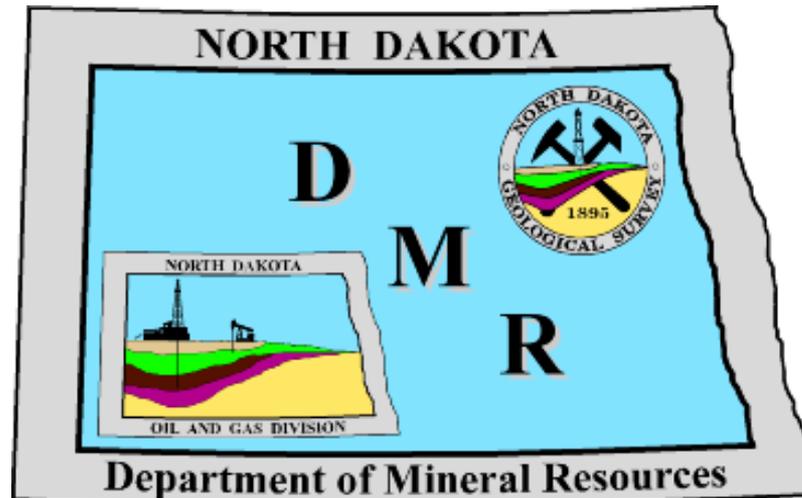


# North Dakota Department of Mineral Resources



<http://www.oilgas.nd.gov>

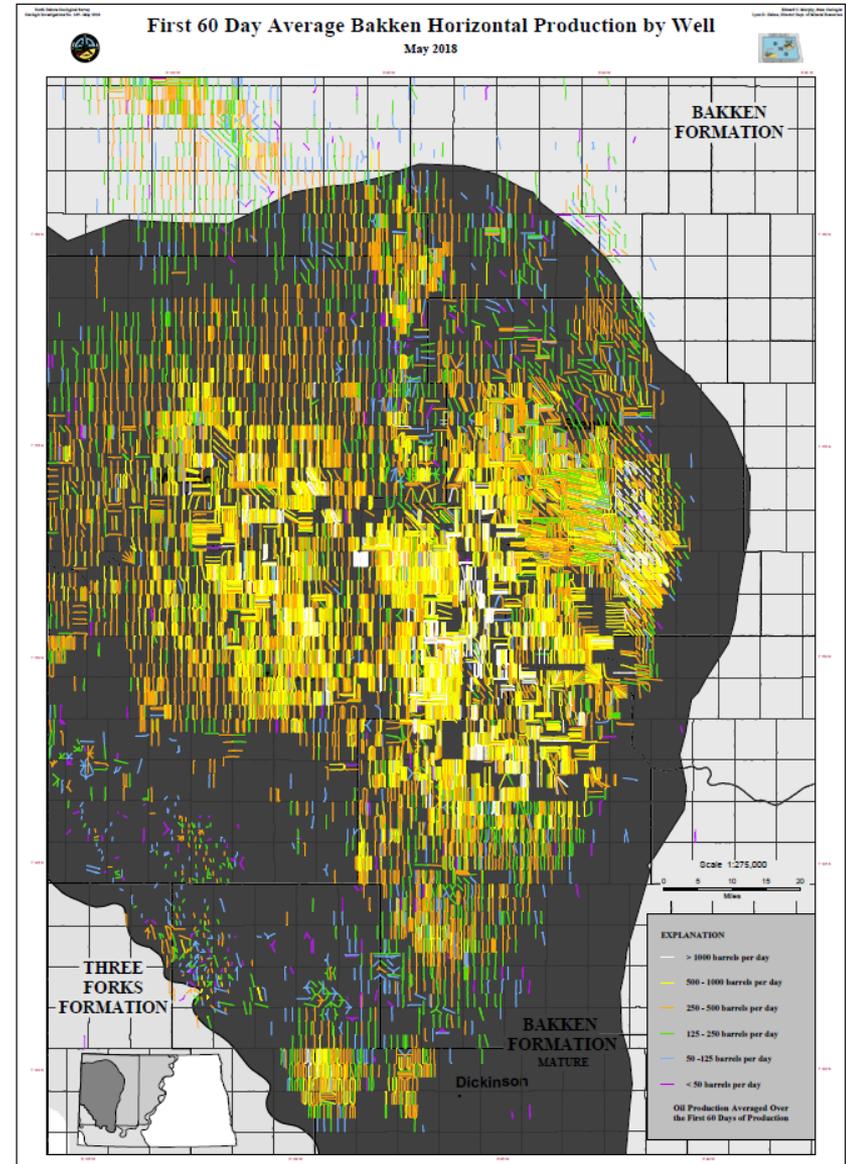
<http://www.state.nd.us/ndgs>

**600 East Boulevard Ave. - Dept 405  
Bismarck, ND 58505-0840  
(701) 328-8020 (701) 328-8000**

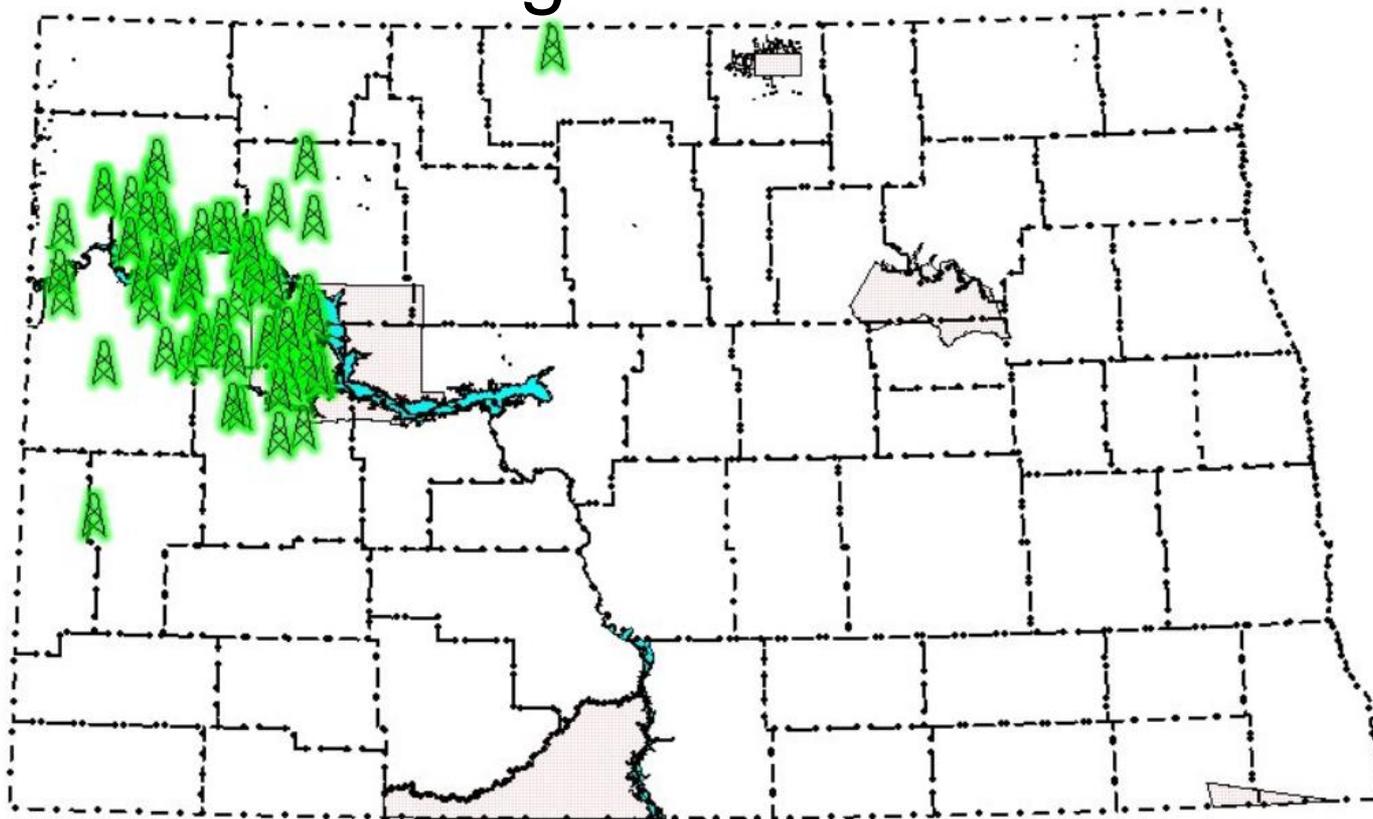
# Wells



<b>Active</b>	14,972
Conventional	1,980
Bakken/Three Forks	12,992
<b>Inactive</b>	1,486
+\$50 for 90 days Jan 2018	
<b>Waiting on Completion</b>	943
+\$55 for 90 days Feb 2018	
<b>Permitted</b>	1,907
+\$60 for 90 days April 2018	
<b>Increase Density</b>	12,962
Approved 07/06/18	
<b>Total</b>	<b>32,270</b>
<b>Estimated Final</b>	<b>40,000 - 85,000</b>
<b>\$60-80/BO &amp; 60-70 rigs</b>	<b>21 - 71 years</b>

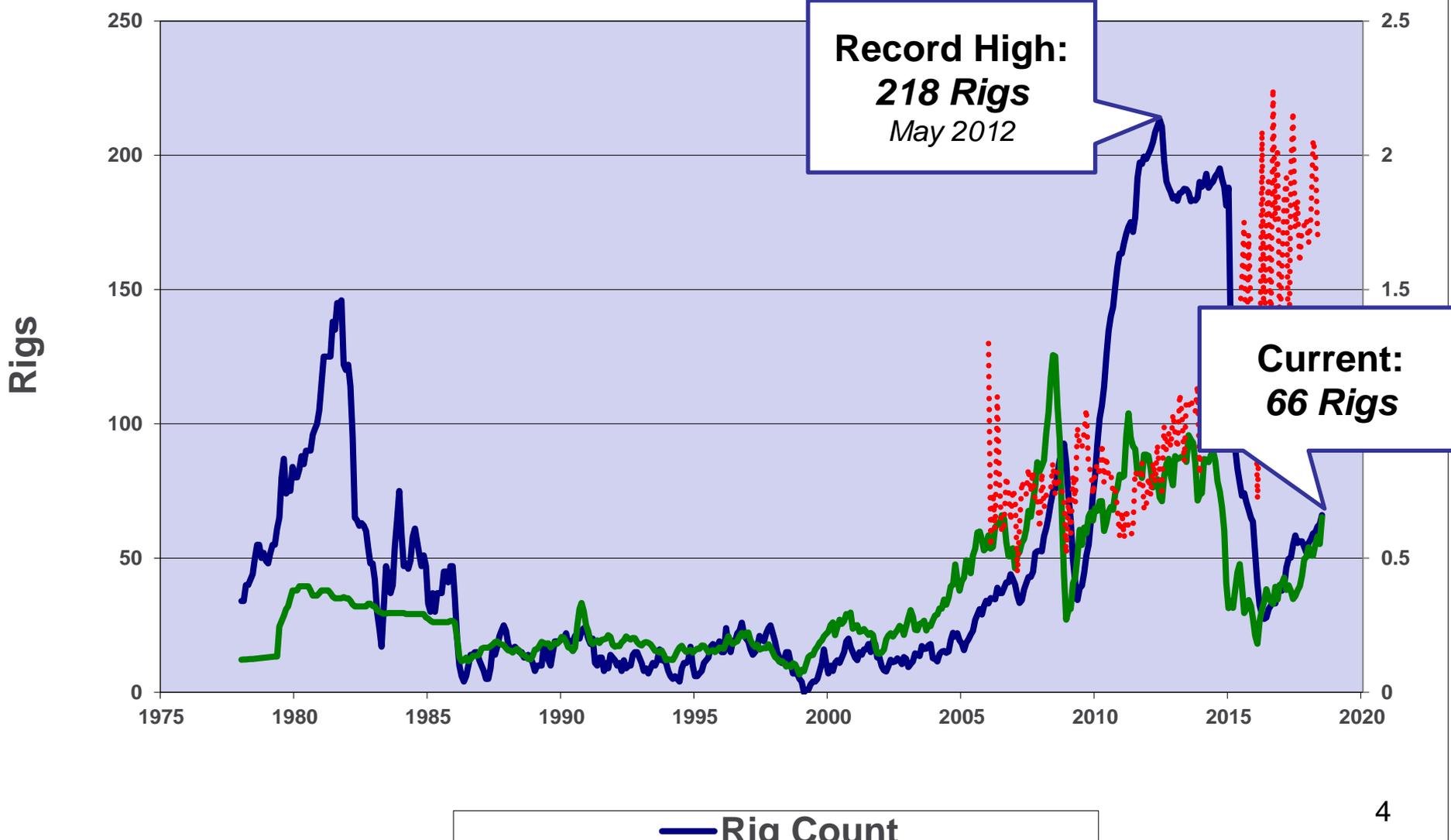


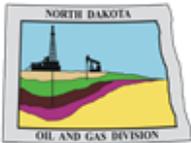
# Rigs - 66



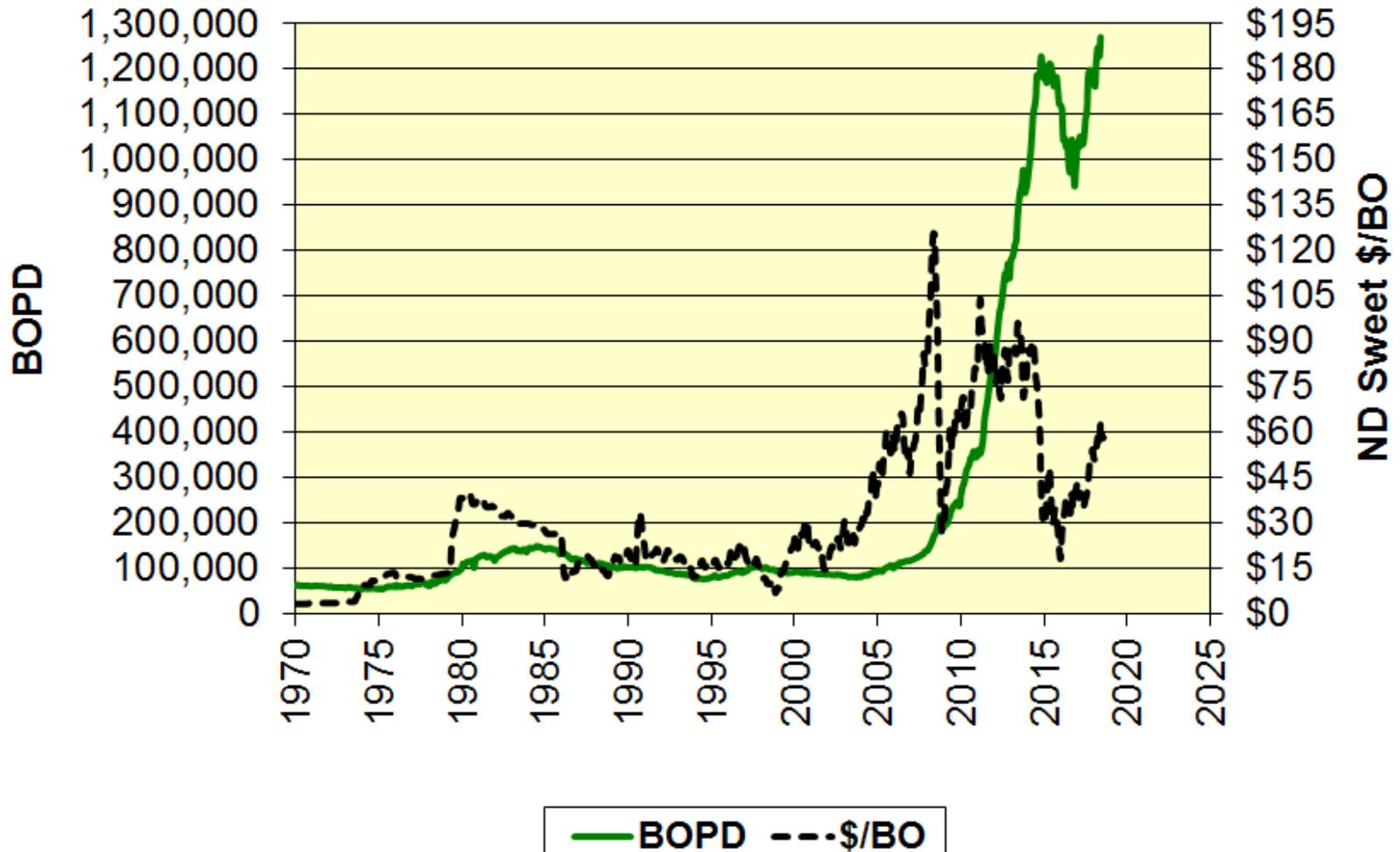
0 88mi

# North Dakota Average Monthly Rig Count

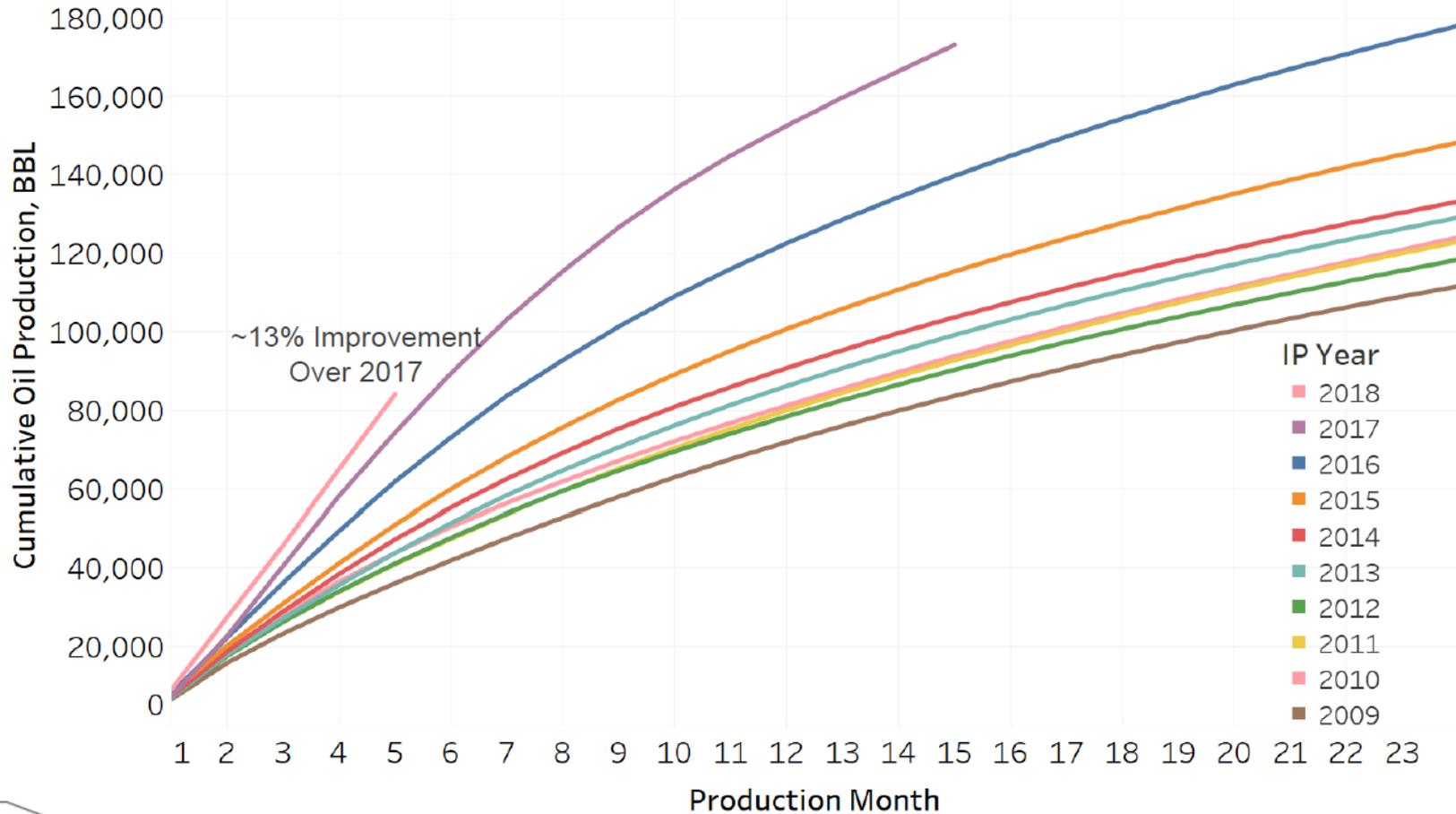




## North Dakota Daily Oil Produced and Price



# Statewide Oil Performance



IP Year

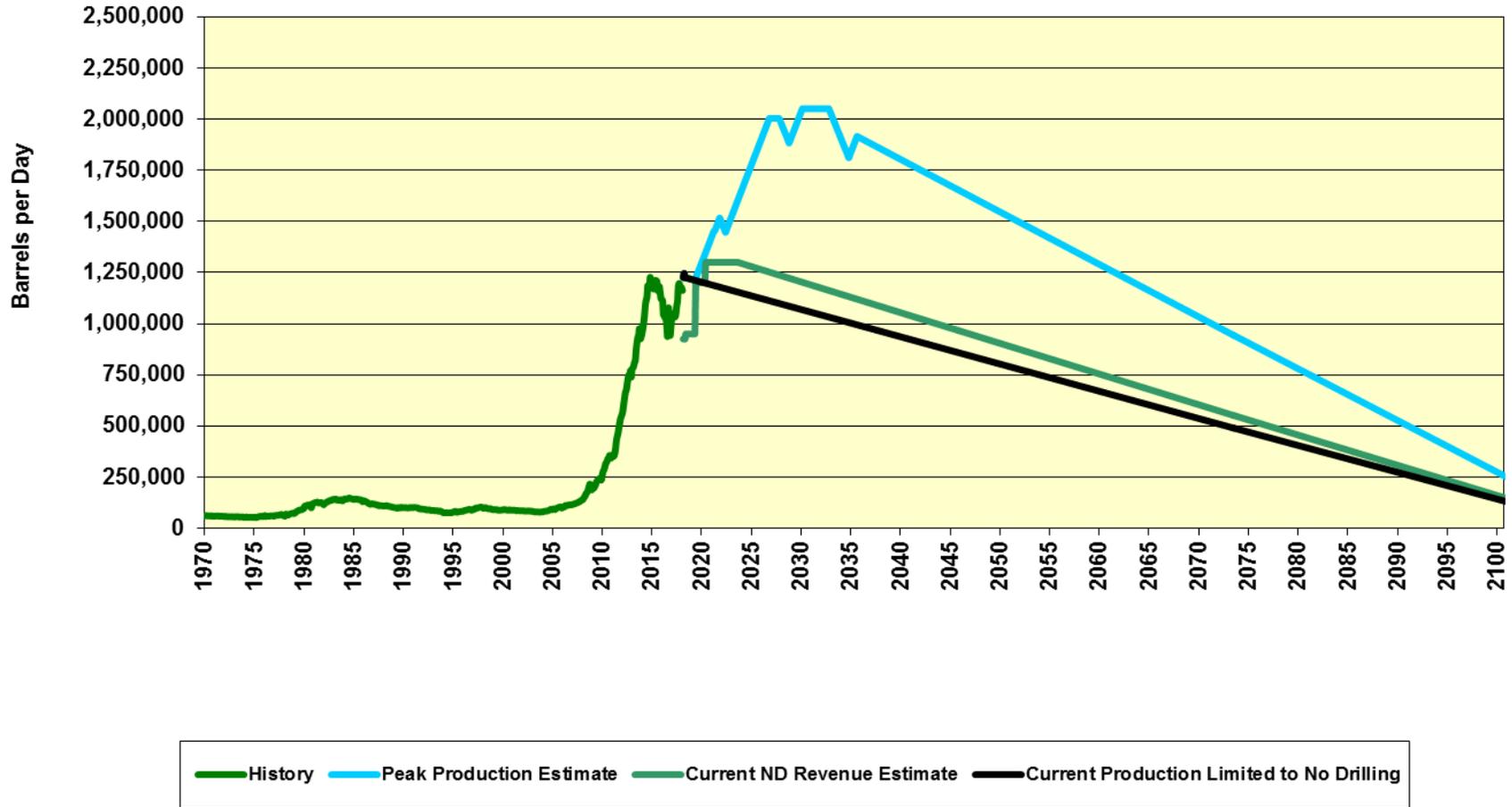
- 2018
- 2017
- 2016
- 2015
- 2014
- 2013
- 2012
- 2011
- 2010
- 2009

~13% Improvement  
Over 2017

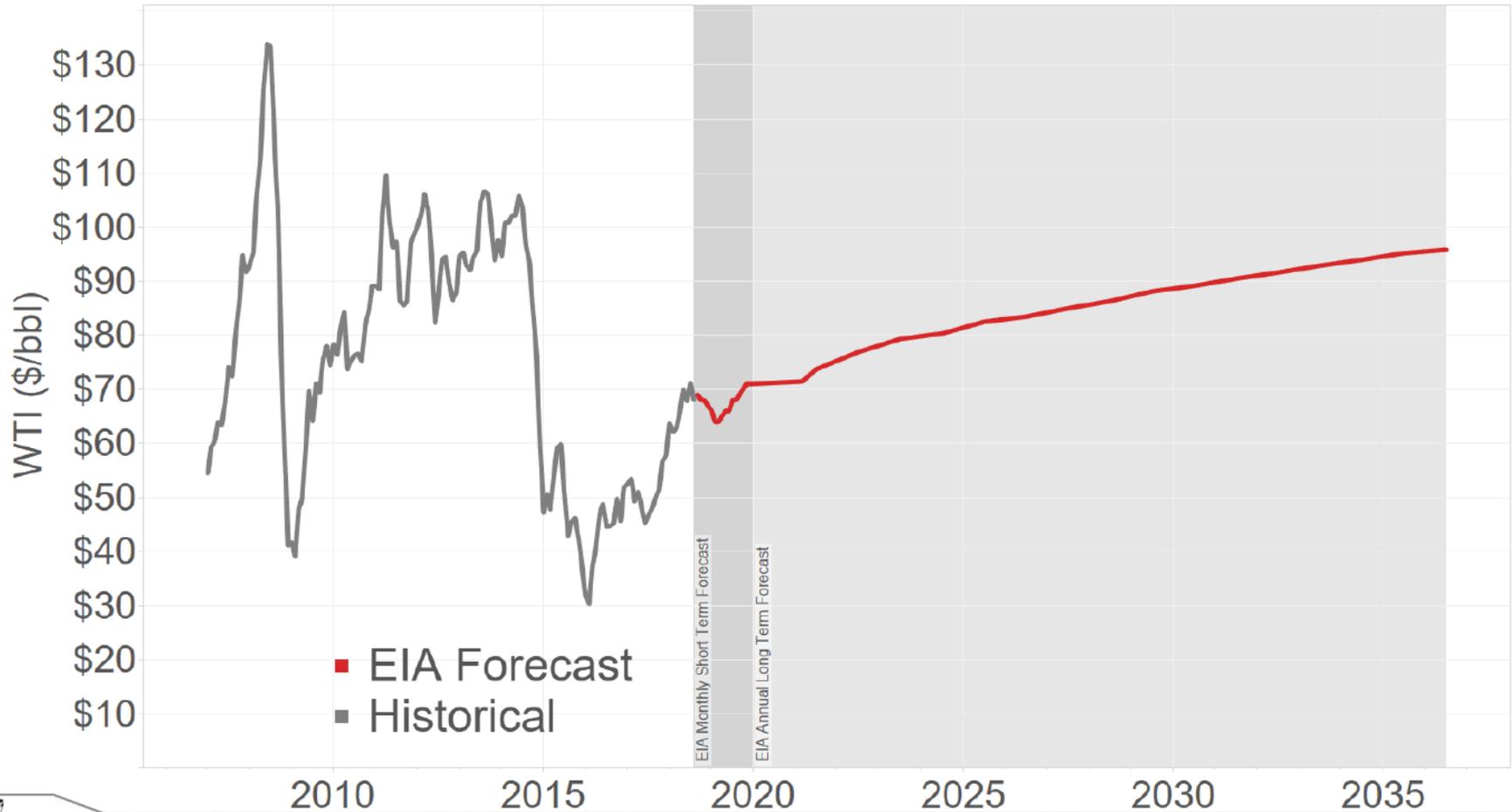




### North Dakota Oil Production

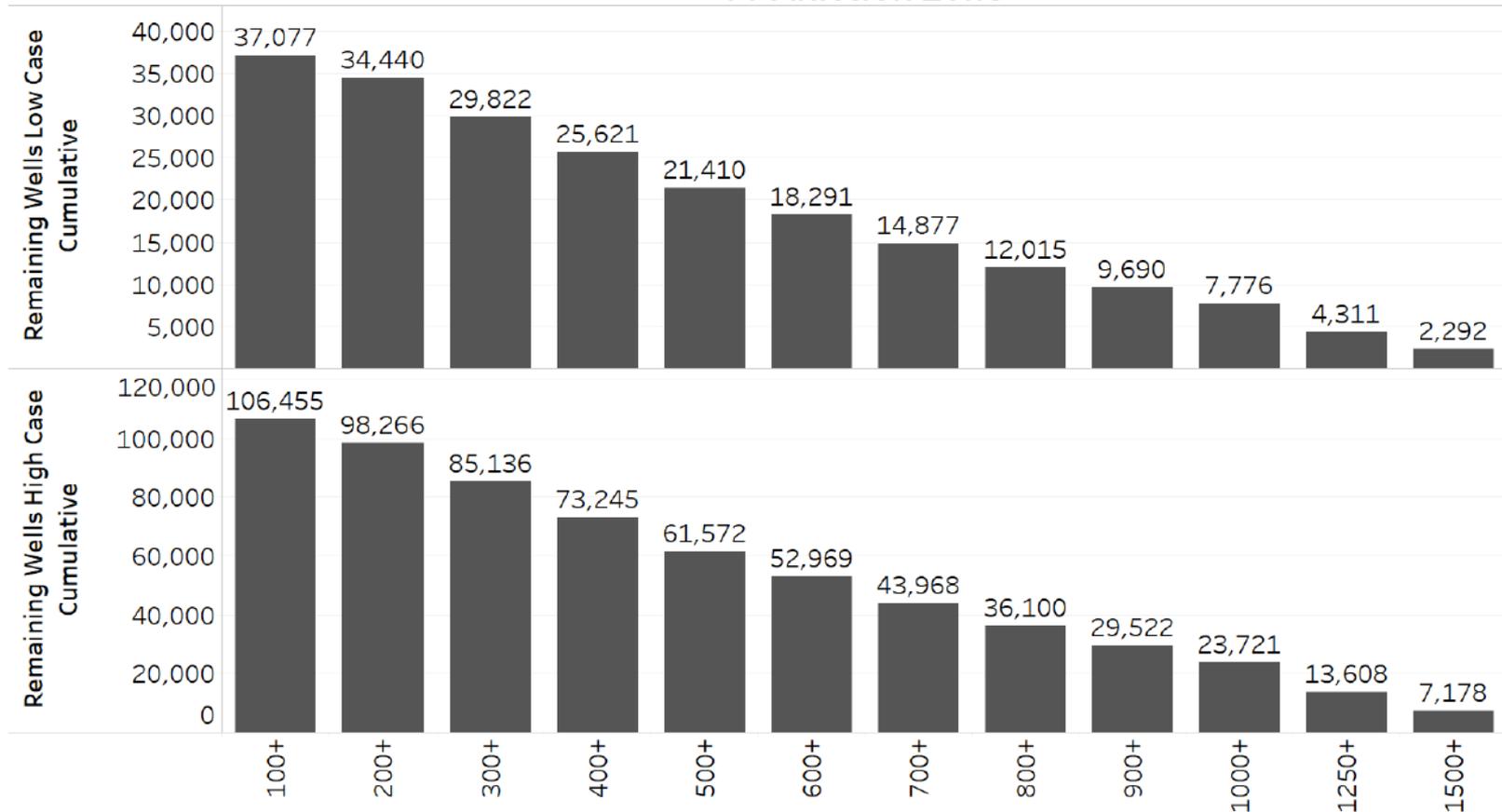


# DOE-EIA Forecasted Oil Price



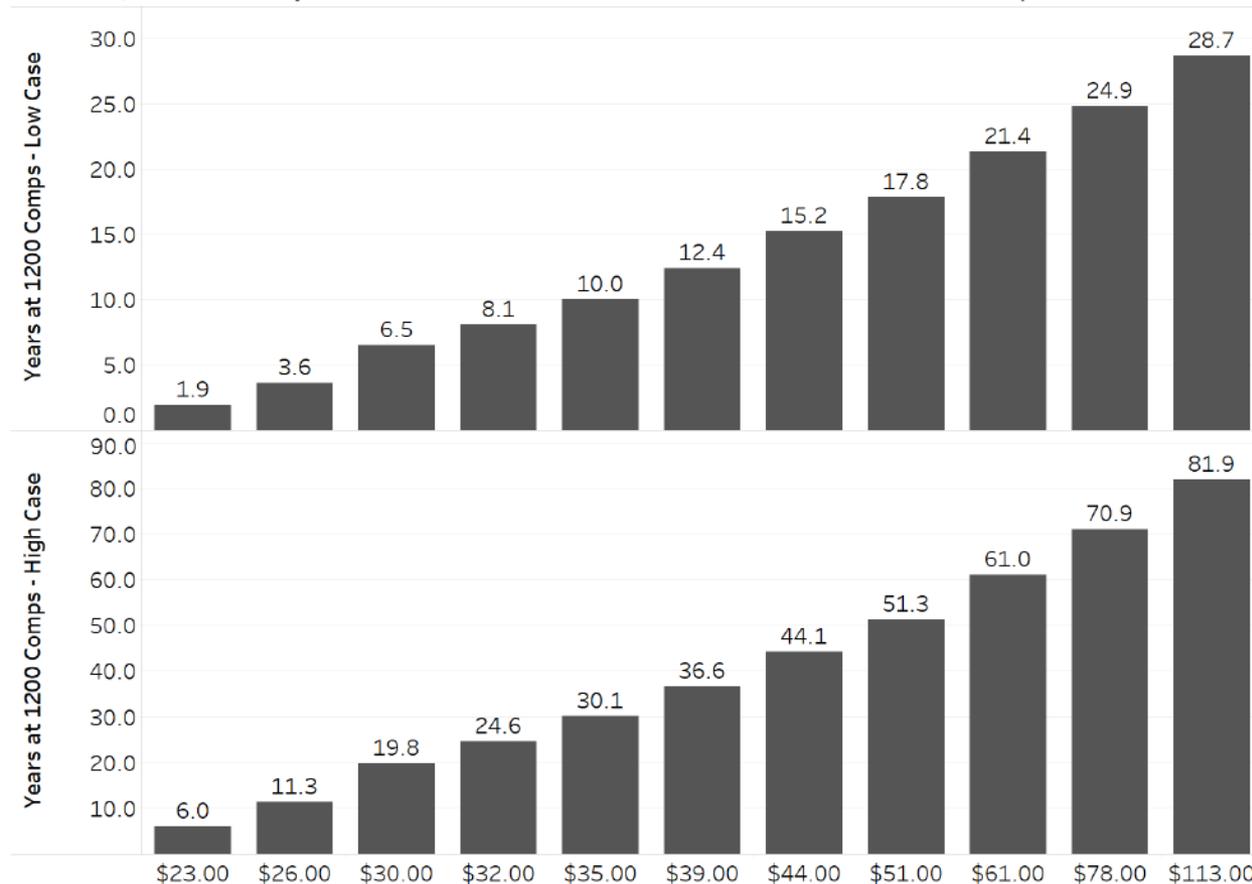
# Cumulative Remaining Wells – Peak Month Minimum BOPD

## Production Zone

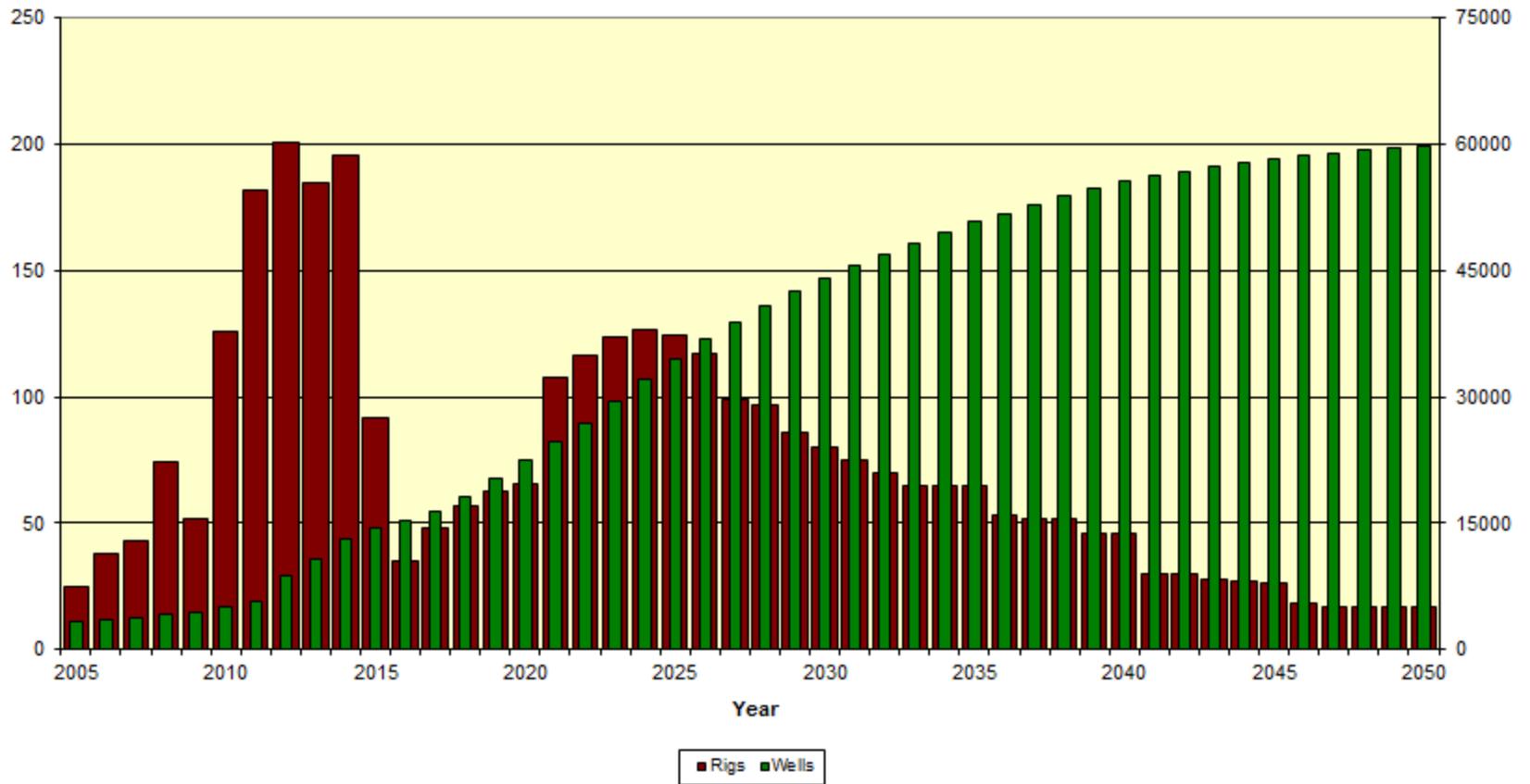


# Years Remaining\* / Minimum Wellhead Oil Price

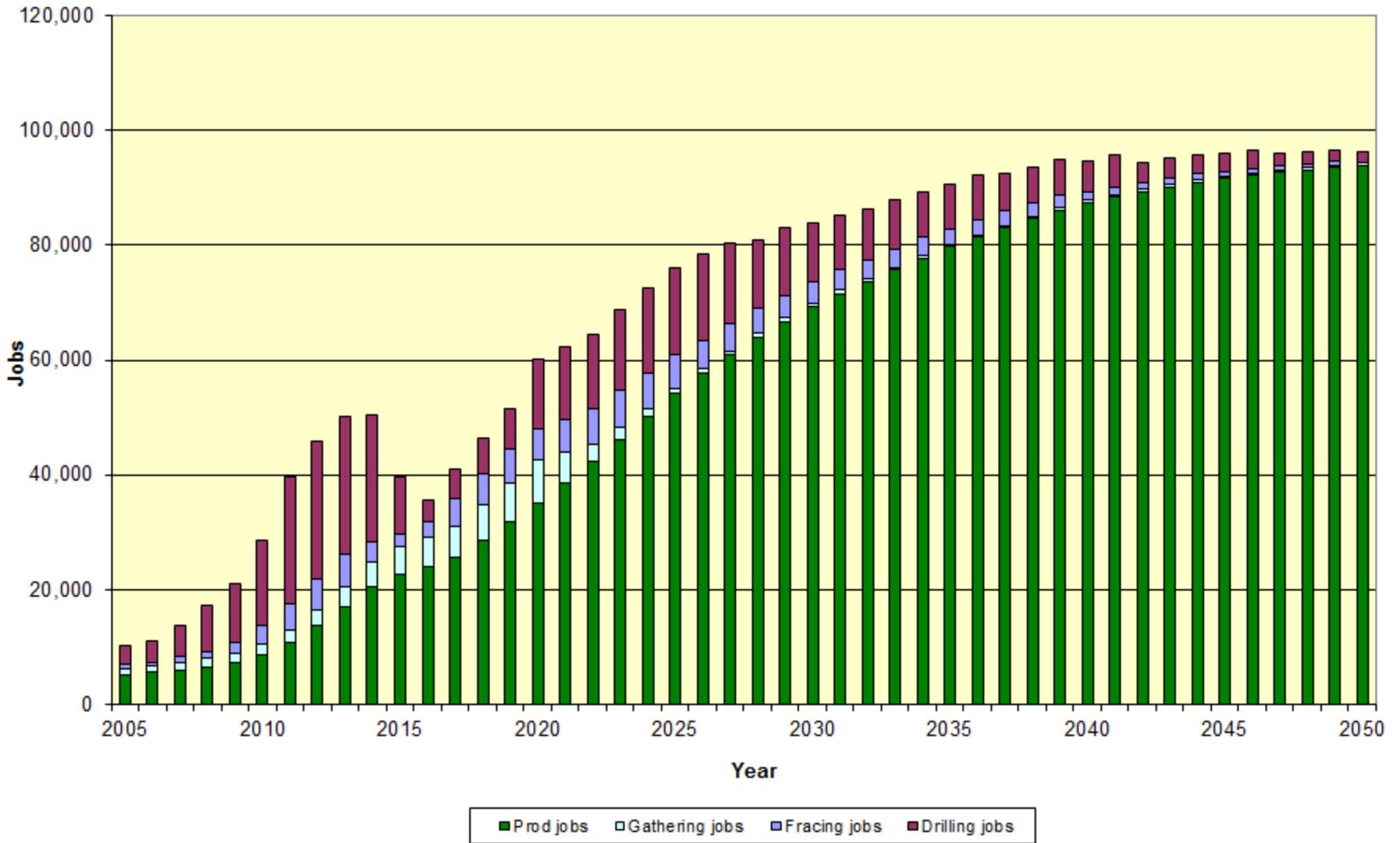
\*Assumes 1,200 Completions Per Year and \$7MM Well Costs (20% After Tax IRR)



### North Dakota Rigs and Wells



# North Dakota Oil Industry Jobs



# Enhanced Oil Recovery (EOR)<sup>1</sup>

- EOG is the 1<sup>st</sup> company to say it has significantly increased oil production from an unconventional play using gas injection.
- Field tests since program started in 2013:
  - The production increases on 15 wells indicated from 30-70% reserve gains.
  - A 32-well test in 2016 added 300,000 bbl of oil at \$6/bbl finding cost.
  - Work is ongoing on 100 wells in six areas in 2017.

# Enhanced Oil Recovery (EOR)<sup>1</sup>

## Inputs and Outputs

- Additional capital costs average about \$1 million per well
- The process uses associated gas from its wells
- Production response is in 2-3 months
- \$1 invested adds \$2 to net present value

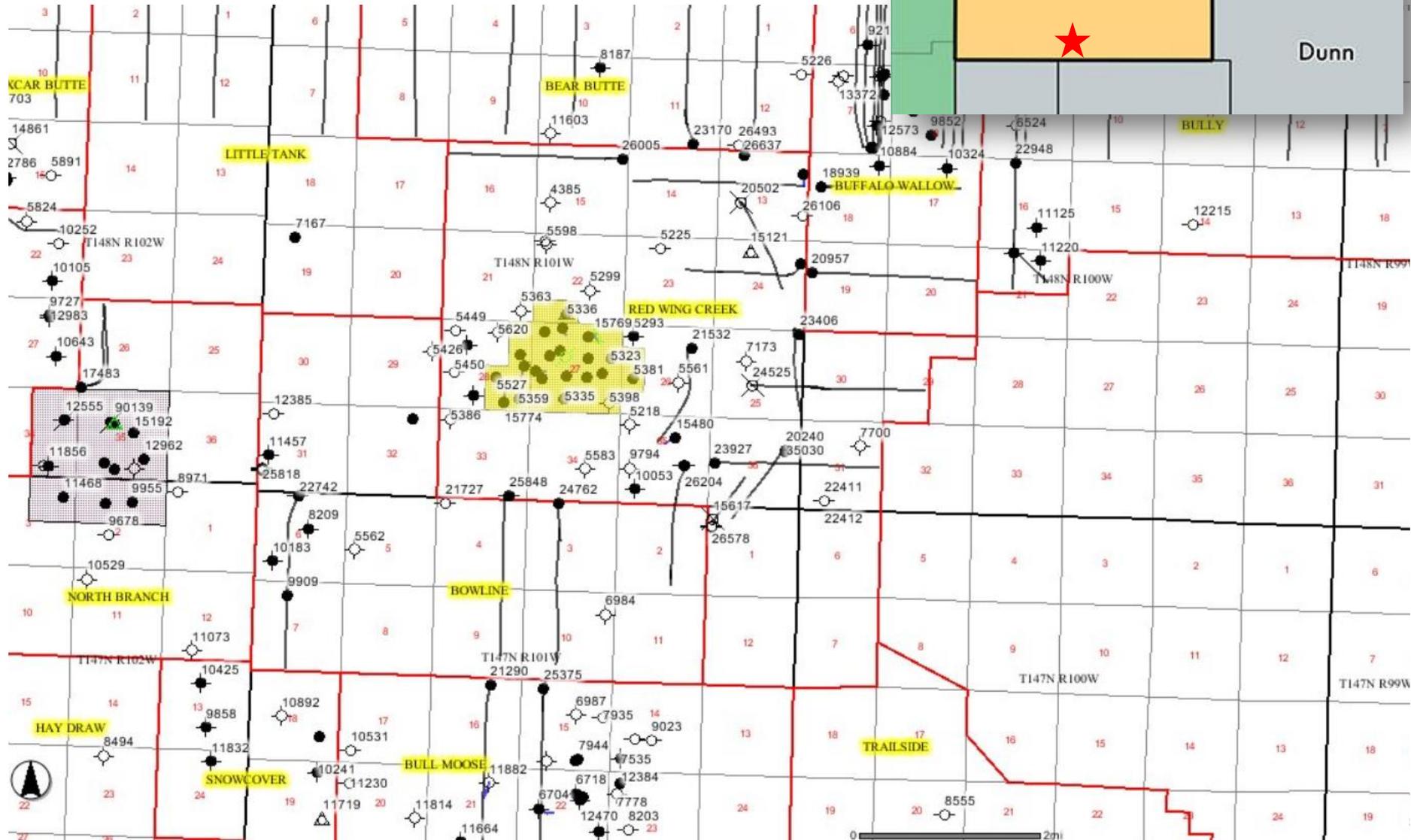
## It Works if:

- The formation is able to contain high-pressure gas injection near the well.
- Wellbores contact the most productive rock.
- The completion maximizes the fractured area within a restricted zone around the wellbore.



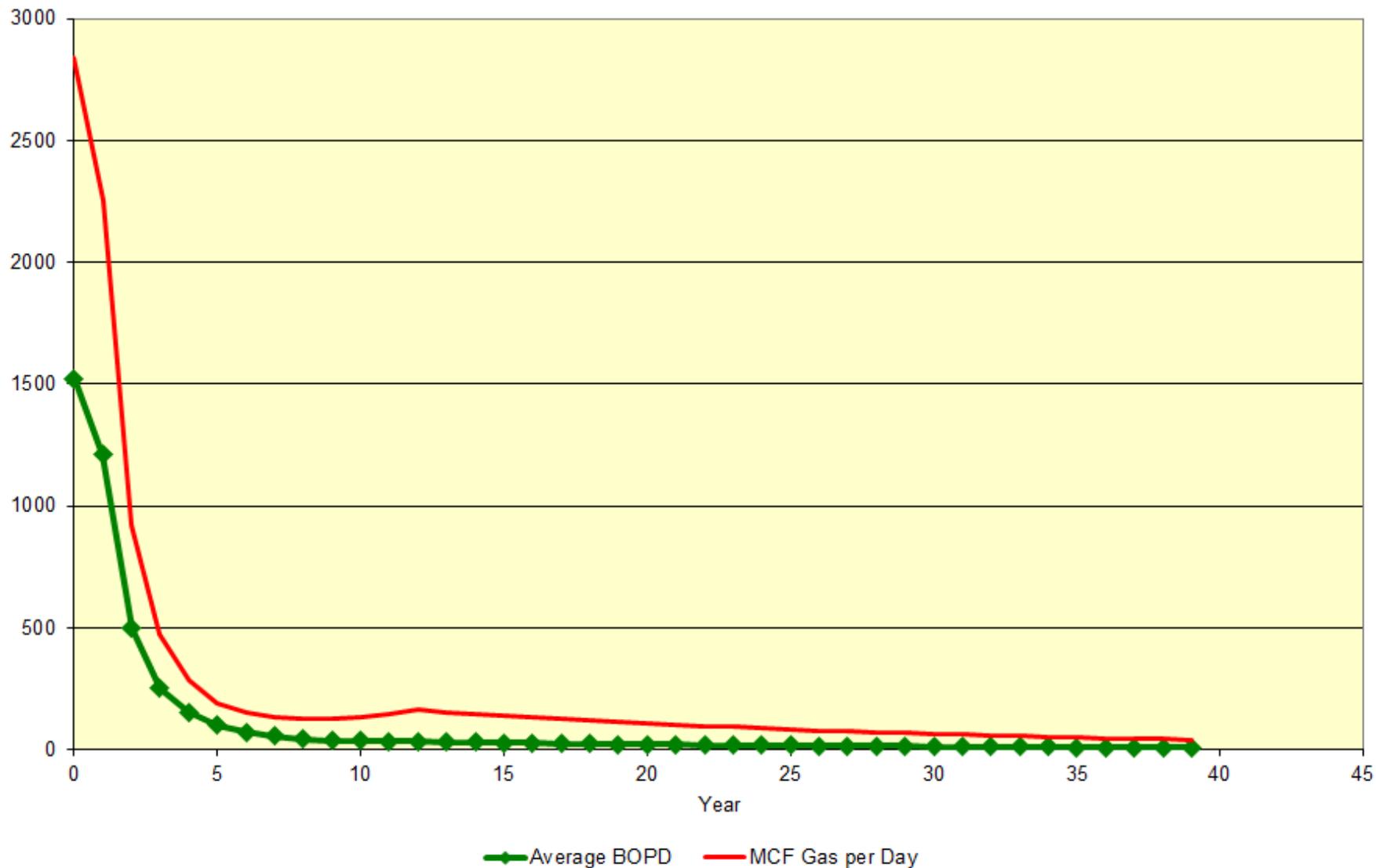


# Red Wing Creek



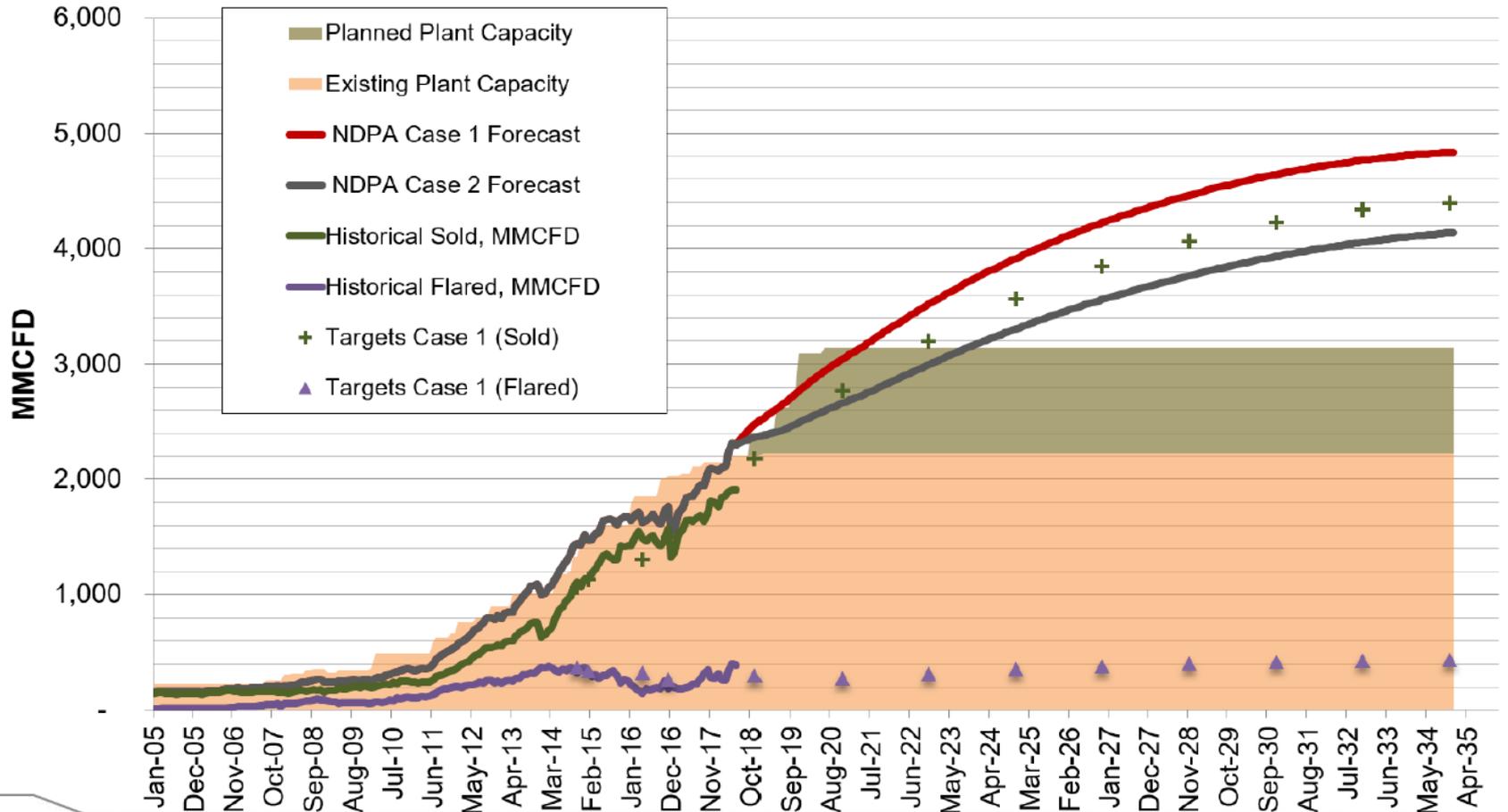
# Oil & Gas Production

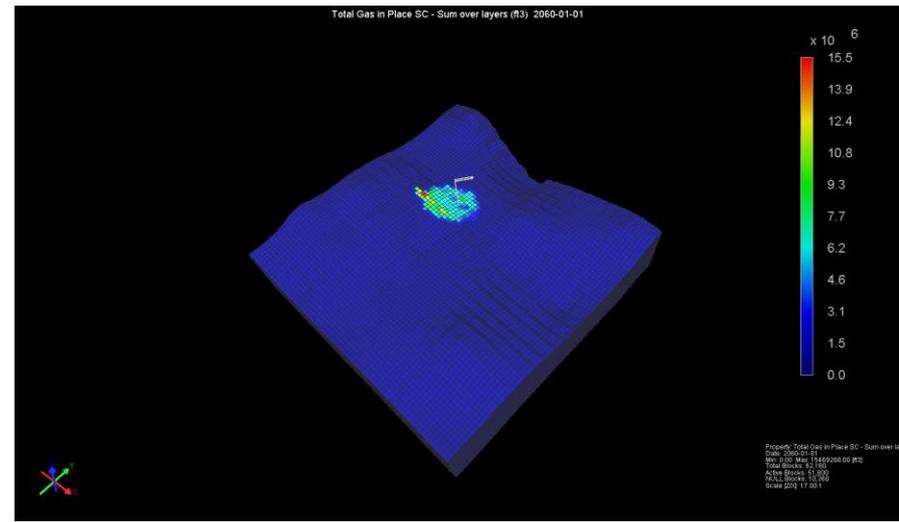
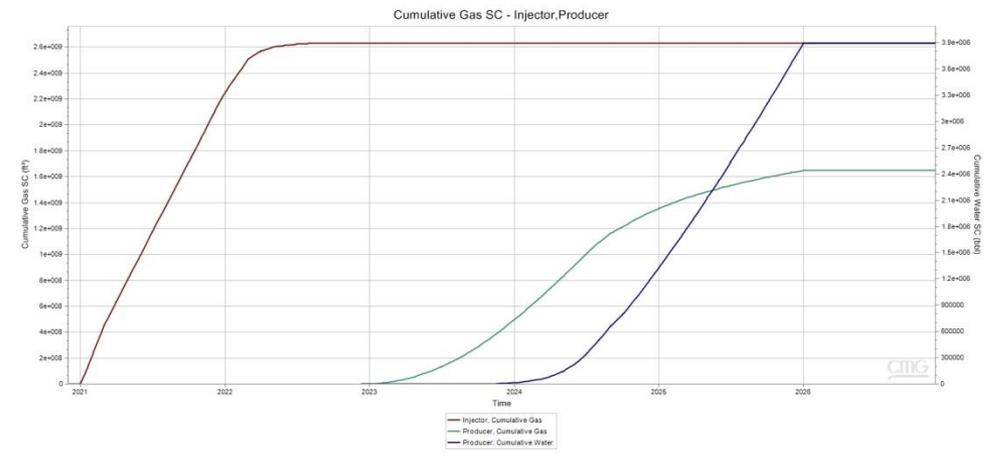
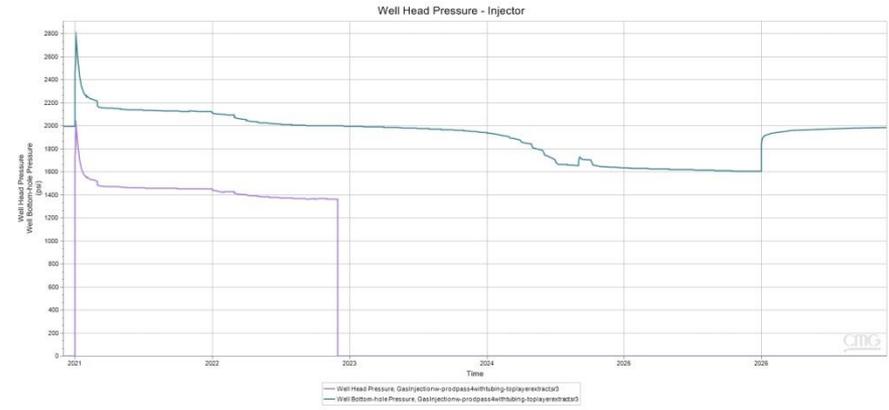
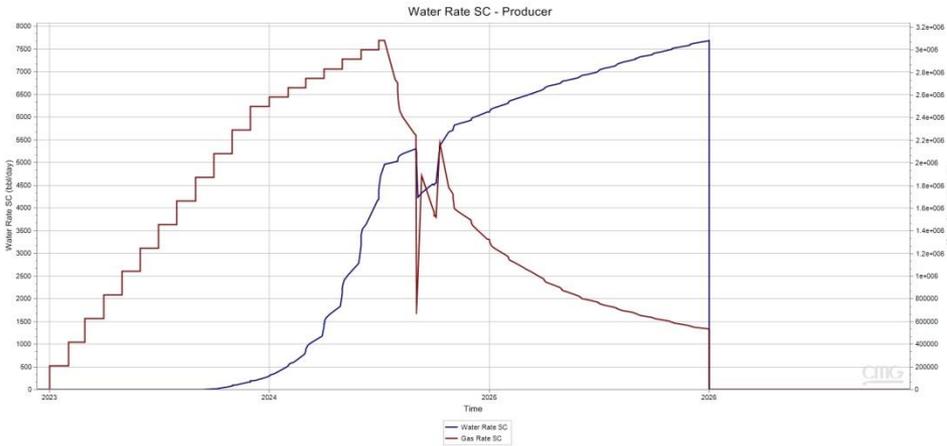
Typical Bakken Well Production



# Gas Production Forecast

## Solving the Flaring Challenge



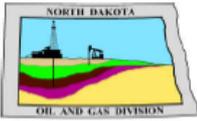


Flexibility will be provided in the form of temporary exemptions from production restrictions for up to one year if an operator files a request on a sundry notice and provides the documentation necessary to validate one or more of the following extenuating circumstances:

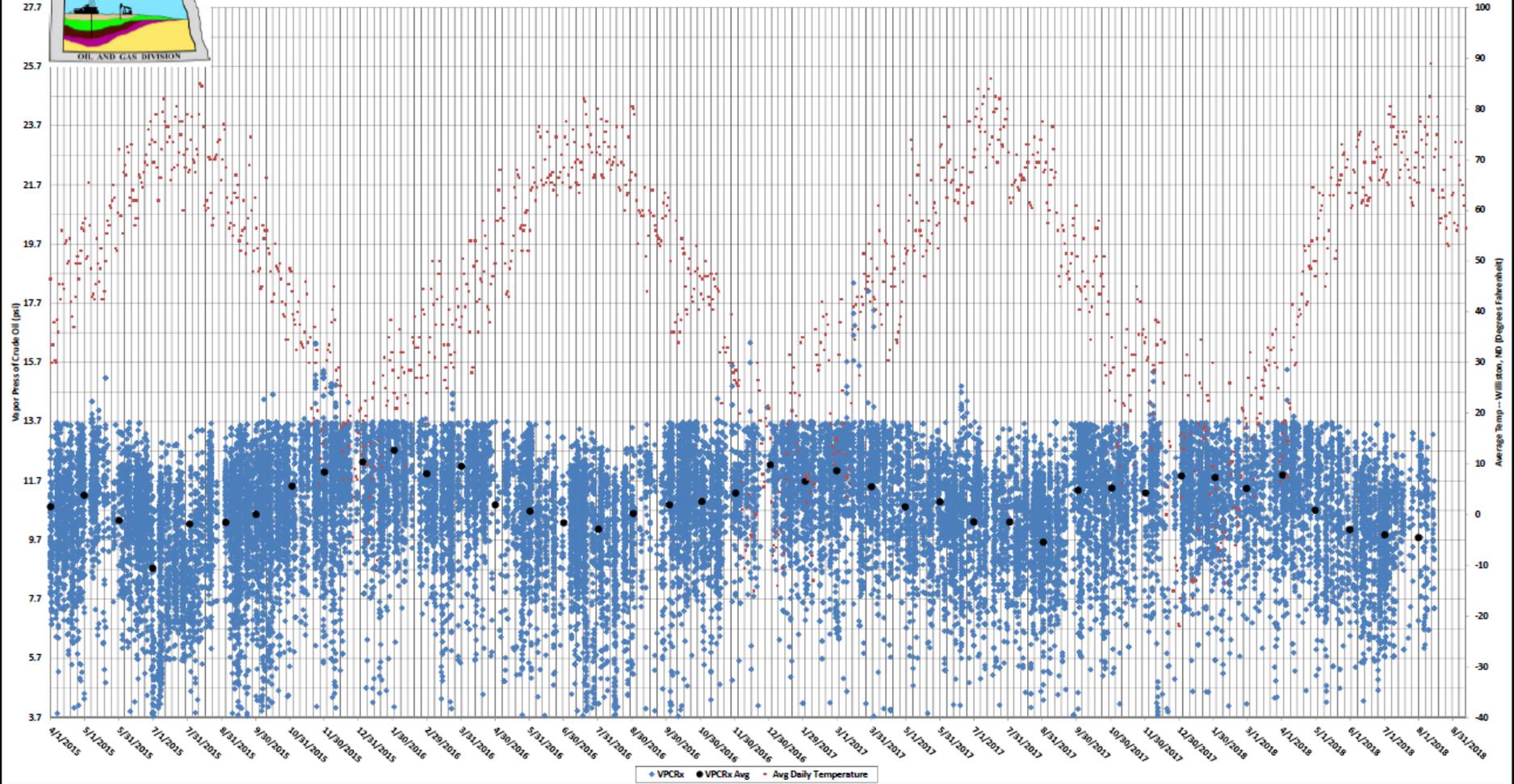
- 1) surface landowner, tribal, or federal government right-of-way delays
- 2) temporary midstream down-time for system upgrades and/or maintenance
- 3) federal regulatory restrictions or delays
- 4) safety issues
- 5) delayed access to electrical power
- 6) possible reservoir damage

A summary of temporary exemptions approved and denied will be provided in Oil and Gas Division Quarterly Reports.

Flexibility in the form of temporary exemptions from production restrictions may be considered for other types of extenuating circumstances after notice and hearing if the effect of such flexibility is a significant net increase in gas capture within one year of the date such relief is granted.



# Historical Vapor Pressure of Crude Oil



## **Proposed amendments to ICO 25417:**

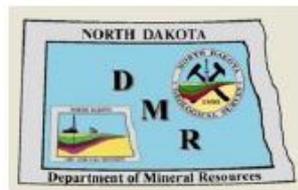
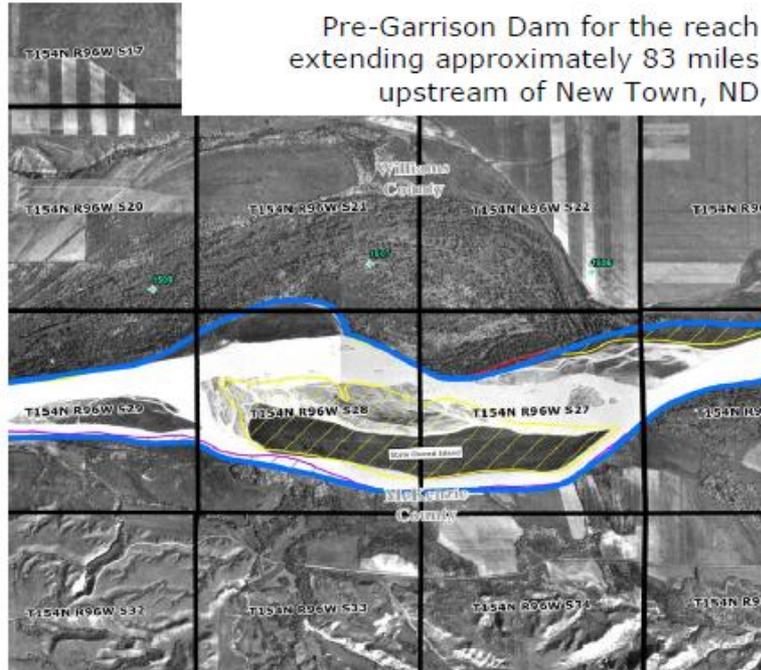
Paragraph (2) (d): Production facilities utilizing gas-liquid separator(s) and/or emulsion heater-treater(s) operating at pressures and temperatures other than those provided in (b) or (c) above shall be allowed only upon the operator demonstrating that the operating pressures and temperatures of the separator(s) and/or emulsion heater-treater(s) are producing crude oil with a Vapor Pressure of Crude Oil (VPCR<sub>x</sub>) no greater than 13.7 psi or 1 psi less than the vapor pressure of stabilized crude oil as defined in the latest version of ANSI/API RP3000 whichever is lower. Such test must be performed by a person sufficiently trained to perform the test. All VPCR<sub>x</sub> tests shall be performed in accordance with ~~the latest version of ASTM D6377~~ the most current ASTM testing standard and shall be conducted quarterly pursuant to Commission approved oil conditioning policy/guidance. Samples for testing must be collected in accordance with ~~ASTM D3700 or ASTM D5842~~ the most current ASTM or API sampling standard at the point of custody transfer. A Sundry Notice (Form 4) shall be submitted to the Director within 15 days of the test date which includes ~~a screen shot and/or printout of the VPCR<sub>x</sub> test conducted and details the operating capacities, pressures, and temperatures of all well site conditioning equipment at the time of the test~~ required information pursuant to Commission approved oil conditioning policy/guidance; or

Paragraph (5) The Commission shall have continuing jurisdiction in this matter and specifically reserves the authority, upon its own motion or the motion of any interested party, to: (a) review such requirements outlined herein; (b) determine whether additional requirements are warranted; (c) issue crude oil conditioning policy/guidance as necessary; and (d) make such further amendments or modifications as the Commission deems appropriate.

[https://www.dmr.nd.gov/oilgas/vapor\\_pressure/Supporting\\_Documentation.pdf](https://www.dmr.nd.gov/oilgas/vapor_pressure/Supporting_Documentation.pdf)

## Ordinary High Water Mark of the Historical Missouri River Bed

Pre-Garrison Dam for the reach  
extending approximately 83 miles  
upstream of New Town, ND



Prepared for:  
North Dakota Industrial Commission  
Department of Mineral Resources  
Attn: Lynn Helms, Director  
1016 East Calgary Avenue  
Bismarck, ND 58503



Prepared by:

Wenck Associates, Inc.  
301 1<sup>st</sup> Street NE  
Mandan, ND 58554  
701-751-3370

## **61-33.1-04. Implementation .**

1. Within six months after the adoption of the final review findings by the industrial commission:  
a. Any royalty proceeds held by operators attributable to oil and gas mineral tracts lying entirely above the ordinary high water mark of the historical Missouri riverbed channel on both the corps survey and the state phase two survey must be released to the owners of the tracts, absent a showing of other defects affecting mineral title; and

### **March 27, 2019**

b. Any royalty proceeds held by the board of university and school lands attributable to oil and gas mineral tracts lying entirely above the ordinary high water mark of the historical Missouri riverbed channel on both the corps survey and the state phase two survey must be released to the relevant operators to distribute to the owners of the tracts, absent a showing of other defects affecting mineral title.

### **March 27, 2019—preliminary injunction in Sorum et al v. State of North Dakota et al**

2. Upon adoption of the final review findings by the industrial commission:

a. The board of university and school lands shall begin to implement any acreage adjustments, lease bonus and royalty refunds, and payment demands as may be necessary relating to state - issued oil and gas leases. The board shall complete the adjustments, refunds, and payment demands within two years after the date of adoption of the final review findings.

### **September 27, 2019—preliminary injunction in Sorum et al v. State of North Dakota et al**

b. Operators of oil and gas wells affected by the final review findings immediately shall begin to implement any acreage and revenue adjustments relating to state - owned and privately owned oil and gas interests. The operators shall complete the adjustments within two years after the date of adoption of the review findings. Any applicable penalties, liability, or interest for late payment of royalties or revenues from an affected oil or gas well may not begin to accrue until the end of the two - year deadline. The filing of an action under section 61 - 33.1 - 05 tolls the deadline for any oil and gas well directly affected by the action challenging the review finding.

### **September 27, 2018 – September 27, 2020**

### **61-33.1-05. Actions challenging review findings.**

An interested party seeking to bring an action challenging the review findings or recommendations or the industrial commission actions under this chapter shall commence an action in district court within two years of the date of adoption of the final review findings by the industrial commission.

The plaintiff bringing an action under this section may challenge only the final review finding for the section or sections of land in which the plaintiff asserts an interest. The state and all owners of record of fee or leasehold estates or interests affected by the finding, recommendation, or industrial commission action challenged in the action under this section must be joined as parties to the action. A plaintiff or defendant claiming a boundary of the ordinary high water mark of the historical Missouri riverbed channel which varies from the boundary determined under this chapter bears the burden of establishing the variance by clear and convincing evidence based on evidence of the type required to be considered by the engineering and surveying firm under subsection 3 of section 61-33.1-03.

Notwithstanding any other provision of law, an action brought in district court under this section is the sole remedy for challenging the final review, recommendations, and determination of the ordinary high water mark under this chapter, and preempts any right to rehearing, reconsideration, administrative appeal, or other form of civil action provided under law.

**September 27, 2020**

# Royalty Statements

**North Dakota Administrative Code: 43-02-06-01**  
**Royalty Owner Information Statement**

**Changes  
effective:  
July 1, 2019**

- *DMR completing compliance reviews – at this time none meeting impending requirement.*

- NDPC Workgroup submitted 6 examples for review – none passed, 1 draft approved after meetings/calls, 1 more under review
- Price: “net price after deducts” needs to be independently verifiable with ND Tax Dept.
- Deductions & Adjustments: Will be broken into two sections
  - Adjustments: The amount and purpose of each adjustment or correction made
  - Deductions: The amount and purpose of each deduction separated into four categories:

Transportation

Processing

Compression

Administrative  
Costs

# Royalty Statements

**North Dakota Administrative Code: 43-02-06-01.1**  
**Ownership Interest Information Statement**

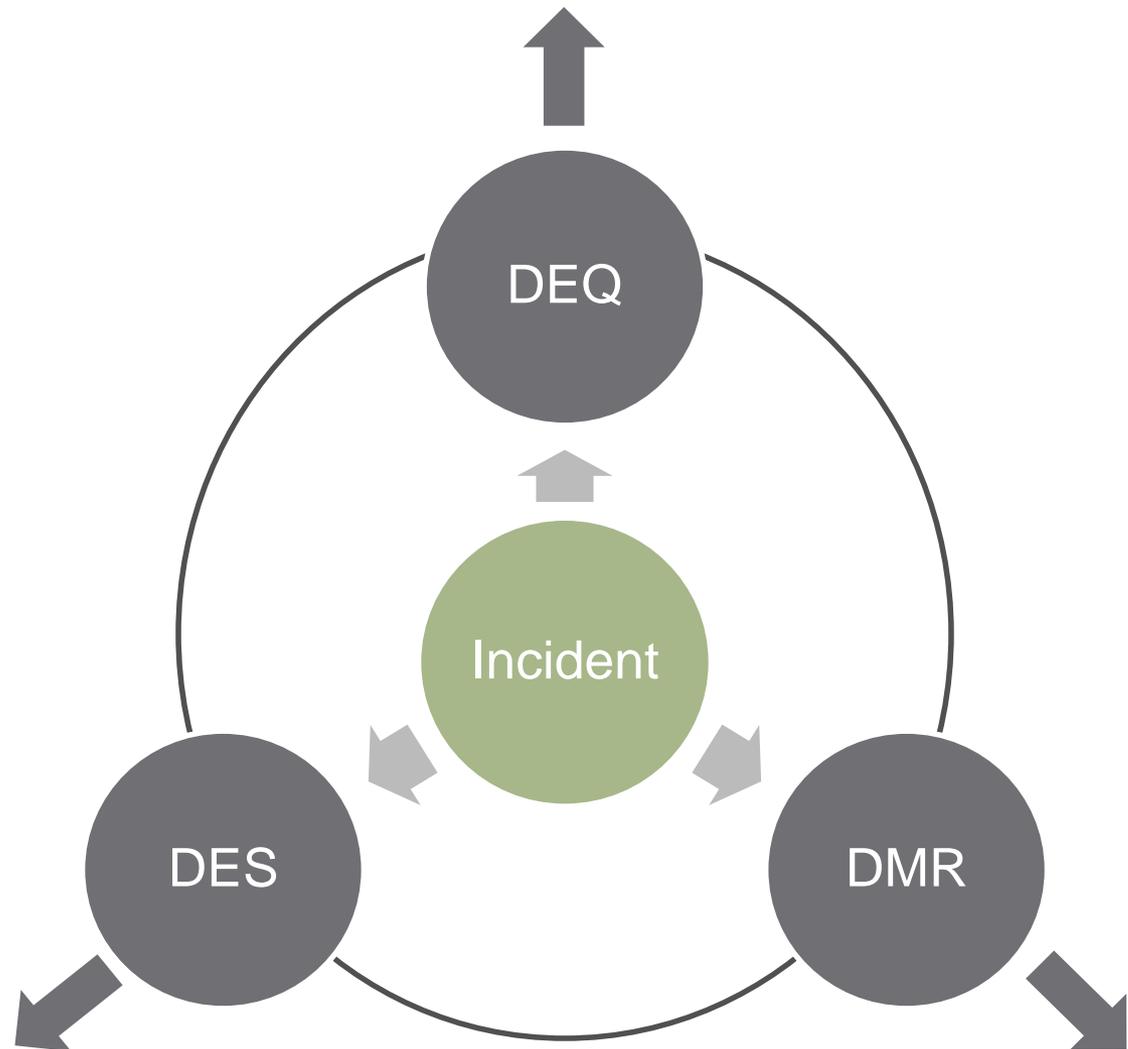
**Changes  
effective:  
July 1, 2019**

- Operator or payor shall provide the mineral owner with a statement identifying:
  - Spacing unit for the well (AND the effective date of the spacing unit change if applicable);
  - the net mineral acres owned by the mineral owner;
  - the gross mineral acres in the spacing unit; and
  - the mineral owner's decimal interest that will be applied to the well.
- Statement will be sent within 120 days after the end of the month of the first sale of production from a well OR change in the spacing unit of a well.

# Unified Spill Reporting

## Current Process

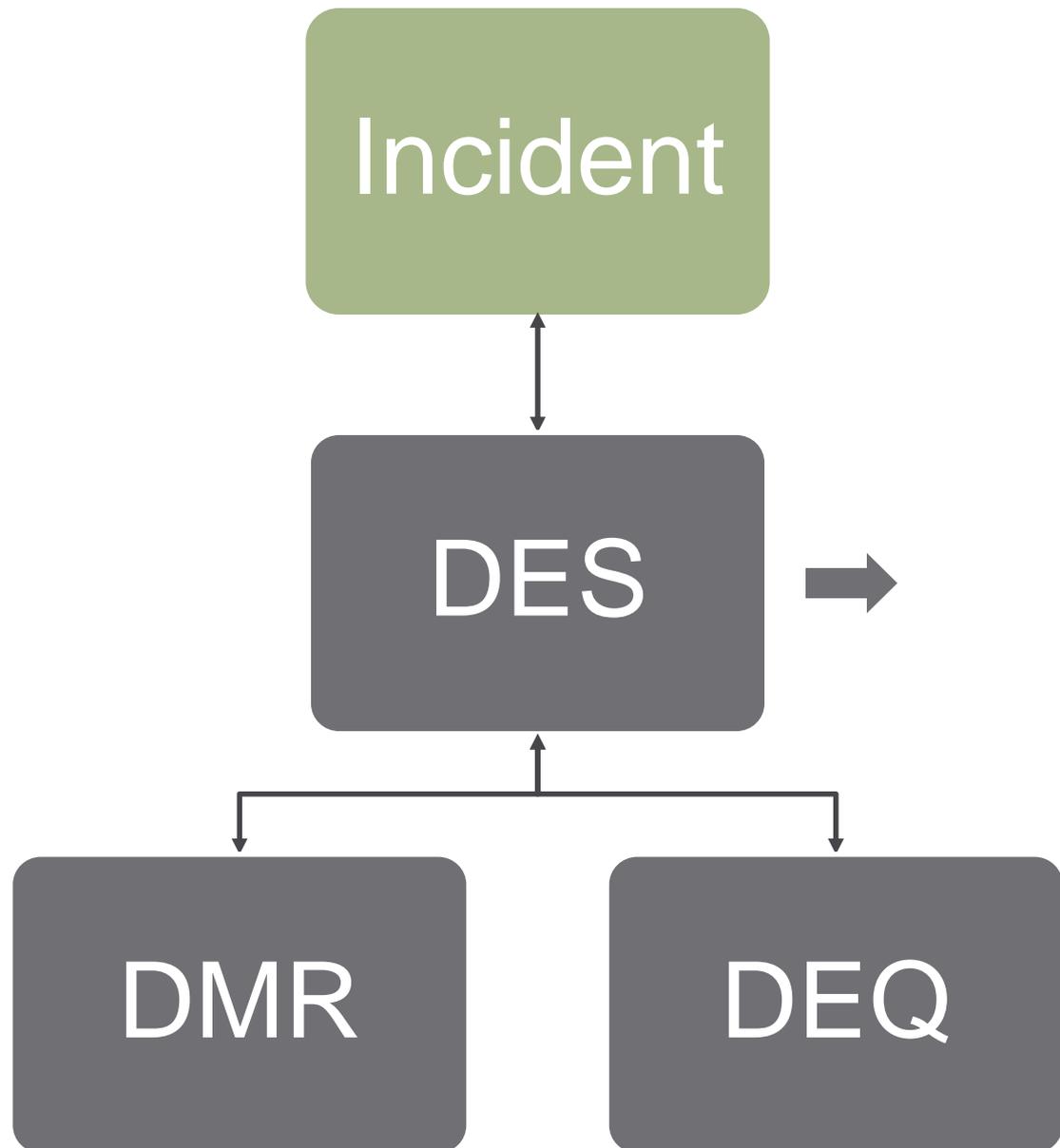
- Multiple places to submit forms
- Confusion among operators and public



# Unified Spill Reporting

## Improvement Goals

- One stop location for reporting
- Information sharing between agencies & databases



**North Dakota  
Department of Mineral Resources**

# Contact Us

600 East Boulevard Ave. – Dept. 405  
Bismarck, ND 58505

Phone: 701.328.8020

Email: [oilandgasinfo@nd.gov](mailto:oilandgasinfo@nd.gov)



[www.dmr.nd.gov](http://www.dmr.nd.gov)