

ND Petroleum Production and Transportation Dynamics



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Director

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April 19, 2016



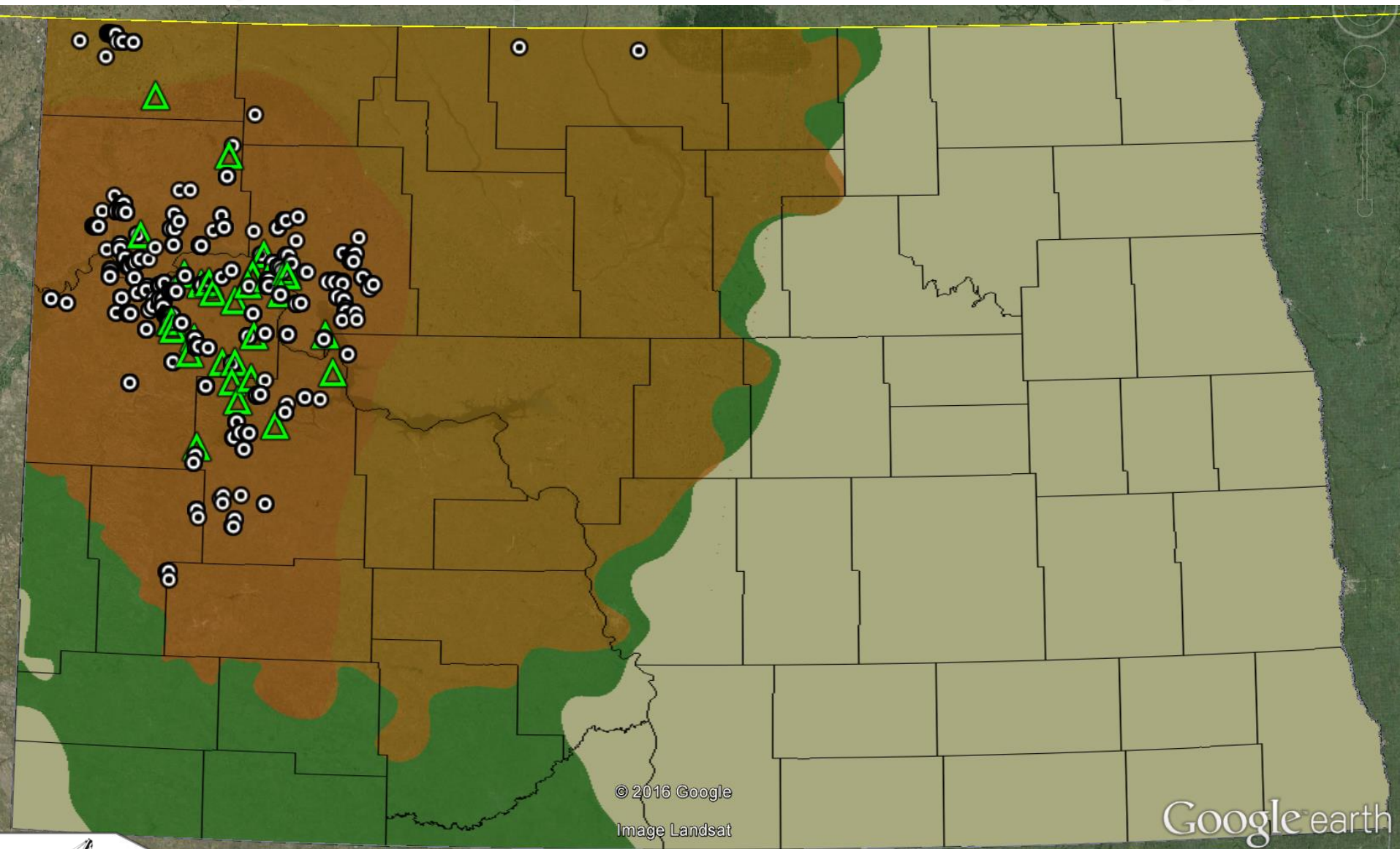
Presentation Outline

- Understanding current and future oil production
 - Activity
 - Forecasts
 - Drilling economics
- Williston Basin oil transportation dynamics
 - Interstate oil movements
 - Intrastate oil movements
- North Dakota natural gas production
 - Flaring and gas capture

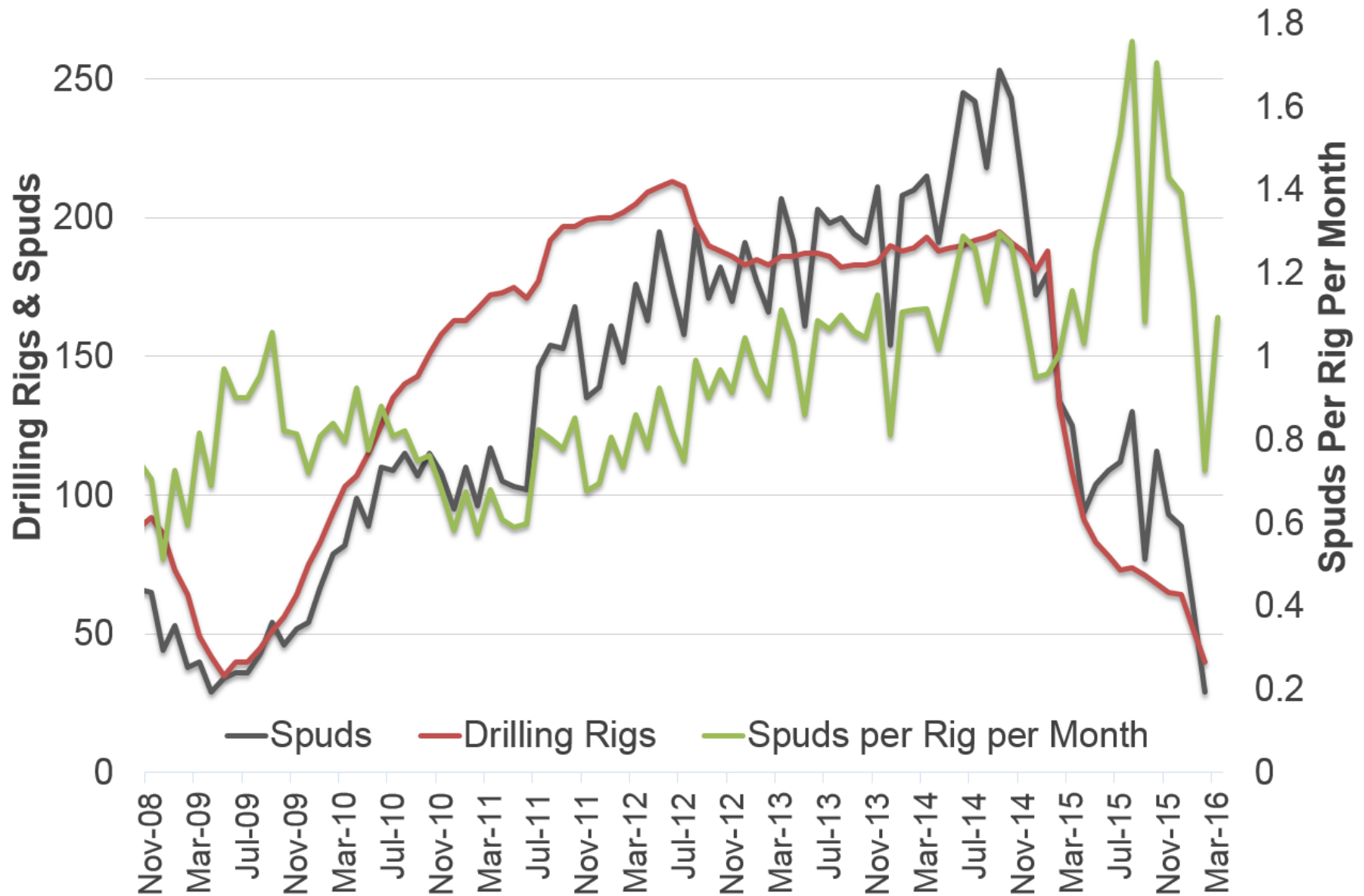


29 Rigs and 628 NC Wells:

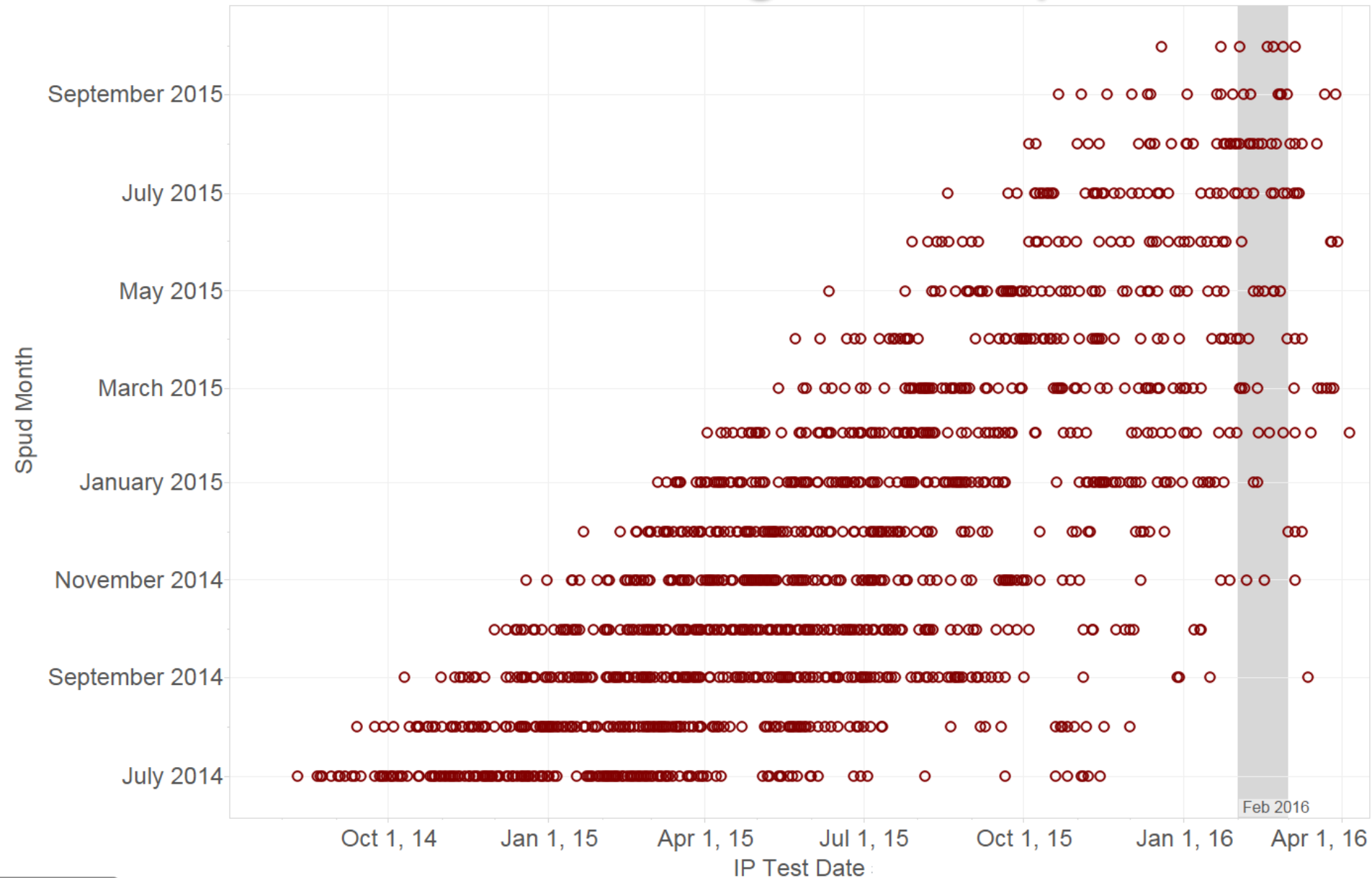
April 15, 2016 (Non Confidential NC Wells Only)



North Dakota Drilling Activity

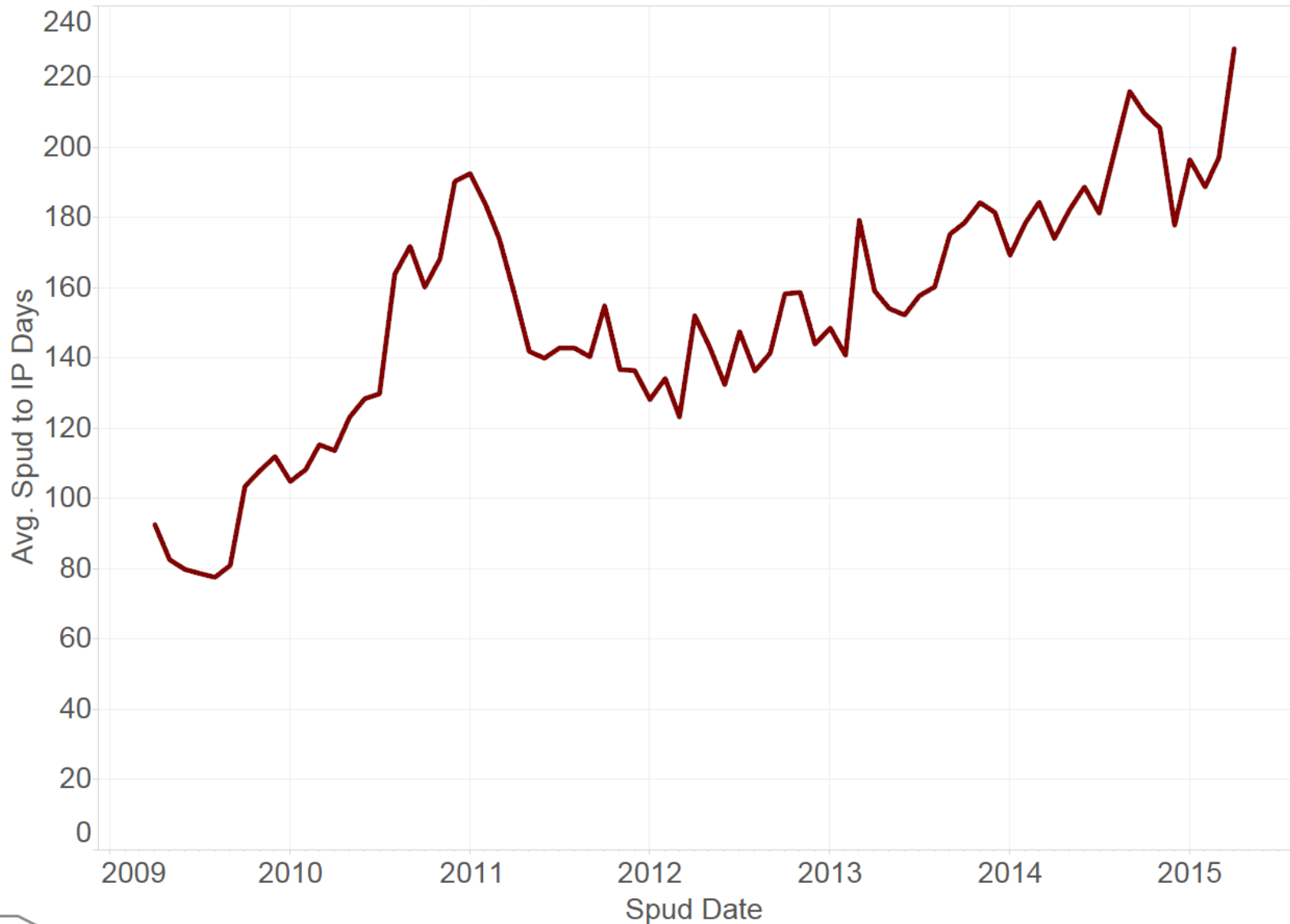


North Dakota Drilling & Completions

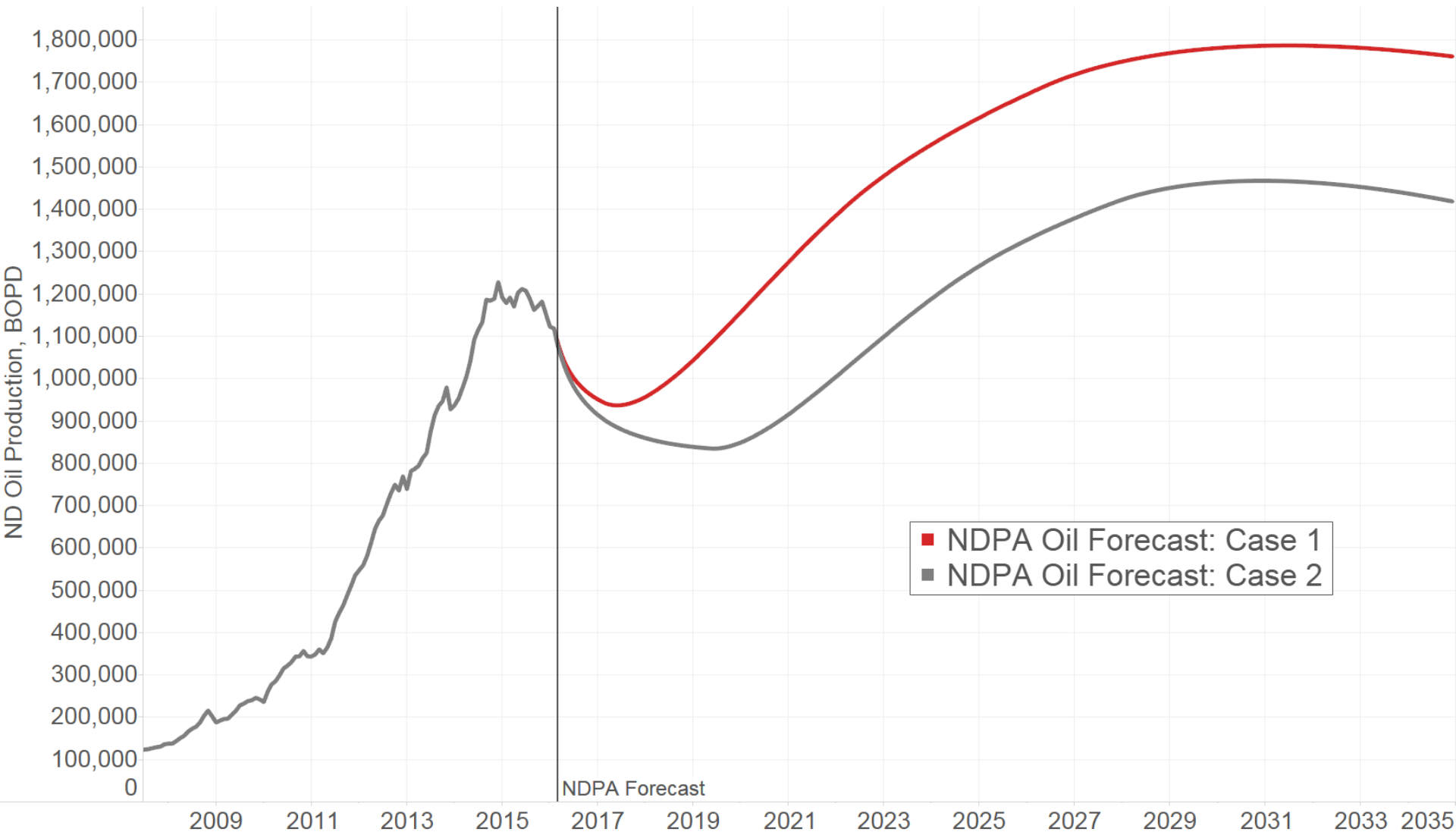


Understanding Current Production Dynamics

Non-Confidential Spud to Initial Production Timeline



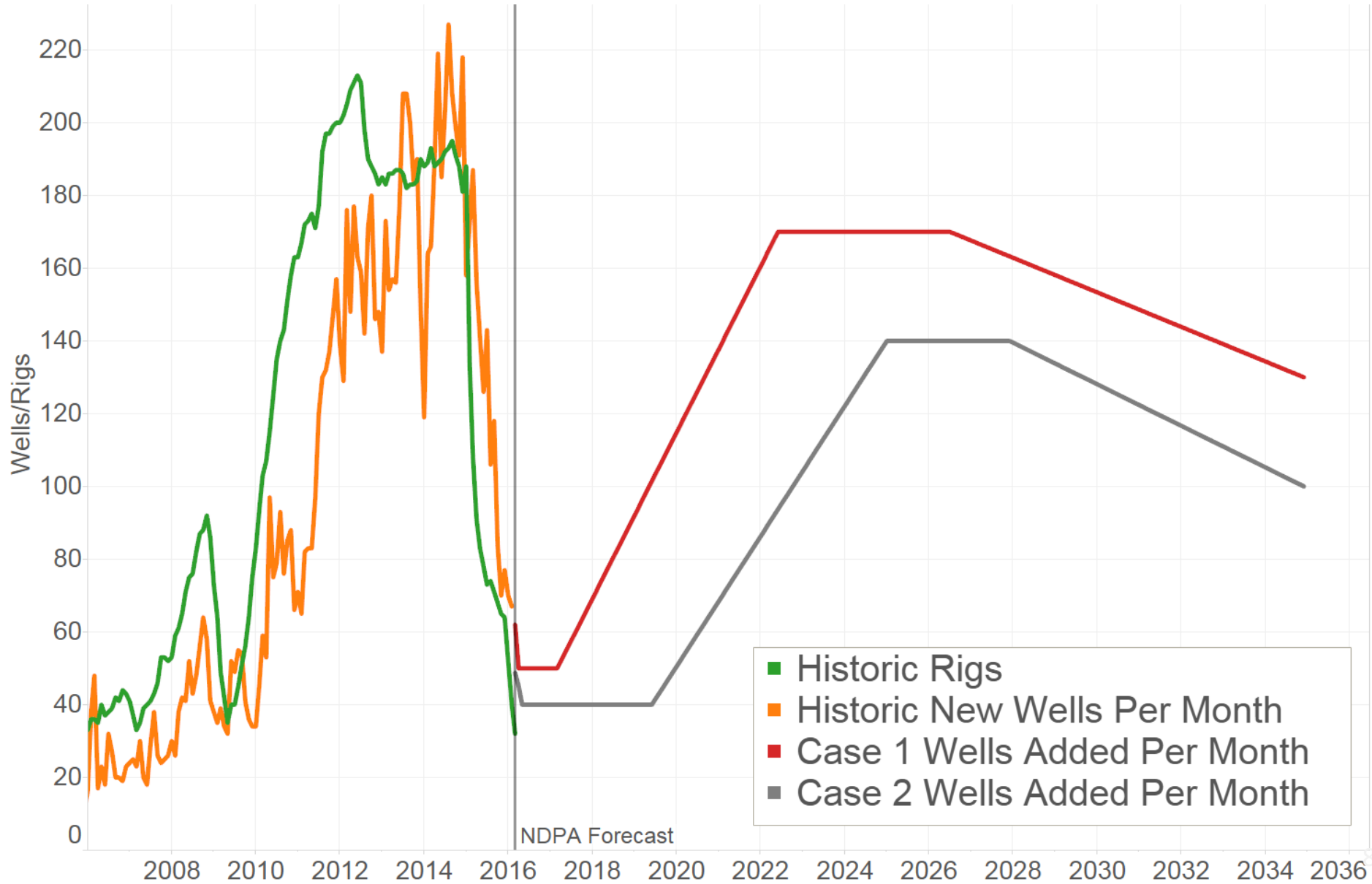
North Dakota Oil Production Forecast



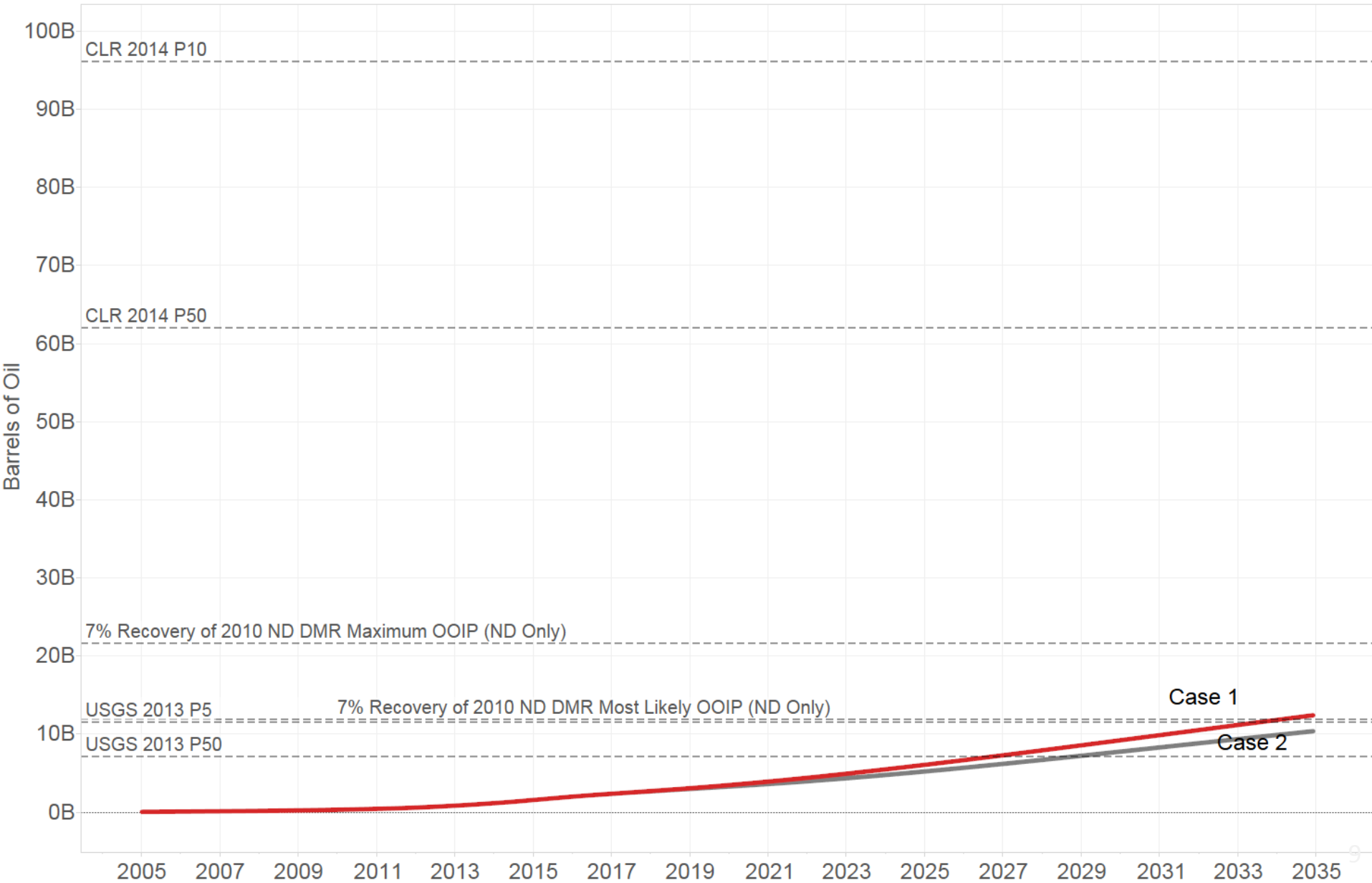
Production forecast is for visual demonstration purposes only and should not be considered accurate for any near or long term planning.



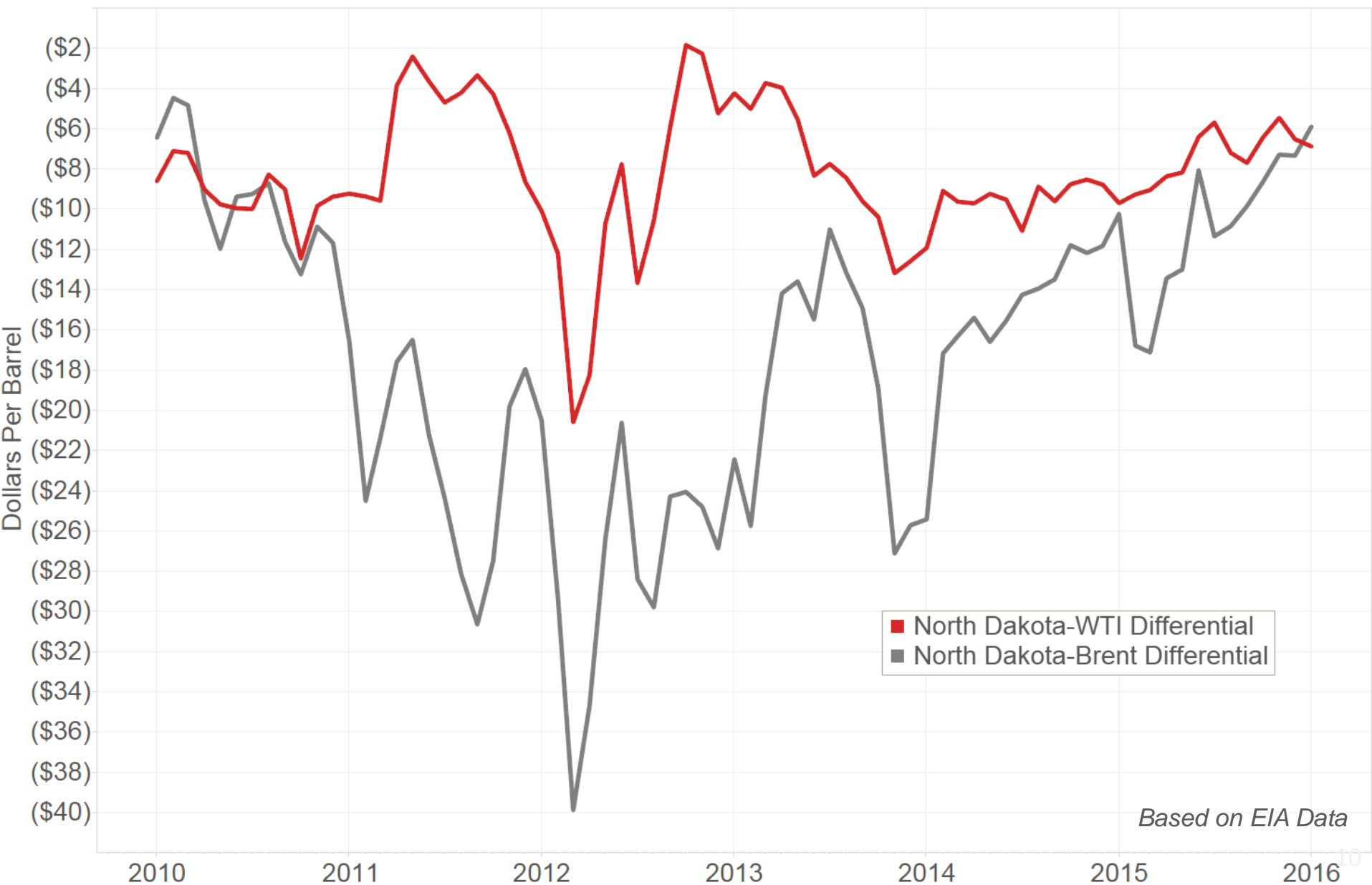
North Dakota Forecast Activity Assumptions



Forecast Cumulative Prod. & EUR Estimates



North Dakota Oil Differential

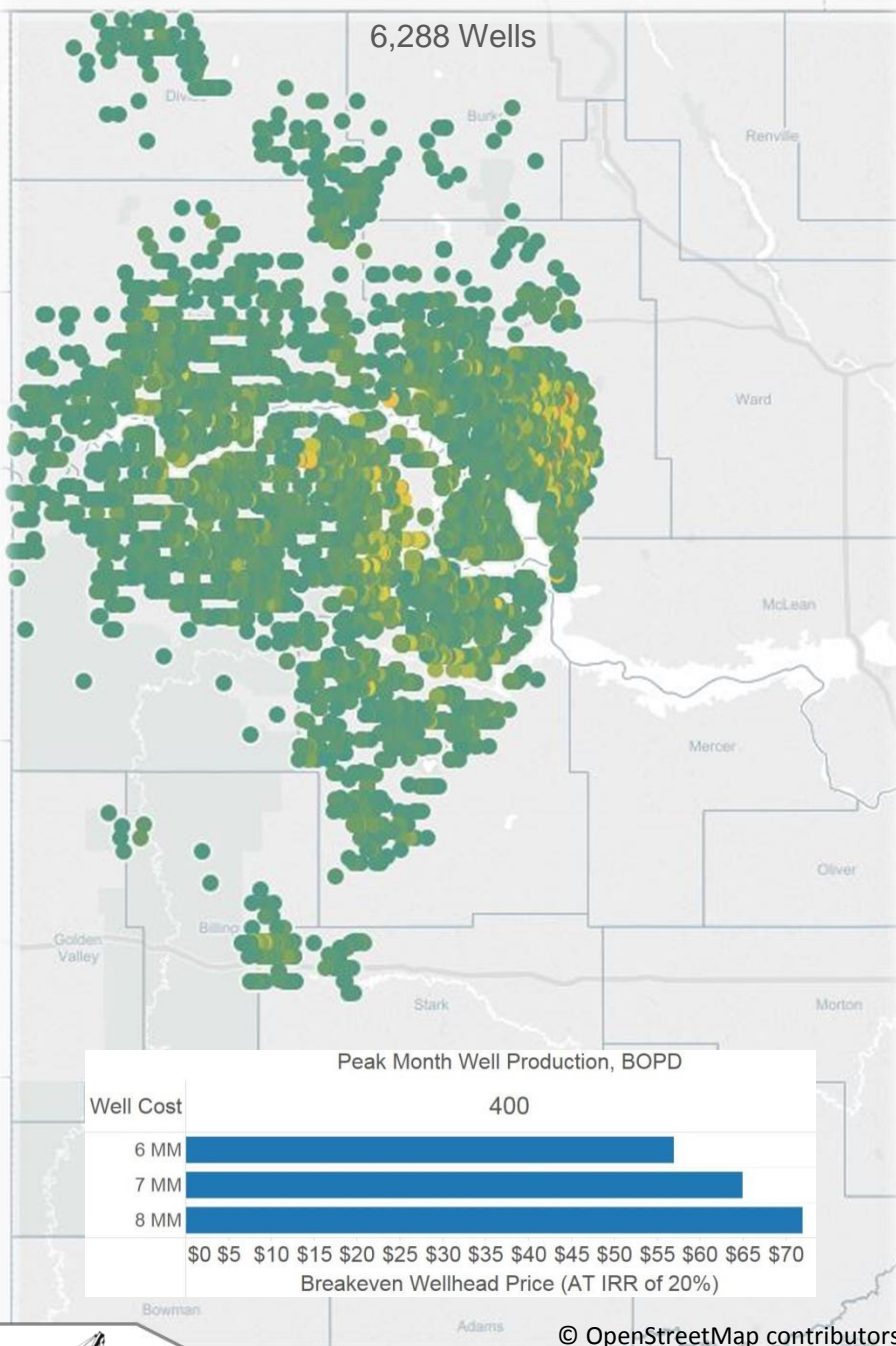


Key Economic Assumptions

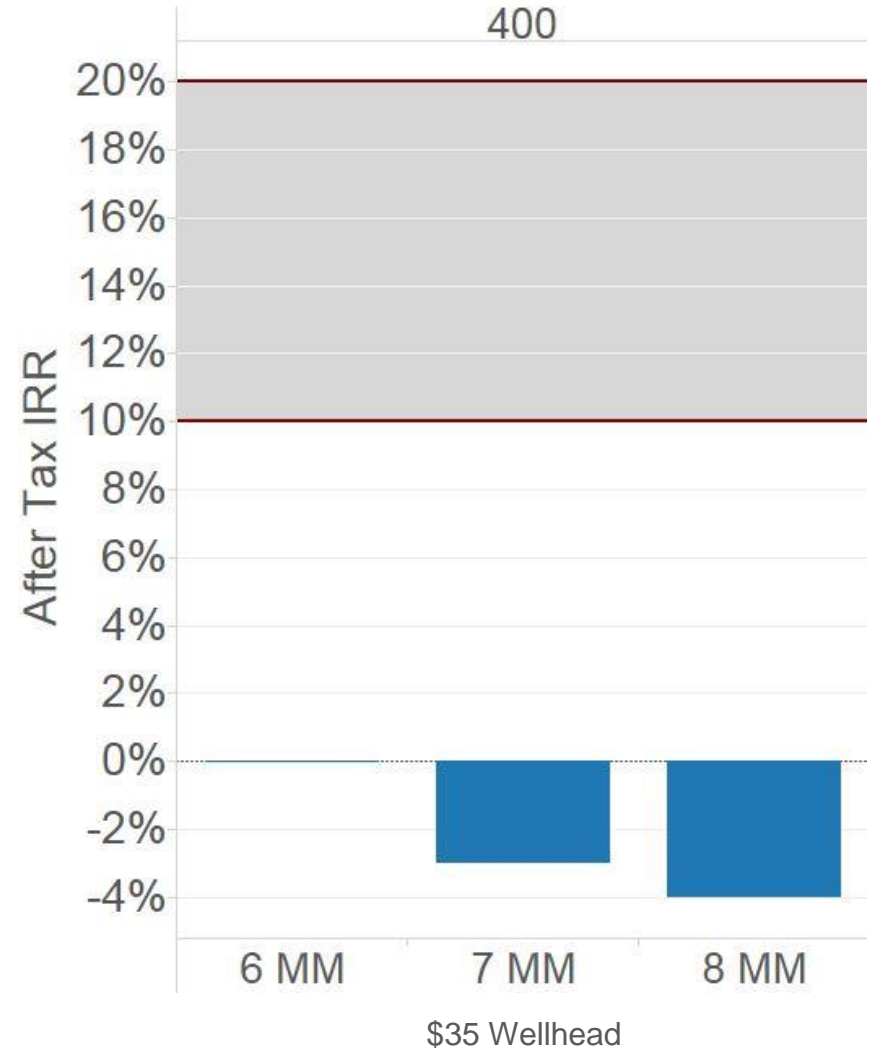
- \$6-\$8 Million Well Costs
- \$35/BBL & \$3.00/MCF Wellhead Pricing
- 1/6 Royalty
- Zero Flaring
- Assumed 10-20% IRR to drill (calculated after production taxes and royalties)
- No Tax Incentives Included
- Production rate is 30-day average
- All Bakken/Three Forks wells drilled in 2008+



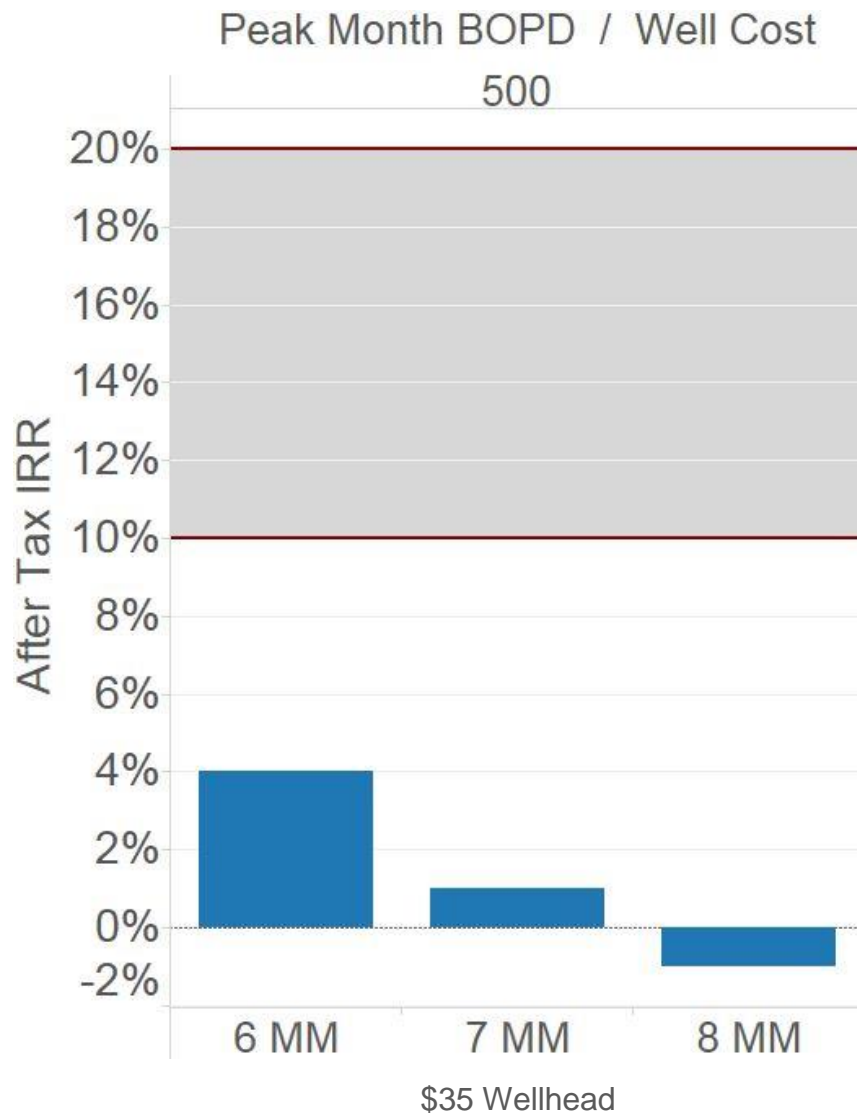
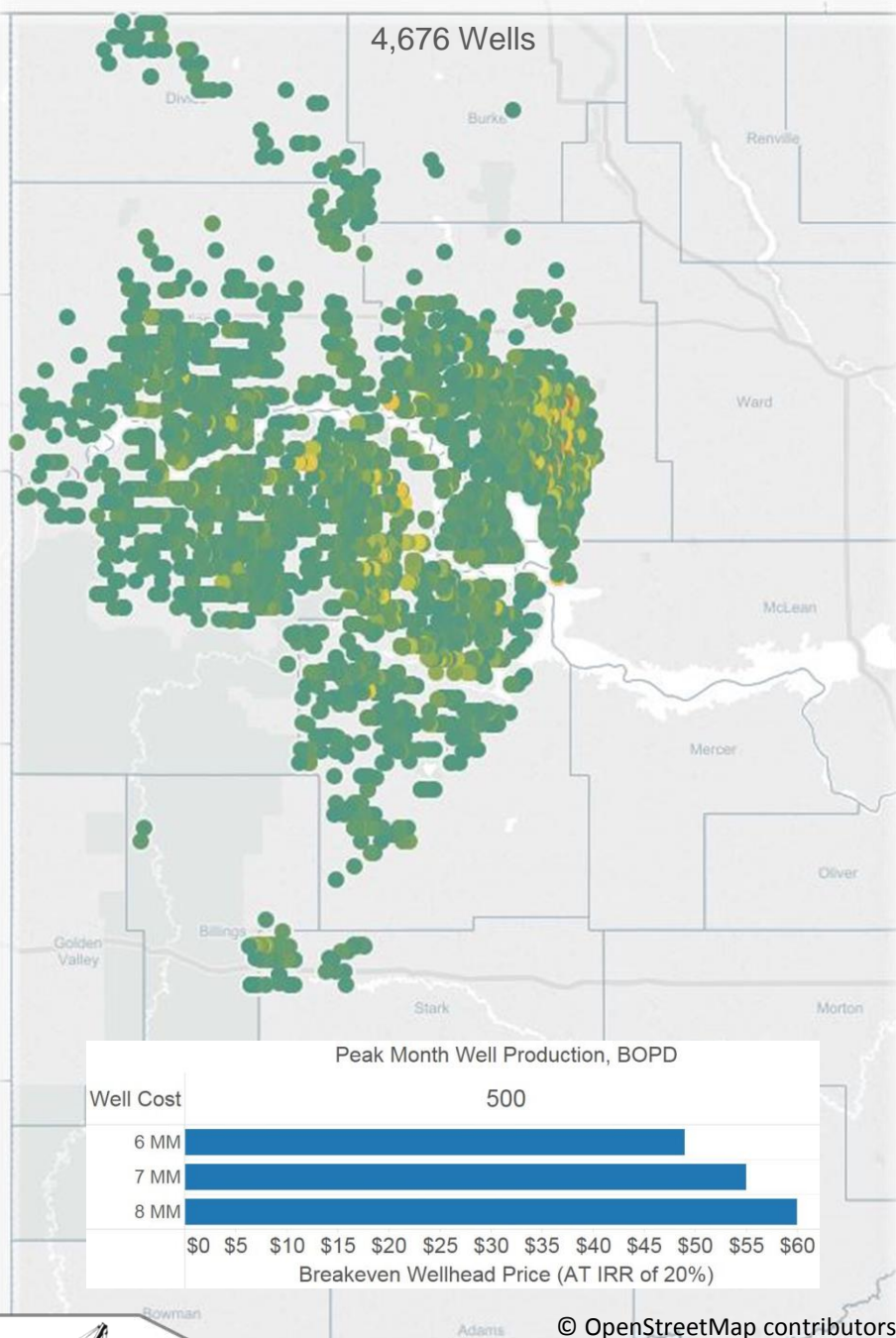
Peak Month Minimum 400 BOPD



Peak Month BOPD / Well Cost
400



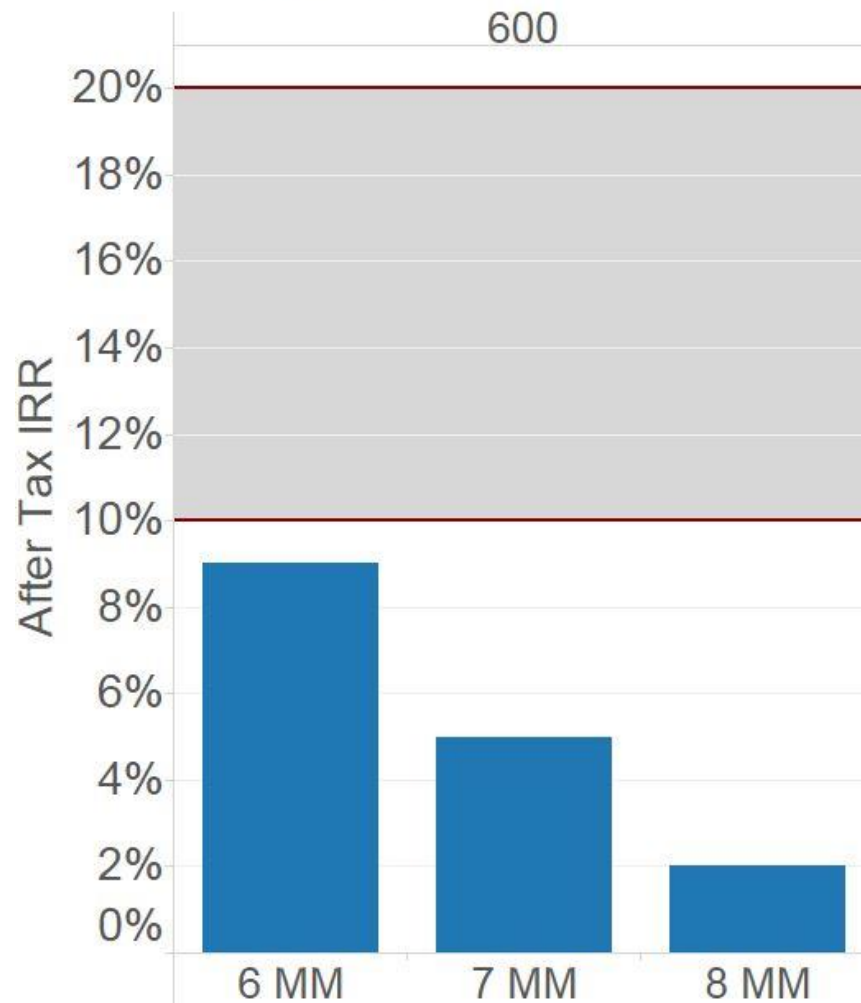
Peak Month Minimum 500 BOPD



Peak Month Minimum 600 BOPD

Peak Month BOPD / Well Cost

600



\$35 Wellhead

3,282 Wells

Peak Month Well Production, BOPD

Well Cost

600

6 MM

7 MM

8 MM

\$0 \$5 \$10 \$15 \$20 \$25 \$30 \$35 \$40 \$45 \$50 \$55

Breakeven Wellhead Price (AT IRR of 20%)

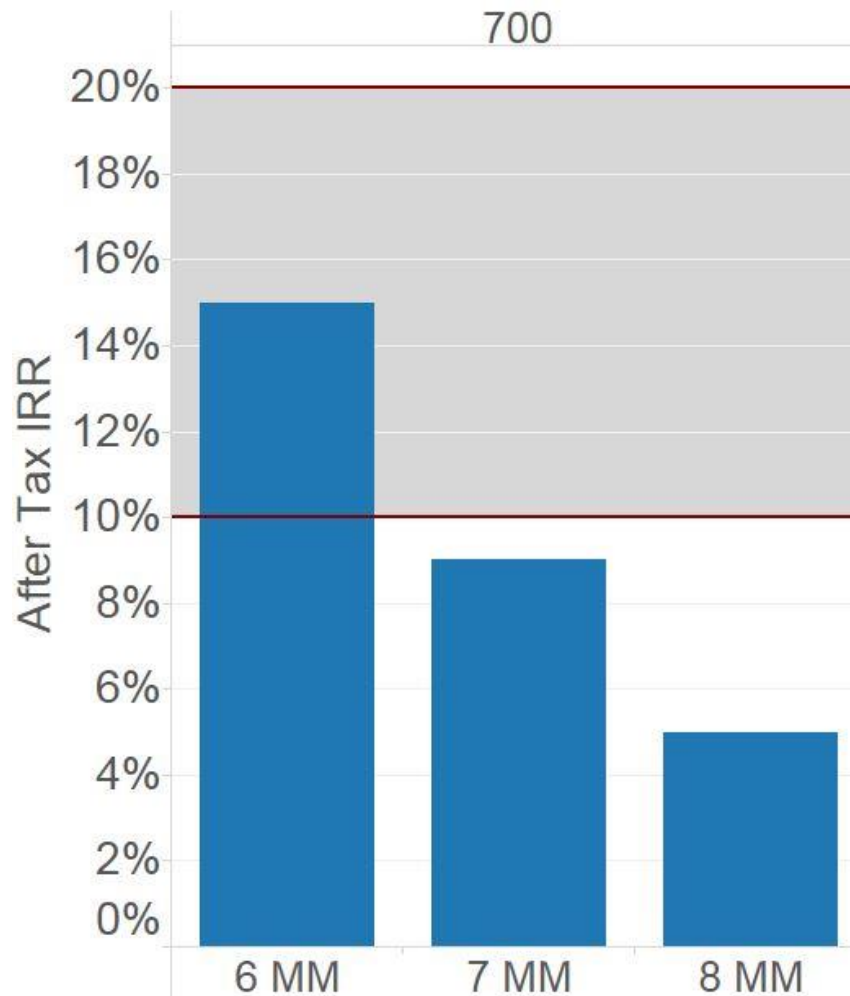
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Peak Month Minimum 700 BOPD

Peak Month BOPD / Well Cost

700



\$35 Wellhead

2,135 Wells

Peak Month Well Production, BOPD

Well Cost

700

6 MM

7 MM

8 MM

\$0 \$5 \$10 \$15 \$20 \$25 \$30 \$35 \$40 \$45

Breakeven Wellhead Price (AT IRR of 20%)

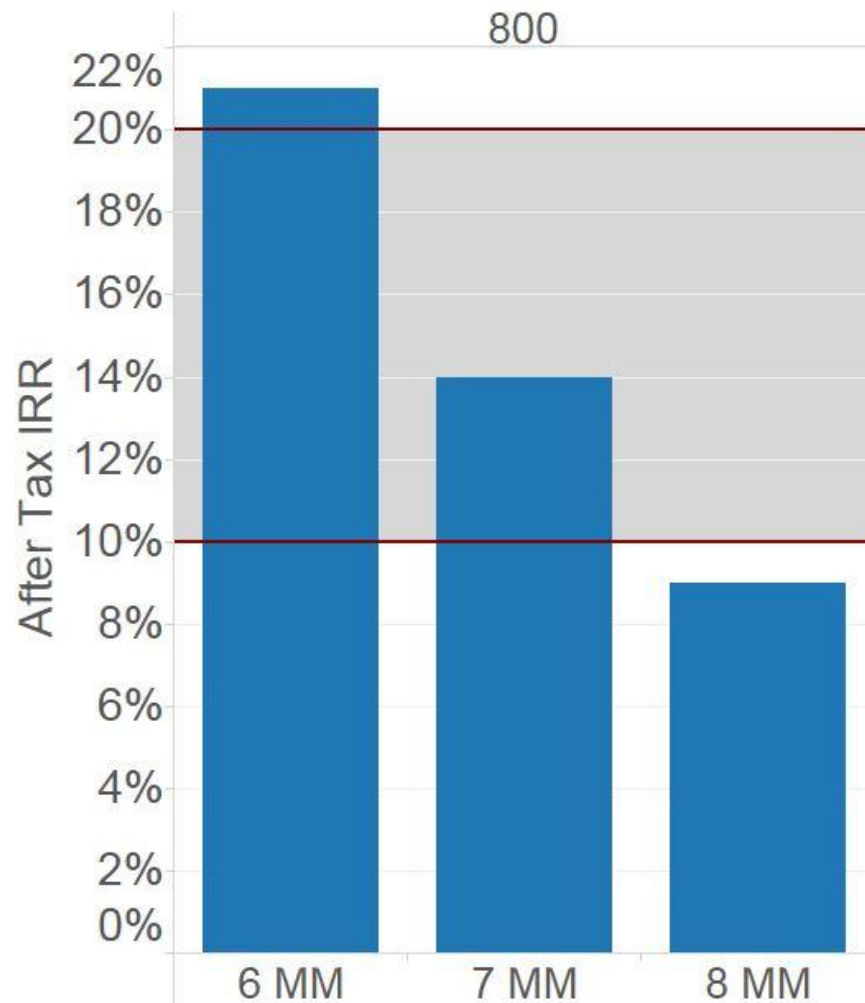
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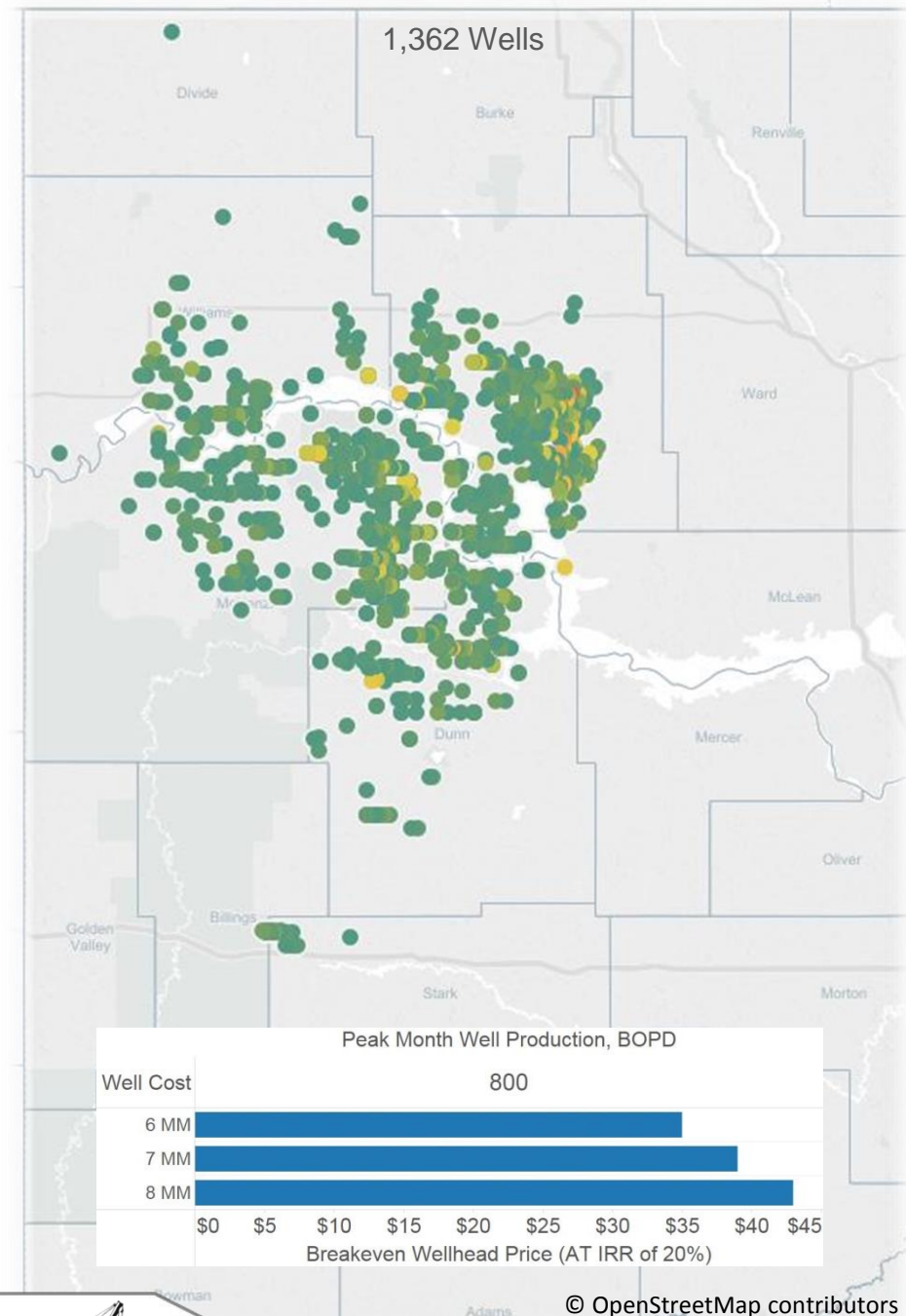
Peak Month Minimum 800 BOPD

Peak Month BOPD / Well Cost

800



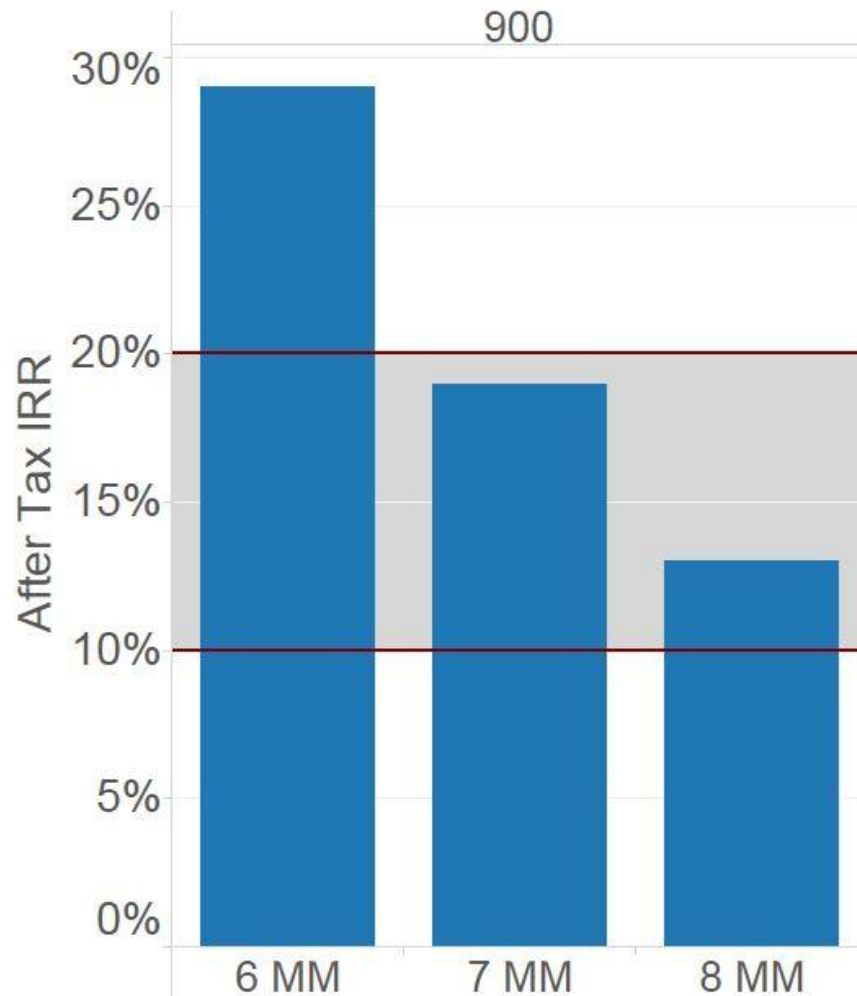
\$35 Wellhead



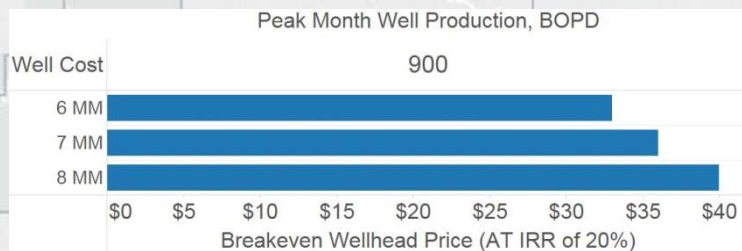
Peak Month Minimum 900 BOPD

Peak Month BOPD / Well Cost

900



\$35 Wellhead



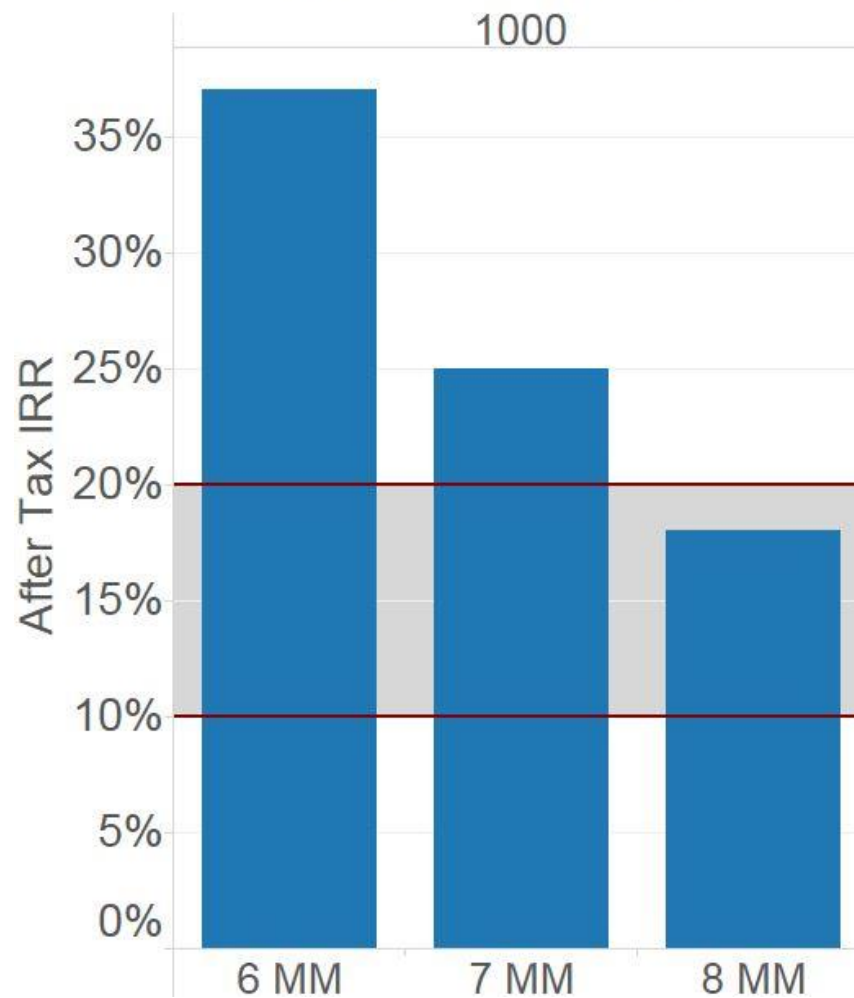
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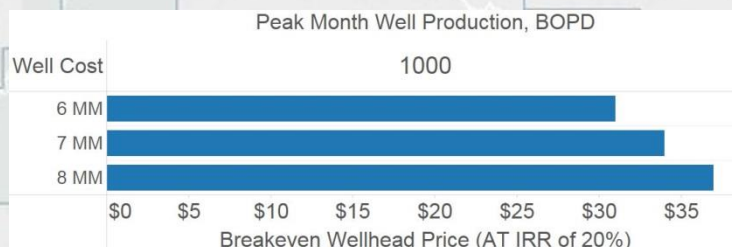
Peak Month Minimum 1,000 BOPD

Peak Month BOPD / Well Cost

1000



\$35 Wellhead



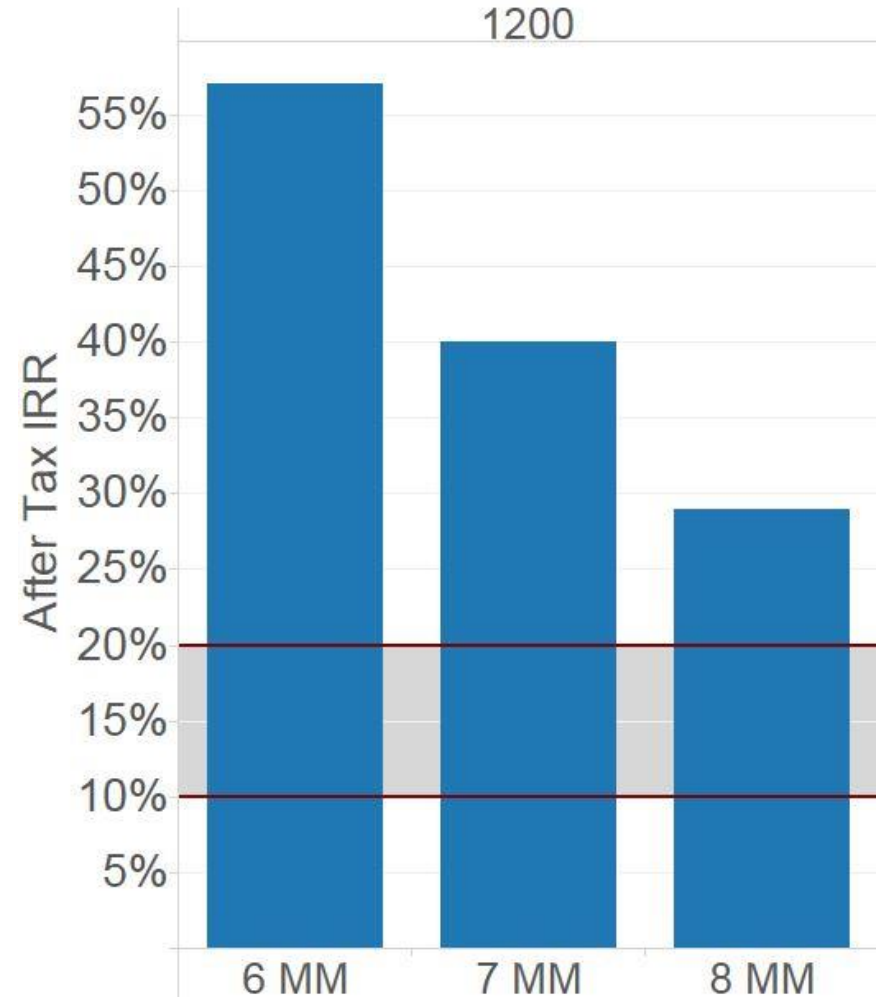
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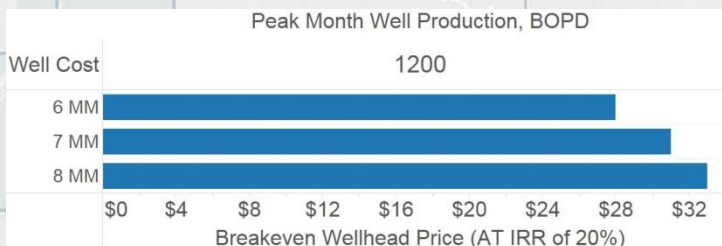
Peak Month Minimum 1,200 BOPD

Peak Month BOPD / Well Cost

1200



\$35 Wellhead

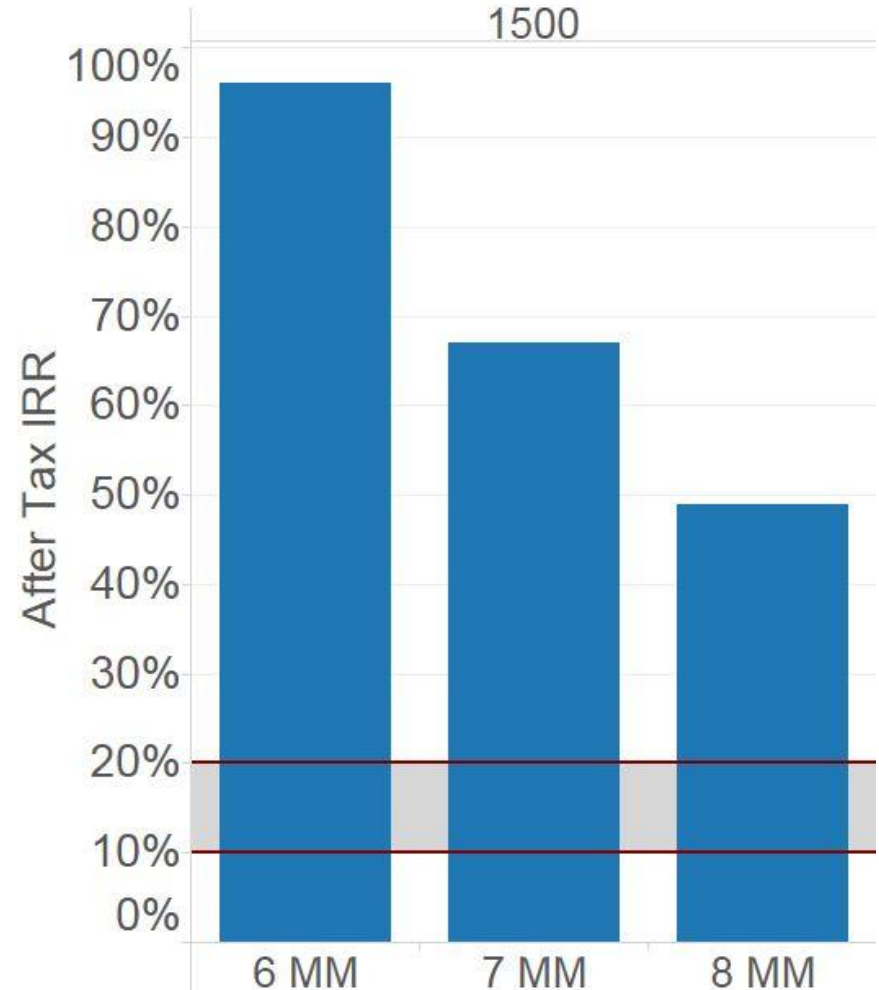


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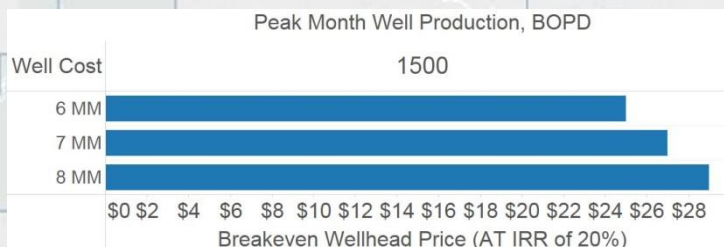


Peak Month Minimum 1,500 BOPD

Peak Month BOPD / Well Cost
1500



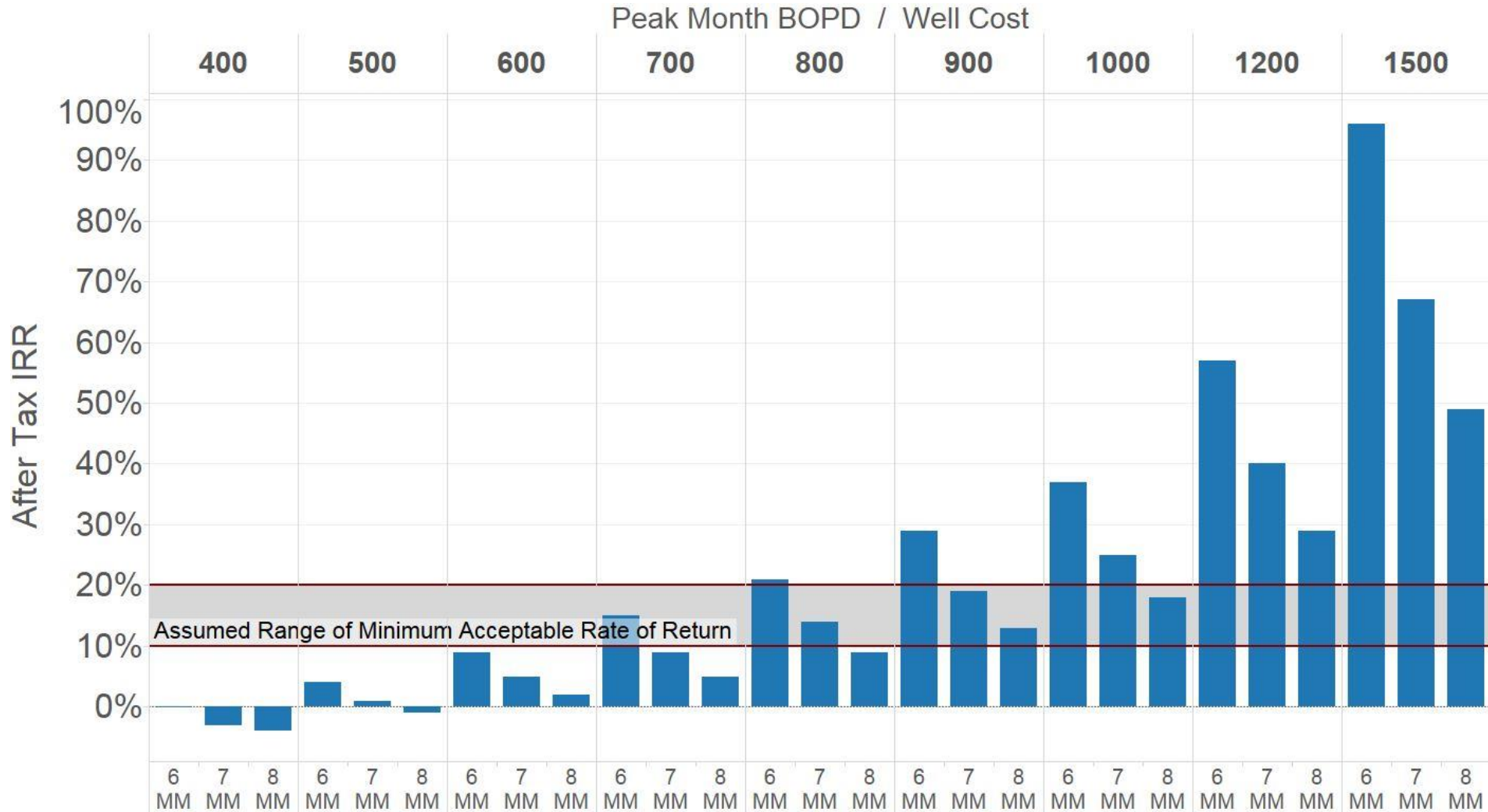
\$35 Wellhead



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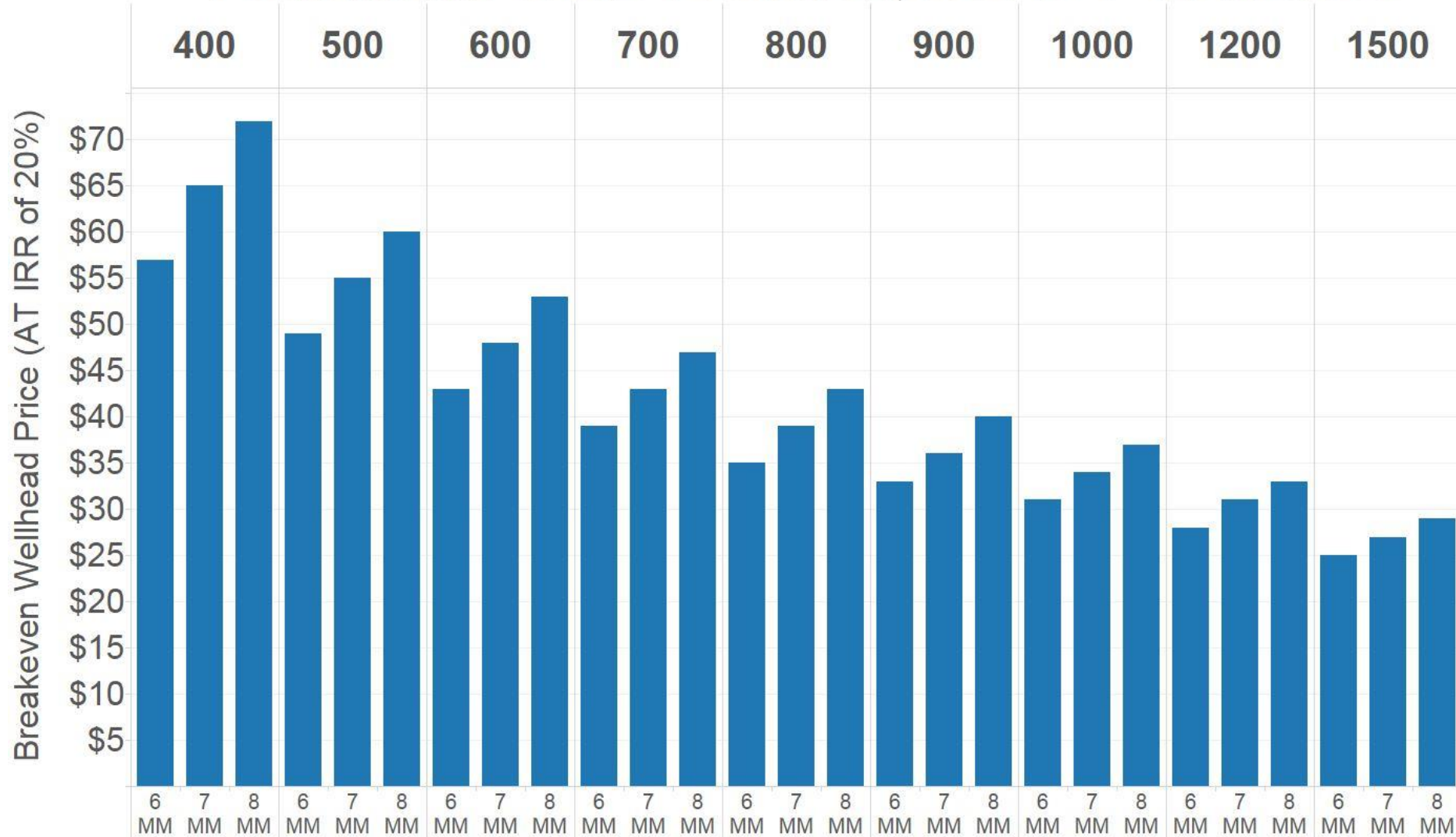


Summary of \$35 Wellhead Oil



Breakeven Summary

Peak Month Well Production, BOPD / Well Cost

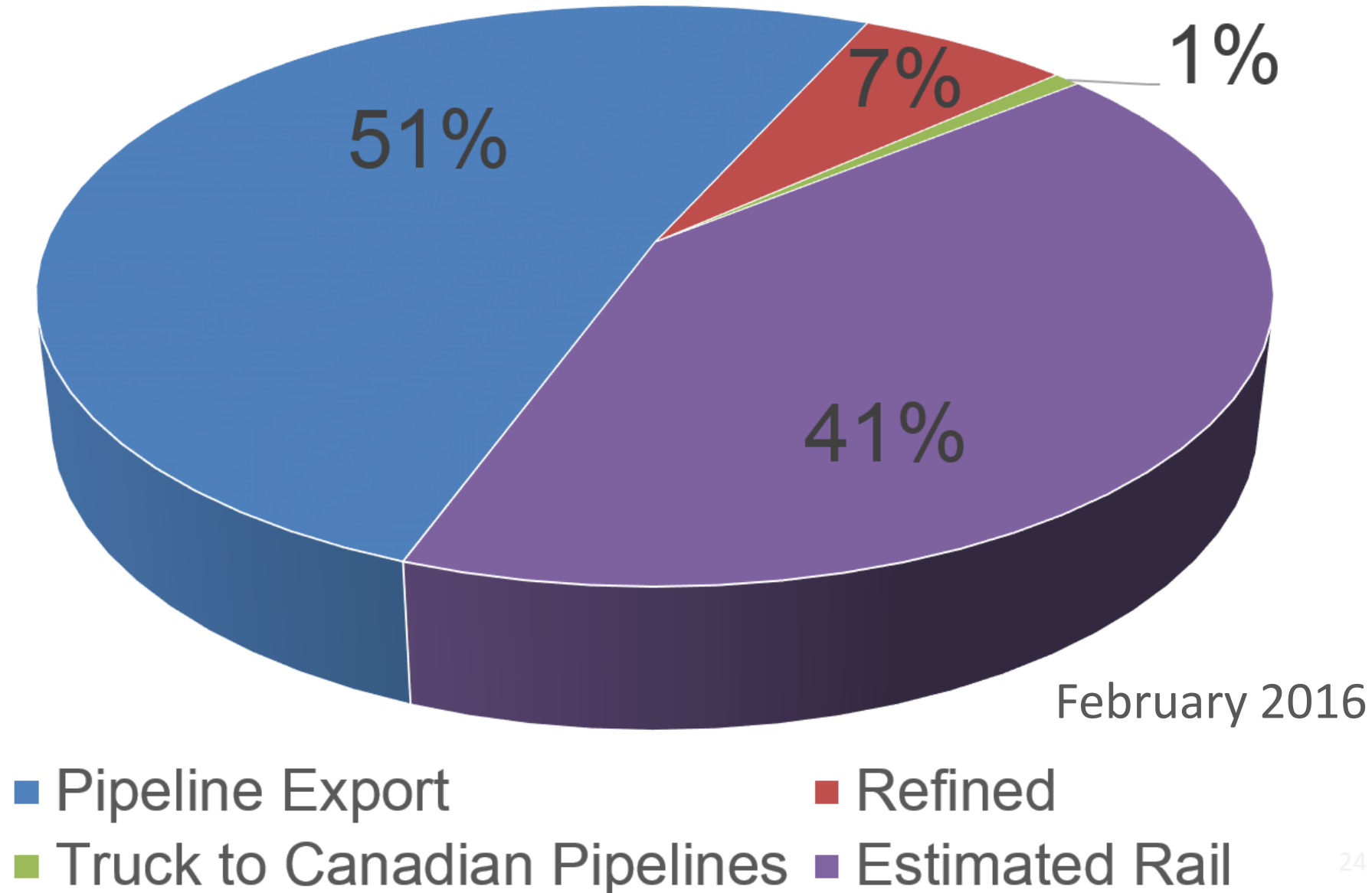


Presentation Outline

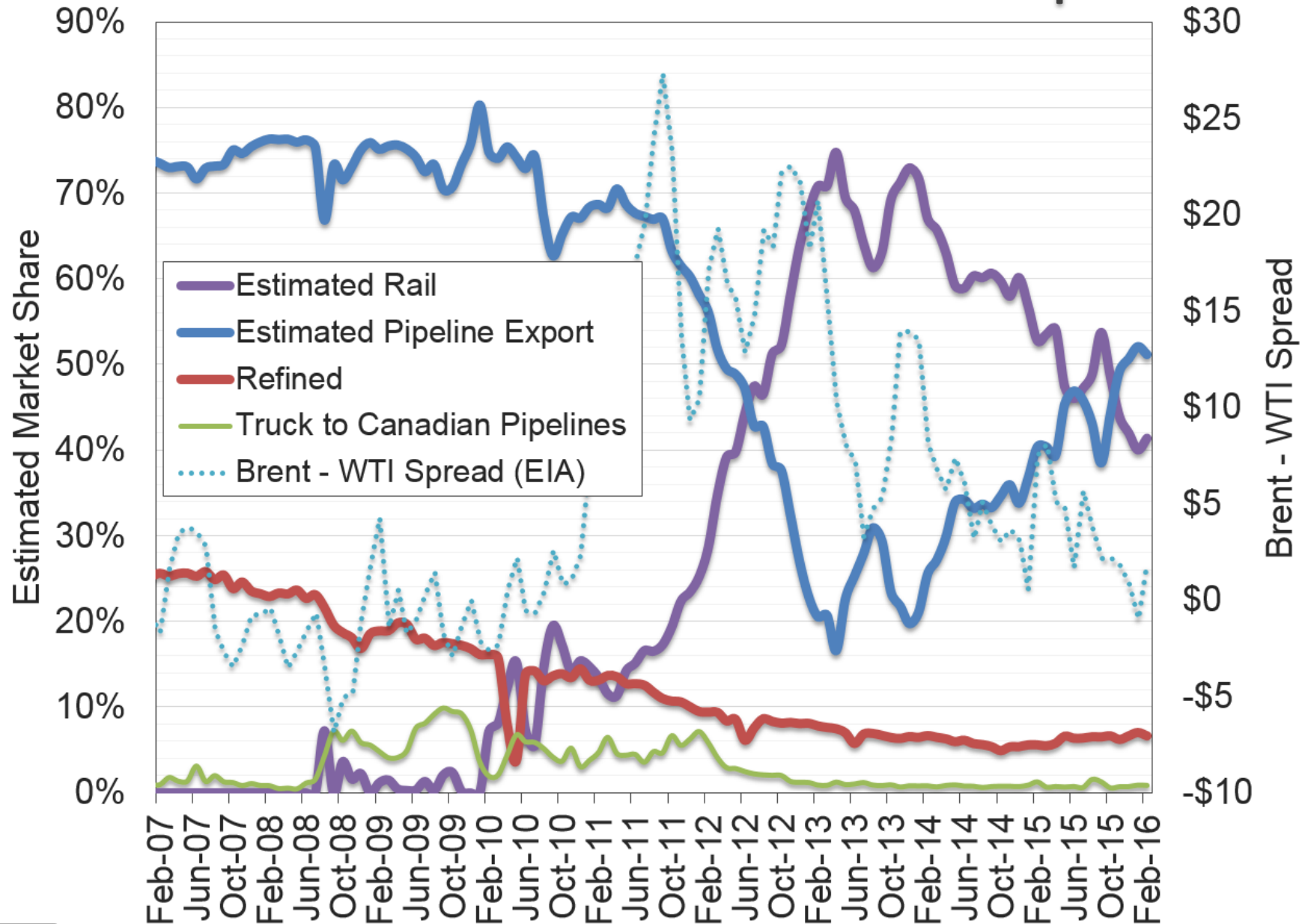
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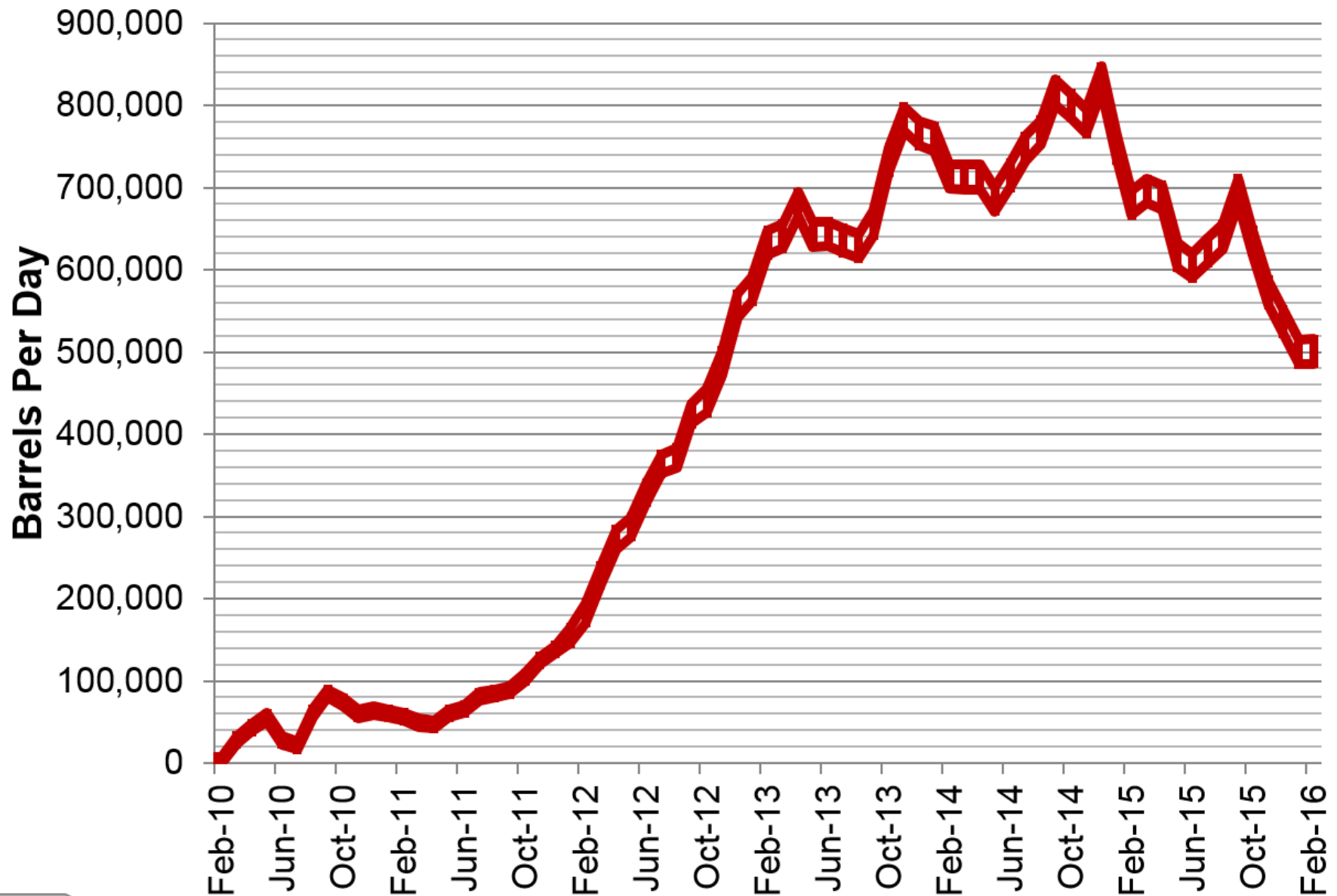
Estimated Williston Basin Oil Transportation



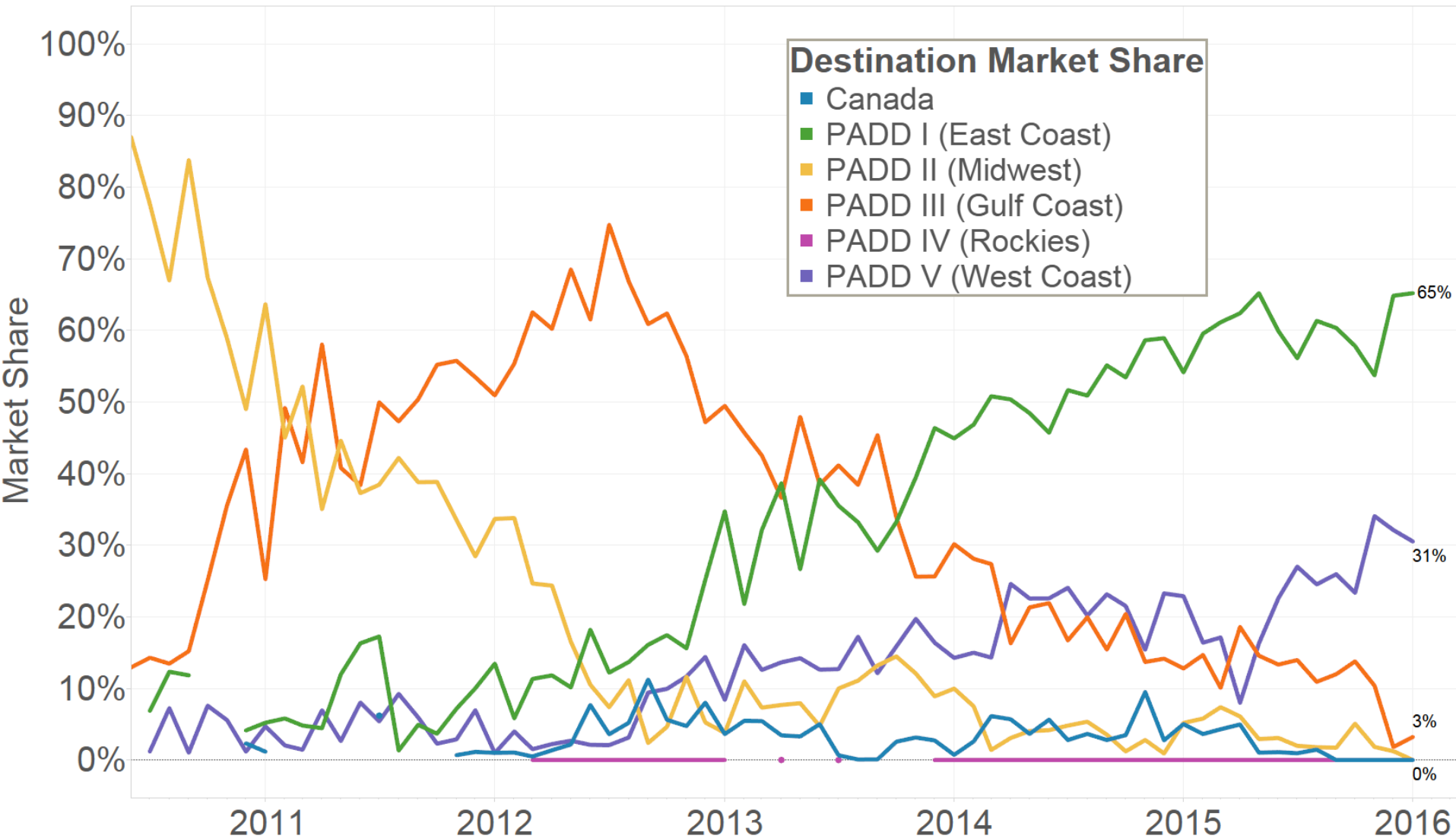
Estimated Williston Basin Oil Transportation



Estimated ND Rail Export Volumes



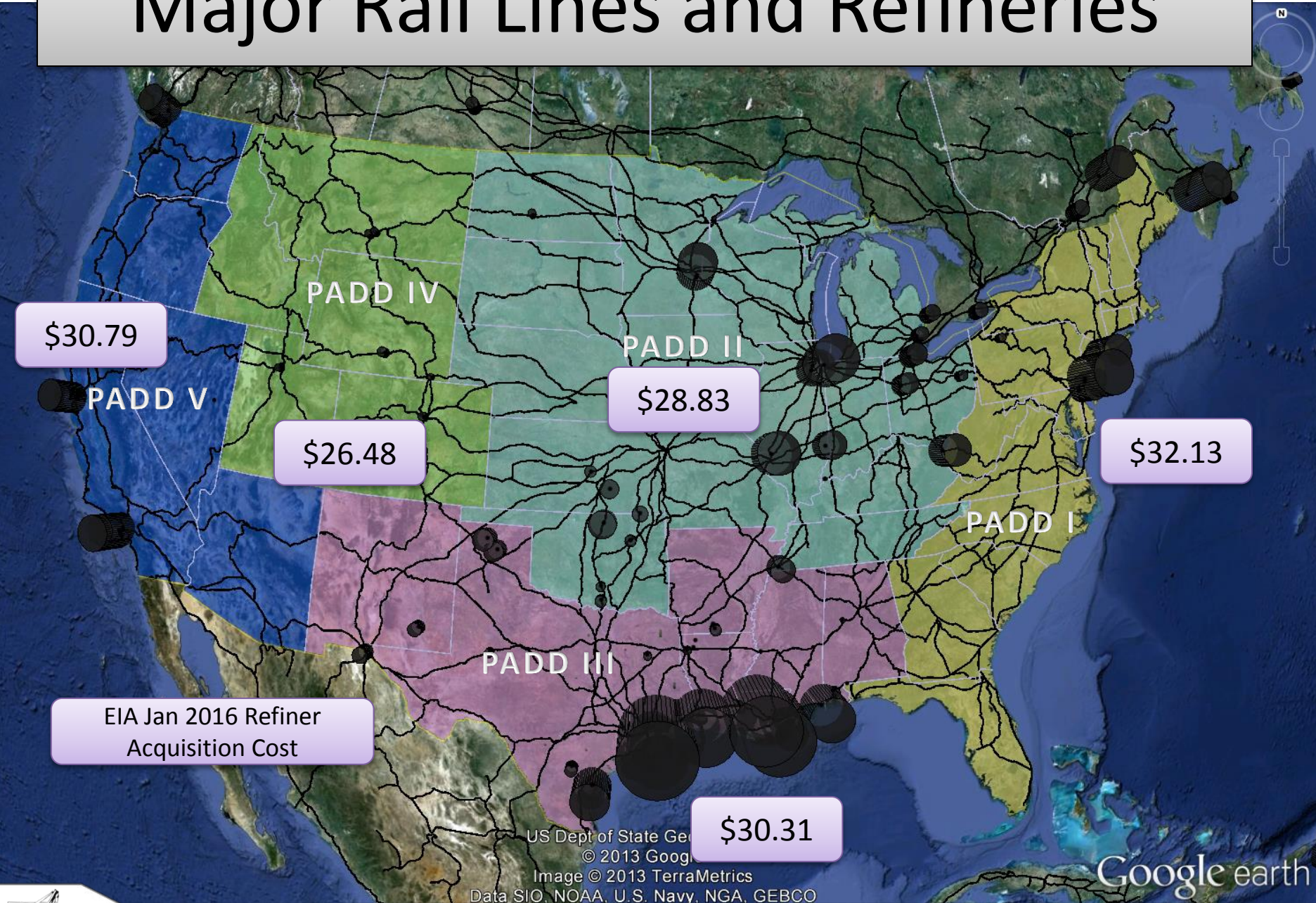
Rail Destinations Market Share (Jan 2016)



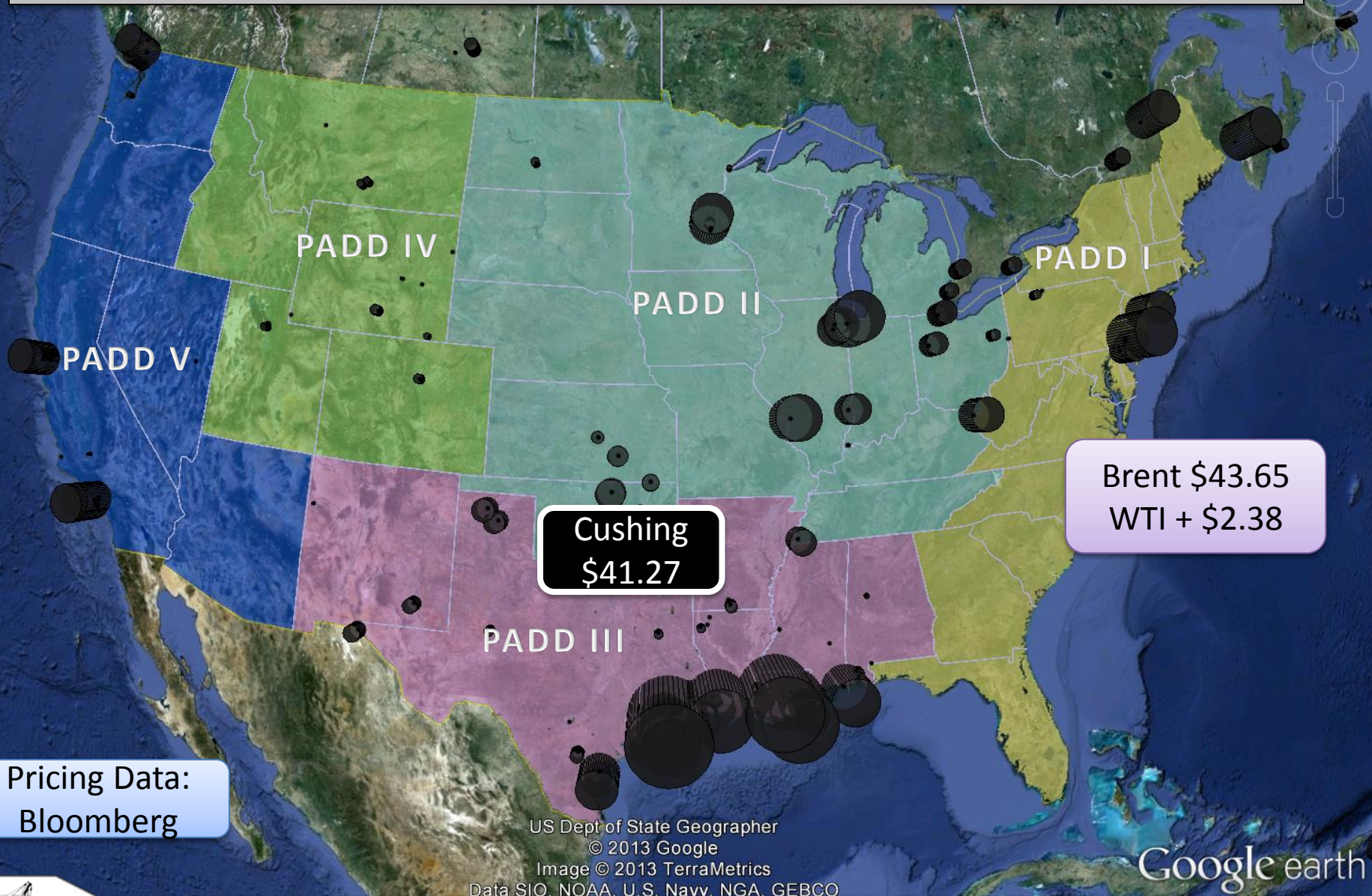
Data for Rail Destination Market Share Provided by the US Energy Information Administration



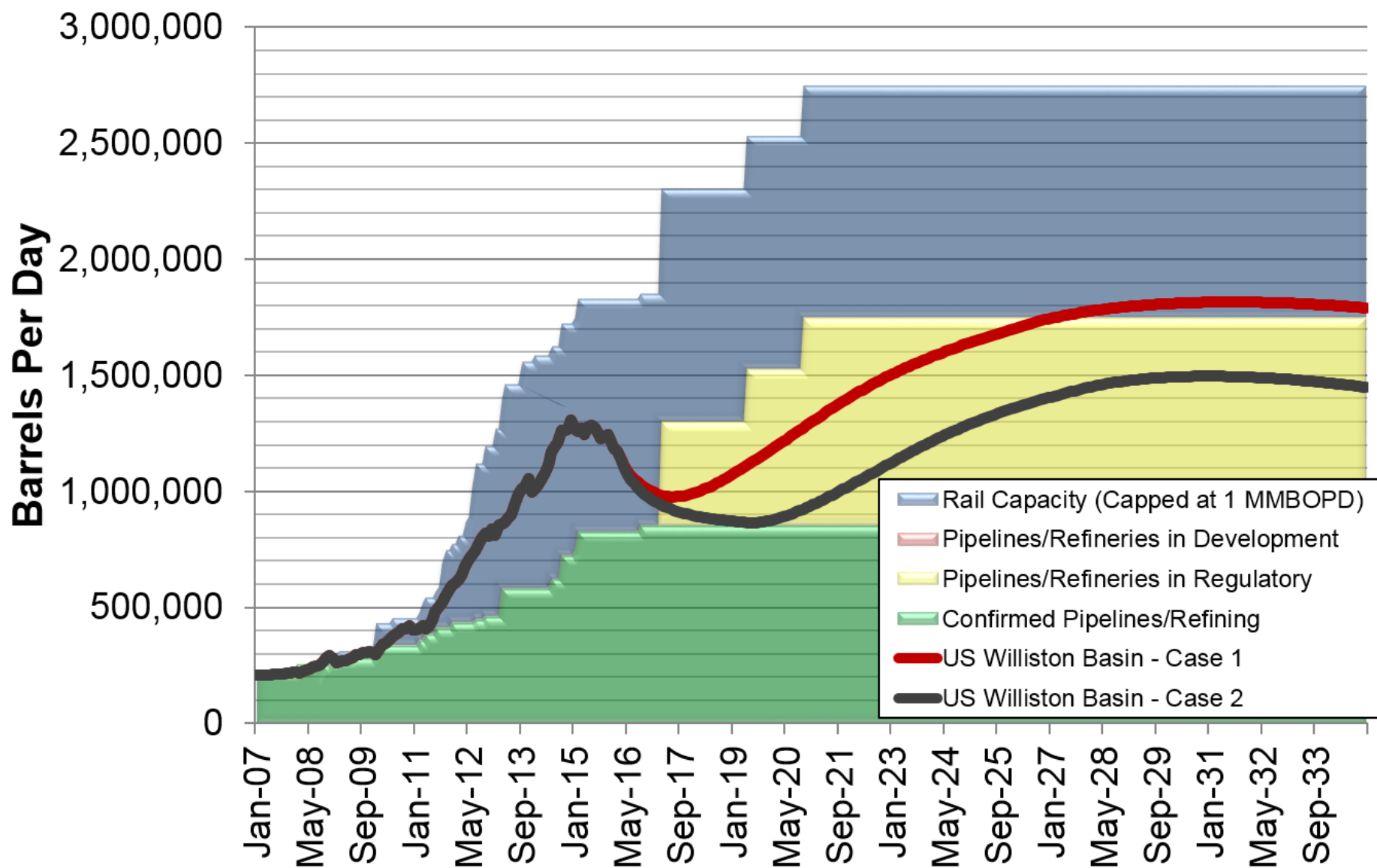
Major Rail Lines and Refineries



Crude Oil Prices – Apr. 14, 2016



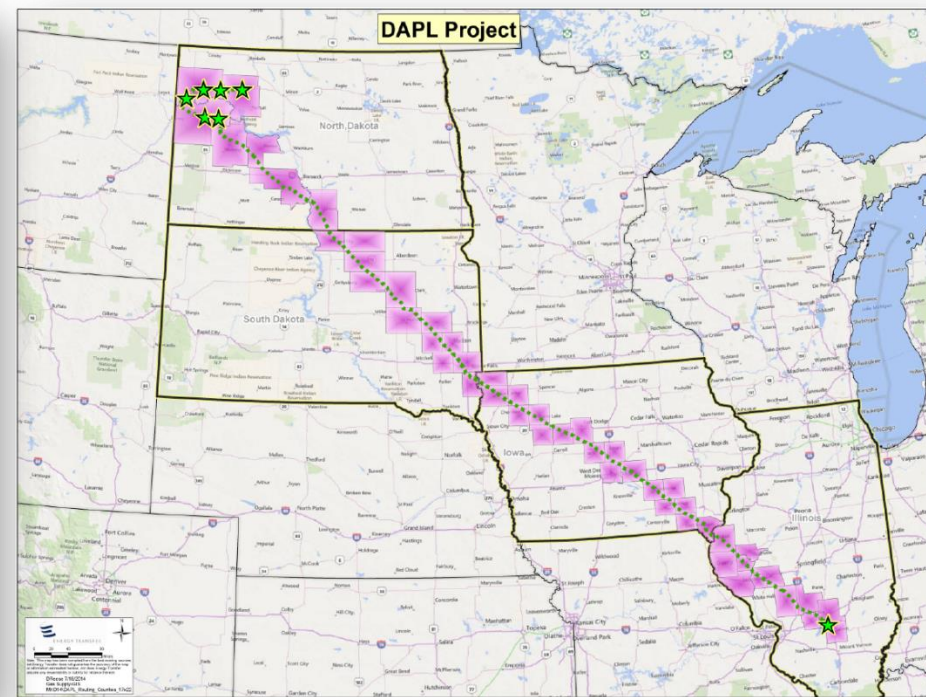
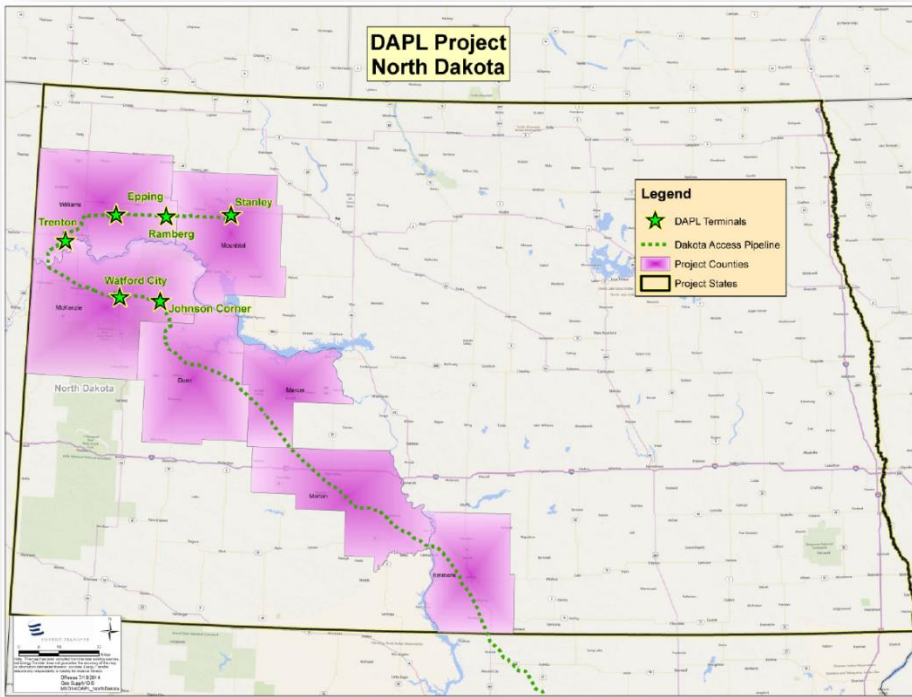
Williston Basin Oil Production & Export Capacity, BOPD



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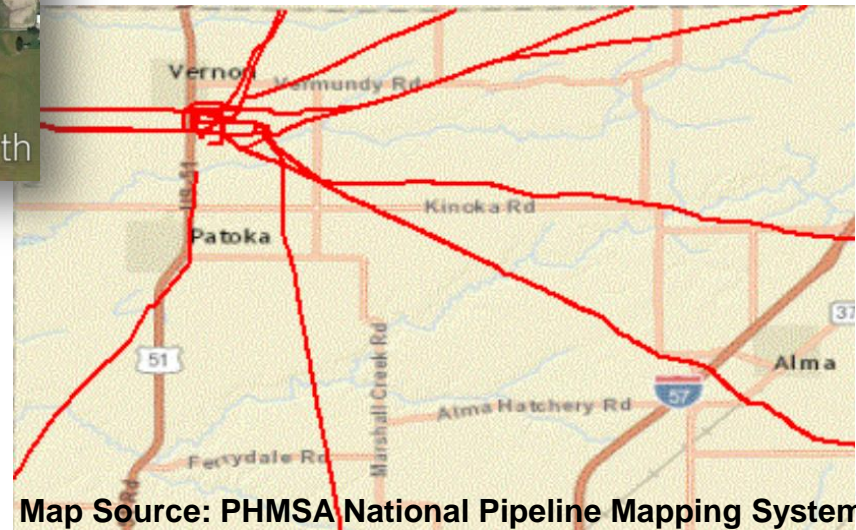
Energy Transfer Partners: Dakota Access



- Successful Open Season During the First Half of 2014
- 450,000 BOPD Capacity to Patoka, IL (30")
- Expandable Up To 570,000 BOPD if Shipper Demand Exists
- Target In-service Date: Late 2016



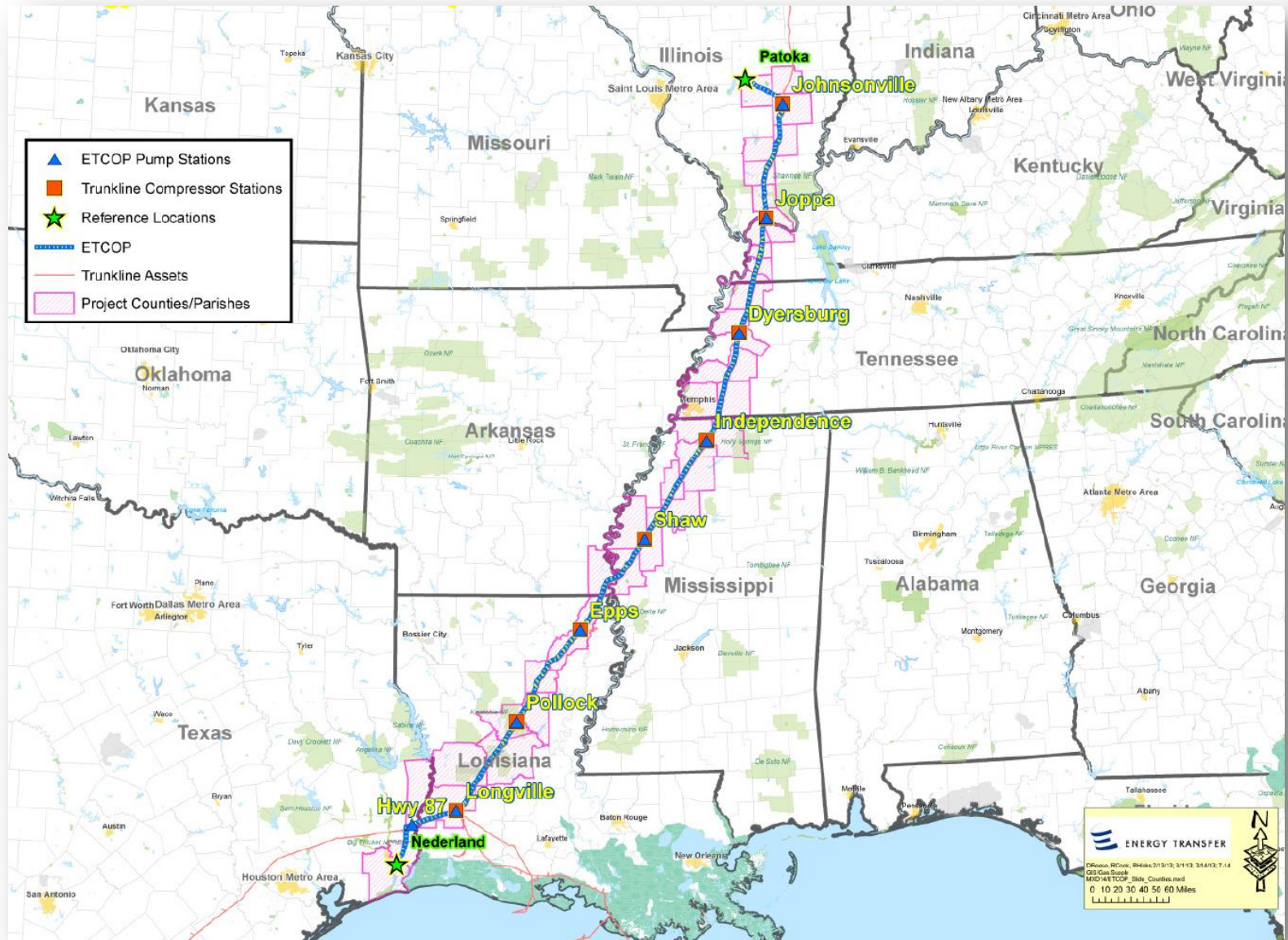
Patoka, IL Crude Hub



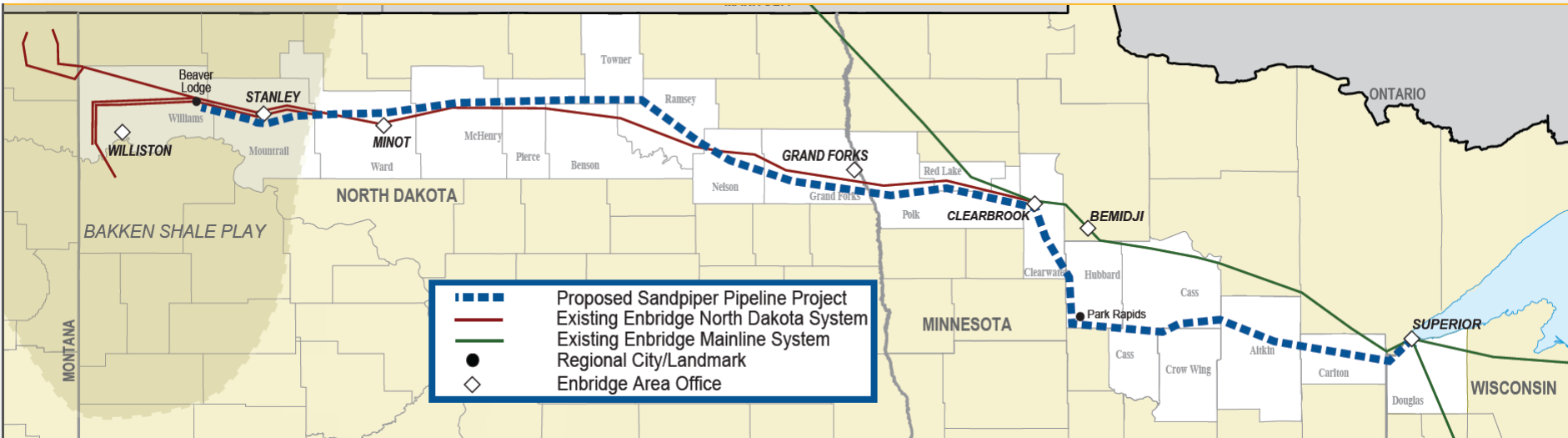
Map Source: PHMSA National Pipeline Mapping System



Energy Transfer Crude Oil Pipeline



Sandpiper Pipeline



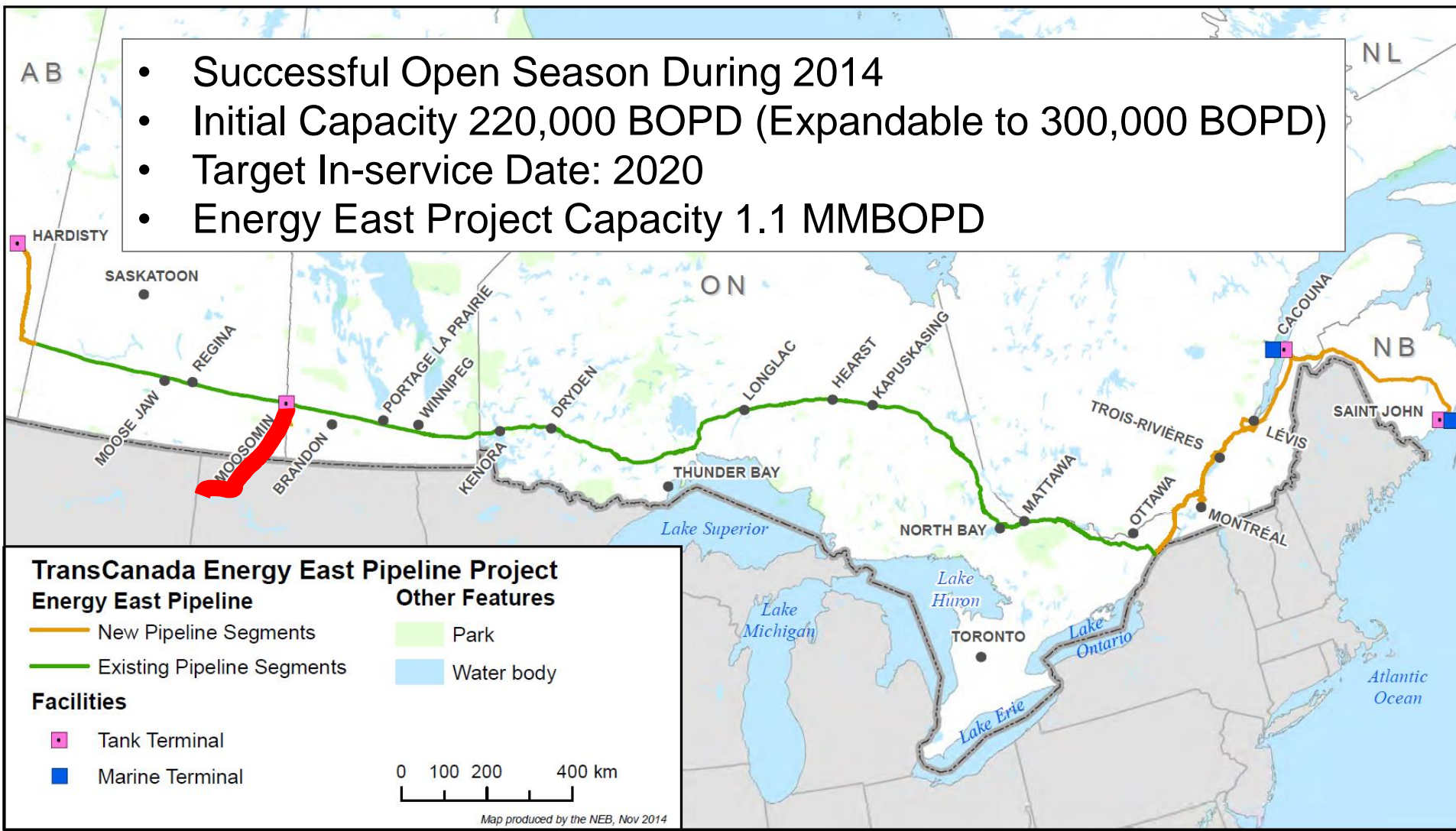
North Dakota Pipeline Company LLC - formerly known as Enbridge Pipelines (North Dakota) LLC

- Open Season Dates: November 26, 2013 – January 24, 2014
- 225,000 BOPD ND Capacity to Clearbrook, MN (24")
- 375,000 BOPD Clearbrook, MN to Superior, WI (30")
- Target In-service Date: 2019



TransCanada: Upland Pipeline

- Successful Open Season During 2014
- Initial Capacity 220,000 BOPD (Expandable to 300,000 BOPD)
- Target In-service Date: 2020
- Energy East Project Capacity 1.1 MMBOPD



Map: NEB – NDPA Upland Addition

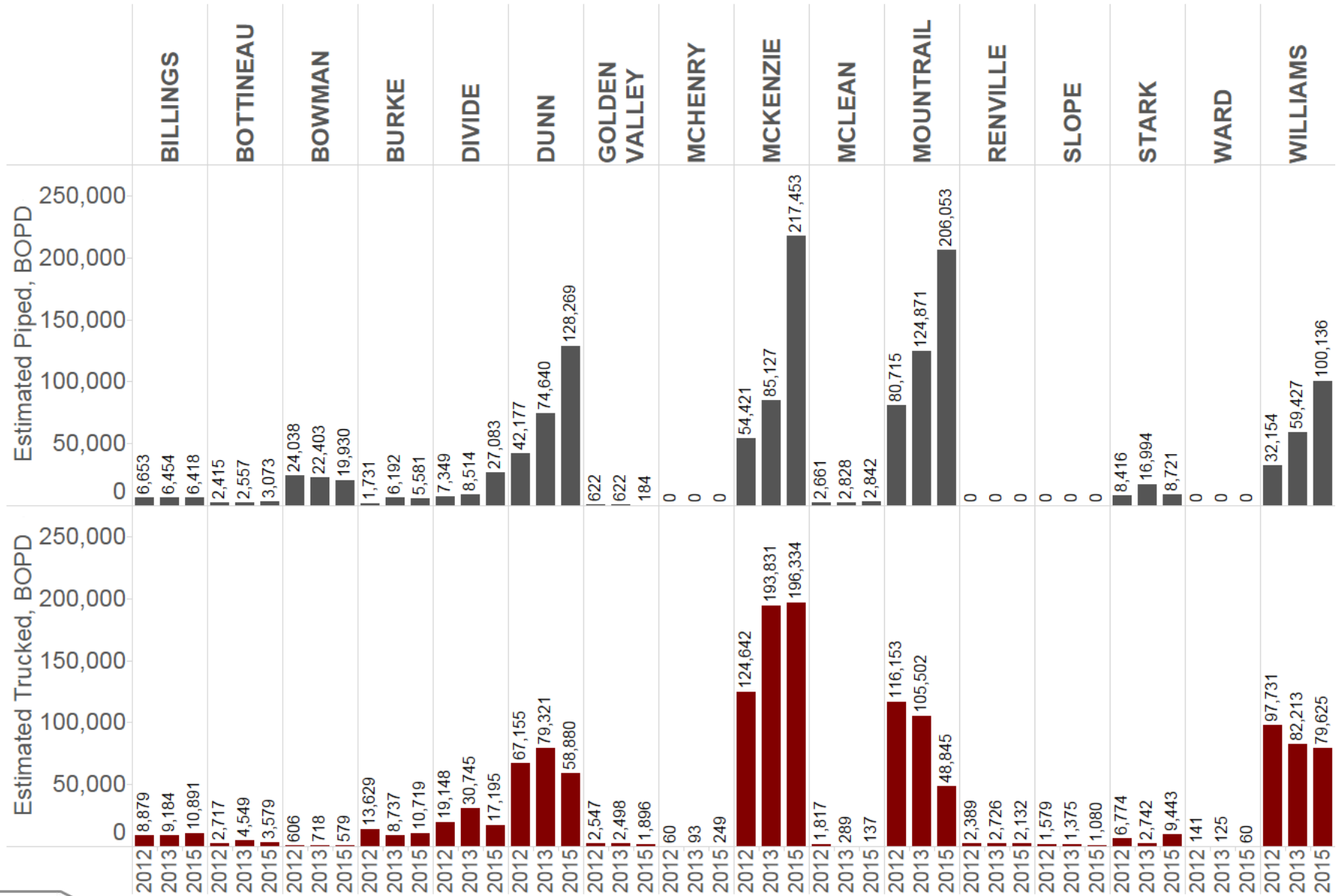


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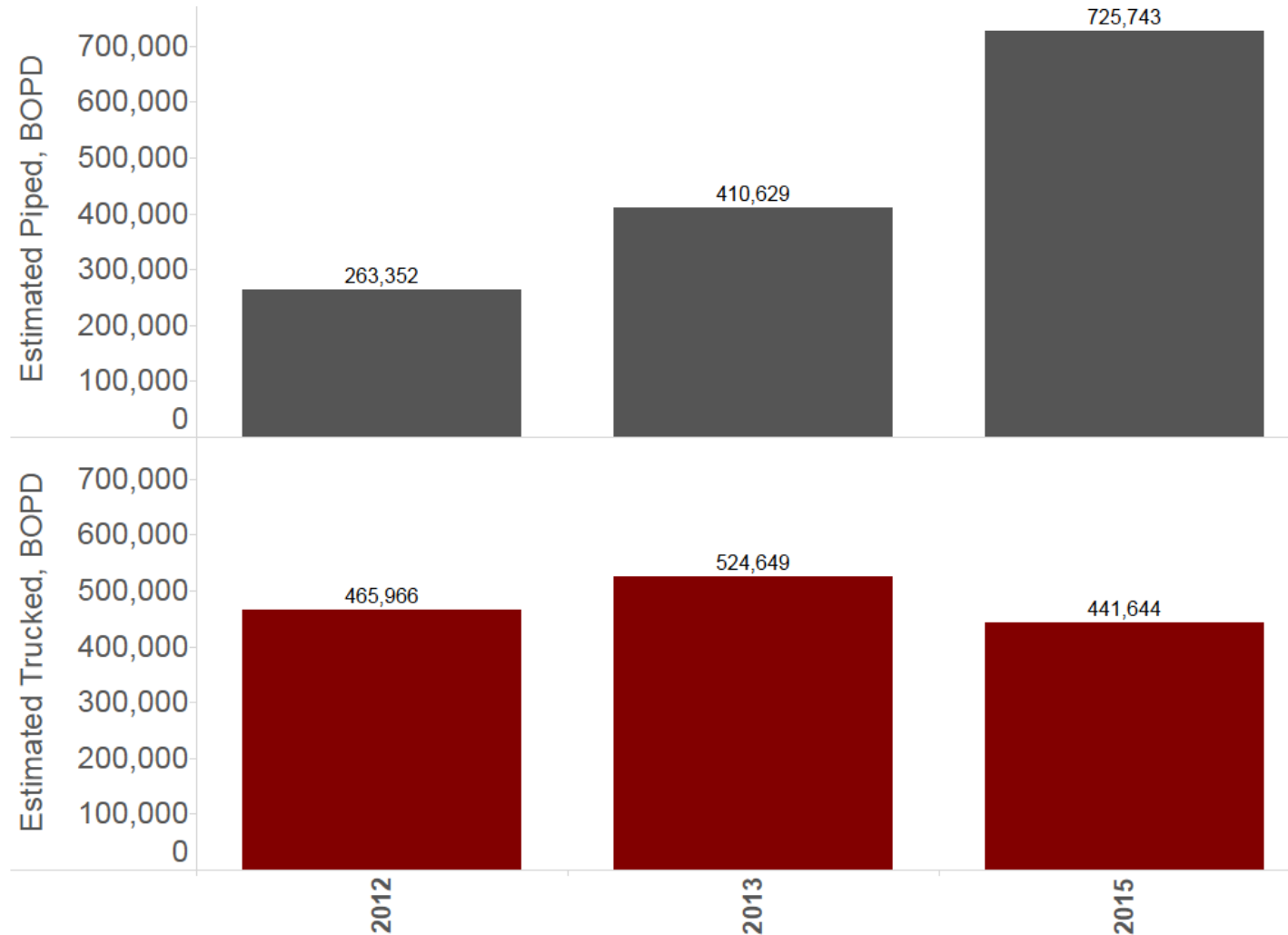
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Evolution of Oil Gathering in ND



Evolution of Oil Gathering in ND Statewide Totals

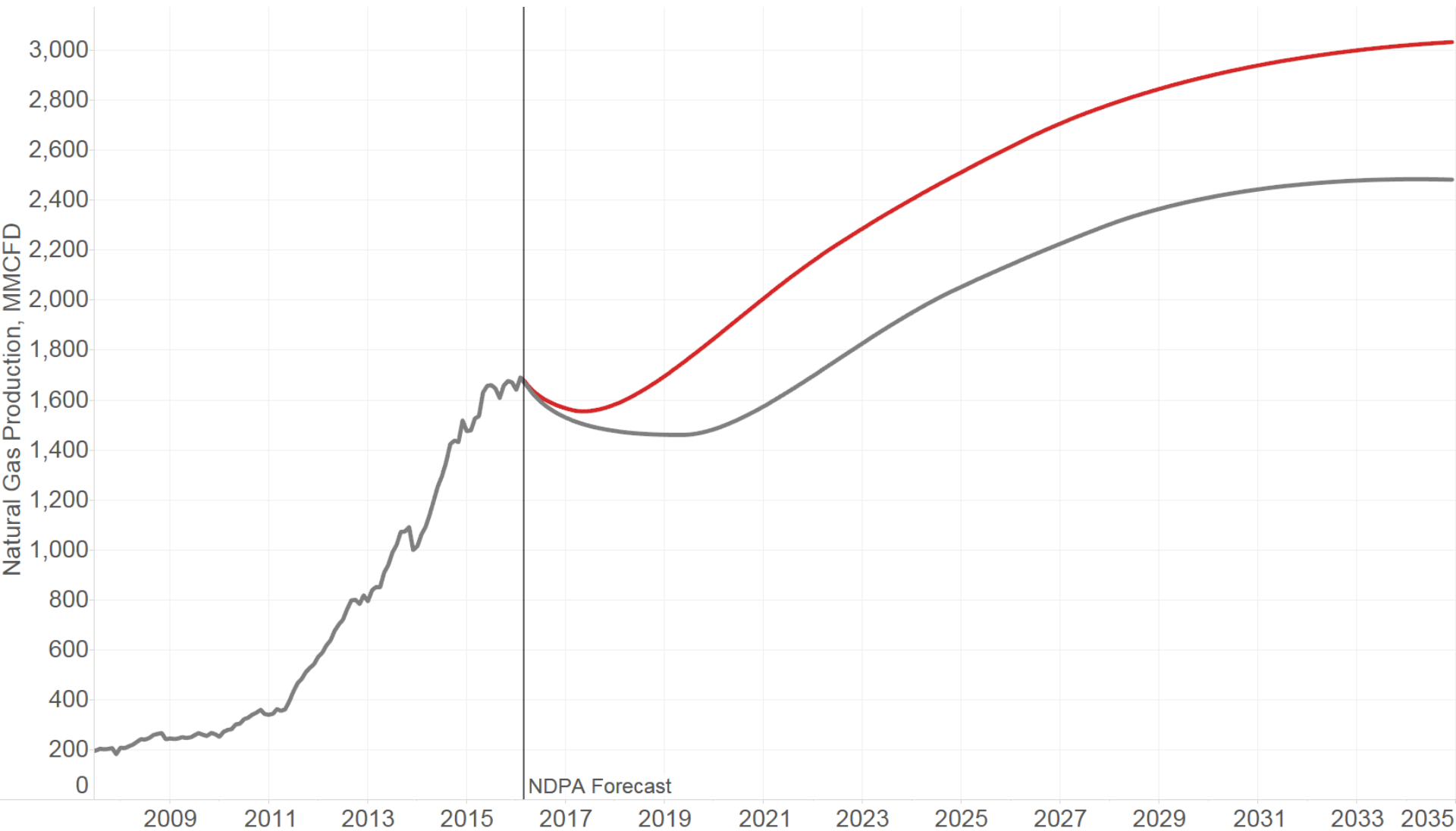


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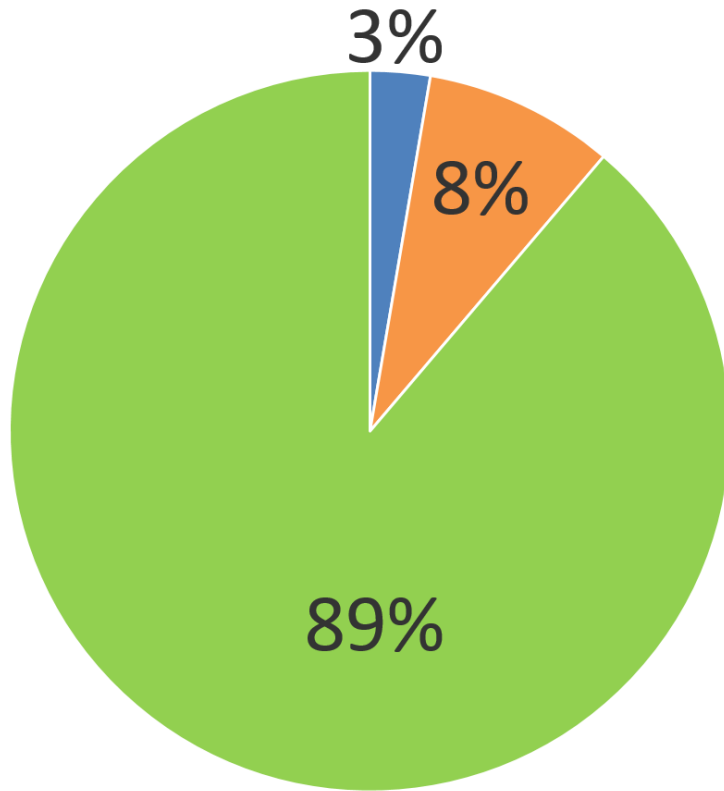
North Dakota Gas Production Forecast



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Solving the Flaring Challenge



Statewide

GREEN – % of gas captured and sold
Blue – % flared from zero sales wells
Orange – % flared from wells with at least one mcf sold.

Simple Terms

Blue – Lack of pipelines
Orange – Challenges on existing infrastructure

February 2016 Data – Non-Confidential Wells



Contact Information

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www.northdakotapipelines.com



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