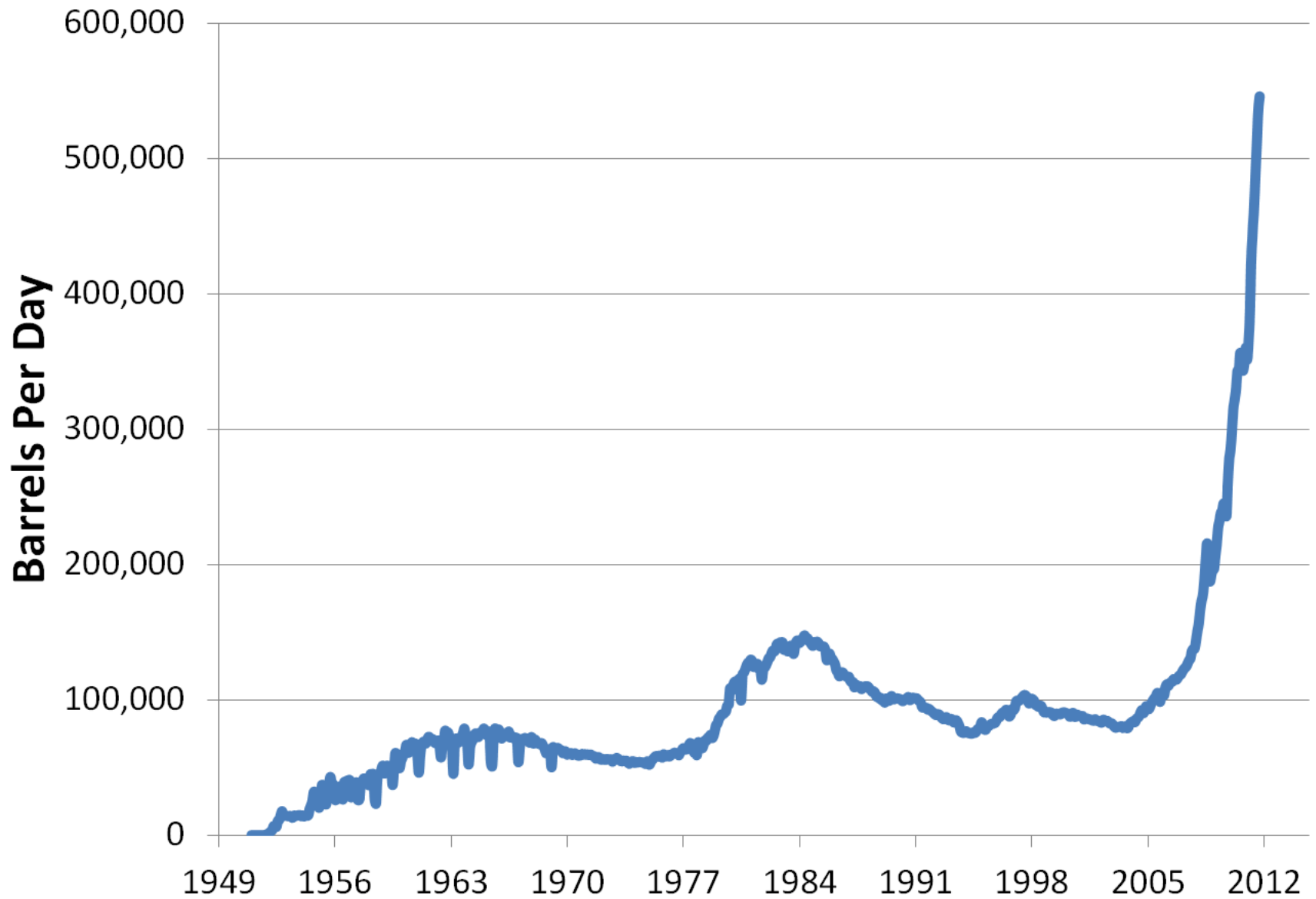


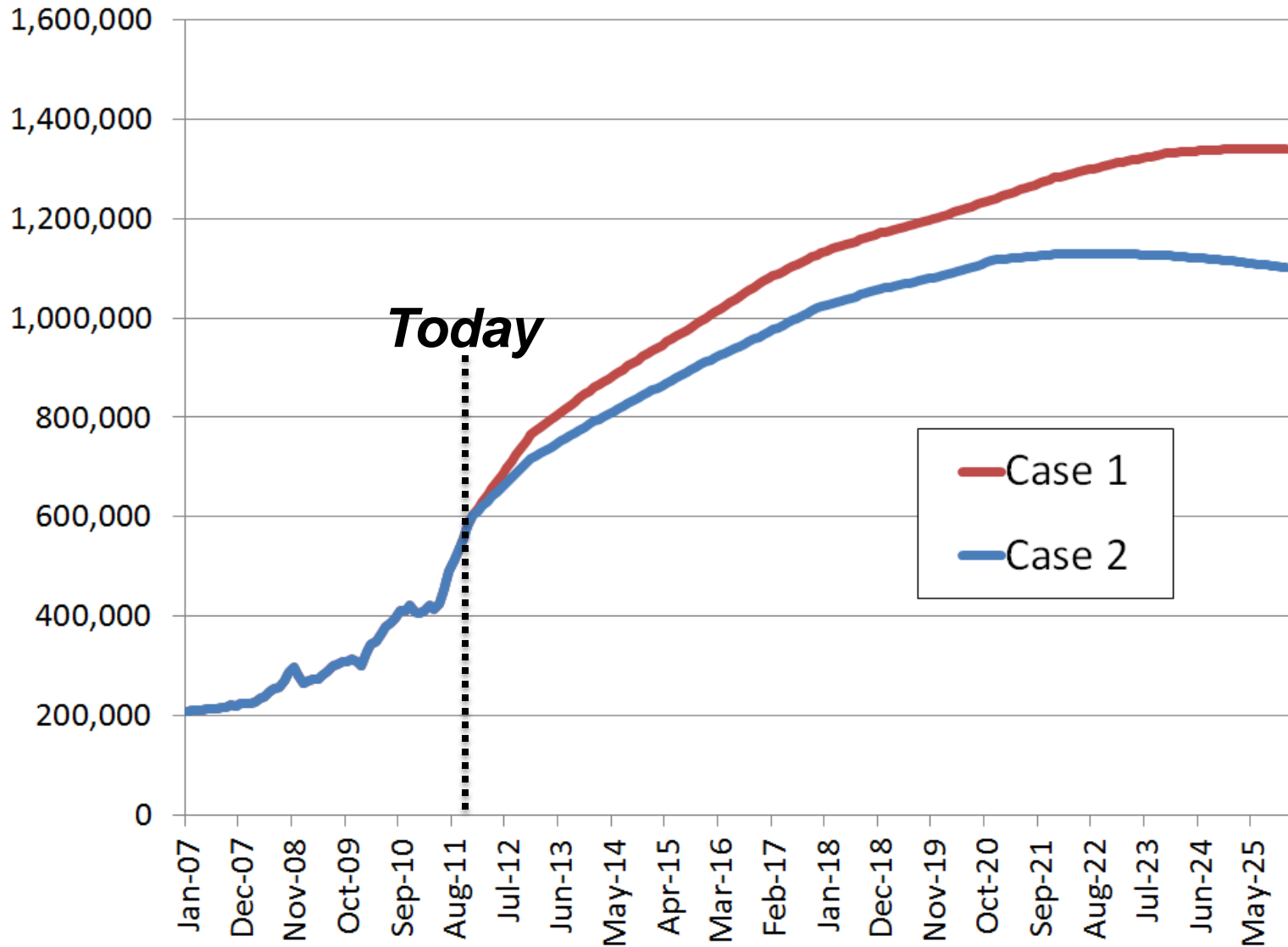


**North Dakota Pipeline Authority**  
**Energy Development and Transmission Committee**  
**Justin J. Kringstad**  
**March 20, 2012**

# North Dakota Crude Oil



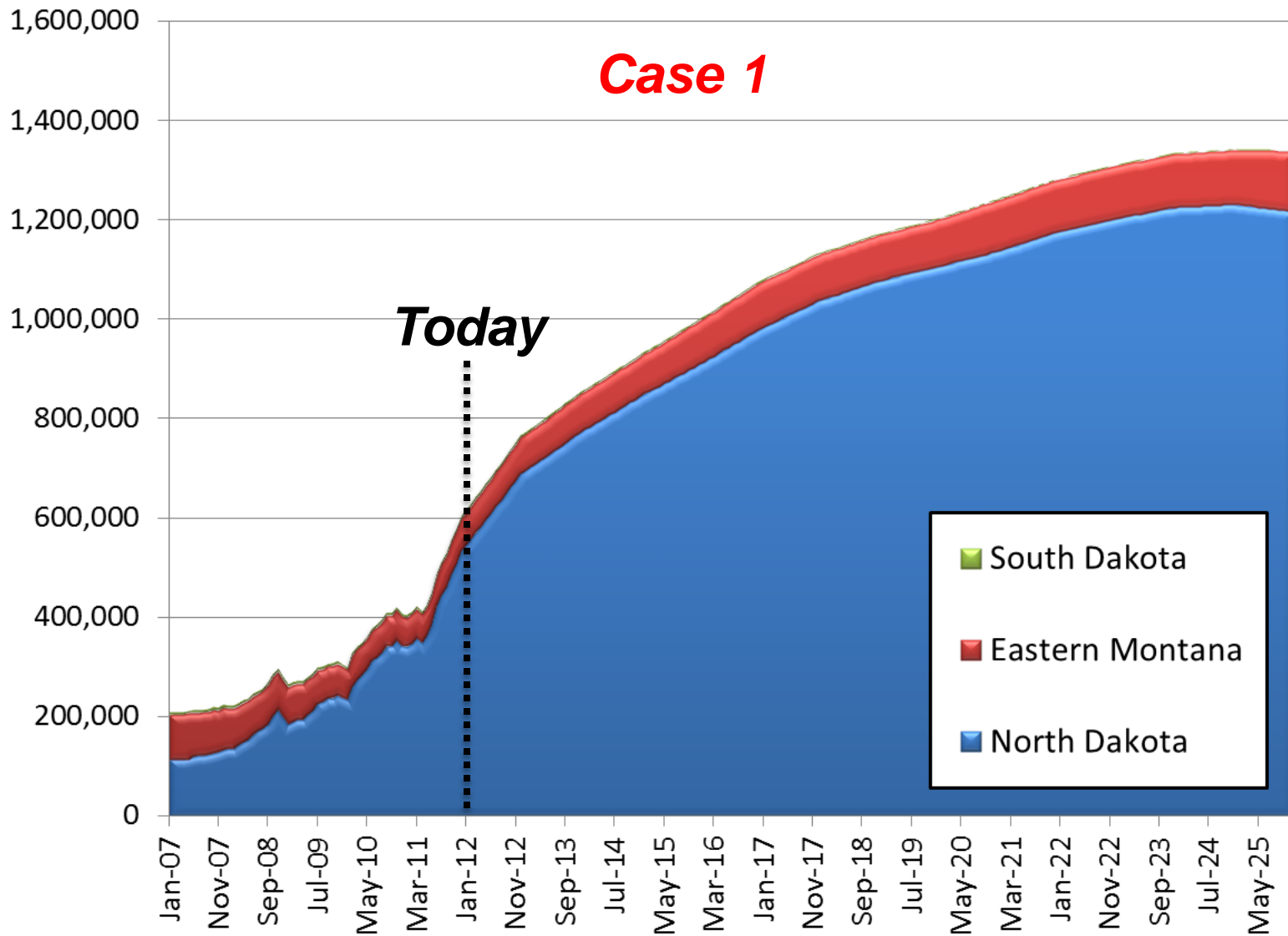
# Forecasting Williston Basin Oil Production, BOPD



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



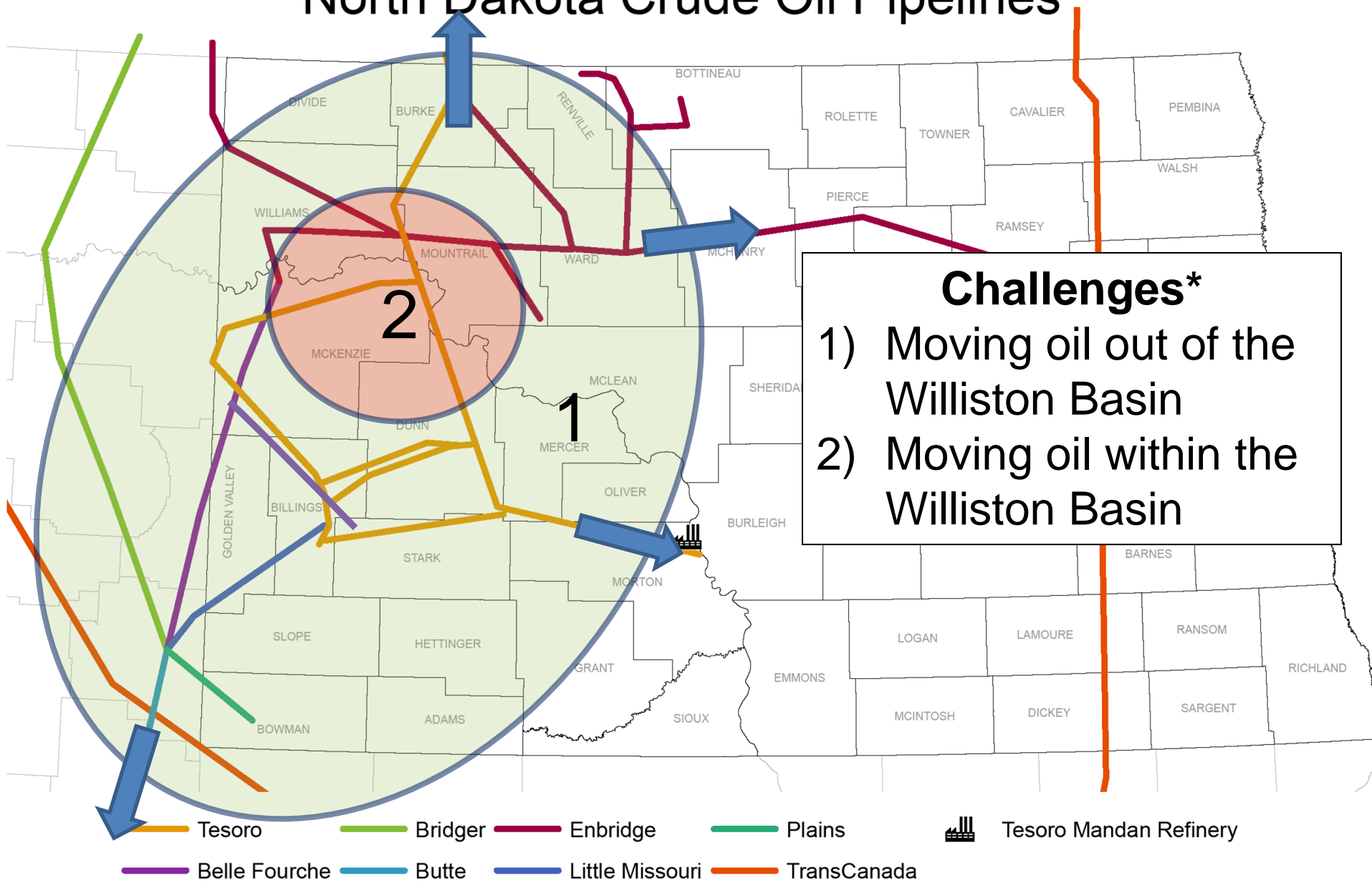
# Forecasting Williston Basin Oil Production, BOPD



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

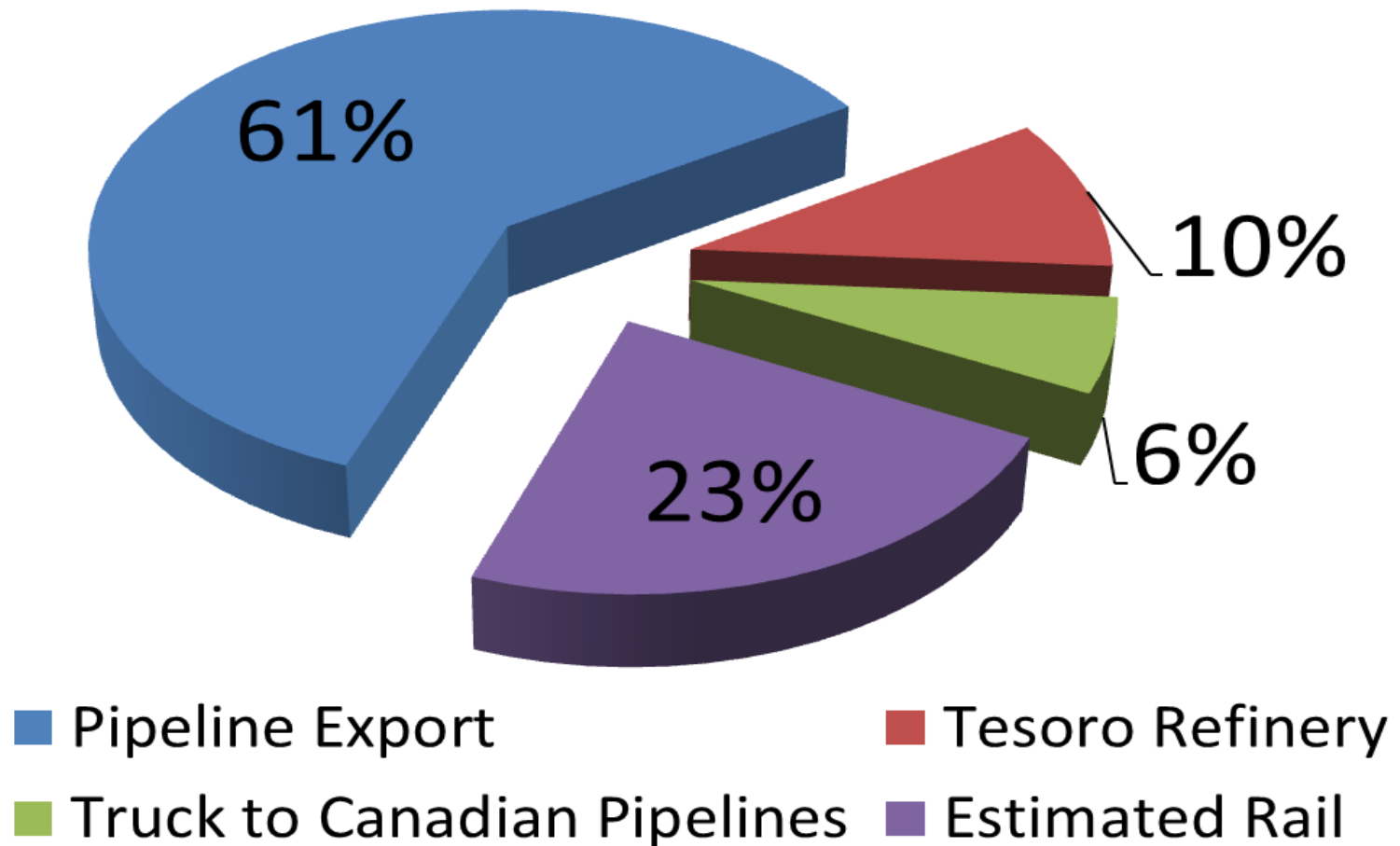


# North Dakota Crude Oil Pipelines



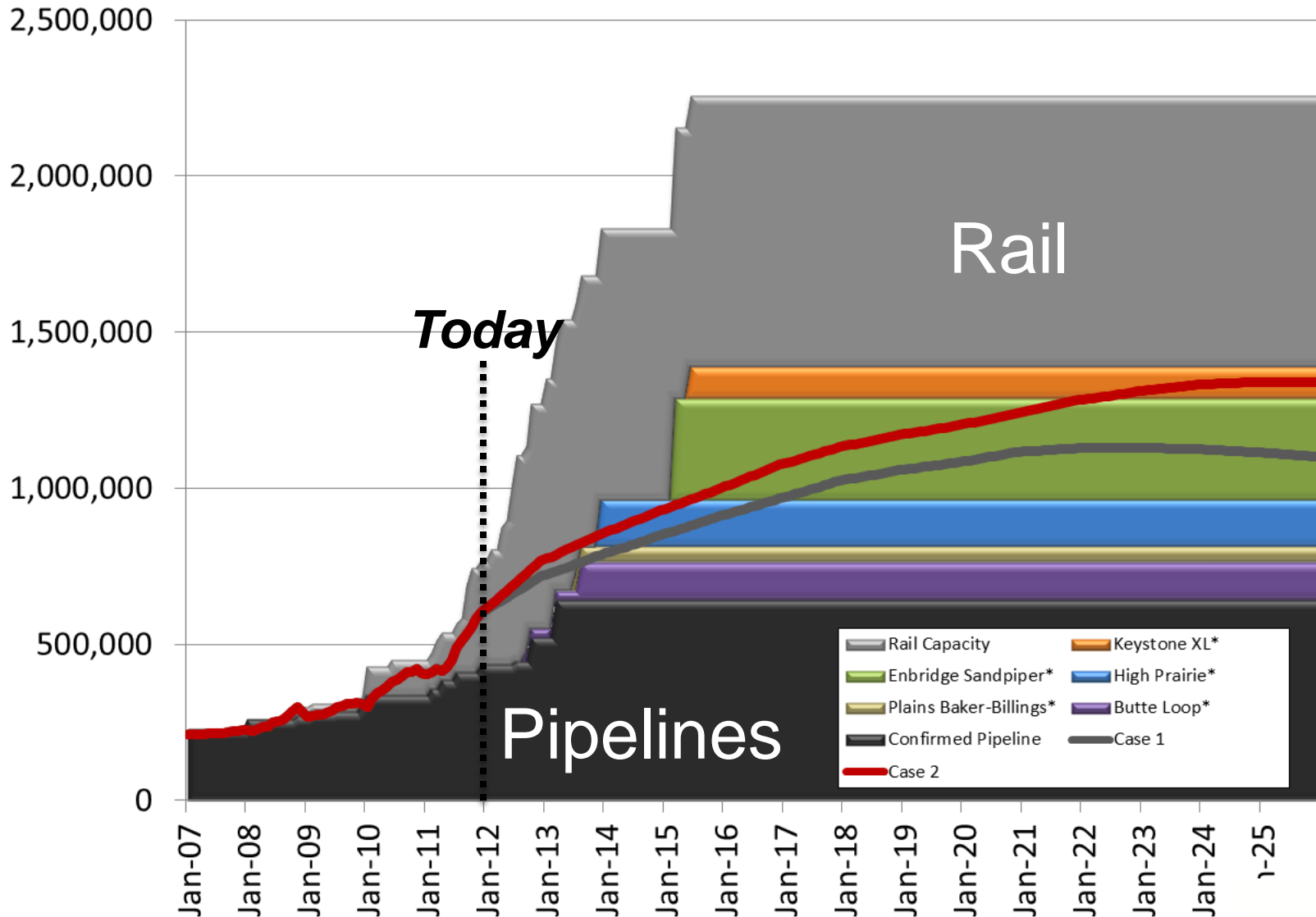
\*Modified from Bridger and Belle Fourche Pipelines

# Williston Basin Oil Transportation



December 2011 Estimates

# Williston Basin Oil Production & Export Capacity, BOPD

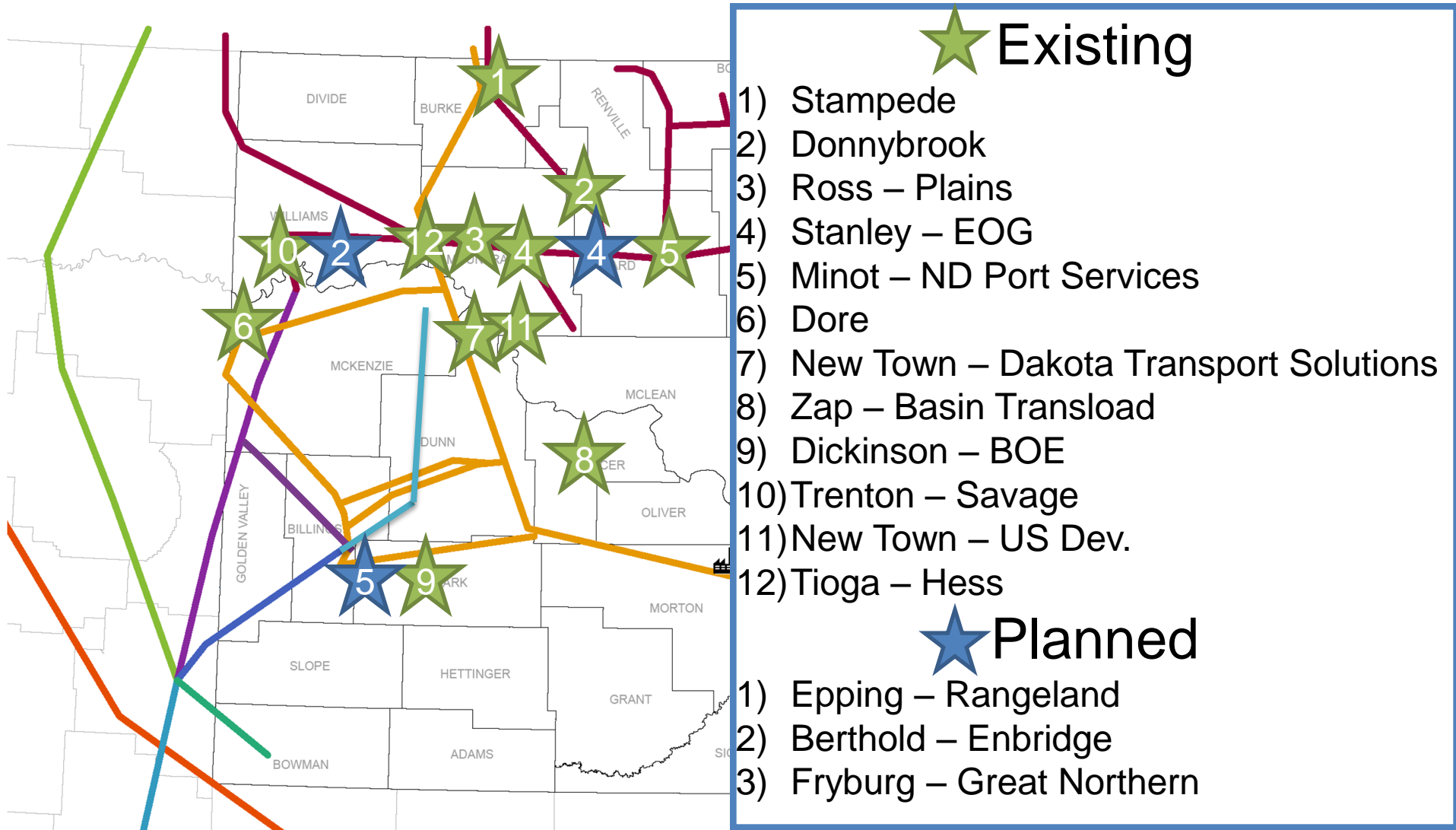


Production forecast is for visual demonstration purposes only and should not be considered accurate for any near or long term planning.

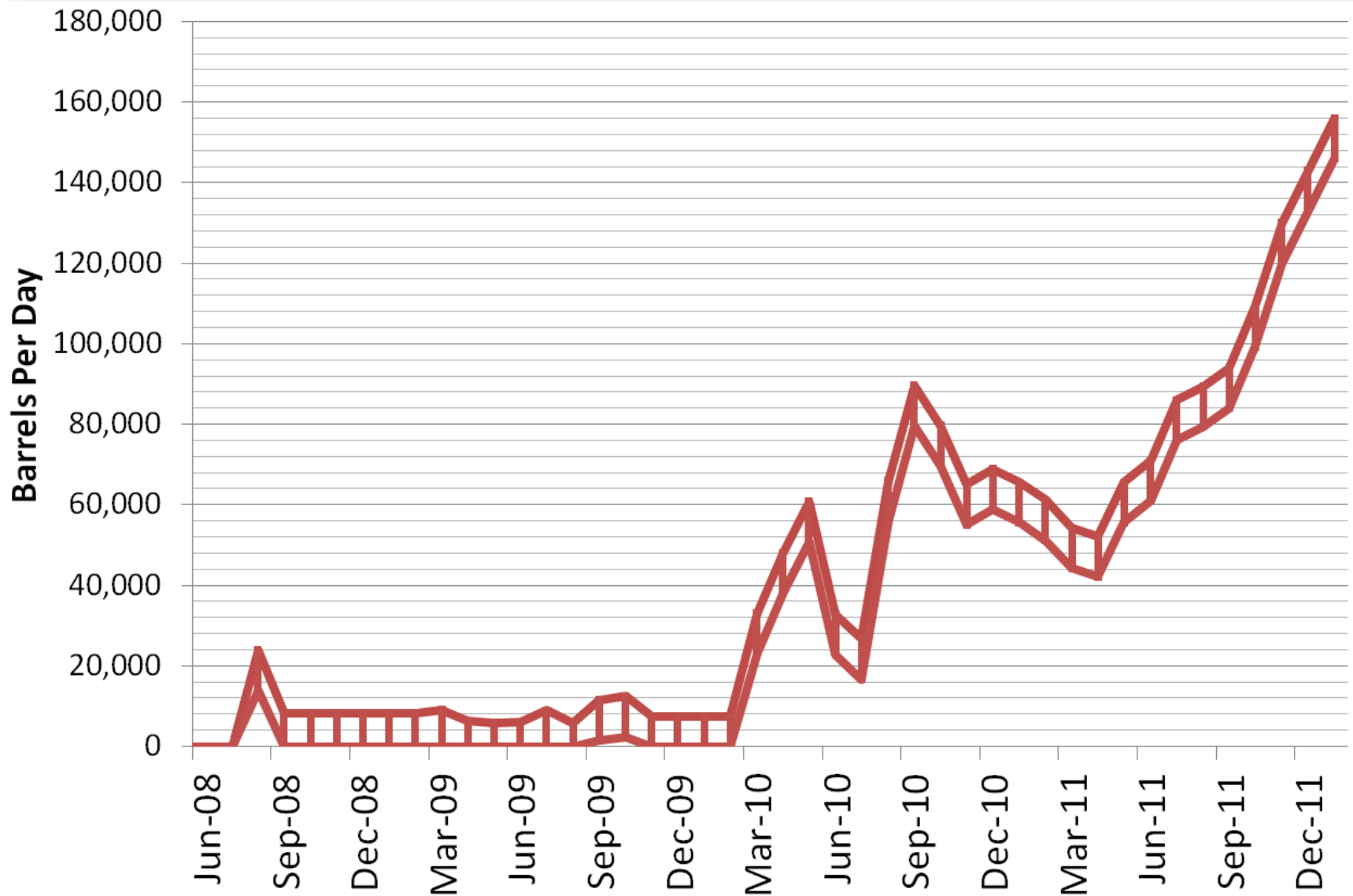
\*Projects still in the proposed or internal review process



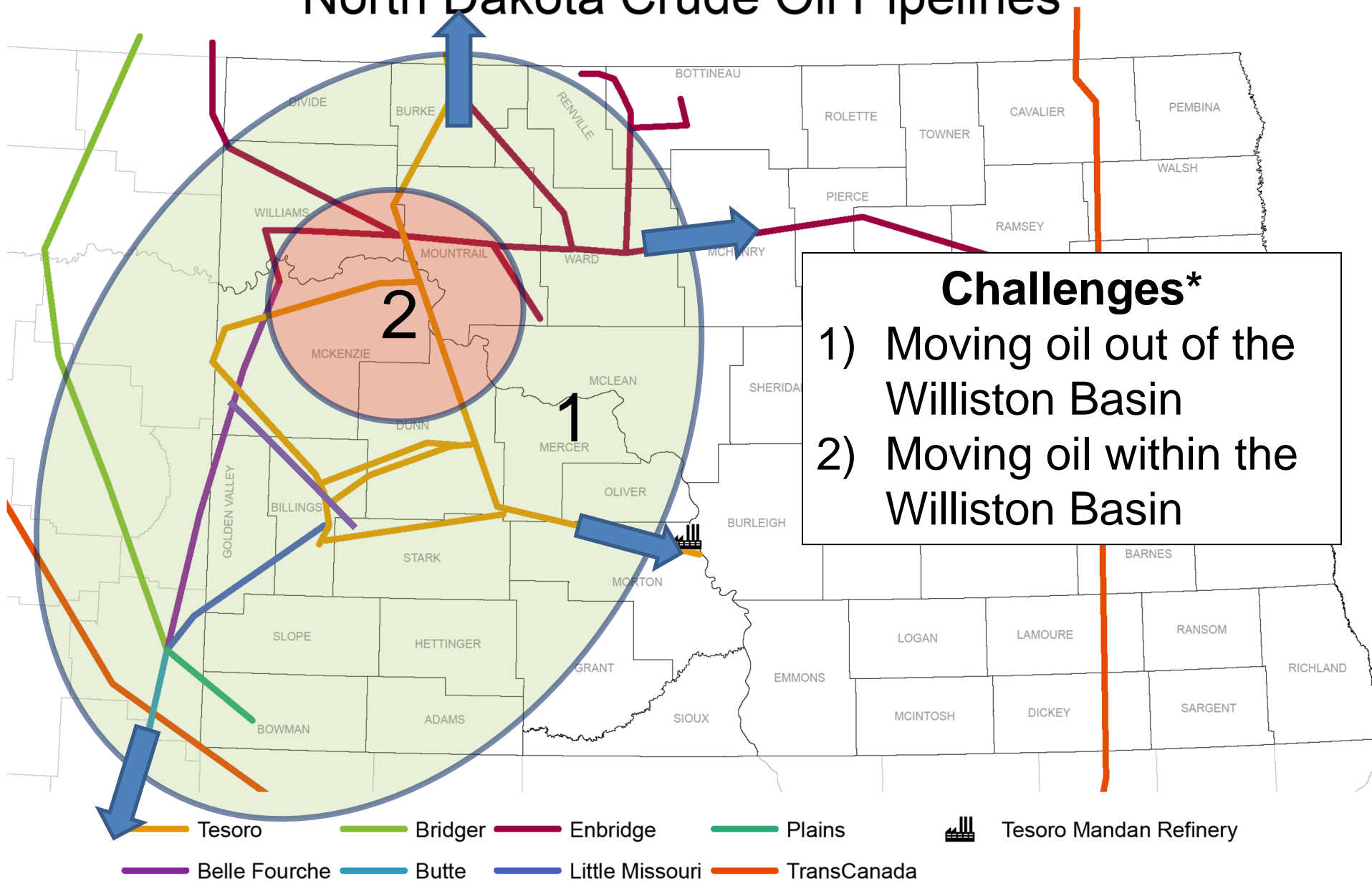
# Existing & Planned Rail Locations



# High-Low Rail Estimate, BOPD



# North Dakota Crude Oil Pipelines

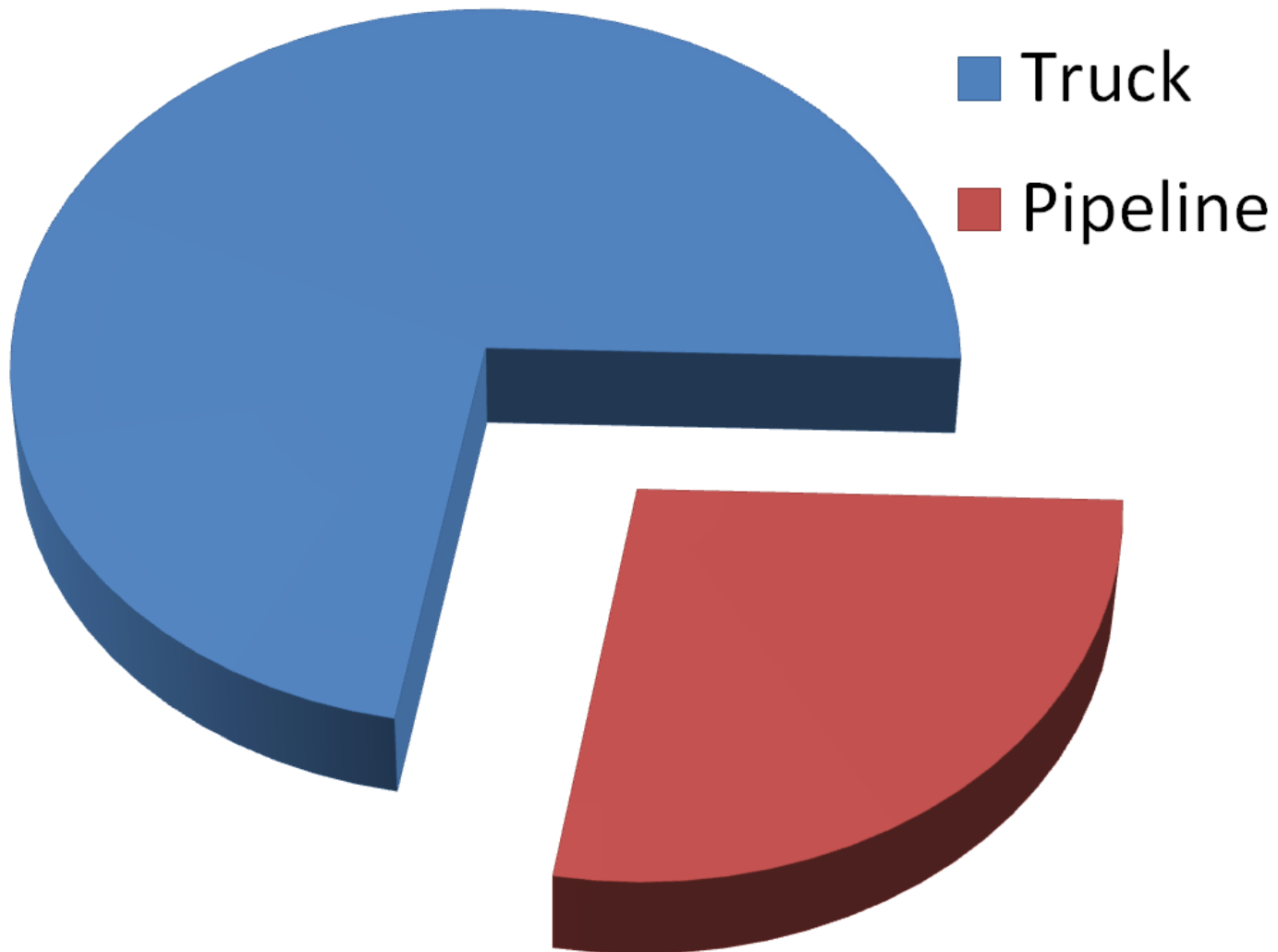


\*Modified from Bridger and Belle Fourche Pipelines

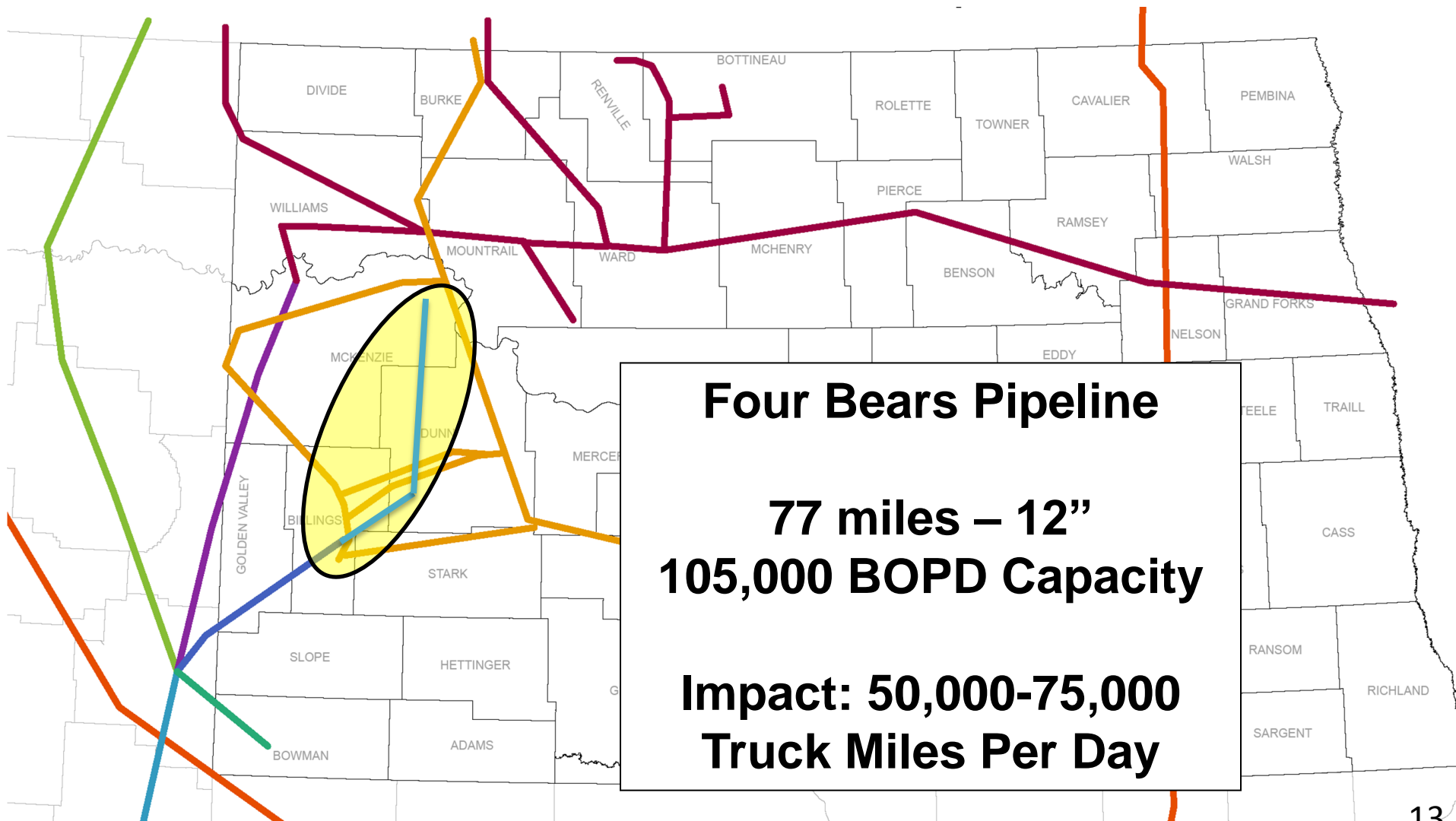
# North Dakota Crude Gathering



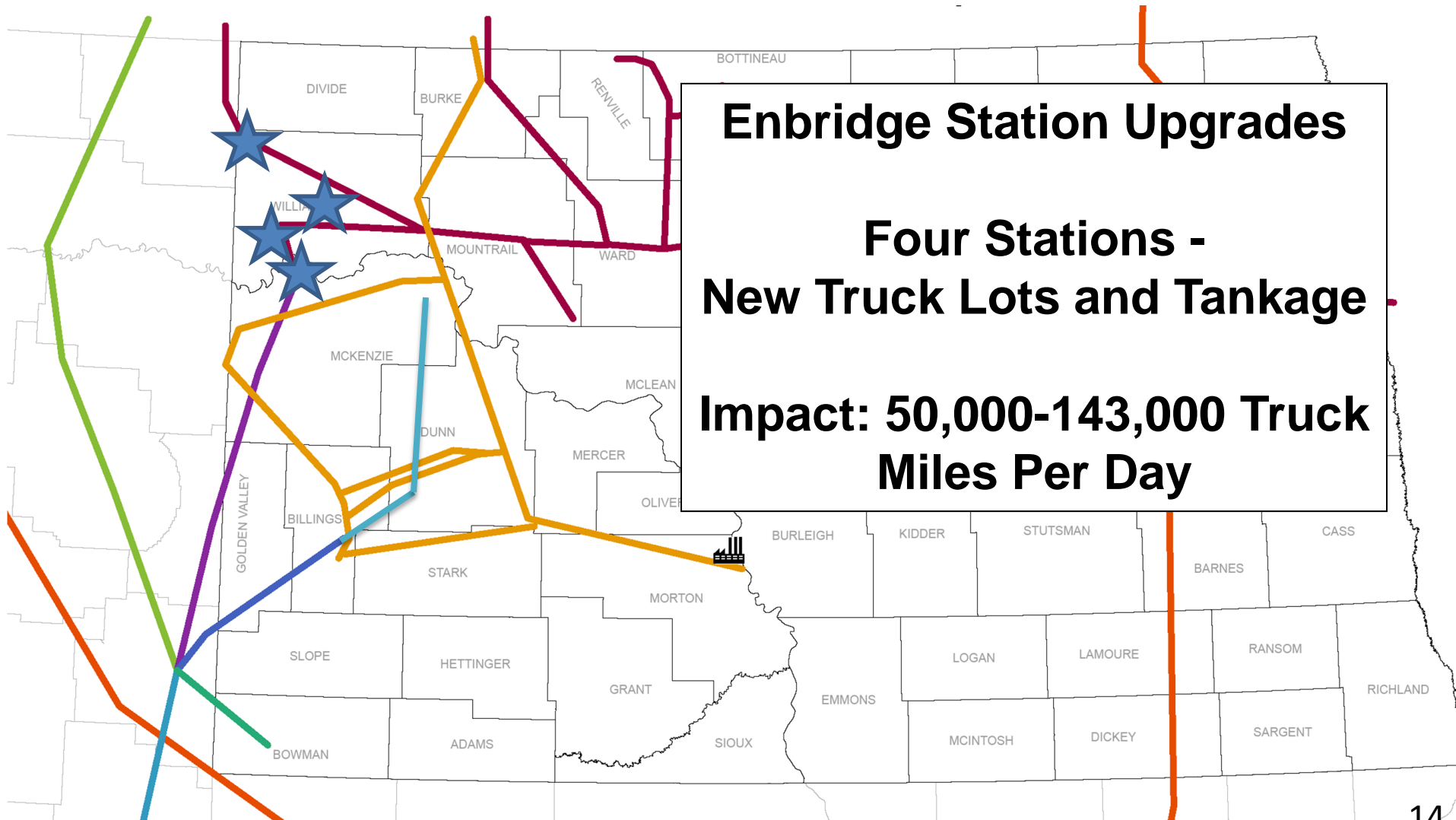
# North Dakota Crude Gathering



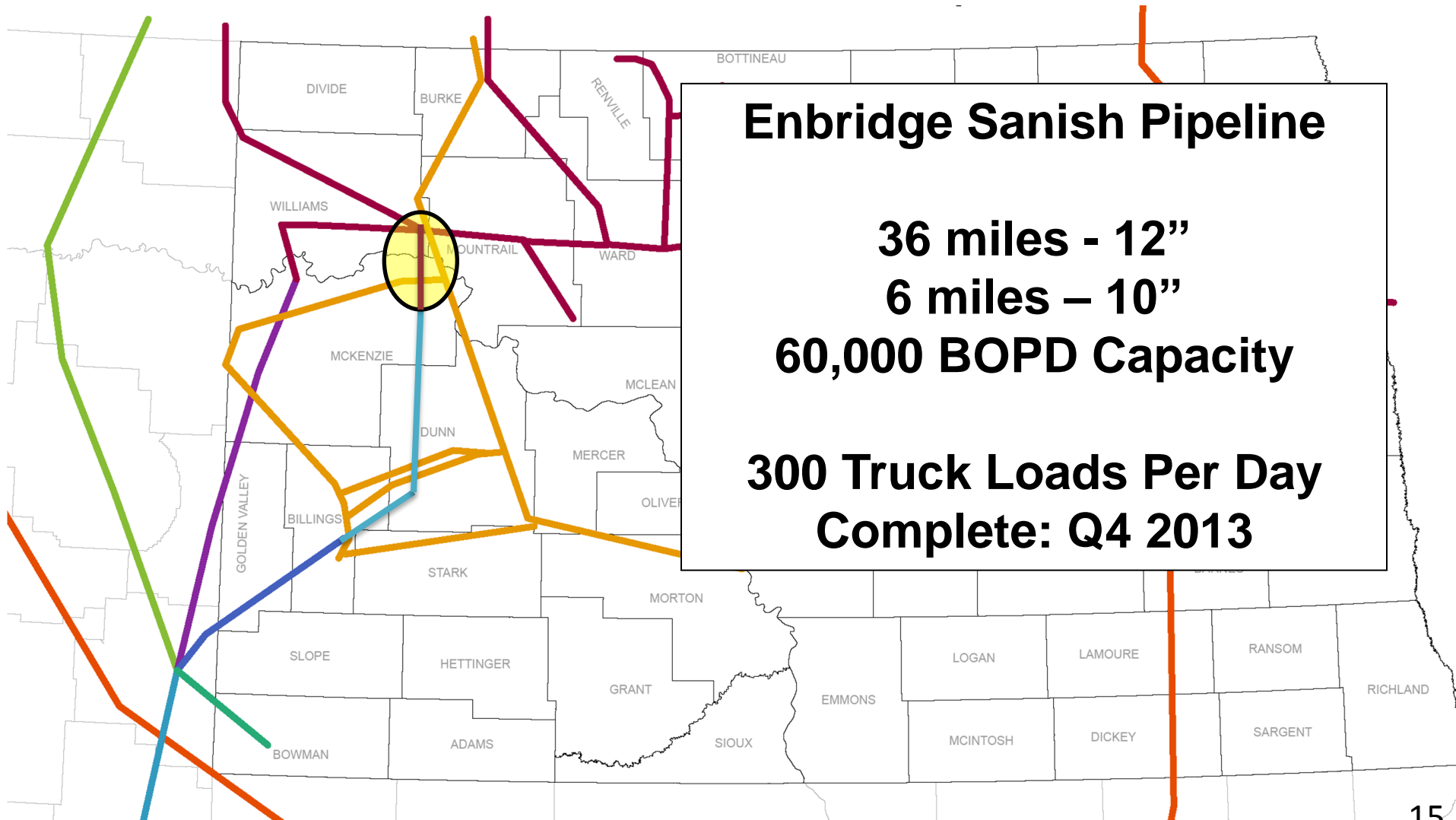
# Reducing Truck Traffic



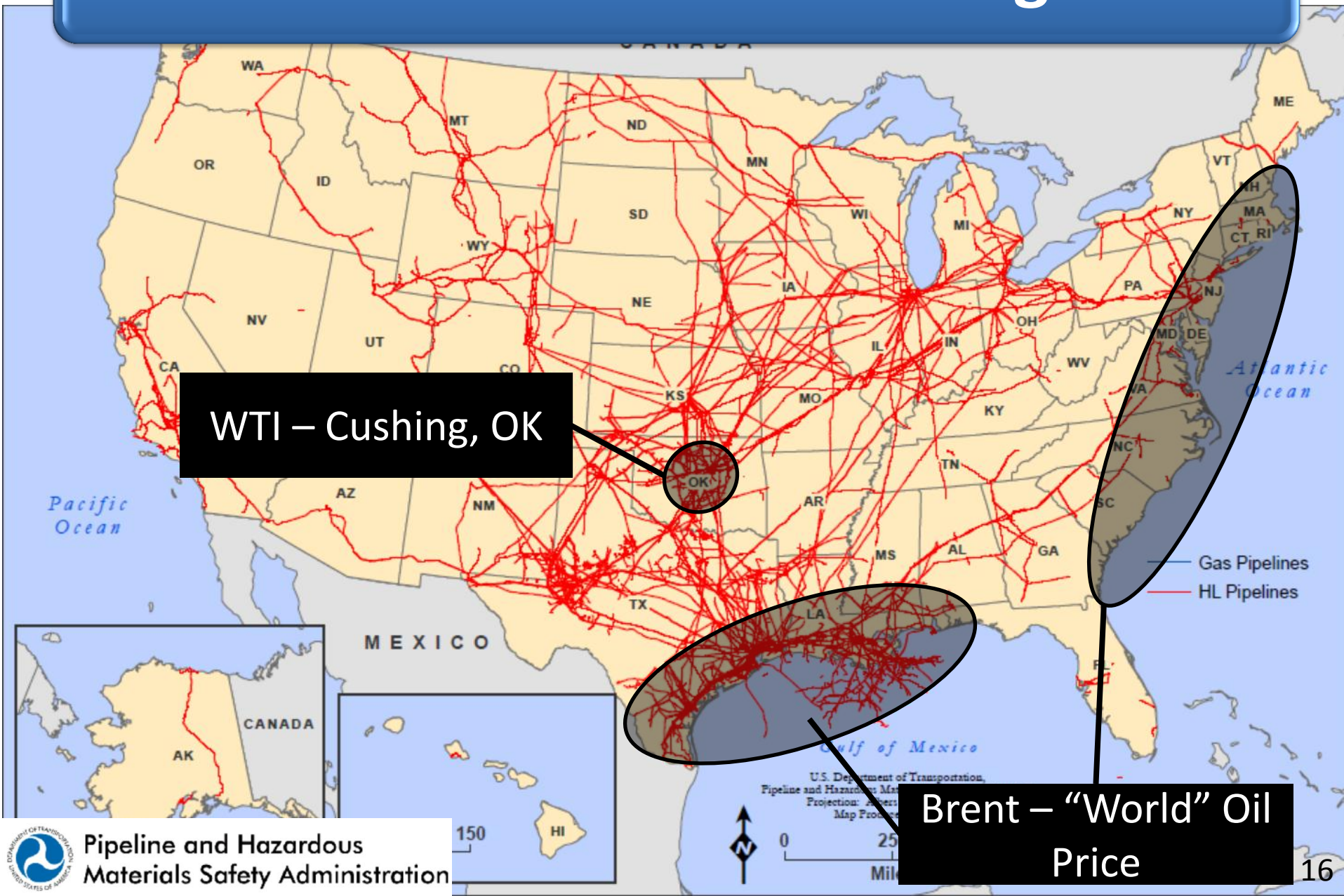
# Reducing Truck Traffic



# Reducing Truck Traffic



# Brent-WTI Crude Pricing



Vancouver Inc.  
Japan - 4,300 miles  
Taiwan - 5,600 miles  
S.Korea - 4,600 miles  
China - 5,100 miles

San Francisco - 800 miles  
Los Angeles - 1,100 miles

Puget Sound	
BP	234
ConocoPhillips	100
Shell	110
Tecoco	120
USOC	39

San Francisco	
Cheniere	210
ConocoPhillips	120
Shell	160
Tecoco	190
Valero	130

Los Angeles	
BP	260
Cheniere	260
ConocoPhillips	190
ExxonMobil	190
Tecoco	37
Valero	120

Upgrades	
Sensuade (Fort McMurray)	147
Suncor (Fort McMurray)	128
Shell (Gordale)	130
CNRL (Horseshoe)	130
CP/Northern Long Lake	73

Sales and	
Imperial	140
Suncor	130
Shell	100
Unionville	100
Husky	38
Husky Upgrader	40

Refineries	
Co-op Refinery	100
Upgrader	100
Moore Inc.	13

2010 Canadian Crude Oil Production		
	000 m/bbl	000 b/d
British Columbia	5	31
Alberta	526	2,052
Saskatchewan	67	421
Manitoba	5	32
Northwest Territories	2	15
Western Canada	605	2,552
Atlantic Canada	44	276
Total Canada	649	2,828

PADD IV

PADD V

PADD II

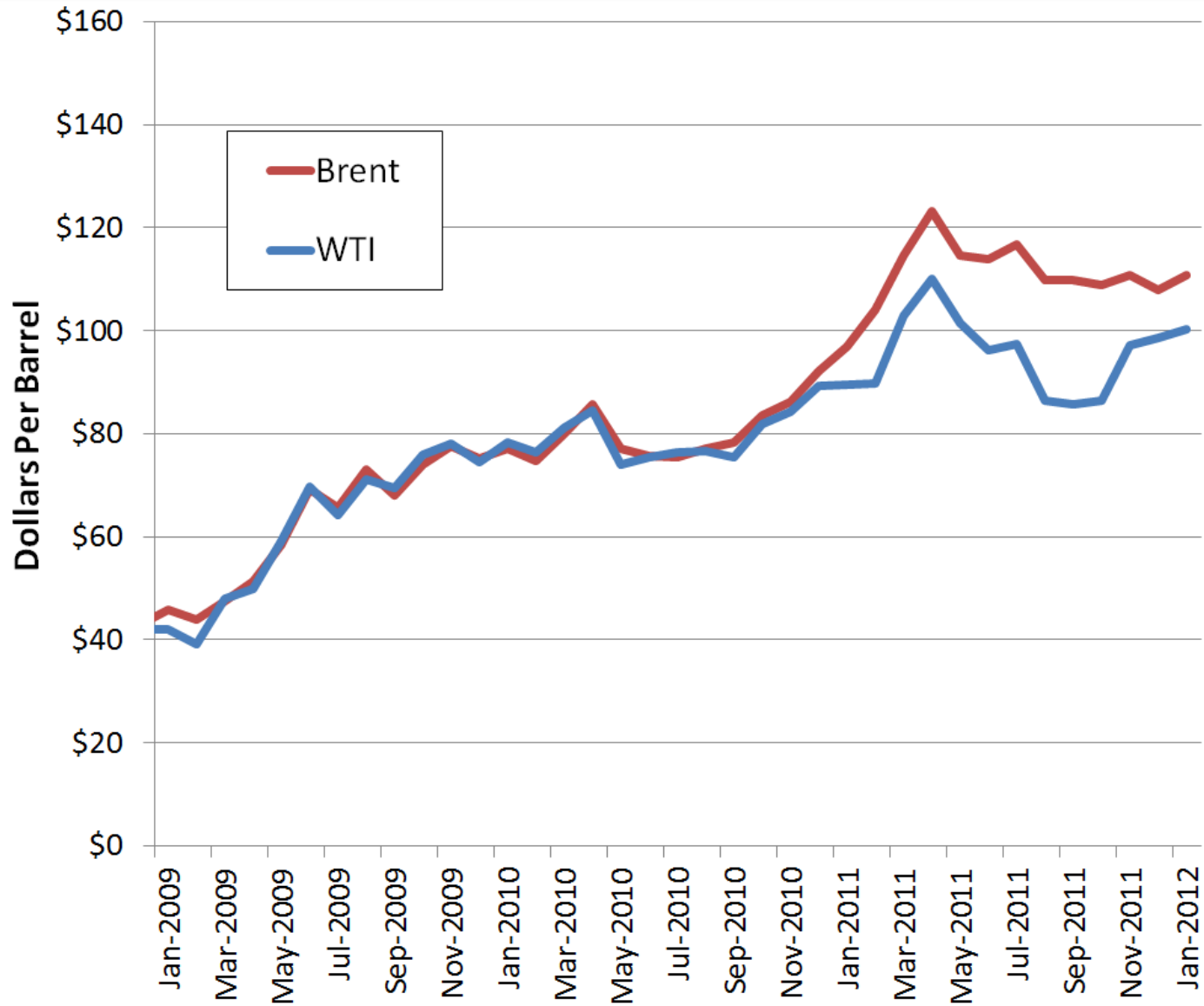
PADD III

PADD I

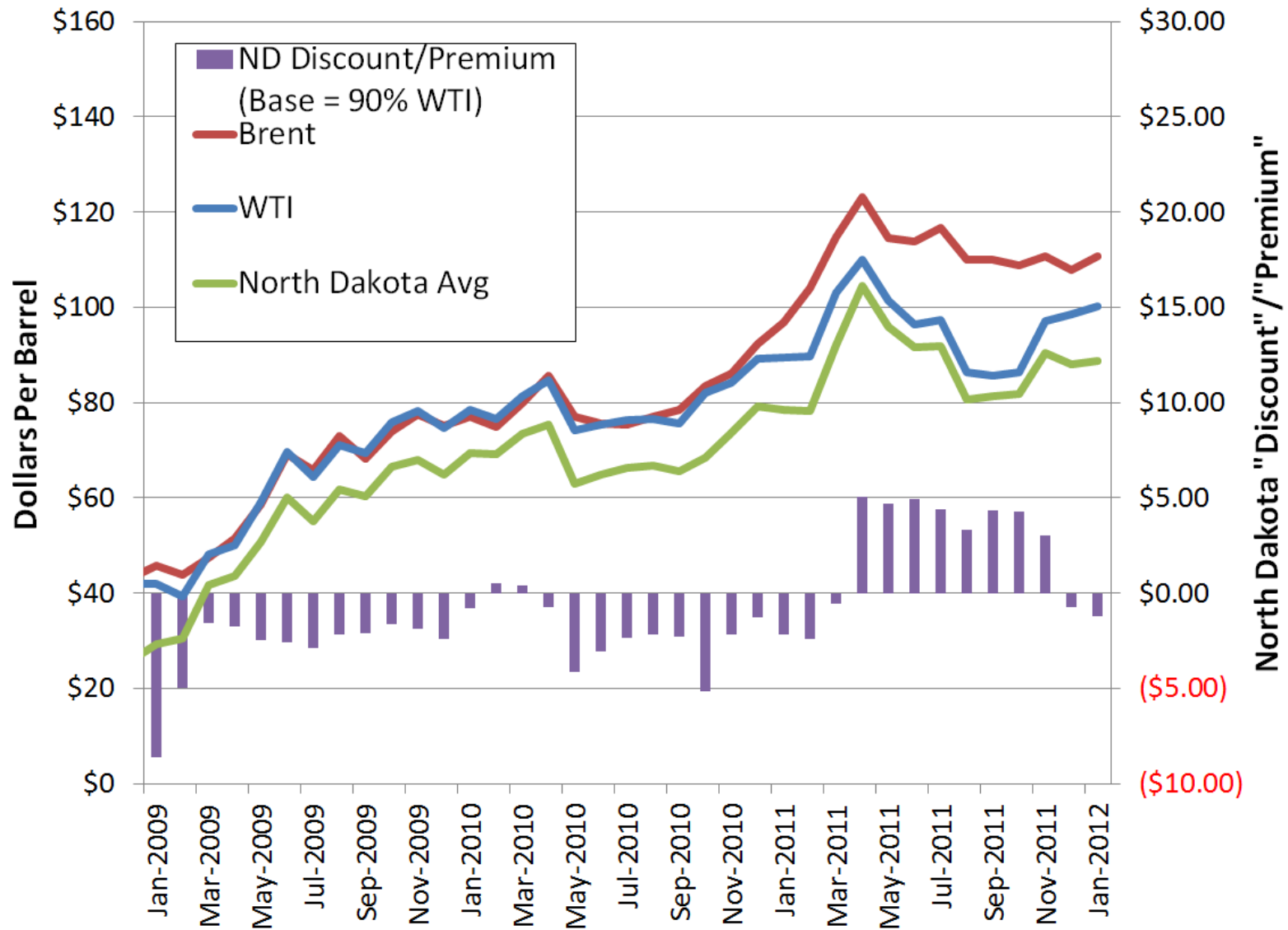
CAPP

CANADIAN ASSOCIATION  
OF PETROLEUM PRODUCERS

# Brent-WTI Crude Pricing



# Brent-WTI-ND Crude Pricing



Interactive Chart for Bloomberg Bakken (Clearbrook MN) Crude Oil Differential (USCSUHC1)

OVERLAY ▾ INDICATORS ▾ ANNOTATIONS ▾ SETTINGS ▾

1D 1W 1M 3M 6M 1Y 3Y 5Y YTD

[?] Add a Comparison

Add

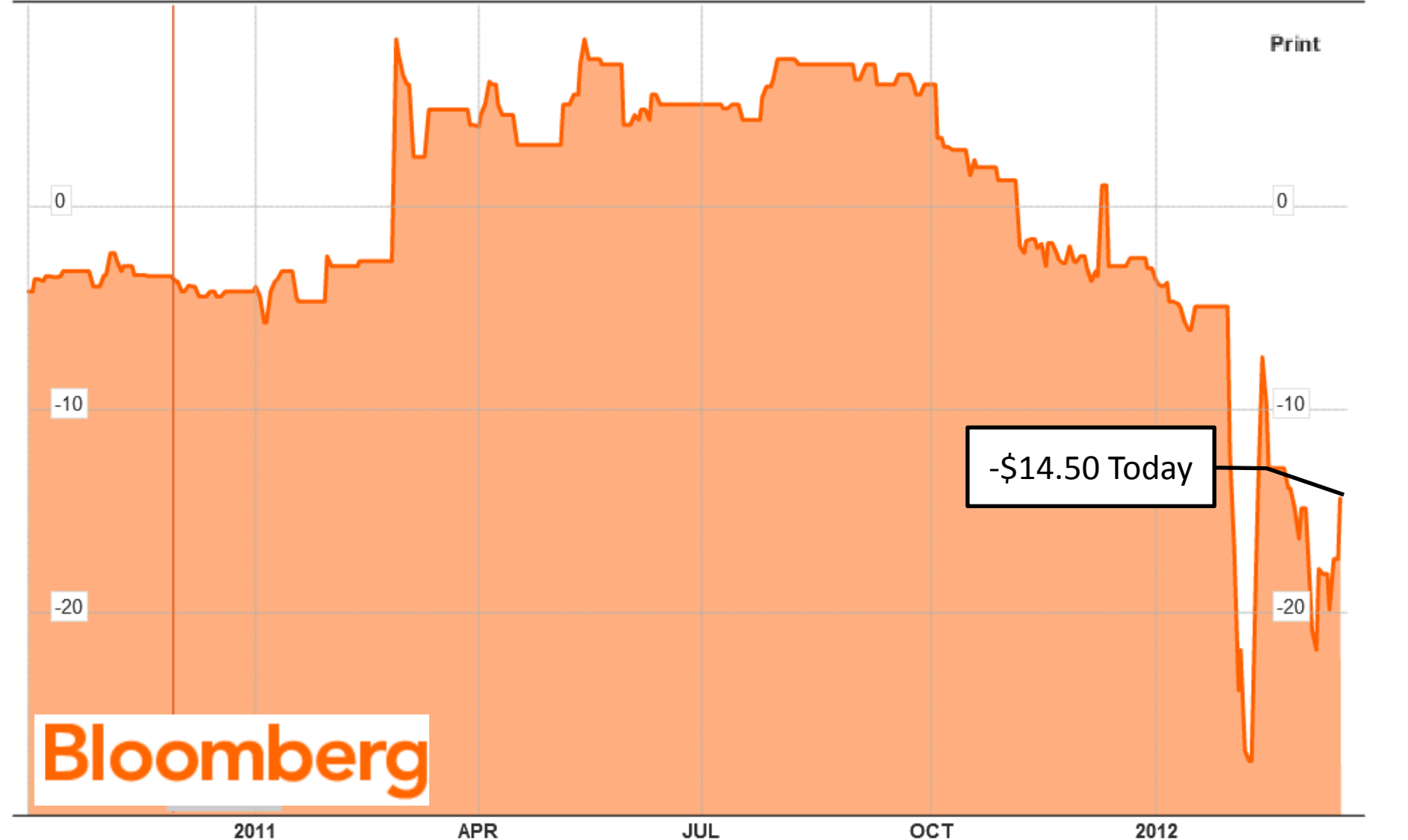
USCSUHC1:INI

Open -3.50

High -3.50

Low -3.50

Close -3.50





## Domestic Crude Oil First Purchase Prices by API Gravity

(Dollars per Barrel)

Period:



[Download Series History](#)



[Definitions, Sources & Notes](#)

API Gravity	Jul-11	Aug-11	Sep-11	Oct-11	Nov-11	Dec-11	View History
20.0° or Less	101.82	93.51	104.07	105.47	111.13	101.87	<a href="#">1993-2011</a>
20.1° to 25.0°	103.92	95.26	103.51	105.14	111.19	103.21	<a href="#">1993-2011</a>
25.1° to 30.0°	98.06	92.89	94.47	96.18	101.42	97.34	<a href="#">1993-2011</a>
30.1° to 35.0°	102.56	95.73	95.53	99.01	104.30	104.58	<a href="#">1993-2011</a>
35.1° to 40.0°	96.70	86.50	87.02	89.38	99.60	99.01	<a href="#">1993-2011</a>
40.0° or Greater	94.66	83.90	84.22	85.10	95.02	94.68	<a href="#">1993-2011</a>

## Domestic Crude Oil First Purchase Prices by API Gravity

(Dollars per Barrel)

Period:



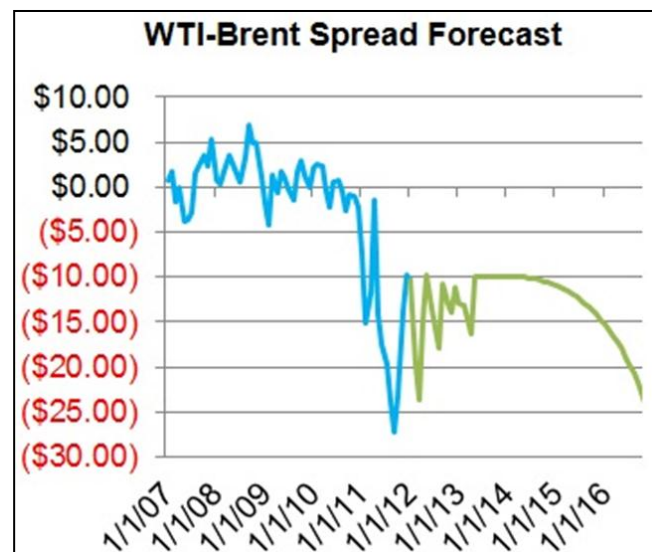
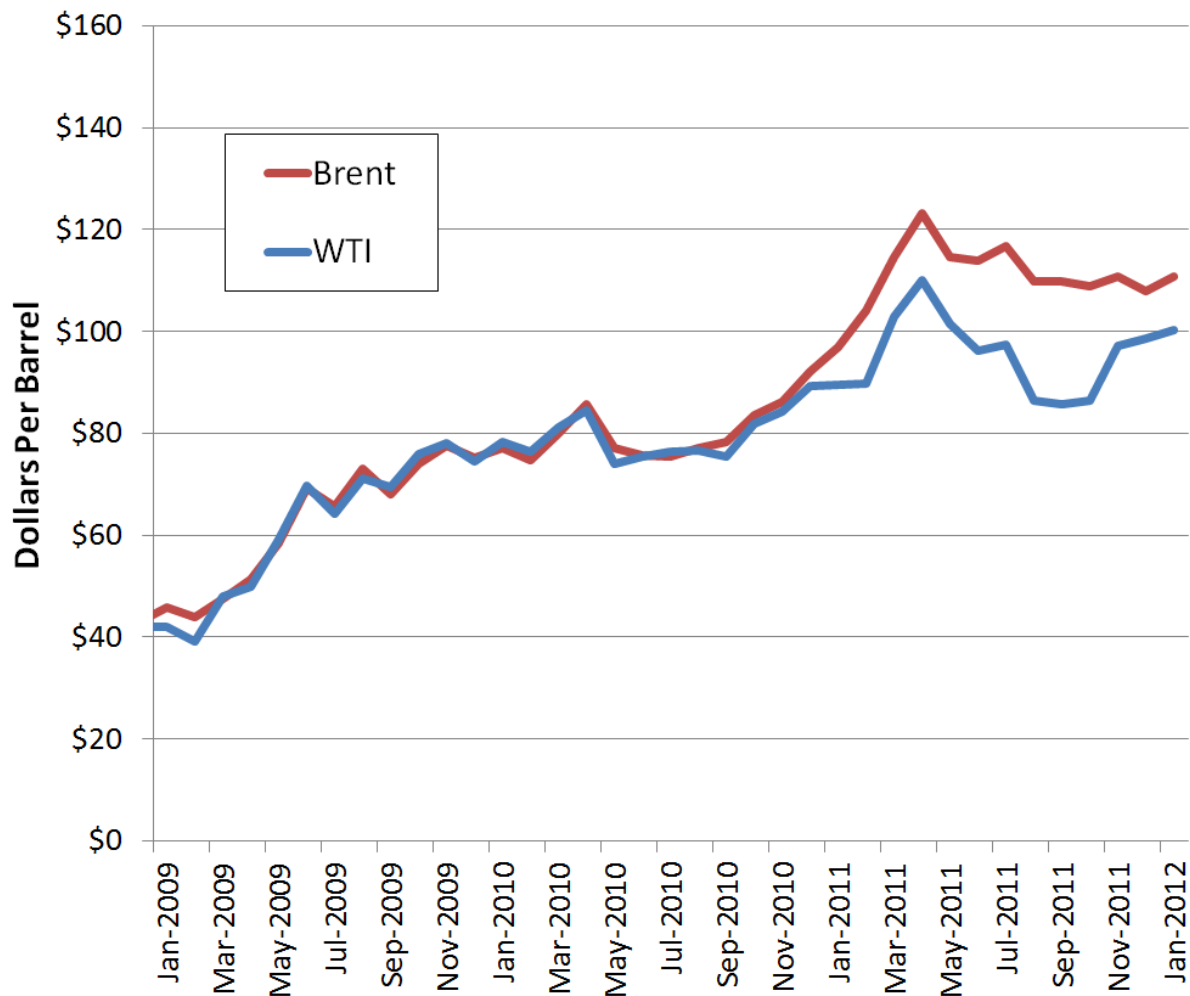
[Download Series History](#)



[Definitions, Sources & Notes](#)

API Gravity	2006	2007	2008	2009	2010	2011	View History
20.0° or Less	54.96	62.00	87.10	54.05	72.40	101.30	<a href="#">1993-2011</a>
20.1° to 25.0°	57.89	64.94	91.01	55.66	75.04	103.07	<a href="#">1993-2011</a>
25.1° to 30.0°	56.18	62.83	89.55	54.30	71.78	97.12	<a href="#">1993-2011</a>
30.1° to 35.0°	60.78	67.14	98.41	57.66	76.22	99.65	<a href="#">1993-2011</a>
35.1° to 40.0°	61.83	69.29	96.69	56.93	76.03	94.54	<a href="#">1993-2011</a>
40.0° or Greater	61.86	69.17	94.95	56.66	74.47	91.87	<a href="#">1993-2011</a>

# Brent-WTI Crude Pricing



# East Coast Getting a Taste



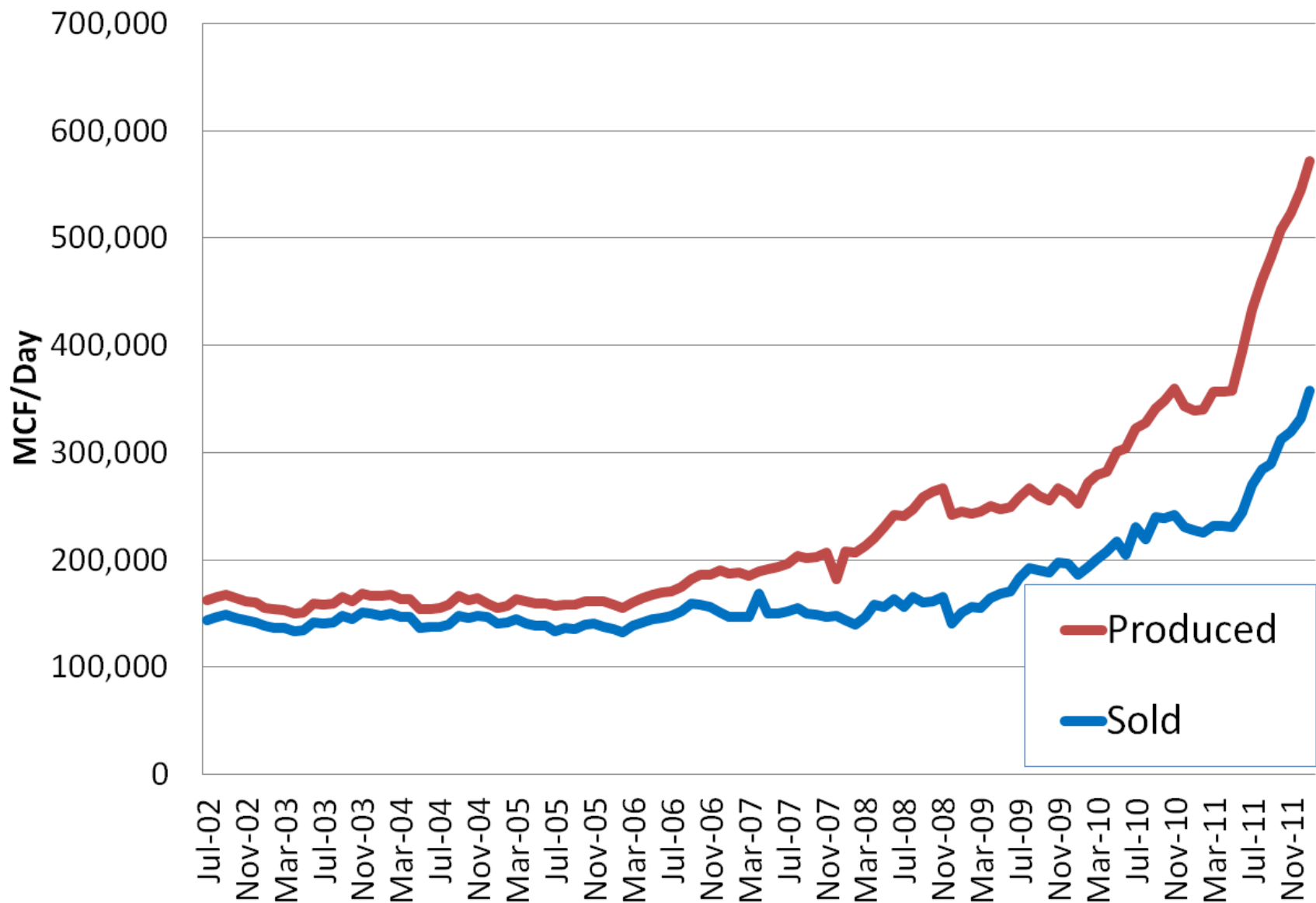
© 2012 Google  
Data SIO, NOAA, U.S. Navy, NGA, GEBCO  
© 2012 Europa Technologies  
Image © 2012 TerraMetrics

Google earth

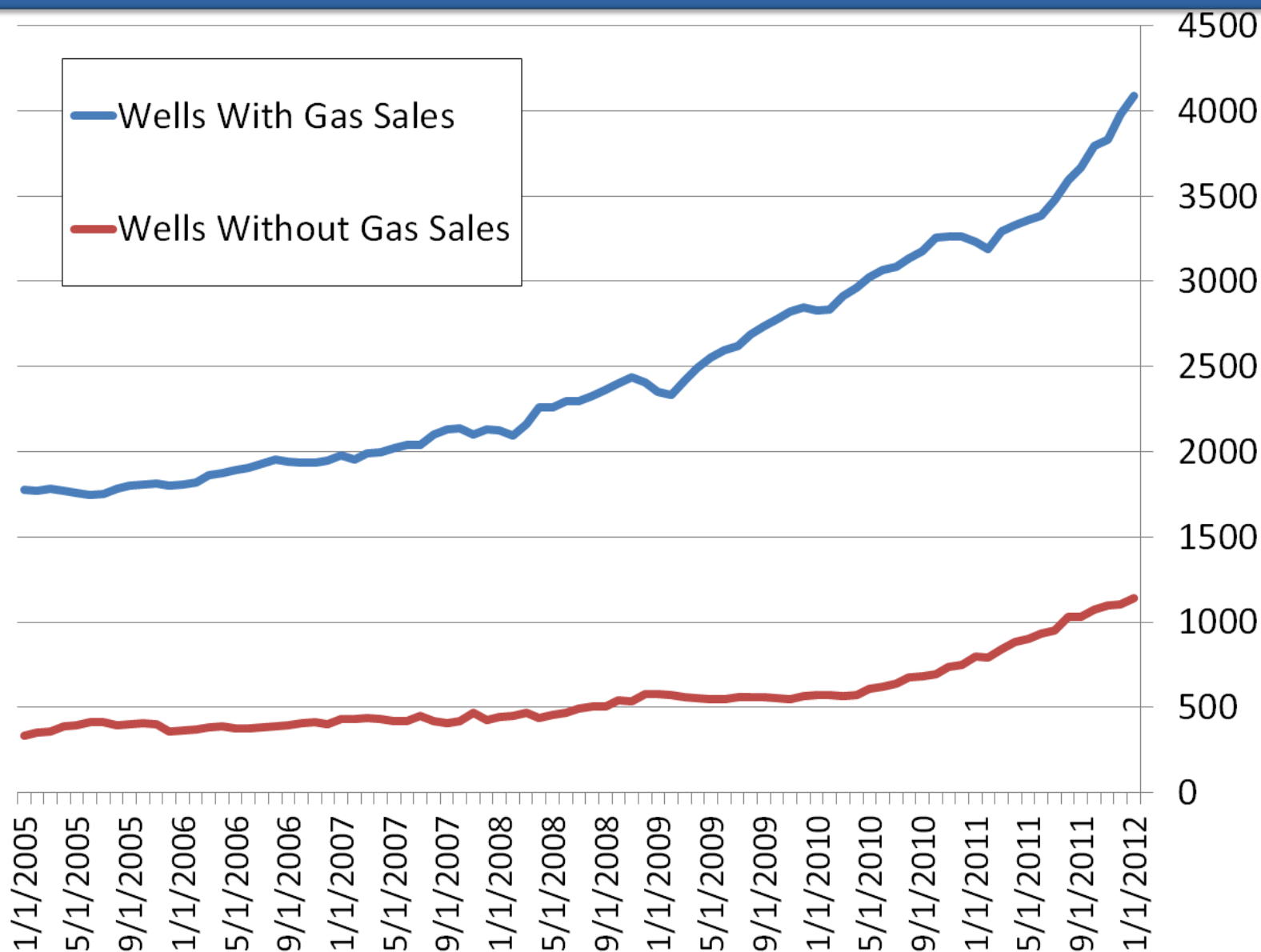
# Natural Gas Projects



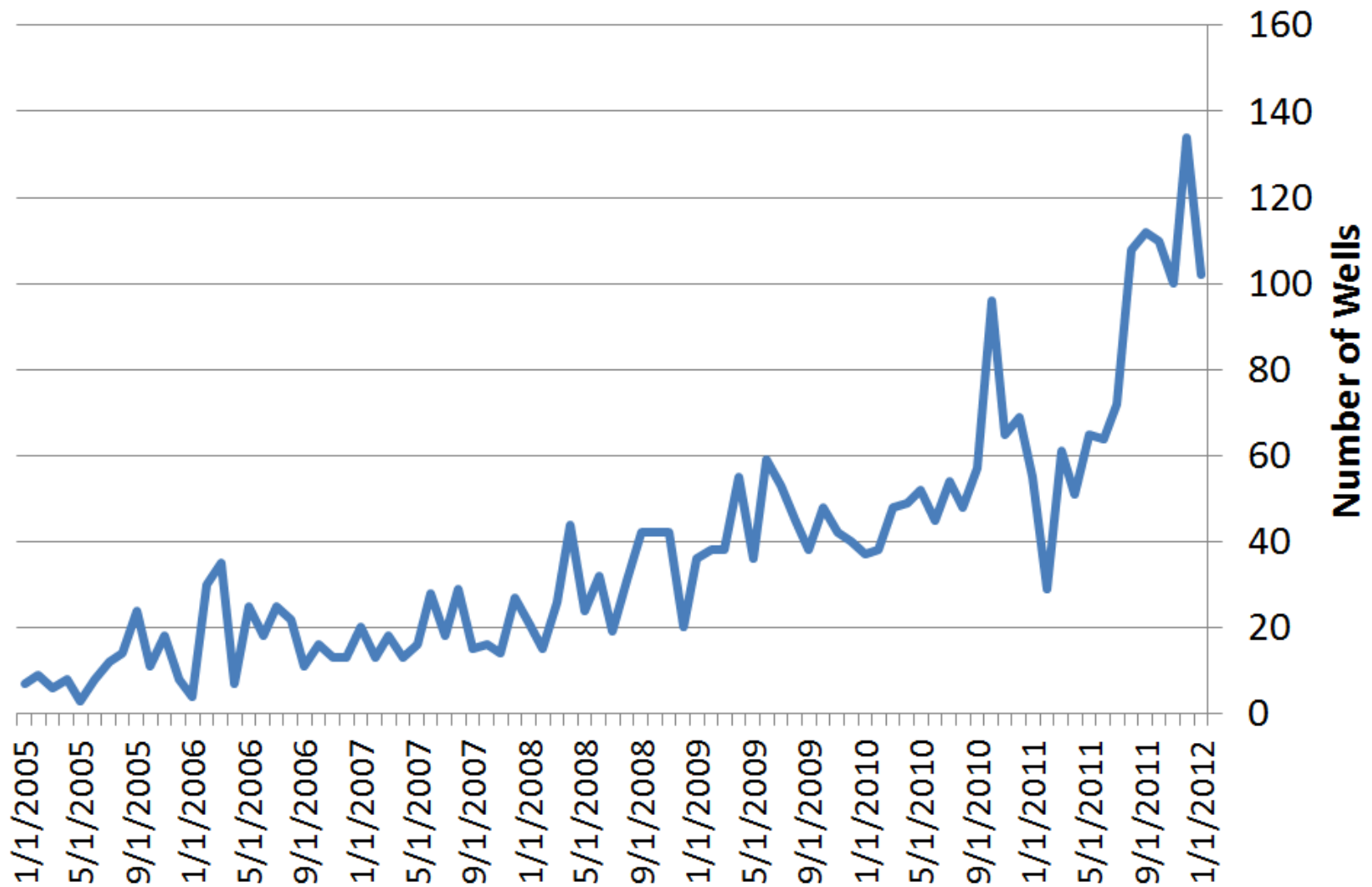
# ND Gas Production



# ND Gas Gathering Statistics



# First Time Gas Sales Per Month



# Natural Gas Study

# Elm Coulee Montana

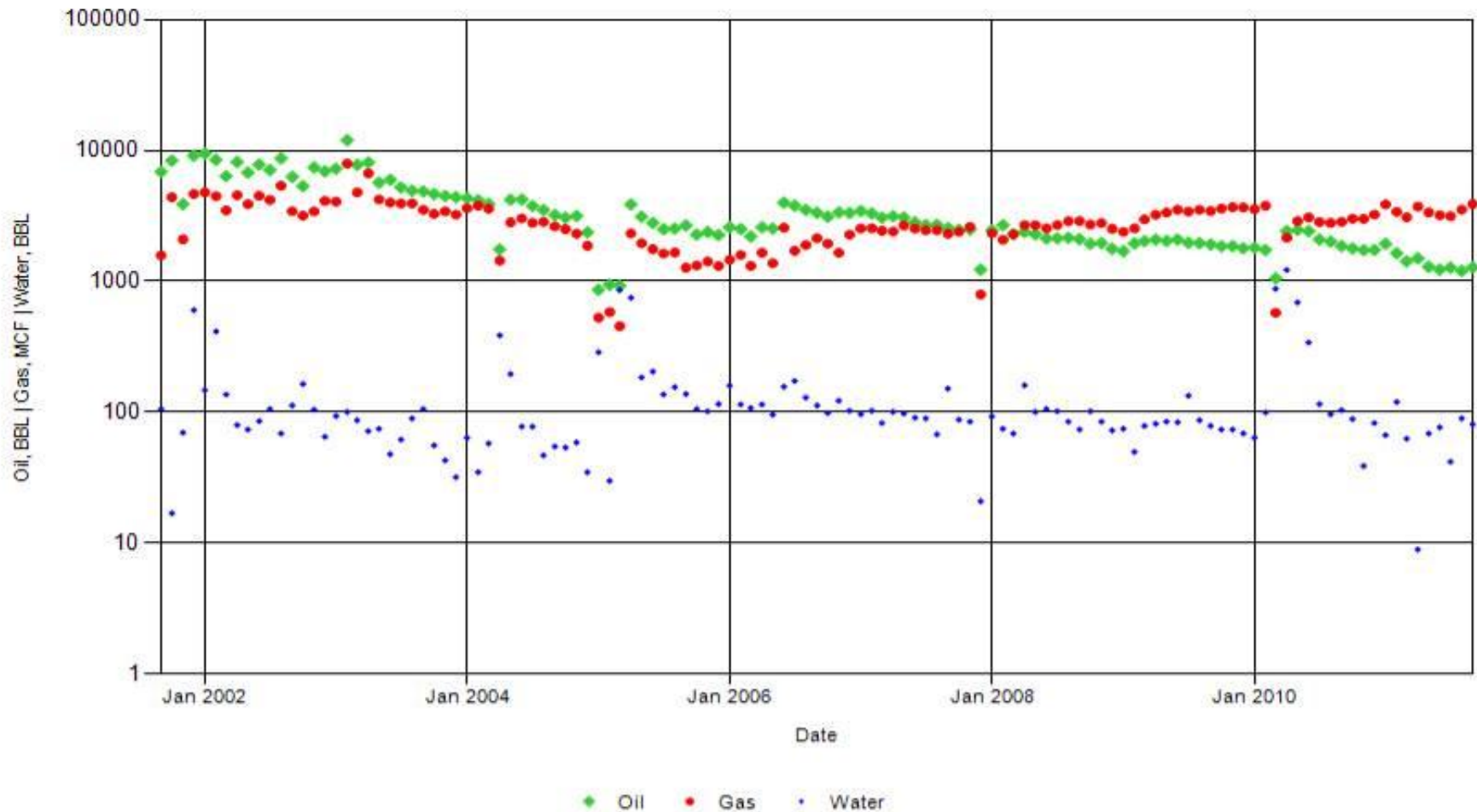
API Number:

25083218940000

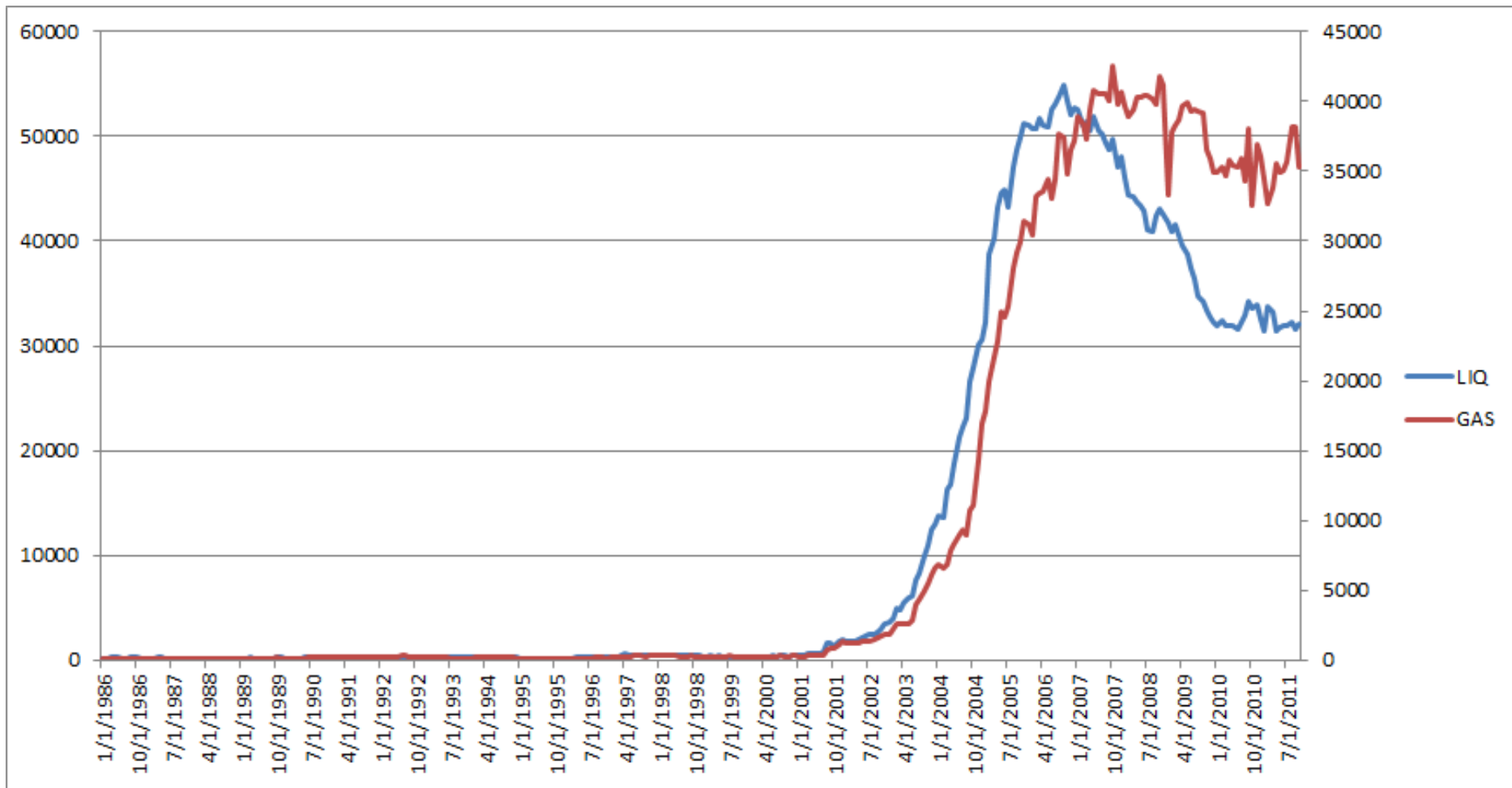
Well Name:

Burning Tree Vaira 5-2H

Well Production

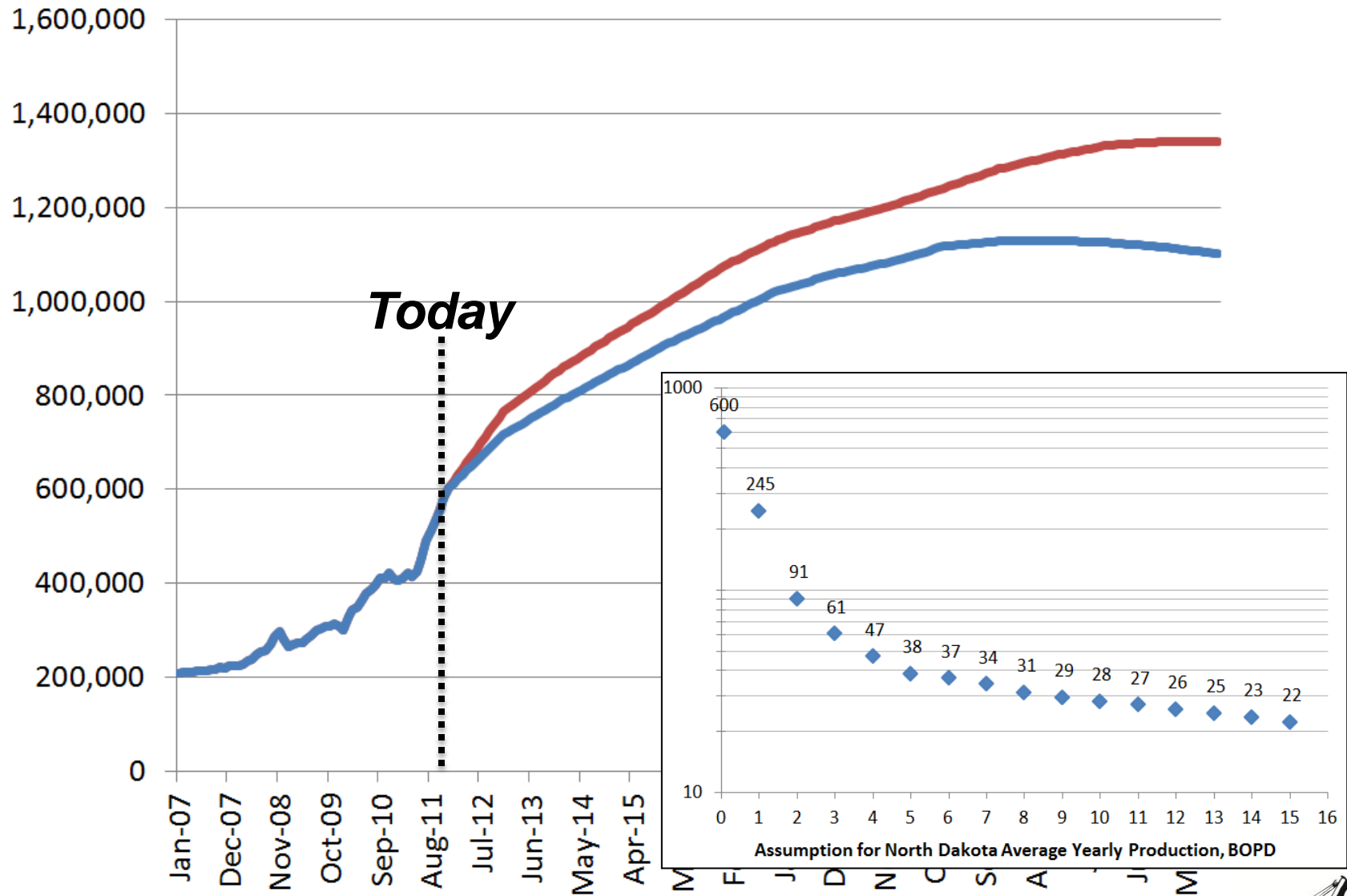


# Montana Bakken Production



Source: EPRINC – Left Axis Oil, BOPD – Right Axis Gas, MCFD

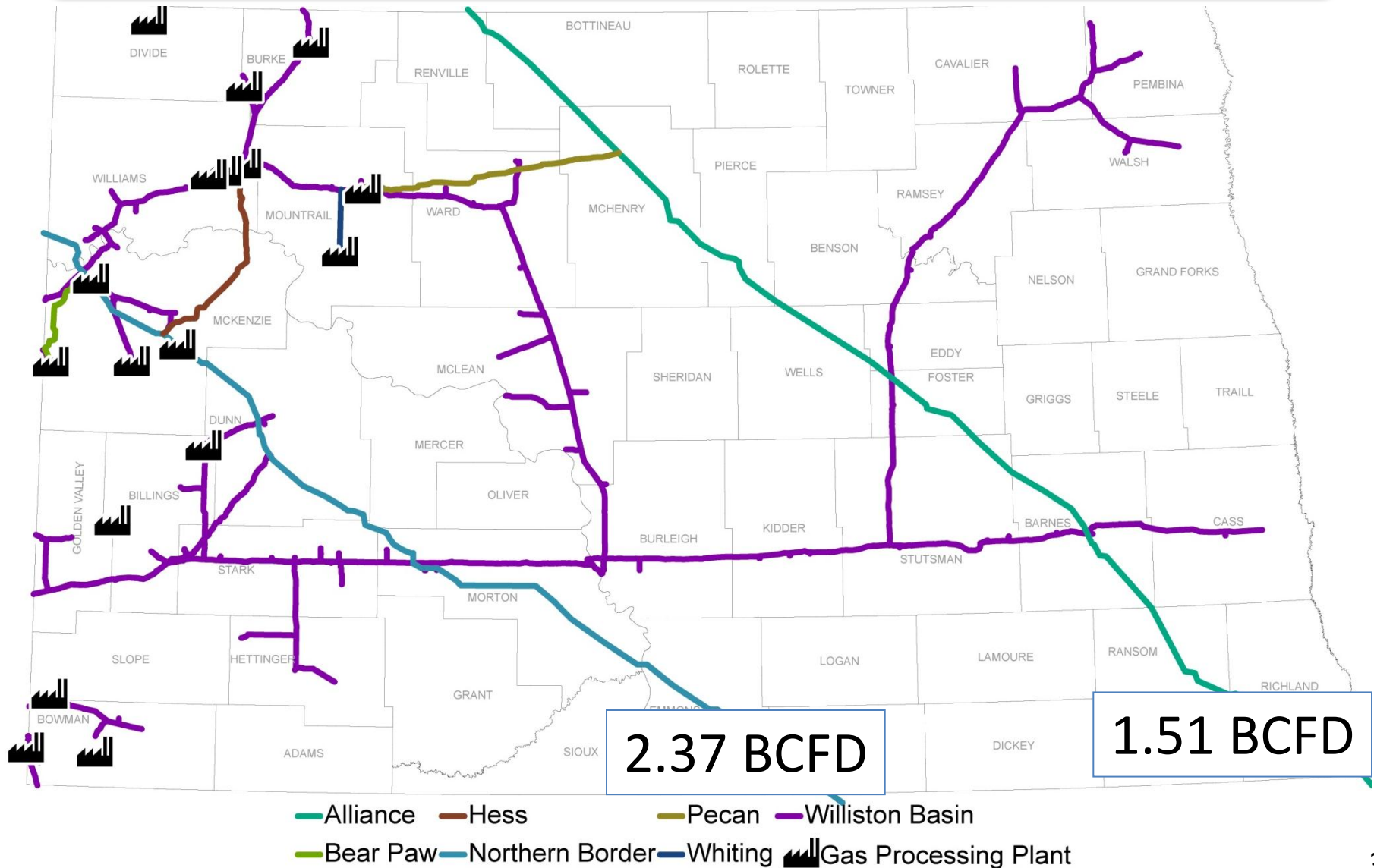
# Forecasting Williston Basin Oil Production, BOPD



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# Gas Transmission Pipelines



# Contact Information

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Website:

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



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**Call before you dig.**

