

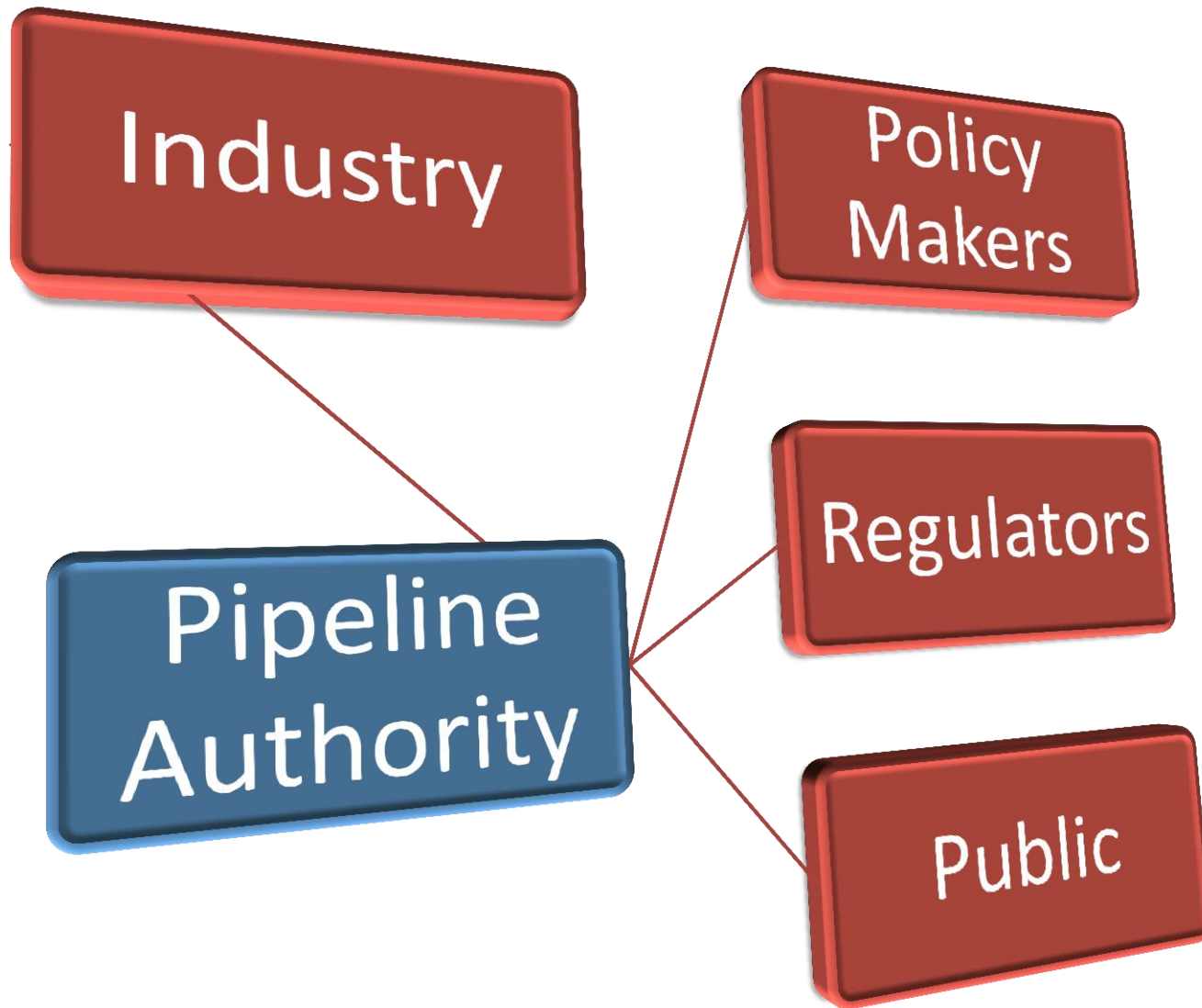


# **NARUC Summer Committee Meetings**

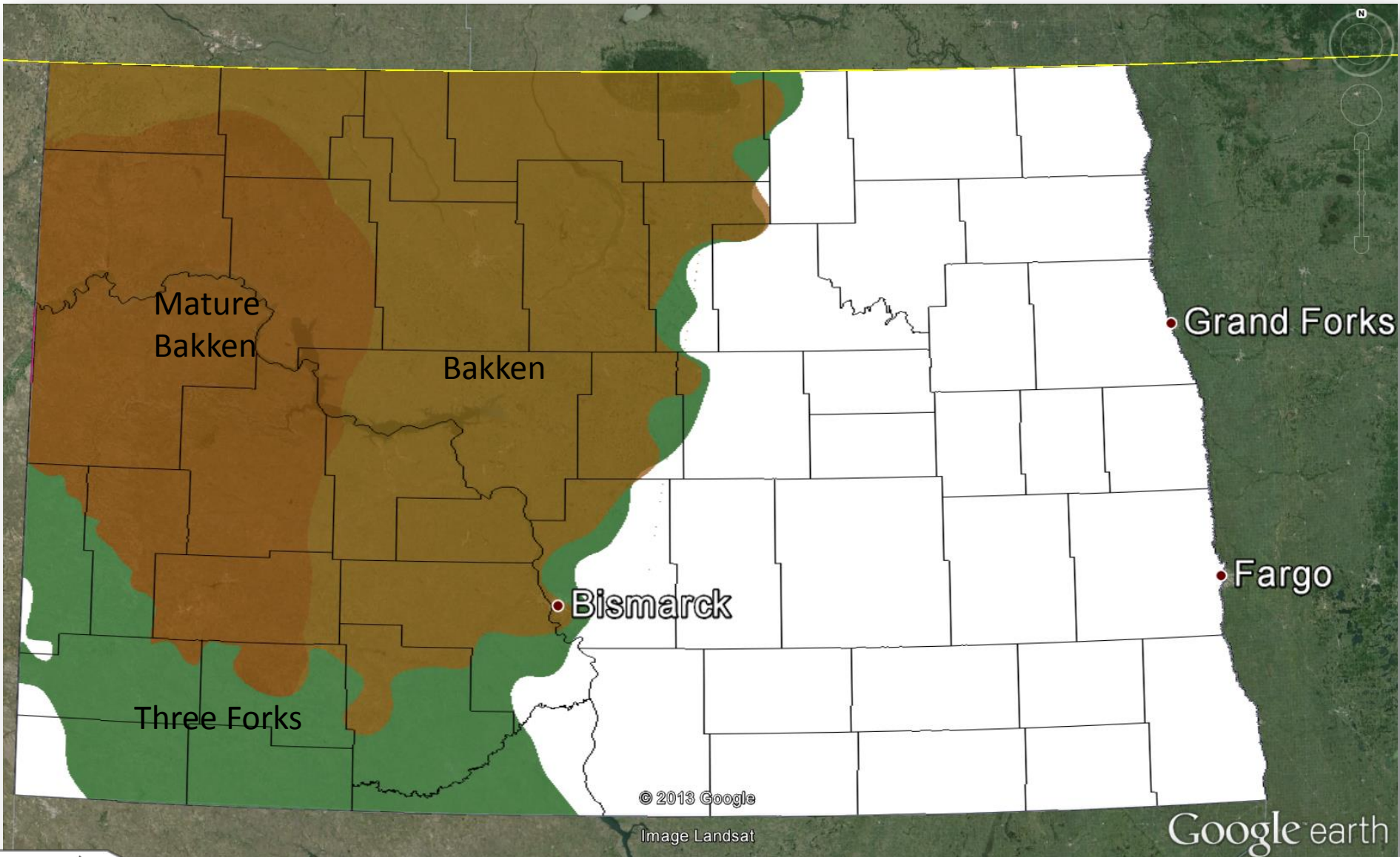
**North Dakota Pipeline Authority**

**Justin J. Kringstad**

**July 23, 2013 – Denver, CO**

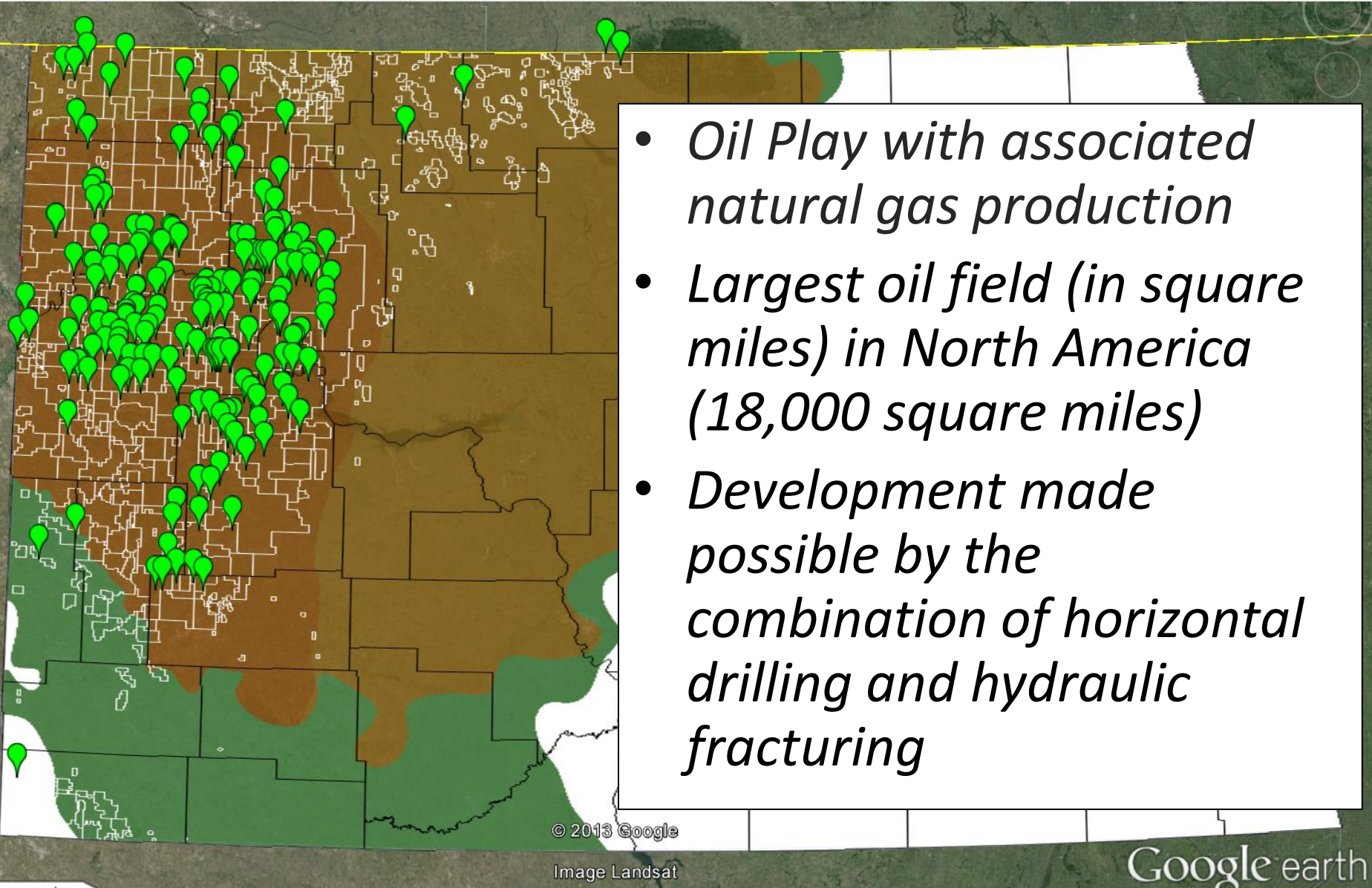


# Bakken-Three Forks Formations

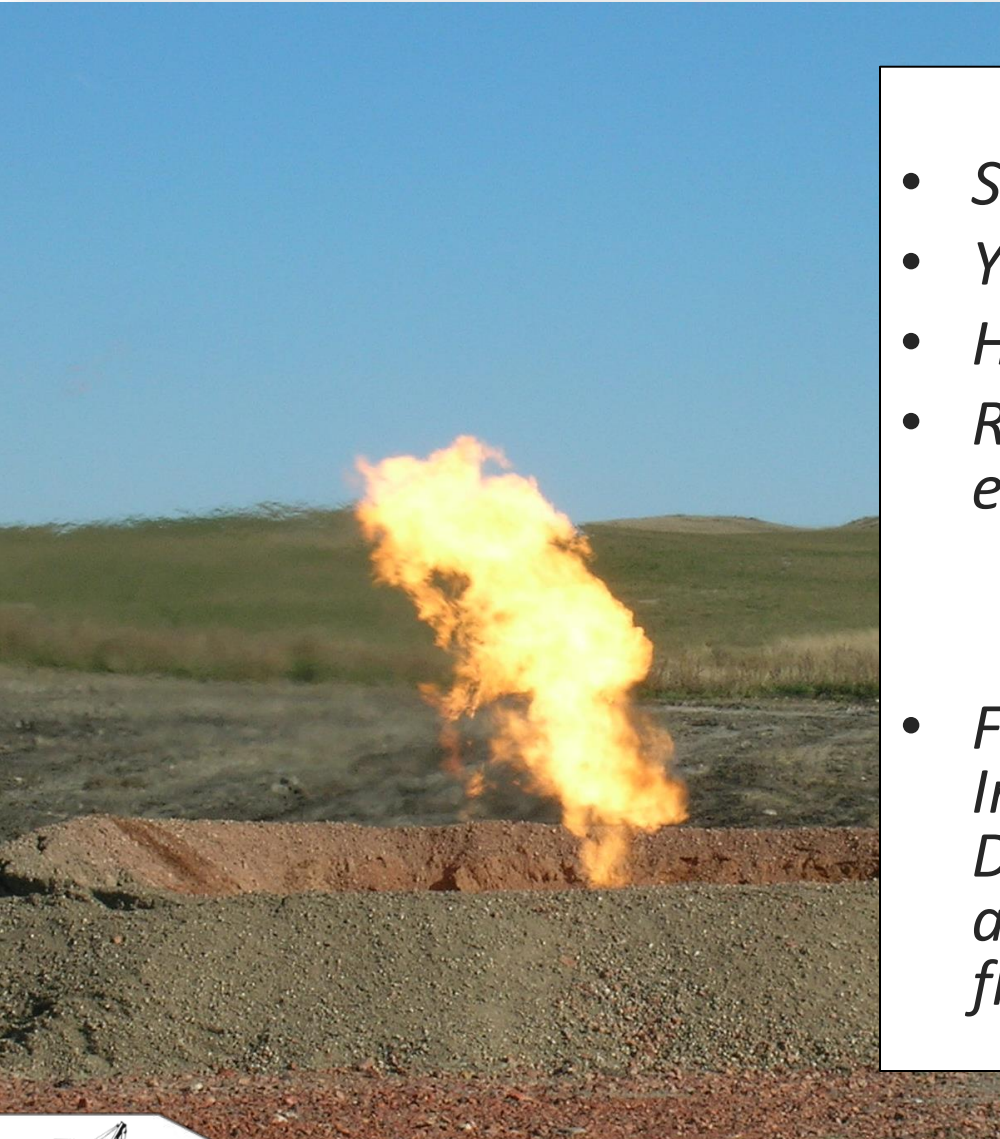




# Bakken-Three Forks Formations



# Natural Gas Flaring Facts/Challenges



## ***Primary Challenges***

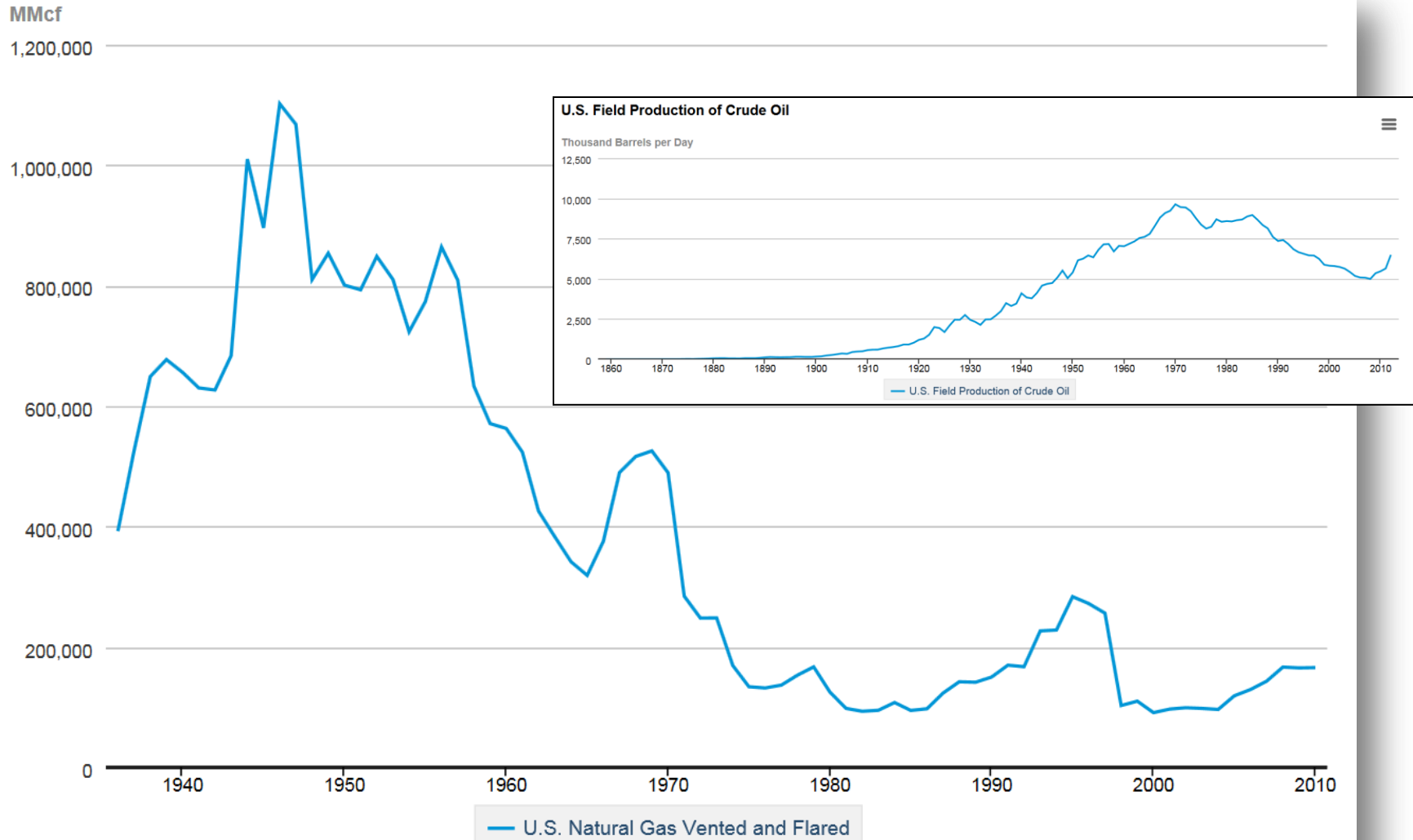
- *Size of resource*
- *Young age of development*
- *Harsh winter conditions*
- *Resource potential still being explored*

## ***Regulations***

- *Flaring regulated by the ND Industrial Commission/Oil & Gas Division with existing penalties and incentives in place to reduce flaring*



# US Natural Gas Flaring



Source: U.S. Energy Information Administration



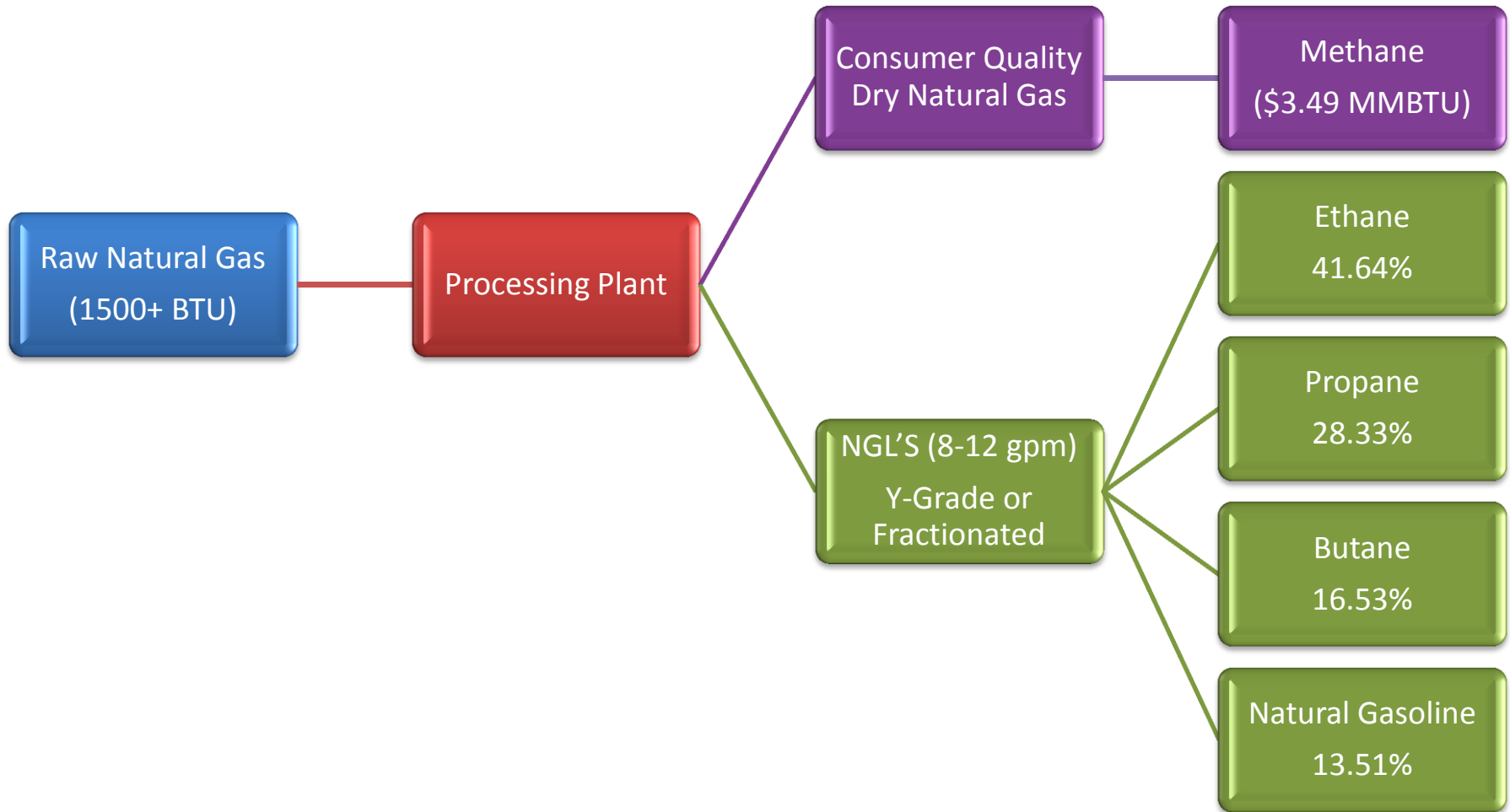
# Keys to Reducing ND Flaring

1. *Economics Must Work*
2. *Understanding Production Potential*
3. *New Gas Gathering Pipelines*
4. *Enhancing Existing Gathering Pipelines*
5. *Adequate Gas Processing Capacity*
6. *Adequate Interstate Pipeline Capacity*
7. *Flaring Alternatives (Short & Long Term)*





# Rich Natural Gas

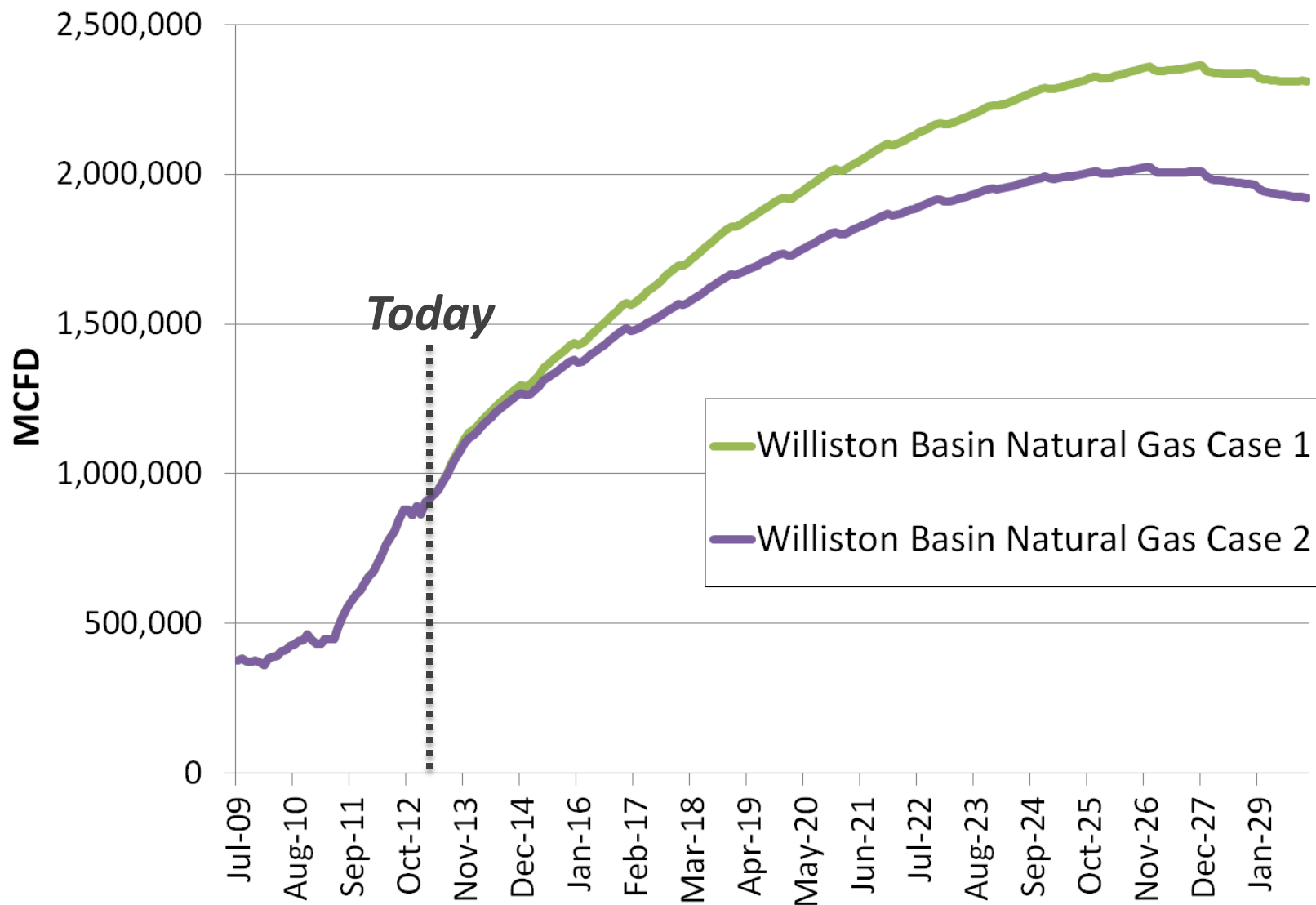


*\*Using NGL breakdown from the July 2012 BENTEK Natural Gas Study*





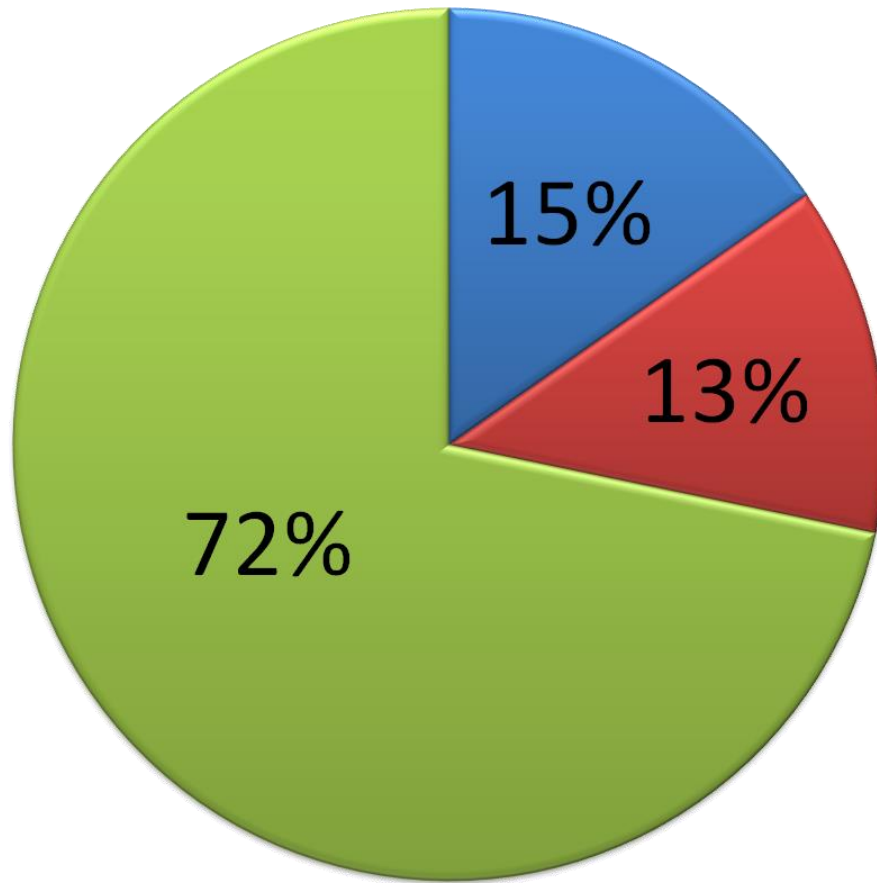
# Forecasting Williston Basin Gas Production



*Production forecast is for visual demonstration purposes only and should not be considered accurate for any near or long term planning.*



# Solving the Flaring Challenge



**GREEN** – % of gas captured and sold

**Why is the gas being flared?**

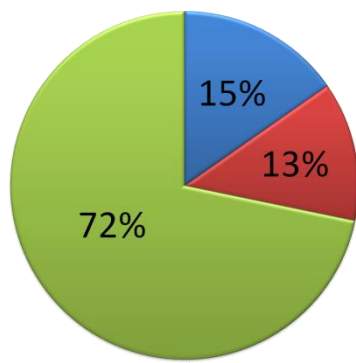
**Blue** – Lack of pipelines

**Red** – Challenges on existing infrastructure

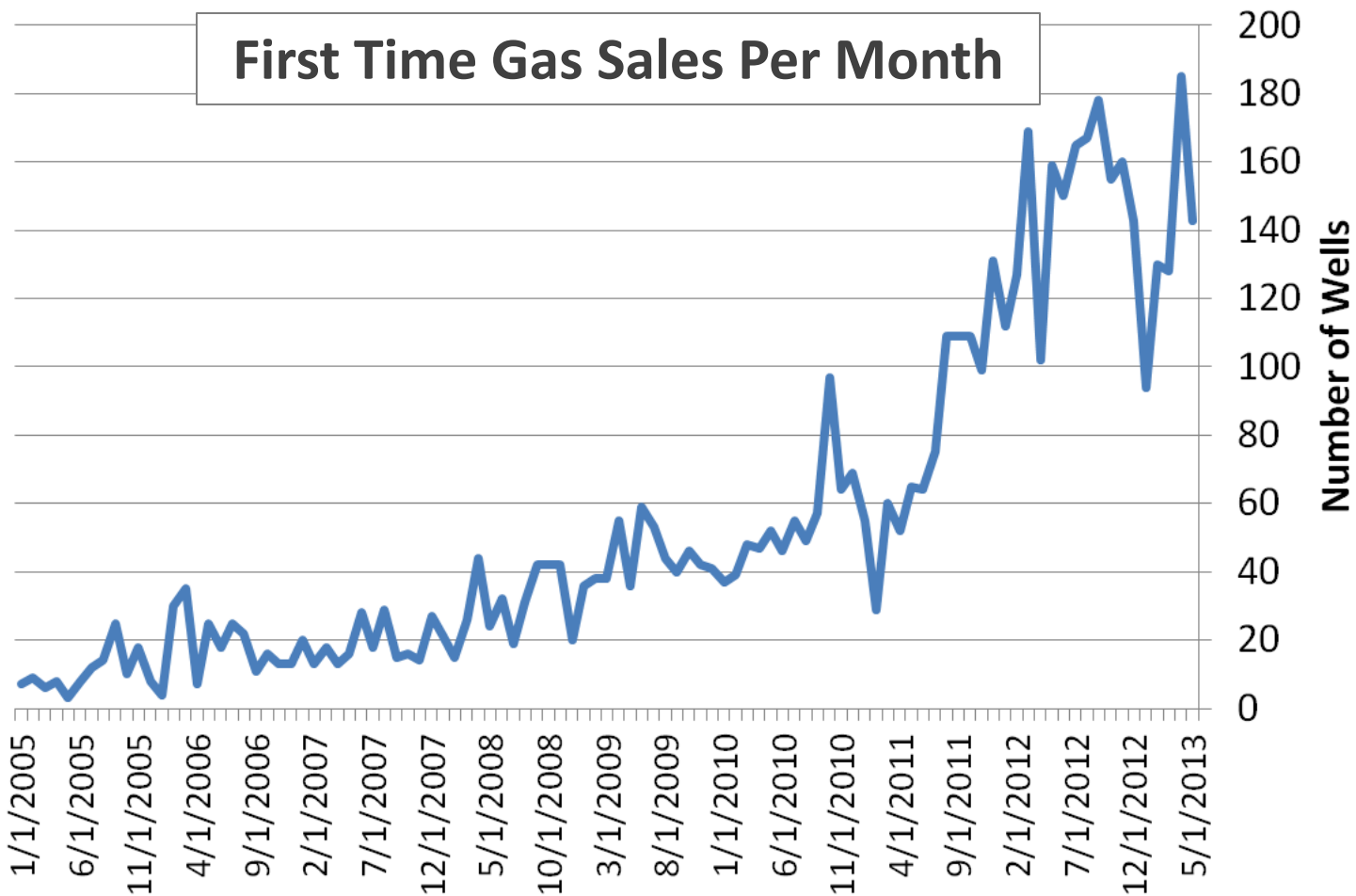
Statewide

May 2013 Data – Non-Confidential Wells

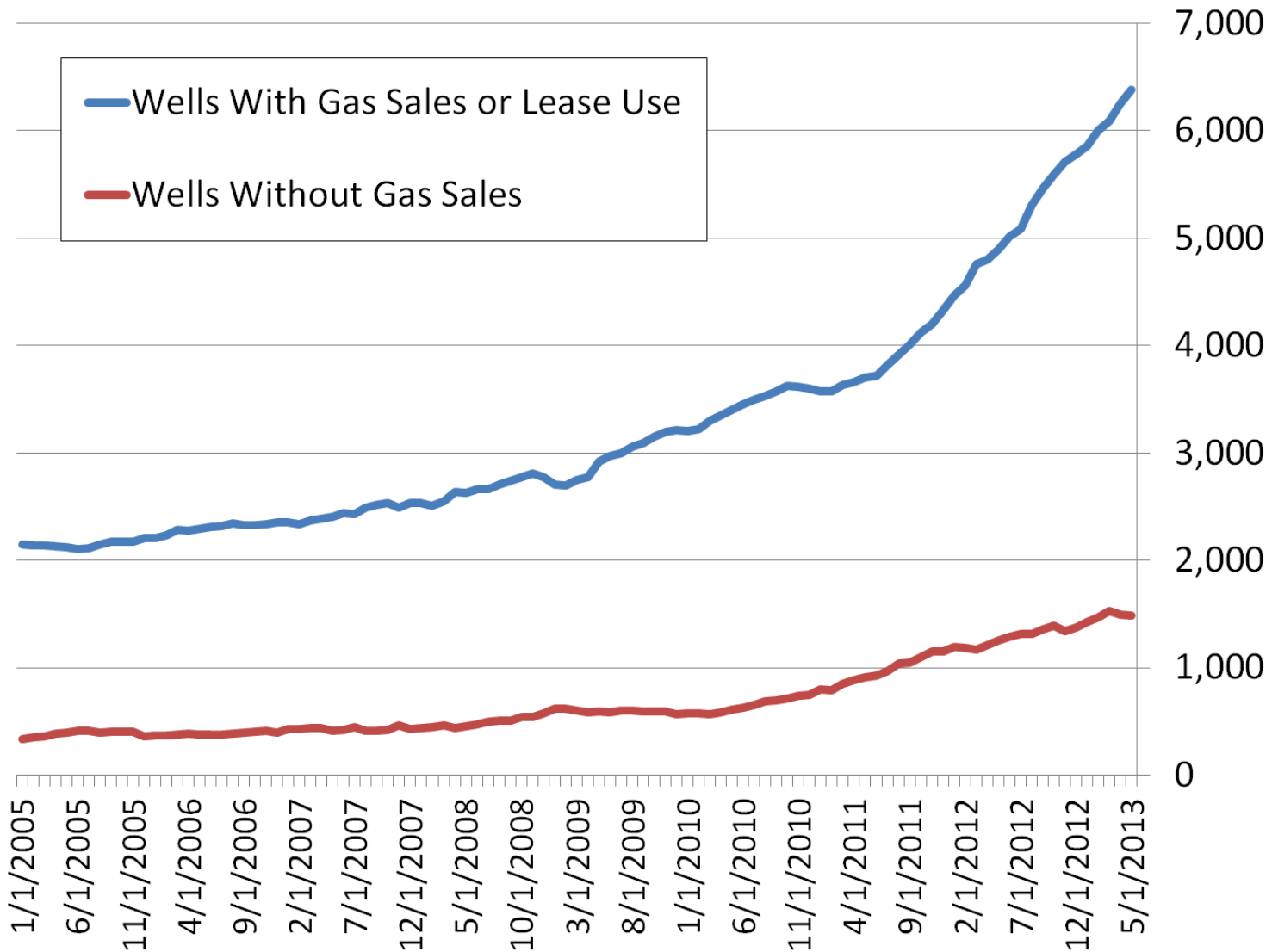




# Capturing the 15% Faster Well Connections

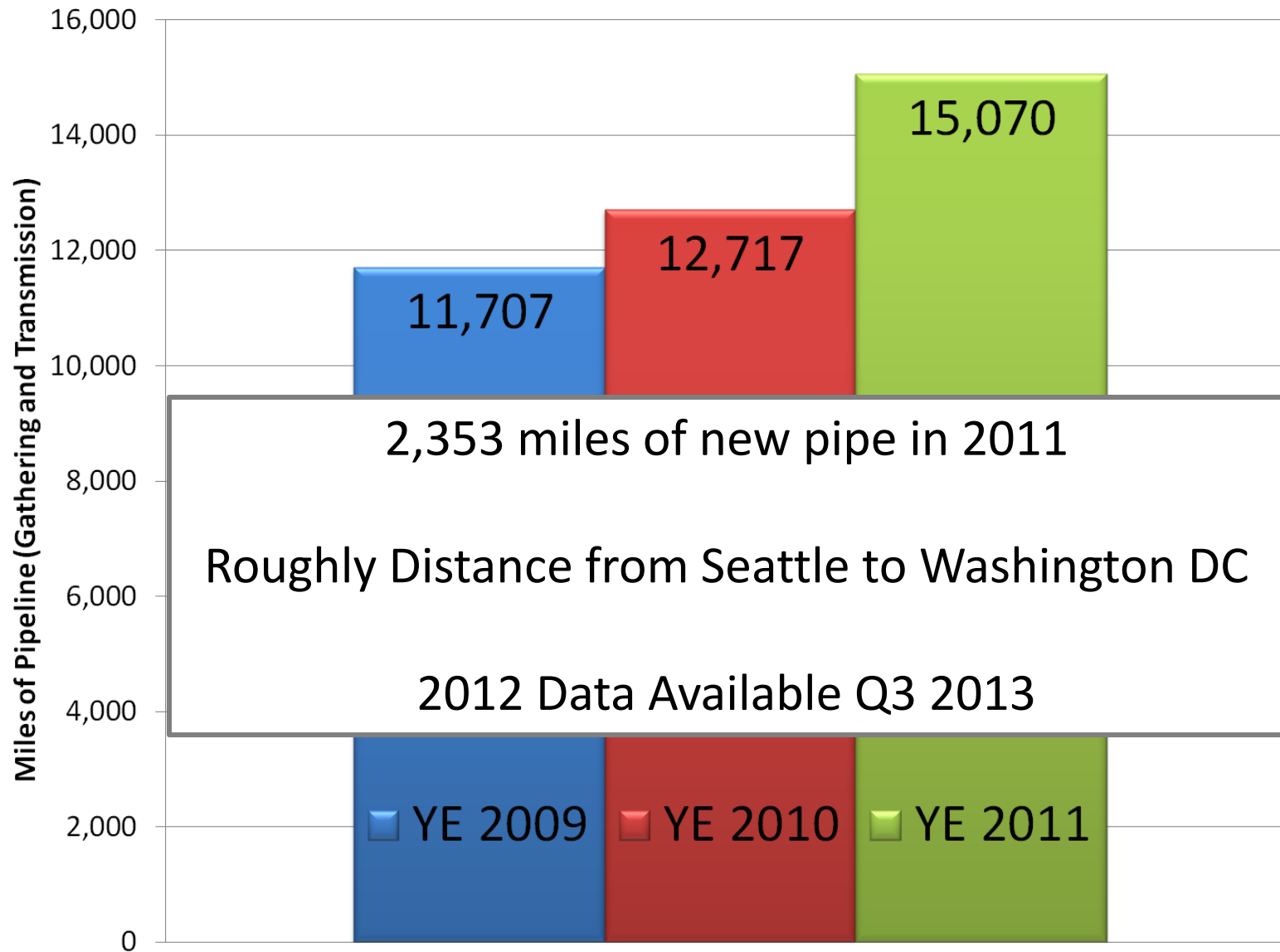


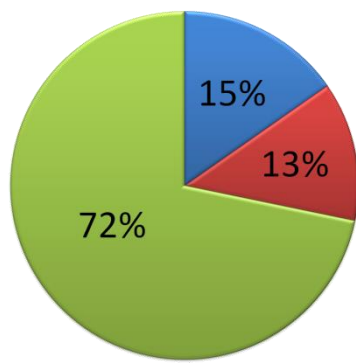
# ND Gas Gathering Statistics



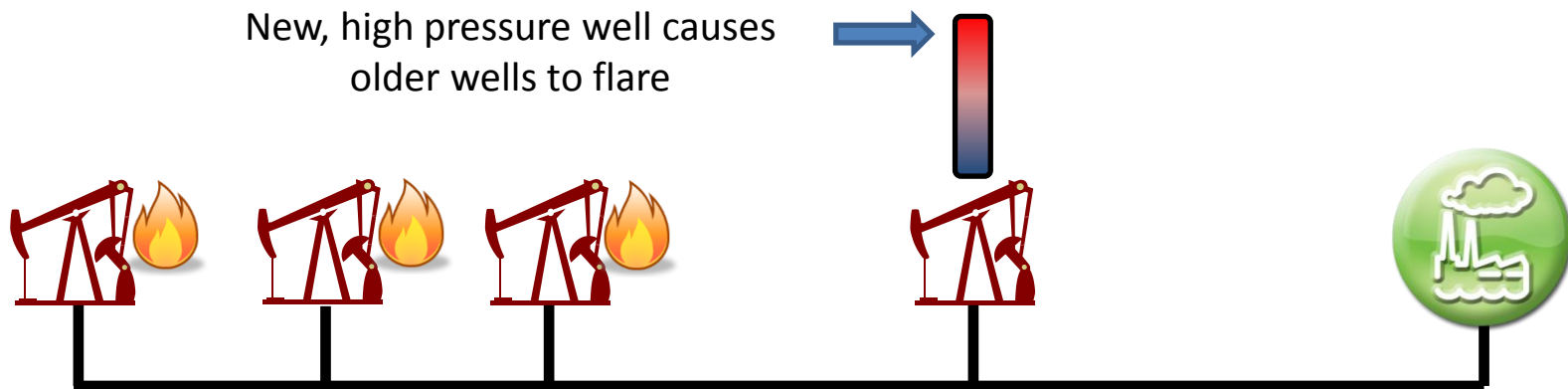
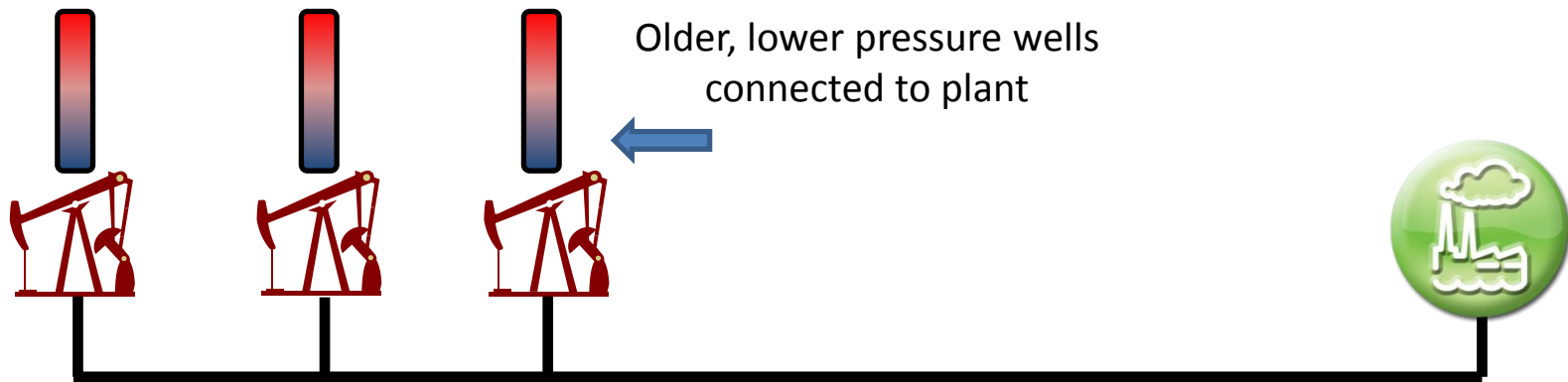


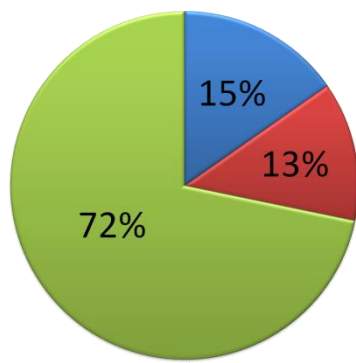
# North Dakota Pipeline Miles



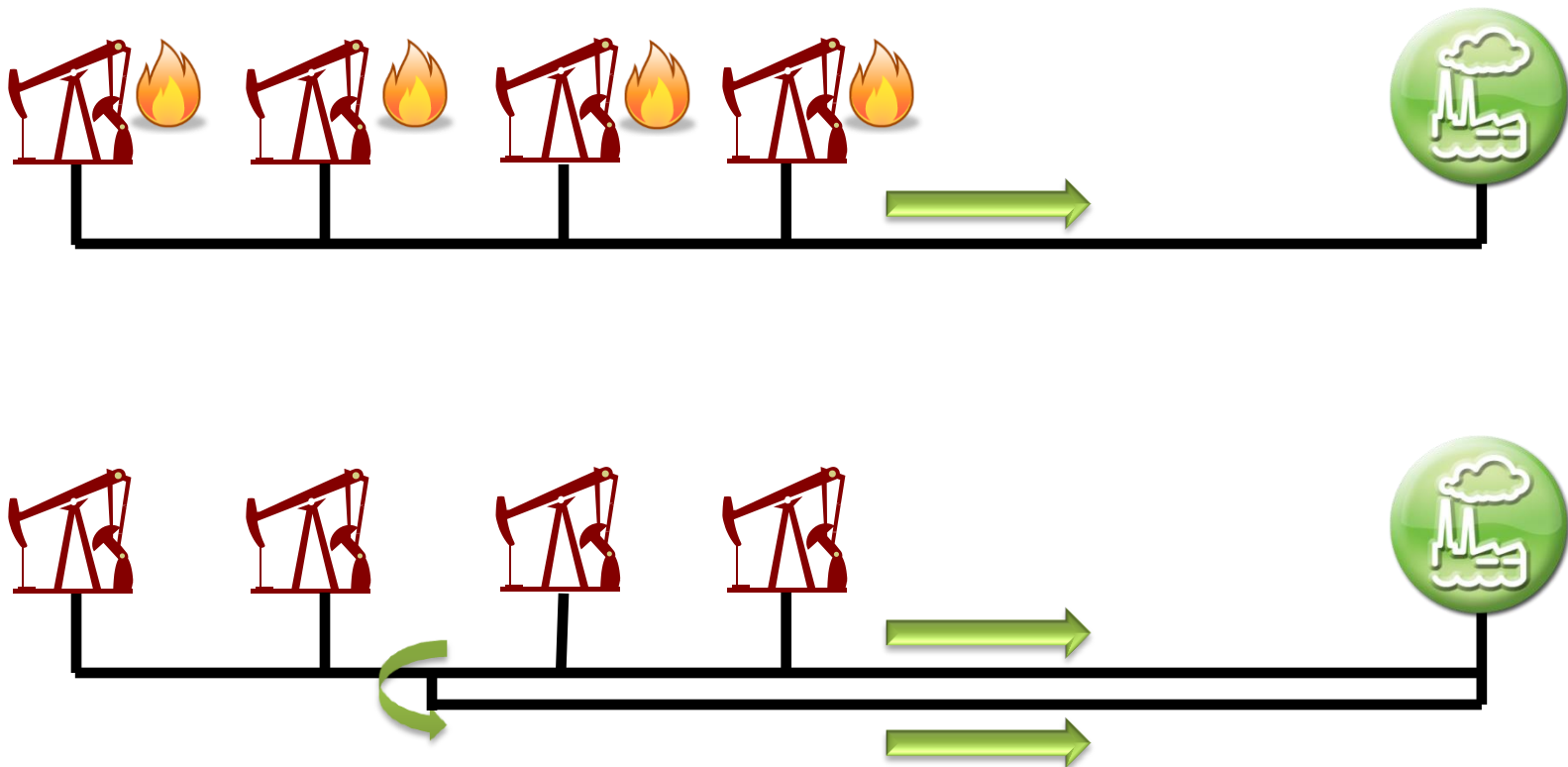


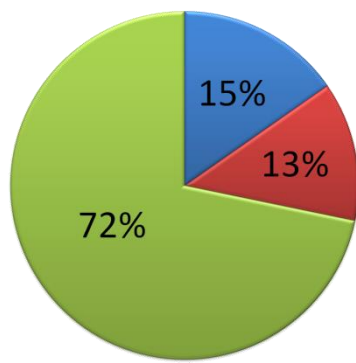
# Capturing the 13% Additional Compression





# Capturing the 13% Looping Existing Pipelines





# Capturing the 13% Frequent Pigging

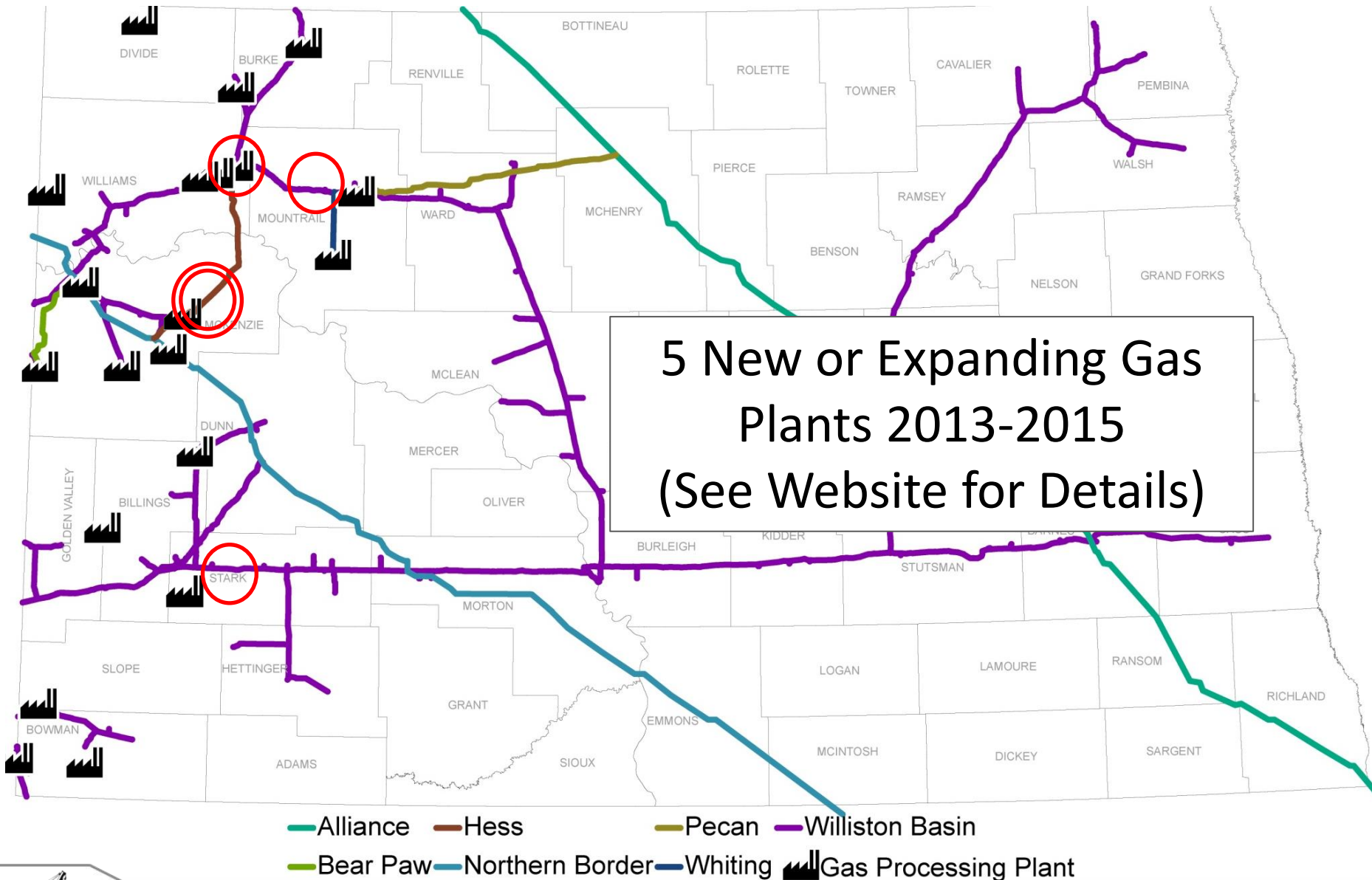
NGL buildup in gathering pipelines  
reduces area for gas to flow



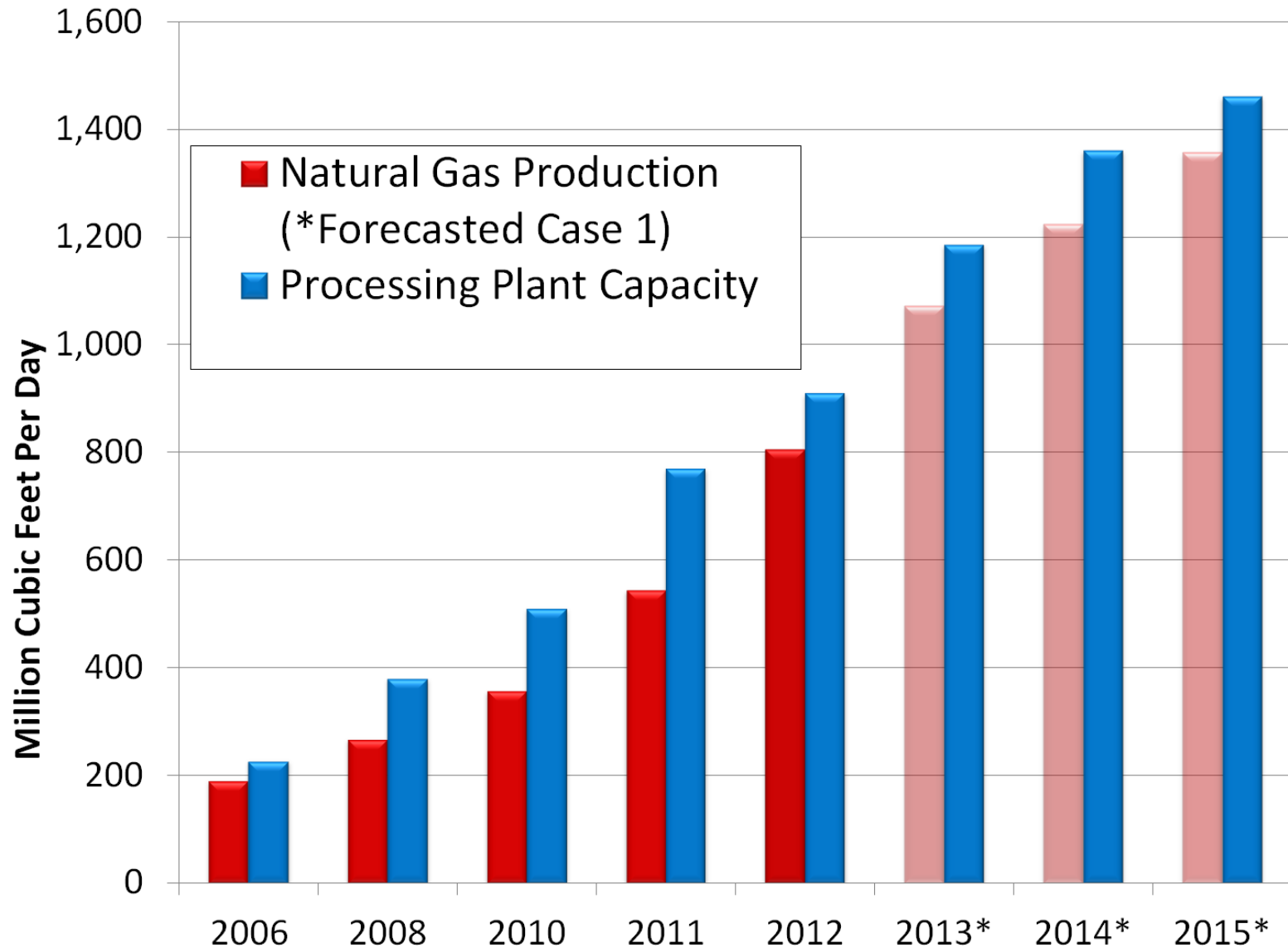
*More of an issue in winter months due  
to lower ground temperature causing  
more liquids to drop out*



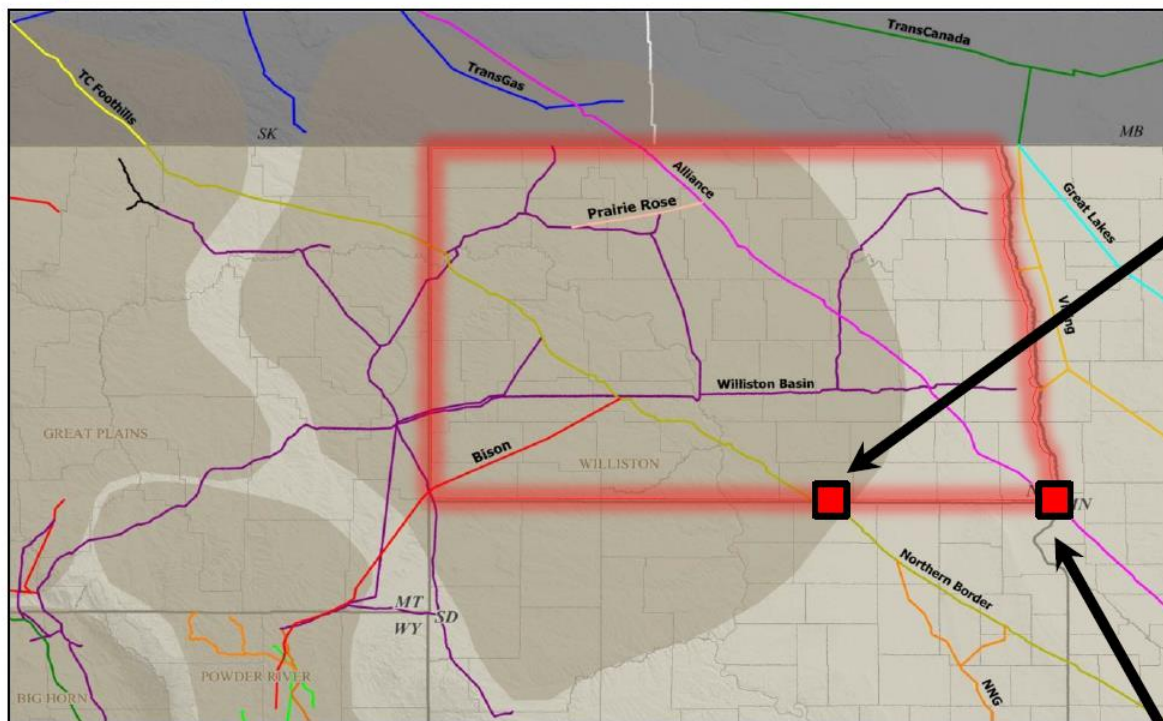
# Natural Gas Processing & Transmission



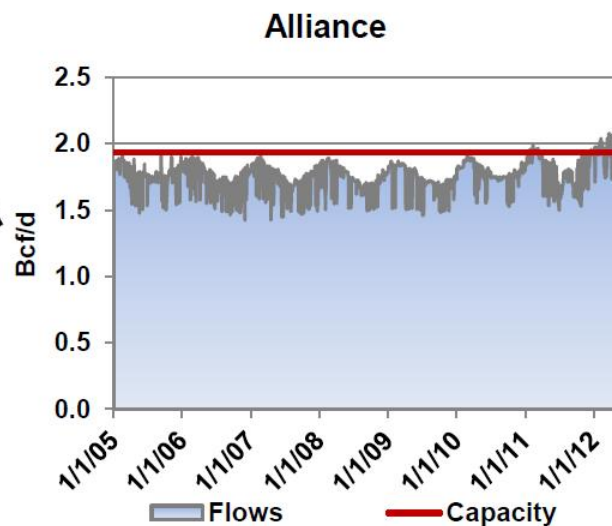
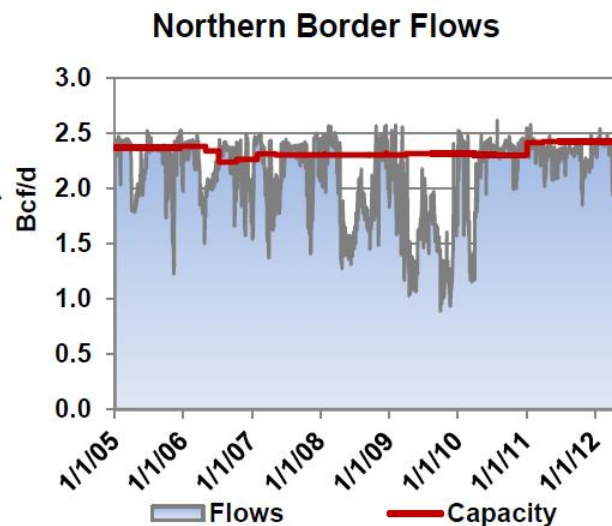
# ND Gas Plant Capacity



# Open Capacity Leaving N. Dakota Is Tight



- Northern Border and Alliance Serve As the Primary Routes to Transport Gas From the Region.
- Each Have Limited Open Mainline Capacity to Carry Additional Williston Supply.



# Flaring Alternatives

**ND PIPELINE  
AUTHORITY**

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[MONTHLY UPDATE](#) [NATURAL GAS STUDY](#) [OIL TRANSPORTATION TABLE](#) [PIPELINE PUBLICATION](#)  
[PRESENTATIONS](#) [RAIL TRANSPORTATION](#) [US WILLISTON BASIN OIL PRODUCTION](#) [WEBINARS](#)

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## WEBINARS

February 27, 2013 – Use of Associated Gas to Power Drilling Rigs [Slides](#)

February 27, 2013 – Use of Associated Gas to Power Drilling Rigs

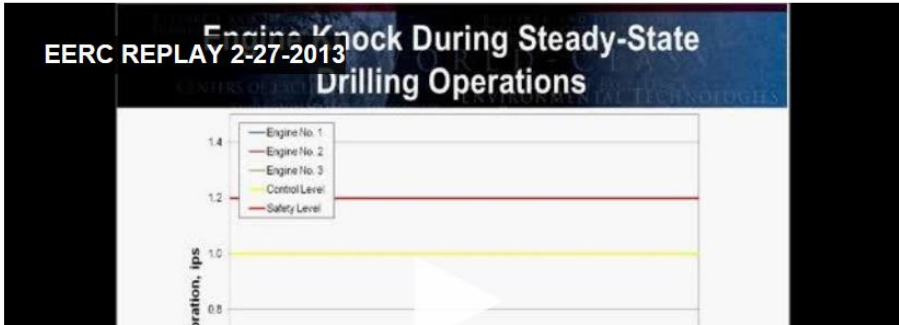
Search this site...

ARCHIVES

- February 2013
- October 2012

META

- Register
- Log in



The screenshot shows a webinar interface. At the top, it says 'EERC REPLAY 2-27-2013' and 'Engine Knock During Steady-State Drilling Operations'. Below this is a line graph with 'Vibration, ips' on the y-axis (ranging from 0.8 to 1.4). The graph shows three data series: 'Engine No. 1' (blue line), 'Engine No. 2' (red line), and 'Engine No. 3' (green line). There are also two horizontal reference lines: a yellow line for 'Control Level' at approximately 1.0 ips and a red line for 'Safety Level' at approximately 1.2 ips. The graph shows that the vibration levels for the three engines are generally below the control level, with some fluctuations. A large white play button is overlaid on the graph.

November 5, 2012 – EERC Associated Gas Use Study

December 18, 2012 – Natural Gas Flaring Alternatives (Company Presentations)

February 27, 2013 – EERC Use of Associated Gas to Power Drilling Rigs

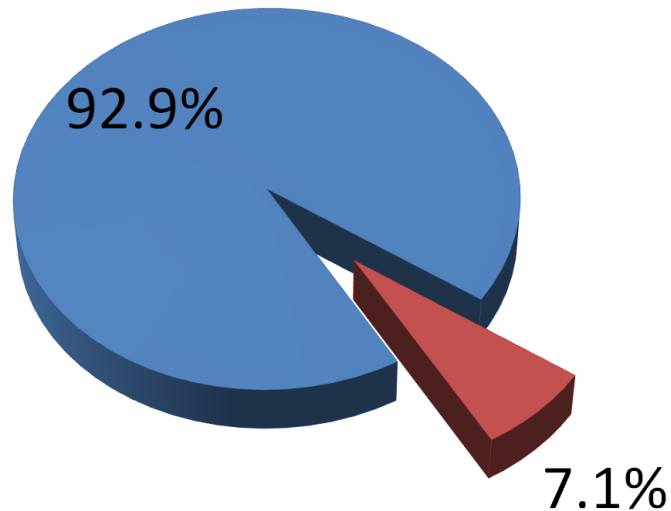




# Strengthening Landowner Relations

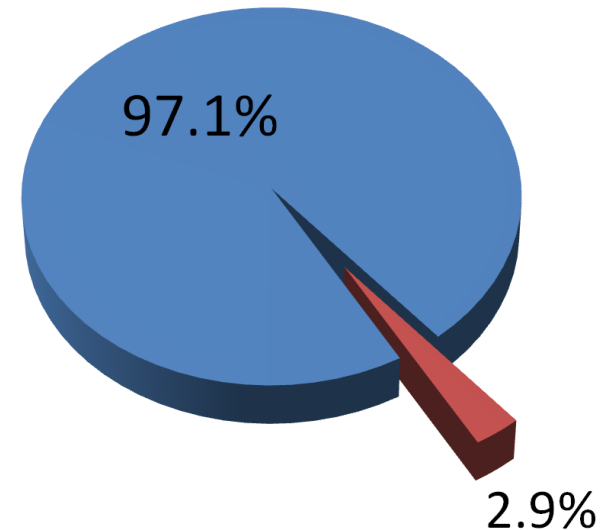


# ND Wellhead Recovery Estimates



■ Energy Captured

■ Energy Flared



■ Economic Value Captured

■ Economic Value Flared

*Estimate Data/Assumptions: April 2013 Production Data  
Oil Price of \$88/bbl, Natural Gas/NGL Wellhead Price of \$8.00/MCF*



# Contact Information

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Websites:

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

[www.northdakotapipelines.com](http://www.northdakotapipelines.com)



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