbbl/d</th>
<th>Production from new wells</th>
<th>Legacy production change</th>
<th>Net change</th>
<th>Oct 1,332 Mbbl/d</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change</td>
<td>+83</td>
<td>-69</td>
<td>+14</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Bakken Region**  
Natural gas production  
million cubic feet/day

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Production</td>
<td>1,871 MMcf/d</td>
<td>1,501 MMcf/d</td>
<td>1,491 MMcf/d</td>
<td>2,499 MMcf/d</td>
<td>2,522 MMcf/d</td>
<td>3,057 MMcf/d</td>
<td>3,132 MMcf/d</td>
<td>3,600 MMcf/d</td>
<td>3,711 MMcf/d</td>
<td>3,849 MMcf/d</td>
</tr>
</tbody>
</table>

**Bakken Region**  
Indicated change in natural gas production (Oct vs. Sep)  
million cubic feet/day

<table>
<thead>
<tr>
<th>Month</th>
<th>Sep 2,499 MMcf/d</th>
<th>Production from new wells</th>
<th>Legacy production change</th>
<th>Net change</th>
<th>Oct 2,522 MMcf/d</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change</td>
<td>+105</td>
<td>-82</td>
<td>+23</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Eagle Ford Region

Drilling Productivity Report

September 2018

Drilling data through August
Projected production through October

**Oil**

- **New-well oil production per rig**
  - **Eagle Ford Region**
  - **Rig count**
  - **Average rig**
  - **September**
  - **October**

**Gas**

- **New-well gas production per rig**
  - **Eagle Ford Region**
  - **Rig count**
  - **Average rig**
  - **September**
  - **October**

**Monthly additions from one average rig**

**Oil production**

- **Eagle Ford Region**
  - **Barrels/day**
  - **September**
  - **October**
  - **Change**

**Gas production**

- **Eagle Ford Region**
  - **Million cubic feet/day**
  - **September**
  - **October**
  - **Change**

**Indicated change in oil production (Oct vs. Sep)**

- **Eagle Ford Region**
  - **Thousand barrels/day**
  - **Change**

**Indicated change in natural gas production (Oct vs. Sep)**

- **Eagle Ford Region**
  - **Million cubic feet/day**
  - **Change**

**New-well oil production per rig**

- **Eagle Ford Region**
  - **Barrels/day**

**New-well gas production per rig**

- **Eagle Ford Region**
  - **Thousand cubic feet/day**

**Legacy oil production change**

- **Eagle Ford Region**
  - **Million barrels/day**
  - **Change**

**Legacy gas production change**

- **Eagle Ford Region**
  - **Million cubic feet/day**
  - **Change**
**Haynesville Region**

**Drilling Productivity Report**

- **Oil** +1 barrels/day month over month
- **Gas** +67 thousand cubic feet/day month over month

### Monthly additions from one average rig

- **2009**
- **2010**
- **2011**
- **2012**
- **2013**
- **2014**
- **2015**
- **2016**
- **2017**
- **2018**

### Oil production

- **Haynesville Region**
  - New-well oil production per rig
    - barrels/day
  - Legacy oil production change
    - thousand barrels/day
  - Indicated change in oil production (Oct vs. Sep)
    - thousand barrels/day
  - Oil production
    - thousand barrels/day

### Gas production

- **Haynesville Region**
  - New-well gas production per rig
    - thousand cubic feet/day
  - Legacy gas production change
    - million cubic feet/day
  - Indicated change in natural gas production (Oct vs. Sep)
    - million cubic feet/day
  - Natural gas production
    - million cubic feet/day
## Niobrara Region

### Drilling Productivity Report

#### September 2018

- **Oil**
  - **1,190 barrels/day**
  - **+1**
  - **month over month**

- **Gas**
  - **4,458 thousand cubic feet/day**
  - **+16**
  - **month over month**

### Niobrara Region

#### New-well oil production per rig

- **barrels/day**
- **1,400**

#### Legacy oil production change

- **thousand barrels/day**
- **(10)**

#### Indicated change in oil production (Oct vs. Sep)

- **thousand barrels/day**
- **+57**
- **-51**
- **+6**

#### Oil production

- **thousand barrels/day**
- **1,189**

#### Natural gas production

- **million cubic feet/day**
- **5,127**

### Niobrara Region

#### New-well gas production per rig

- **thousand cubic feet/day**
- **8,400**

#### Legacy gas production change

- **million cubic feet/day**
- **(30)**

#### Indicated change in natural gas production (Oct vs. Sep)

- **million cubic feet/day**
- **+215**
- **-165**
- **+50**

#### Natural gas production

- **million cubic feet/day**
- **5,177**

---

**U. S. Energy Information Administration | Drilling Productivity Report**
Permian Region

Oil production

-9 barrels/day
month over month

Permian Region

New-well oil production per rig

barrels/day

Permian Region

Legacy oil production change

thousand barrels/day

Permian Region

Indicated change in oil production (Oct vs. Sep)

thousand barrels/day

Permian Region

Natural gas production

million cubic feet/day

Permian Region

New-well gas production per rig

thousand cubic feet/day

Permian Region

Legacy gas production change

million cubic feet/day

Permian Region

Indicated change in natural gas production (Oct vs. Sep)

million cubic feet/day

Permian Region

Rig count

rigs

Permian Region

Drilling Productivity Report

September 2018

drilling data through August
projected production through October

October 2018

546 barrels/day

September 2018

555 barrels/day

October 2018

1,225 thousand cubic feet/day

September 2018

1,225 thousand cubic feet/day

Oil +31 barrels/day
month over month

Gas +239 million cubic feet/day
month over month

Permian Region

Monthly additions from one average rig

barrels/day

Permian Region

Projected oil production

thousand barrels/day

Permian Region

Projected gas production

million cubic feet/day

Production from new wells

Legacy production change

Net change

Oct 2018

3,427 Mbbl/d

Oct 2018

3,458 Mbbl/d

September

3,427 Mbbl/d

Published October

3,487 Mbbl/d

Permian Region

Production from new wells

thousand barrels/day

October

11,565 MMcf/d

September

11,804 MMcf/d

Oil +31

+264

-233

+31

Gas +239

+593

-354

+239

Note: New-well production is modeled using a drilling data through August and projected production through October.

U.S. Energy Information Administration | Drilling Productivity Report
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 and natural gas 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 contribution to production of oil and natural gas from new wells. 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. 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) 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) Source of rig and well counts by county, state, and basin.

North Dakota Oil and Gas Division (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) 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) 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) 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) 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) 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) 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) Source of well production, permit, and completion data in the counties associated with this report in Ohio.