

Director's Cut

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Oil Production

August 30,442,347 barrels = 982,011 barrels/day
September 29,149,737 barrels = 971,658 barrels/day (preliminary)(all-time high was Dec 2014 at 1,227,483 barrels/day)
920,899 barrels per day or 95% from Bakken and Three Forks
50,759 barrels per day or 5% from legacy conventional pools

Gas Production

August 50,851,988 MCF = 1,640,387 MCF/day
September 48,355,065 MCF = 1,611,836 MCF/day (preliminary)(all-time high was March 2016 at 1,709,945 MCFD)

Producing Wells

August 13,295
September 13,367 (preliminary)(NEW all-time high)
11,281 wells or 84% are now unconventional Bakken – Three forks wells
2,086 wells or 16% produce from legacy conventional pools

Permitting

August 99 drilling and 1 seismic
September 63 drilling and 1 seismic
October 82 drilling and 1 seismic (all time high was 370 in 10/2012)

ND Sweet Crude Price¹

August \$33.73/barrel
September \$32.98/barrel
October \$39.31/barrel
Today \$34.75/barrel (all-time high was \$136.29 7/3/2008)

Rig Count

August 32
September 34
October 33
Today's rig count is 38 (all-time high was 218 on 5/29/2012)

¹ Pricing Source: [Flint Hills Resources](#)

The statewide rig count is down 83% from the high and in the five most active counties rig count is down as follows:

Divide -85% (high was 3/2013)
 Dunn -76% (high was 6/2012)
 McKenzie -80% (high was 1/2014)
 Mountrail -95% (high was 6/2011)
 Williams -90% (high was 10/2014)

Comments:

The drilling rig count increased two from August to September, then decreased one from September to October, and is currently up five from October to today. Operators are shifting from running the minimum number of rigs to incremental increases throughout 2017 as long as oil prices remain below \$60/barrel WTI.

The number of well completions rose from 63(final) in August to 71(preliminary) in September. Oil price weakness is the primary reason for the slow-down and is now anticipated to last into the second quarter of 2017.

There was one significant precipitation event, 10 days with wind speeds in excess of 35 mph (too high for completion work), and no days with temperatures below -10F.

Over 98% of drilling now targets the Bakken and Three Forks formations.

Estimated wells waiting on completion² is 861, down 27 from the end of August to the end of September.

Estimated inactive well count³ is 1,514, unchanged from the end of August to the end of September.

Crude oil take away capacity remains dependent on rail deliveries to coastal refineries to remain adequate.

Low oil price associated with lifting of sanctions on Iran, a weak economy in China, and the Brexit are expected to lead to continued low drilling rig count. Utilization rate for rigs capable of 20,000+ feet is 25-30% and for shallow well rigs (7,000 feet or less) 15-20%.

² The number of wells waiting on completions is an estimate on the part of the director based on idle well count and a typical five year average. Neither the State of North Dakota, nor any agency officer, or employee of the State of North Dakota warrants the accuracy or reliability of this product and shall not be held responsible for any losses caused by this product. Portions of the information may be incorrect or out of date. Any person or entity that relies on any information obtained from this product does so at his or her own risk.

³ Includes all well types on IA and AB statuses.

IA= Inactive shut in >3 months and <12 months

AB= Abandoned (Shut in >12 months)

Drilling permit activity dropped sharply from August to September then increased from September to October. Operators are maintaining a permit inventory that will accommodate a return to the drilling price point within the next 12 months.

Rigs actively drilling on federal surface in the Dakota Prairie Grasslands is unchanged at 1.

Activity on the Fort Berthold Reservation is as follows:

7 drilling rigs (1 on fee lands and 6 on trust lands)
 162,632 barrels of oil per day (103,218 from trust lands & 59,414 from fee lands)
 1,499 active wells (1,040 on trust lands & 459 on fee lands)
 165 wells waiting on completion
 524 approved drilling permits (342 on trust lands & 182 on fee lands)
 1,741 additional potential future wells (1,228 on trust lands & 513 on fee lands)

Seismic activity is unchanged. There are 4 surveys active, 0 recording and 0 NDIC reclamation projects, 0 remediating, 0 suspended, and 1 permitted.

North Dakota leasing activity is limited to renewals and top leases in the Bakken - Three Forks area.

US natural gas storage is now 4.9% above the five-year average indicating some price improvement in the future. North Dakota shallow gas exploration could be economic at future gas prices, but is not at the current price. The operator of the exploration well (file 27235) in Emmons County has cancelled all other permits in the area and is in the process of transferring the well to a working interest owner who plans a production test. The well appears to contain 2 pay sections totaling about 80 feet thick with very good gas shows.

The price of natural gas delivered to Northern Border at Watford City is down \$0.47 to \$1.93/MCF. This results in a current oil to gas price ratio of 18 to 1. The percentage of gas flared increased to 11.9%. The Tioga gas plant operated at 82% of capacity. The expansion of gas gathering from south of Lake Sakakawea continues to experience approval delays resulting in start-up now anticipated in Q1 of 2017. The September Bakken capture percentage was 89% with the daily volume of gas flared from August to September down 2.9 MMCFD. The historical high flared percent was 36% in 09/2011.

Gas capture statistics are as follows:

Statewide	88%
Statewide Bakken	89%
Non-FBIR Bakken	90%
FBIR Bakken	88%
Trust FBIR Bakken	87%
Fee FBIR	92%

77% January 1, 2015 through March 31, 2016
 80% April 1, 2016 through October 31, 2016
 85% November 1, 2016 through October 31, 2018
 88% November 1, 2018 through October 31, 2020
 91% beginning November 1, 2020

The North Dakota Legislature passed HB1432 which sets up a council to address Clean Water Act, Safe Drinking Water Act, Clean Air Act, and Endangered Species Act issues:

BIA has published a new final rule to update the process for obtaining rights of way on Indian land. The rule was published 11/19/15 and became effective 12/21/15. The final rule can be found at <https://www.federalregister.gov/articles/2015/11/19/2015-28548/rights-of-way-on-indian-land>. On 3/11/16, the Western Energy Alliance filed a complaint and motion for a temporary restraining order and/or a preliminary injunction. On 4/19/16, the US District court for the District of North Dakota issued an order denying the motion for a preliminary injunction.

BLM has published a new final rule 43 CFR 3161.1, 3162.4-1, 3163.2, 3165.3, 3170.3, 3170.6-3170.8, and 3173.1 to replace Onshore Order 3. The final rule can be viewed online at https://www.blm.gov/style/medialib/blm/wo/MINERALS_REALTY_AND_RESOURCE_PROTECTION/energy/onshore_order_documents.Par.33040.File.dat/OO_3170_3173_%20Draft_10_14_16.pdf. NDIC review indicates that BLM revised the proposed rule to remove the application of 43 CFR 3160 that would have required a federal drilling permit for non-federal wells in a unit or CA and expanded the circumstances in which commingling of production can be permitted, but failed to reduce the enormous expansion of record keeping requirements as recommended in NDIC comments.

BLM has published a new final rule 43 CFR 3174.1-3174.15 to replace Onshore Order 4 which sets standards for the measurement of oil. The final rule can be viewed online at https://www.blm.gov/style/medialib/blm/wo/MINERALS_REALTY_AND_RESOURCE_PROTECTION/energy/onshore_order_documents.Par.48007.File.dat/OO_3174_Draft_10_14_16.pdf. NDIC review indicates that BLM revised the proposed rule to incorporate API oil measurement standards by reference as recommended in NDIC comments.

BLM has published a new final rule 43 CFR 3175.10-3175.150 to update and replace its regulations (Onshore order 5) governing the measurement of natural gas produced from onshore Federal and Indian leases. The final rule can be viewed online at https://www.blm.gov/style/medialib/blm/wo/MINERALS_REALTY_AND_RESOURCE_PROTECTION/energy/onshore_order_documents.Par.48468.File.dat/OO_3175_Draft_10_14_16.pdf. NDIC review indicates that BLM made slight revisions to the proposed rule as recommended in NDIC comments, but failed to simply incorporate API and AGA standards by reference resulting in a final rule that will be outdated any time new natural

gas measurement technologies become available or when standards are improved or modified.

BLM has published a final rule new final rule 43 CFR Parts 3100, 3160 and 3170 to update and replace its regulations on venting and flaring of natural gas. The final rule can be viewed online at <https://www.blm.gov/programs/energy-and-minerals/oil-and-gas/operations-and-production/methane-and-waste-prevention-rule>. NDIC is reviewing the final rule to determine what changes have been made in response to NDIC comments and if legal action is appropriate.

BLM revised final regulations for hydraulic fracturing on federal and Indian lands were published in the CFR on 3/26/15 and they were scheduled to go into effect 6/24/15. North Dakota, Colorado, Utah, Wyoming, Western Energy Alliance, and IPAA filed for a preliminary injunction to prevent the rules going into effect until the case is settled. Following a lengthy hearing in Casper, Wyoming on 6/23/15, the court issued a stay on the rules. On 9/30/15 the court granted a preliminary injunction, preventing the rules from being enforced until litigation on the rule is final. The 10th Circuit Court of Appeals issued an order 3/10/16 denying the industry alternative motion for a stay. On 6/21/16 the court found the rule to be unlawful and ordered it set aside. The plaintiffs filed a motion with the US Court of Appeals for the Tenth Circuit to dismiss the appeal of the preliminary injunction. The Department of Justice on behalf of the BLM and the intervening environmental groups have appealed the decision on the rule and oppose the motion to dismiss the appeal of the preliminary injunction. The North Dakota Response Brief to the US Court of Appeals for the Tenth Circuit was filed 9/15/16. The 10th Circuit Court of Appeals has scheduled oral argument on the BLM HF Rule litigation for January 17th at 9am. We will be notified of the three judge panel at a later date. NDIC comments on the rule can be found at <http://www.nd.gov/ndic/ic-press/BLM-comments-120625.pdf>

BLM has published the North Dakota Greater Sage-Grouse Proposed Resource Management Plan Amendment and Final EIS. NDIC is evaluating whether the state needs to intervene in the lawsuit filed by Western Energy Alliance challenging the final plan. Information on the plan and EIS can be found at the following web addresses: <https://www.blm.gov/epl-front-office/eplanning/planAndProjectSite.do?methodName=dispatchToPatternPage¤tPageId=48797>

EPA On 8/11/16 EPA's Scientific Advisory Board completed their peer review of the Agency's draft of the Assessment of the Potential Impacts of Hydraulic Fracturing for Oil and Gas on Drinking Water Resources. The review can be found at [https://yosemite.epa.gov/sab/sabproduct.nsf/LookupWebReportsLastMonthBOARD/BB6910FEC10C01A18525800C00647104/\\$File/EPA-SAB-16-005+Unsigned.pdf](https://yosemite.epa.gov/sab/sabproduct.nsf/LookupWebReportsLastMonthBOARD/BB6910FEC10C01A18525800C00647104/$File/EPA-SAB-16-005+Unsigned.pdf). EPA will use the SAB's final comments and suggestions, along with relevant literature published since the release of the draft assessment, and public comments received by the Agency, to revise and finalize the assessment. The revised final report is scheduled for release in

early December. NDIC is monitoring the potential impacts of the peer review to determine if any action is appropriate. NDIC comments on the EPA Assessment can be found at <http://www.nd.gov/ndic/ic-press/DMR-EPA-HydraulicFractureComments.pdf>

EPA On 8/26/15 a coalition of environmental organizations filed a 60 day legal notice with the U.S. Environmental Protection Agency demanding more regulation of drilling and fracking waste. The groups are the Environmental Integrity Project, Natural Resources Defense Council, Earthworks, Responsible Drilling Alliance, San Juan Citizens Alliance, West Virginia Surface Owners Rights Organization, and the Center for Health, Environment and Justice. On 5/4/16 the same environmental groups filed suit against the EPA in the federal district court for the District of Columbia. The Plaintiffs Allege that EPA "has failed to meet its nondiscretionary duty" under the federal Resource Conservation and Recovery Act (RCRA) to review and revise the RCRA Subtitle D solid waste regulations for O&G wastes every three years and that EPA last completed such a review in 1988 and that EPA has failed to review or revise the guidelines for state solid waste plans since 1981.

Plaintiffs want to force EPA to do two things-

1. Issue more stringent regulations for managing and disposing of O&G wastes, including on issues such as open-air pits and impoundments used for storing O&G wastewater, underground injection wells, and the transportation of O&G wastes by truck or pipeline.
2. Make the state solid waste plan guidelines more stringent and comprehensive.

The document filed in the suit can be found at <http://environmentalintegrity.org/wp-content/uploads/2016-05-04-RCRA-OG-Wastes-Deadline-Suit-Complaint-FILED.pdf>

On 6/30/16 North Dakota filed motions to intervene in order to prevent a sue and settle situation that would adversely impact state regulatory jurisdiction and to dismiss the case. Motions to Intervene were also filed by the Texas Railroad Commission, American Petroleum Institute, Independent Petroleum Association of America, and the association of Texas oil and gas producer/royalty owners (TIPRO). The plaintiffs and EPA each filed motions to oppose the motions to intervene. North Dakota filed a reply in support of its motion on 9/23/16.

EPA Prime Minister Justin Trudeau and President Barack Obama announced Thursday 3/10/16 their two countries will work together to reduce methane emissions from the oil and gas sector by 40 to 45 per cent below 2012 levels by 2025. On 6/3/16 the proposed "Information Collection Effort for Oil and Gas Facilities" was published in the Federal Register. The notice and supporting statement along with the operator survey and facility survey can be found at <https://www3.epa.gov/airquality/oilandgas/actions.html>. NDIC comments can be found at <http://www.nd.gov/ndic/ic-press/dmr-epa-comments2016-0204.pdf>. On 9/23/16 EPA issued the second draft of an Information Collection Request (ICR) to require oil and natural gas companies to provide extensive information needed to develop regulations to reduce methane emissions from existing oil and gas sources. The second draft reflects a number of changes EPA made based on comments the agency received on the draft ICR. The ICR process, which is governed by the Paperwork Reduction Act, provides the public two opportunities to review drafts of the ICR and supporting materials. The comment period for the second draft ICR closed 10/31/16.

Due to NDIC schedule conflicts the North Dakota Department of Health (NDDH) provided comments for the state of North Dakota. Those comments are available from the NDIC or NDDH upon request. After reviewing public comment, the Office of Management and Budget (OMB) will determine whether to approve the ICR.

EPA On 6/3/16 the final rule proposing a suite of changes to Clean Air Act permitting requirements for new and modified emissions sources in the oil and natural gas industry was published in the Federal Register. On 6/29/16 the NDIC decided to file a Petition for Review with the US Appeals Court for the District of Columbia to defend the state's sovereign jurisdiction over oil and gas regulation. Thirteen other states have joined this effort. North Dakota declined the standard offer to explore settlement through the court's mediation program.

The proposed actions and NDIC comments are as follows:

- o Proposed New Source Performance Standards – Docket ID number EPA-HQ-OAR-2010-0505. NDIC comments can be found at <http://www.nd.gov/ndic/ic-press/EPA-HQ-OAR-2010-0505.pdf>
- o Draft Control Techniques Guidelines – Docket ID number: EPA-HQ-OAR-2015-0216. NDIC comments can be found at <http://www.nd.gov/ndic/ic-press/EPA-HQ-OAR-2015-0216.pdf>
- o Proposed Source Determination Rule – Docket ID number: EPA-HQ-OAR-2013-0685. NDIC comments can be found at <http://www.nd.gov/ndic/ic-press/EPA-HQ-OAR-2013-0685.pdf>
- o Proposed Federal Implementation Plan for Implementing Minor New Source Review Permitting in Indian Country – Docket ID number: EPA-HQ-OAR-2014-0606. NDIC comments can be found at <http://www.nd.gov/ndic/ic-press/EPA-HQ-OAR-2014-0606.pdf>.

North Dakota et al. and EPA have filed motions to govern further proceedings and briefing schedules.

EPA published an advanced notice of proposed rule-making to seek comments on the information that should be reported or disclosed for hydraulic fracturing chemical substances and mixtures and the mechanism for obtaining this information. The proposed rule-making is in response to a petition from Earthjustice and 114 other groups who are opposed to the use of the GWPC-IOGCC FracFocus website process of chemical disclosure and any type of trade secret protection for hydraulic fracturing fluid mixtures. These groups are requesting EPA regulation of chemical disclosure under the federal Toxic Substances Control Act. Thanks to all who provided comments in support of a “states first” policy. NDIC comments can be viewed at <http://www.nd.gov/ndic/ic-press/DMR-frac714.pdf>

EPA Administrator, Gina McCarthy, and the Assistant Secretary of the Army (Civil Works), Jo Ellen Darcy, signed the “Waters of the United States” final rule on 05/27/2015. The final rule was published in the Federal Register 7/29/15 and became effective in 37 states on 8/28/15. North Dakota, Alaska, Arizona, Arkansas, Colorado, Idaho, Missouri, Montana, Nebraska, New Mexico, Nevada, South Dakota, and Wyoming filed a lawsuit in U.S. District Court, claiming the final rule would harm states

as regulators of the waters and lands. On 8/27/15 Federal District Judge Erickson granted a preliminary injunction preventing enforcement of the rule in the 13 states. The North Dakota case will now be subject to appeal, but no schedule has been set at this time.

NDIC comments can be viewed at <http://www.nd.gov/ndic/ic-press/WOTUS-comments.pdf>

Texas, Mississippi and Louisiana filed a joint complaint in the U.S. District Court for the Southern District of Texas, charging that the rule is unconstitutional. Ohio and Michigan filed a complaint in the U.S. District Court for the Southern District of Ohio, alleging that the expansion of jurisdiction includes dry land. Georgia and eight other states (Alabama, Florida, Kansas, Kentucky, South Carolina, Utah, West Virginia and Wisconsin) filed suit in the U.S. District Court for the Southern District of Georgia, asking the court to vacate the rule and block its enforcement by injunction. On 10/9/15 the United States Court Of Appeals for the Sixth Circuit granted a nationwide stay of the WOTUS rule pending jurisdiction determinations.

USFWS has made a decision to list the Dakota Skipper and Powershiek Skipperling to receive protection under the Endangered Species Act. Additional potential listing of concern are the Rufa Red Knot, Sprague's Pipit, Greater Sage Grouse, Monarch Butterfly, Sturgeon Chub, and Sicklefing Chub.

USFWS has published a new final rule to revise Management of Non-Federal Oil and Gas Rights. Key components of the proposed rule include: A permitting process for new operations; A permitting process for well plugging and reclamation for all operations; Information requirements for particular types of operations; Operating standards so that both the Service and the operator can readily identify what standards apply to particular operations; Fees for new access beyond that held as part of the operator's oil and gas right; Financial assurance (bonding); Penalty provisions; Clarification that the process for authorizing access to non-Federal oil and gas properties in Alaska will continue to be controlled by 43 CFR part 36, which implements provisions of the Alaska National Interest Lands Conservation Act; and Codification of some existing agency policies and practices. The proposed rule September be viewed online at <http://www.fws.gov/policy/library/2015/2015-30977.html> comments on the proposed rule were due September 9, 2016. NDIC comments can be found at <http://www.nd.gov/ndic/ic-press/DMR-FWS-0086.pdf> On September 28, 2016 USFWS published the handbook for implementing the rule. On September 11, 2016 Congressman Cramer successfully included a prohibition on funding for the US Fish and Wildlife Service Management of Non-Federal Oil and Gas rule in the House Interior and Environment Appropriations bill which has a number of other provisions prohibiting this Administration from infringing on State's rights. The NDIC is evaluating the impacts of rule and handbook to determine if legal action is appropriate.

	3Q 2016 Breakeven WTI \$/BO	Rigs	Sep-16	Wells		
				NC	P90	P50
Billings	\$47*	0	627	5	1,900	2,500
Bottineau-Renville	+\$100*	0	1,033	2	3,000	4,000
Bowman-Slope	+\$100*	0	540	0	900	1,200
Burke	\$78	1	628	2	1,300	3,000
Divide	\$84	1	802	48	3,000	5,000
Dunn	\$15	10	1,933	128	4,800	9,000
Golden Valley	\$78*	1	102	1	250	300
McKenzie	\$17	12	4,028	360	7,100	15,000
McLean	\$16	1	59	4	800	1,200
Mountrail	\$29	4	2,635	187	4,800	9,000
Stark	\$29	0	277	4	2,900	3,500
Williams	\$24	4	2,427	146	5,500	10,000
Statewide	\$21	34	15,130	887	36,250	63,700

* Information from previous quarter, too little data to calculate new value