

# the PIPELINE publication

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## INDUSTRIAL COMMISSION OF NORTH DAKOTA PIPELINE AUTHORITY

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## WINTER CHALLENGES FOR NATURAL GAS GATHERING

Temperatures and snowfall has moderated recently from the harsh winter storm events between Thanksgiving and the New Year. The winter storms of 2016-2017 made just about every outdoor activity more challenging and the work of gathering natural gas from the wellhead to a processing plant was no exception.



Photo Credit: ND Oil & Gas Division

At first glance, it may seem that buried natural gas gathering pipelines should be immune to a harsh North Dakota winter. To the contrary, cold temperatures and poor road conditions can prove to be challenging for gas gathering operators.

In its raw form, Bakken natural gas is very high in natural gas liquids (NGLs). Cold ground temperatures can chill the natural gas stream and cause NGL's to condense and pool in low sections of a pipeline. This pooling of NGL's restricts the pipeline's ability to operate at full capacity. As a result of increased NGL condensing in colder months, North Dakota's gas gathering companies have scheduled more frequent "pigging" operations to clear the lines of accumulated NGL's. These routine pigging operations are disrupted when road conditions prohibit safe travel of personnel and trucks carrying NGL's away from pig launching and retrieving facilities.

## NORTH DAKOTA — Production Numbers

⌘ [www.pipeline.nd.gov](http://www.pipeline.nd.gov)

### Average Daily Oil Production, BOPD

Nov. 2016	Dec. 2016	Jan. 2017
1,034,484	942,461	981,054

### Average Daily Gas Production, MMCFD

Nov. 2016	Dec. 2016	Jan. 2017
1,760	1,538	1,556

### Average Rig Count

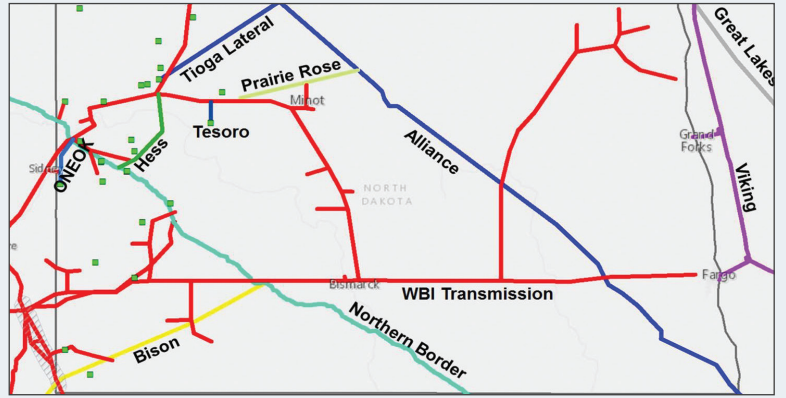
Nov. 2016	Dec. 2016	Jan. 2017
37	40	38

As of March 20, 2017, there are 49 active rigs in North Dakota.

## HOW DO ND HOMES RECEIVE NATURAL GAS?

Many people do not put much thought into how the natural gas for heating their homes got to their furnace. Even less thought is given to where that natural gas was produced.

North Dakotans heating their homes and businesses with natural gas are typically served by a Local Distribution Company or LDC. LDCs receive the natural gas supply from a larger, high pressure, interstate natural gas pipeline system (see map). These interstate pipelines connect the field gas processing plants (green squares) with the LDCs.



Major North Dakota Natural Gas Infrastructure

Three major natural gas pipeline systems, WBI Transmission, Northern Border, and Viking, are responsible for transporting natural gas to community LDCs. A fourth major natural gas pipeline, the Alliance Pipeline, moves gas from Western Canada and North Dakota to the Chicago area for further processing.

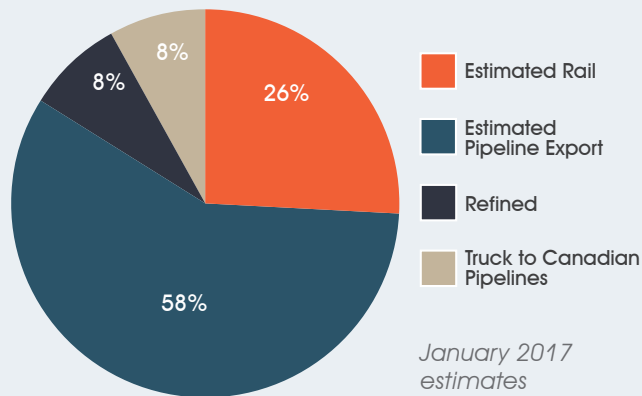
### North Dakota Pipeline Authority

State Capitol, 14<sup>th</sup> Floor  
600 E. Boulevard Ave. Dept. 405  
Bismarck, ND 58505-0840

### PIPELINE FACTOID

A typical North Dakota home consumes roughly 94 dekatherms of natural gas per year. Due to North Dakota's cold climate, this is roughly 22 dekatherms higher than the US average. A dekatherm is an energy measurement unit. One dekatherm equals roughly one thousand cubic feet of dry, residential natural gas.

### Estimated Williston Basin Oil Transportation



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