

# Revisiting Bakken Well Economics



**Justin J Kringstad**

*Geological Engineer*

*Director*

*North Dakota Pipeline Authority*



**September 10, 2015**

## **Objective**

Define where the Bakken/Three Forks system is economic in a lower oil price environment.

## **Method**

Analyze past well performance across the region and estimate well economics for various production levels.

## **Disclaimer**

The goal of this work is not to imply individual company actions or intentions. All view expressed are strictly that of Justin J. Kringstad.

Neither the State of North Dakota, nor any agency, officer, or employee of the State of North Dakota warrants the accuracy or reliability of this product and shall not be held responsible for any losses related to its use.

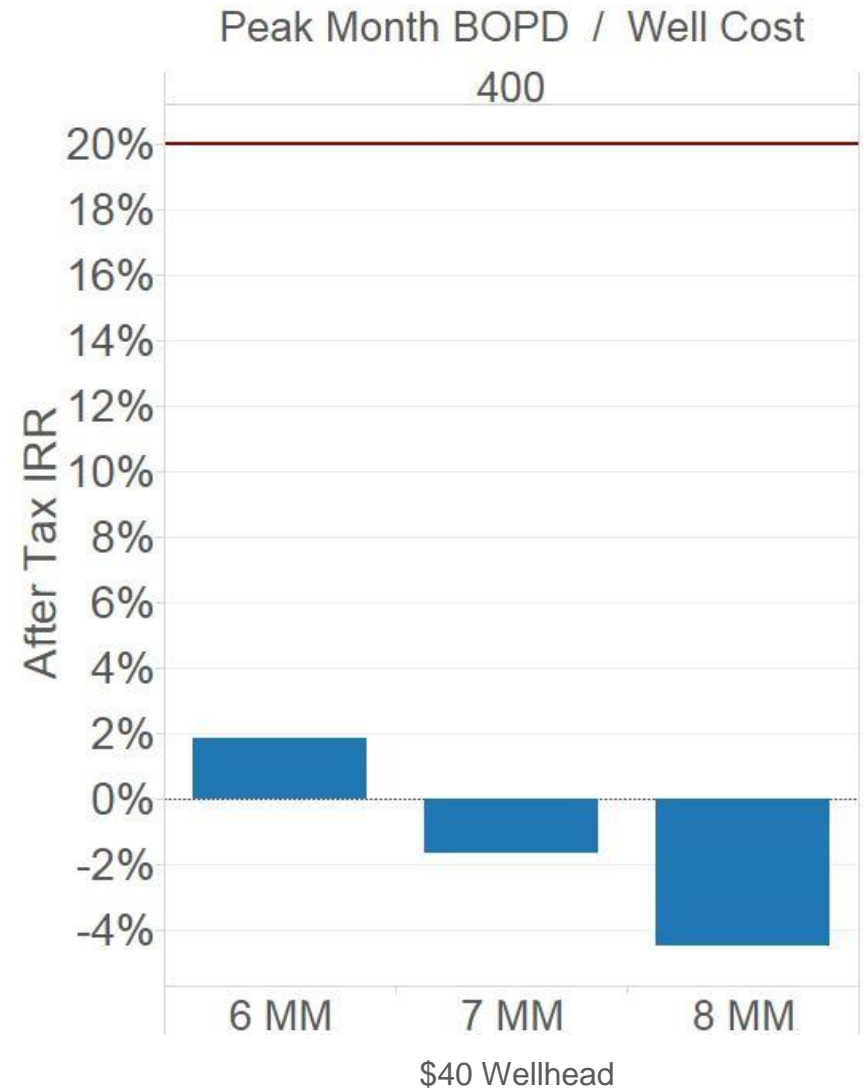
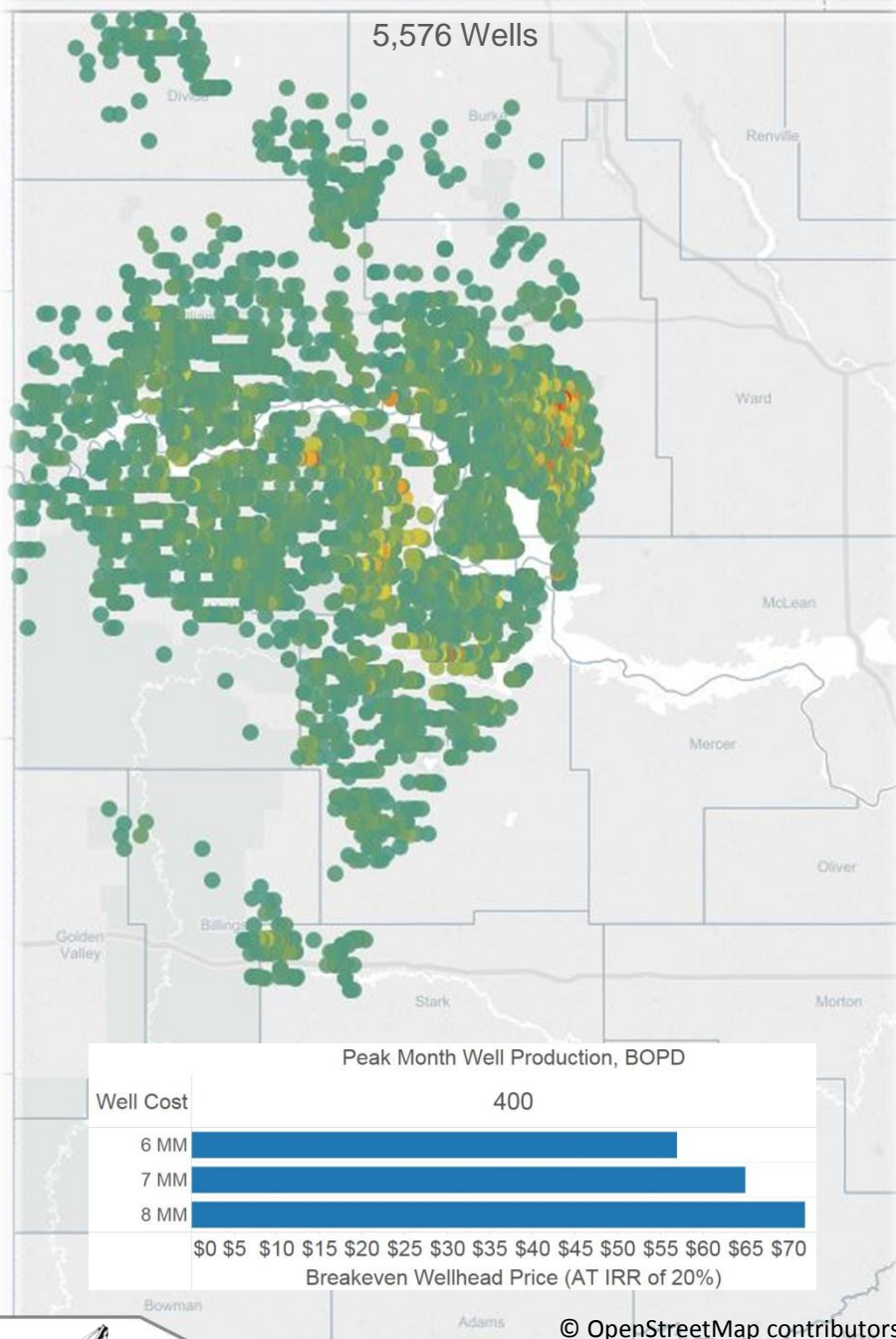


# Key Economic Assumptions

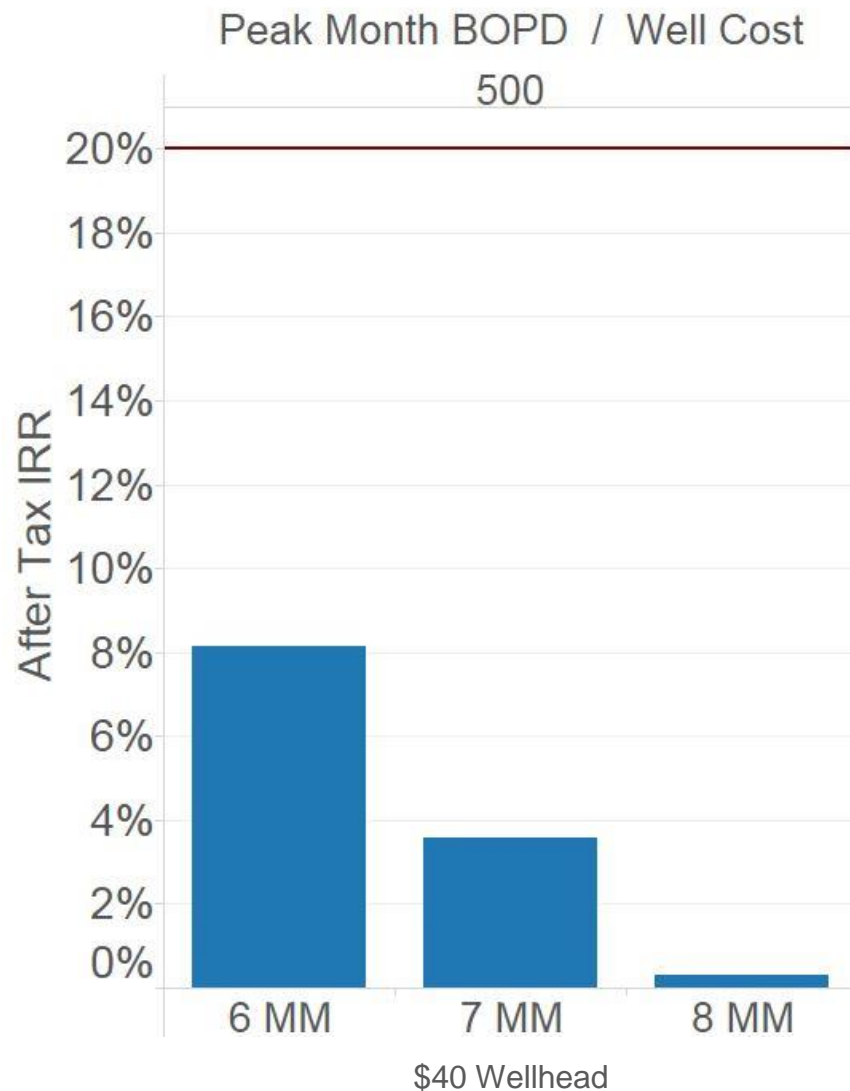
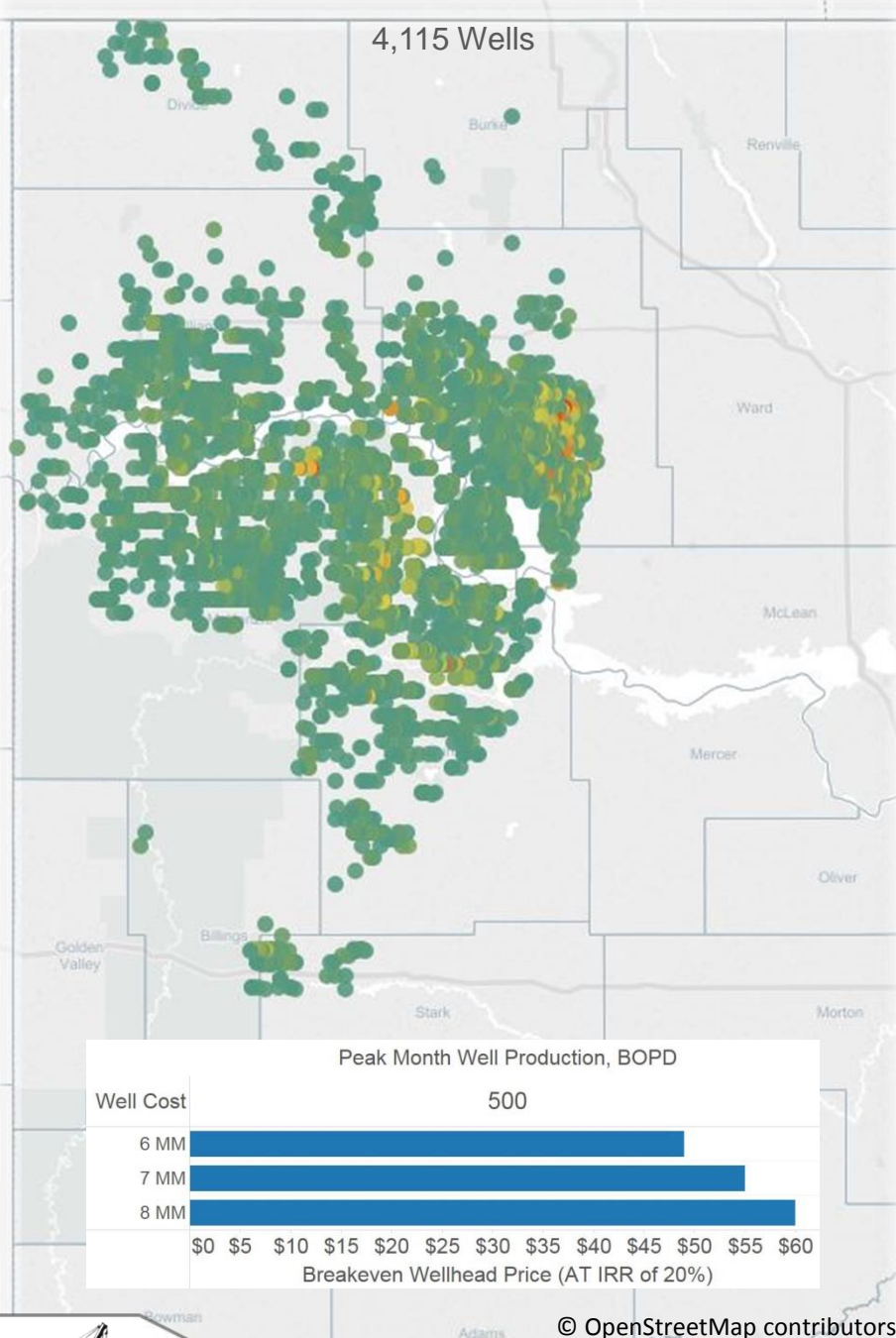
- \$6-\$8 Million Well Costs
- \$40/BBL & \$3.50/MCF Wellhead Pricing
- 1/6 Royalty
- Zero Flaring
- Minimum 20% IRR to drill (calculated after production taxes and royalties)
- No Tax Incentives Included
- Production rate is 30-day average
- All Bakken/Three Forks wells drilled in 2008+



# Peak Month Minimum 400 BOPD

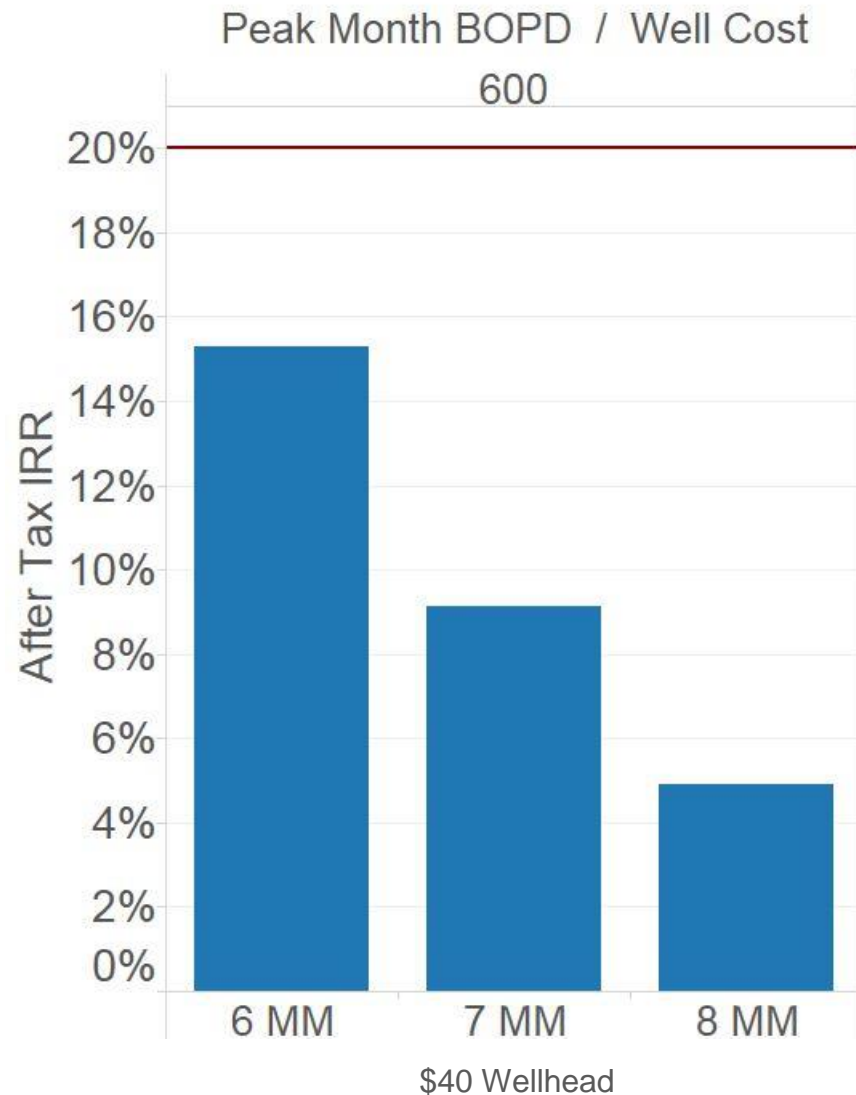
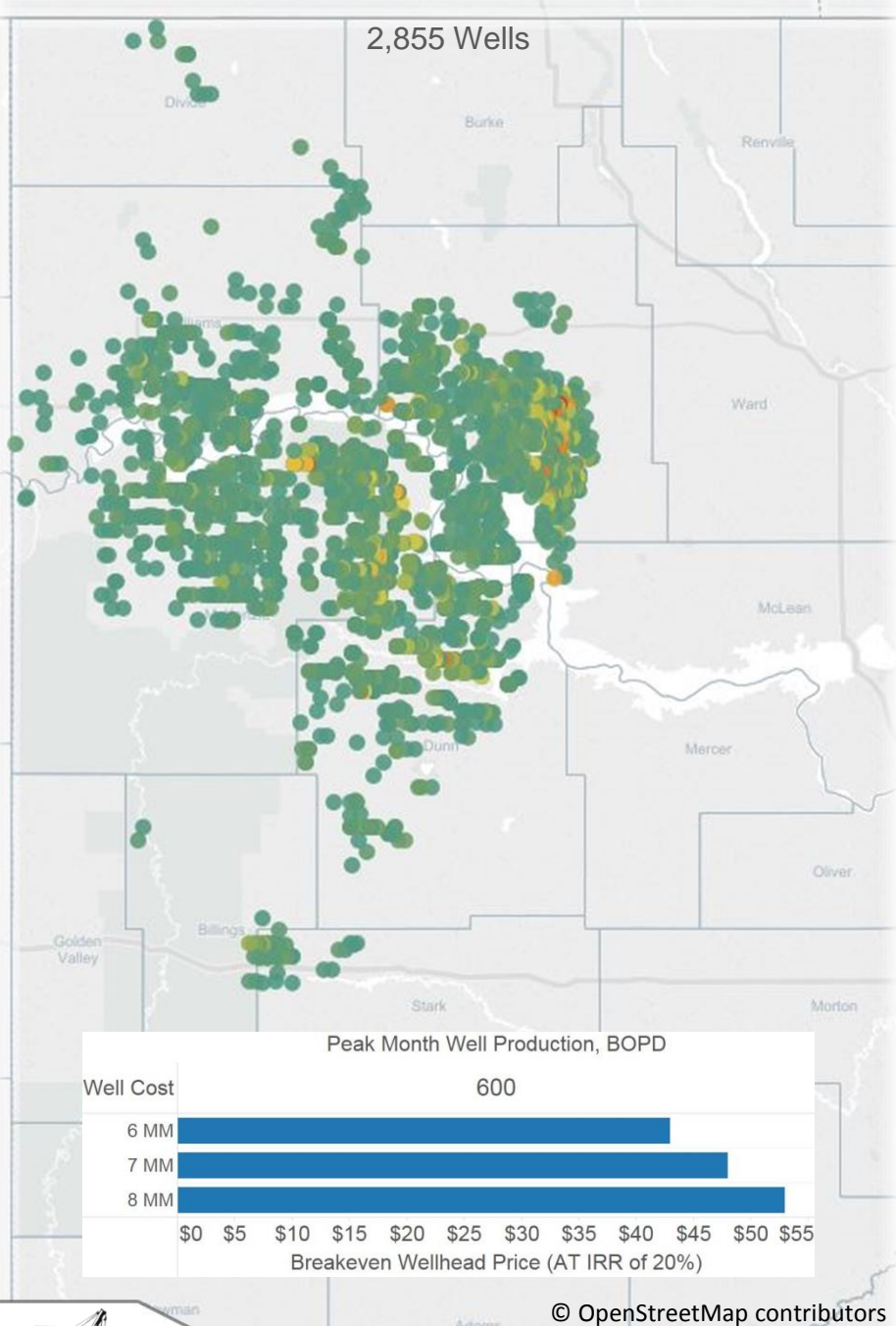


# Peak Month Minimum 500 BOPD

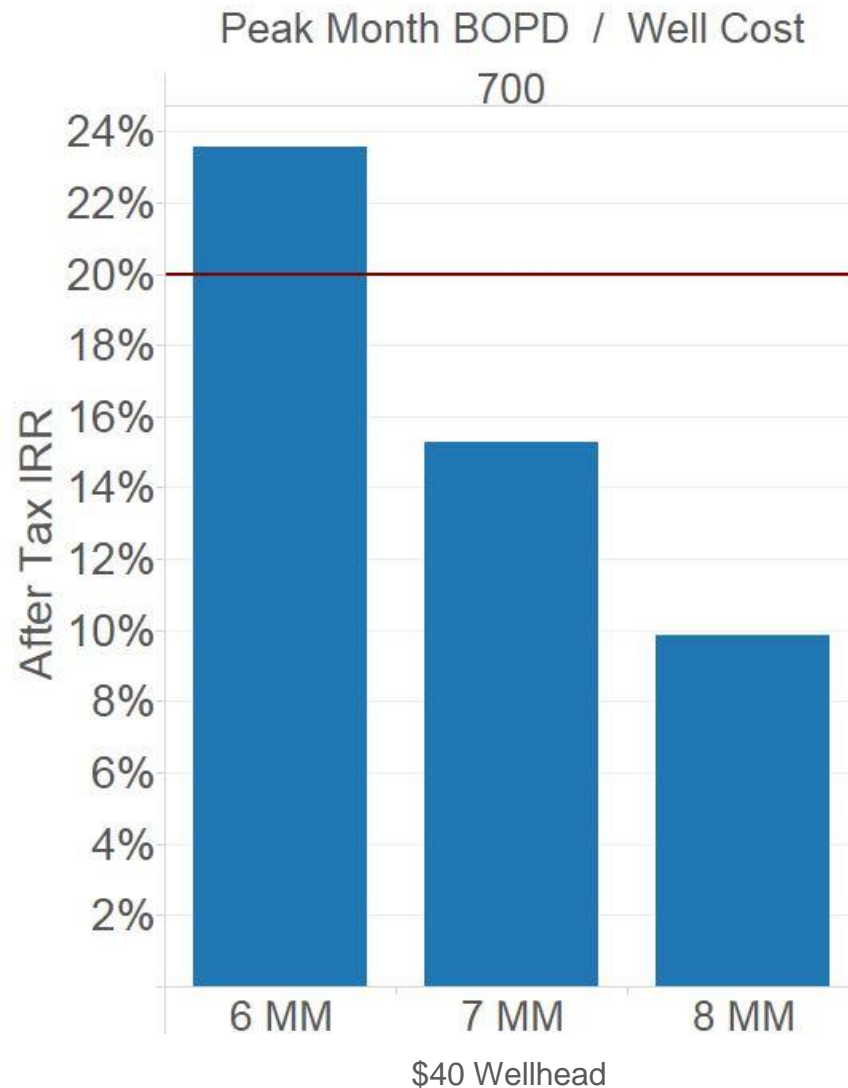
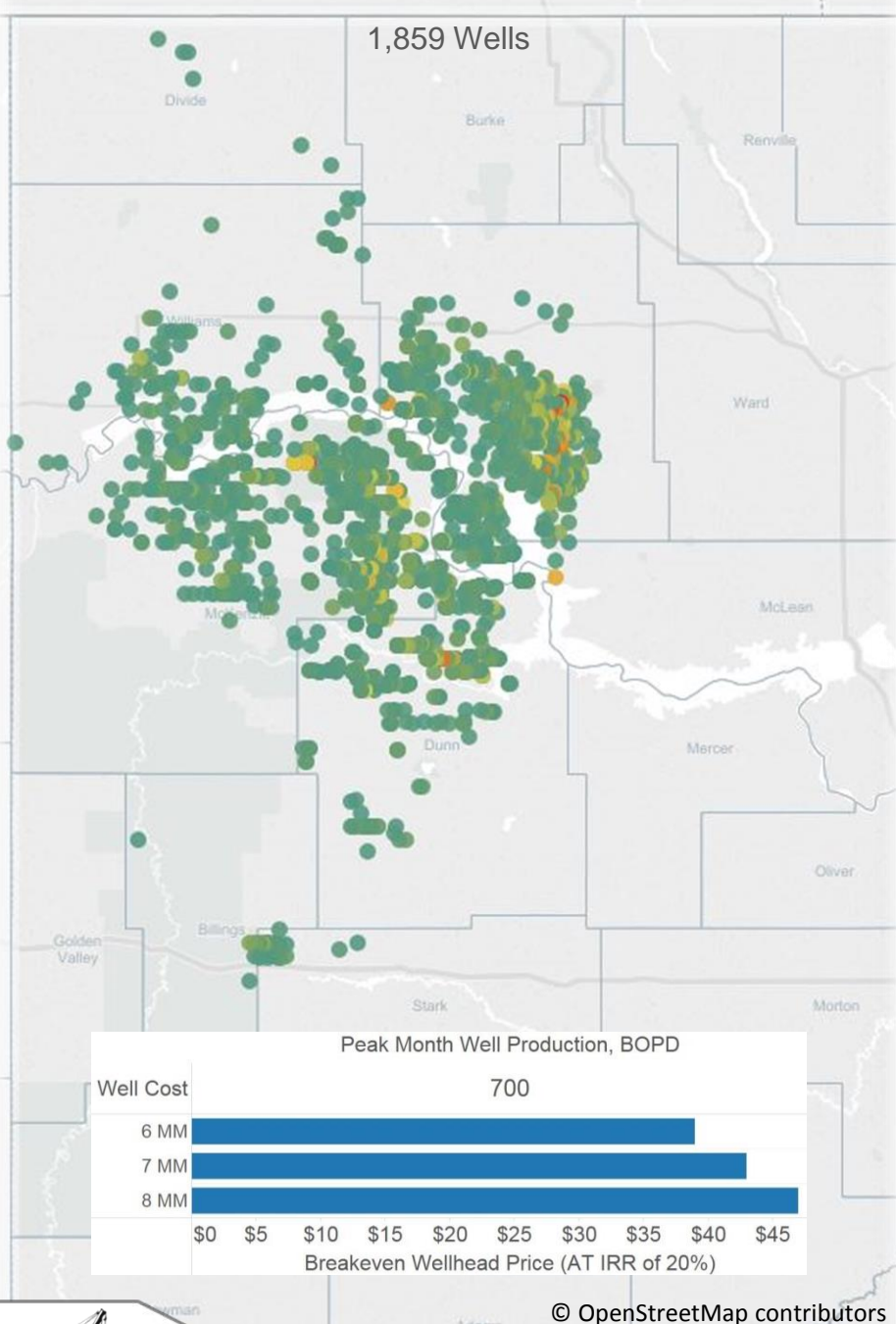




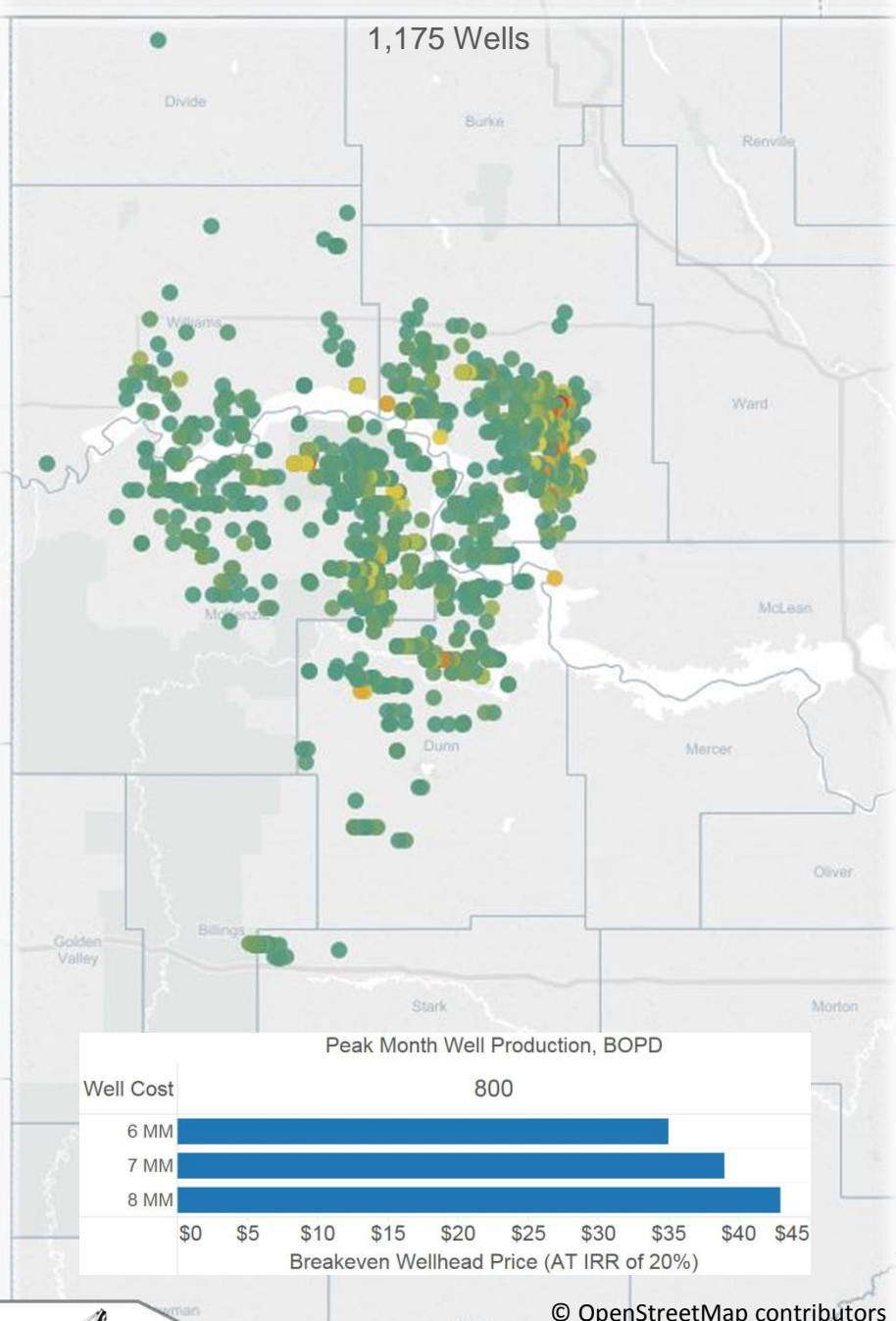
# Peak Month Minimum 600 BOPD



# Peak Month Minimum 700 BOPD

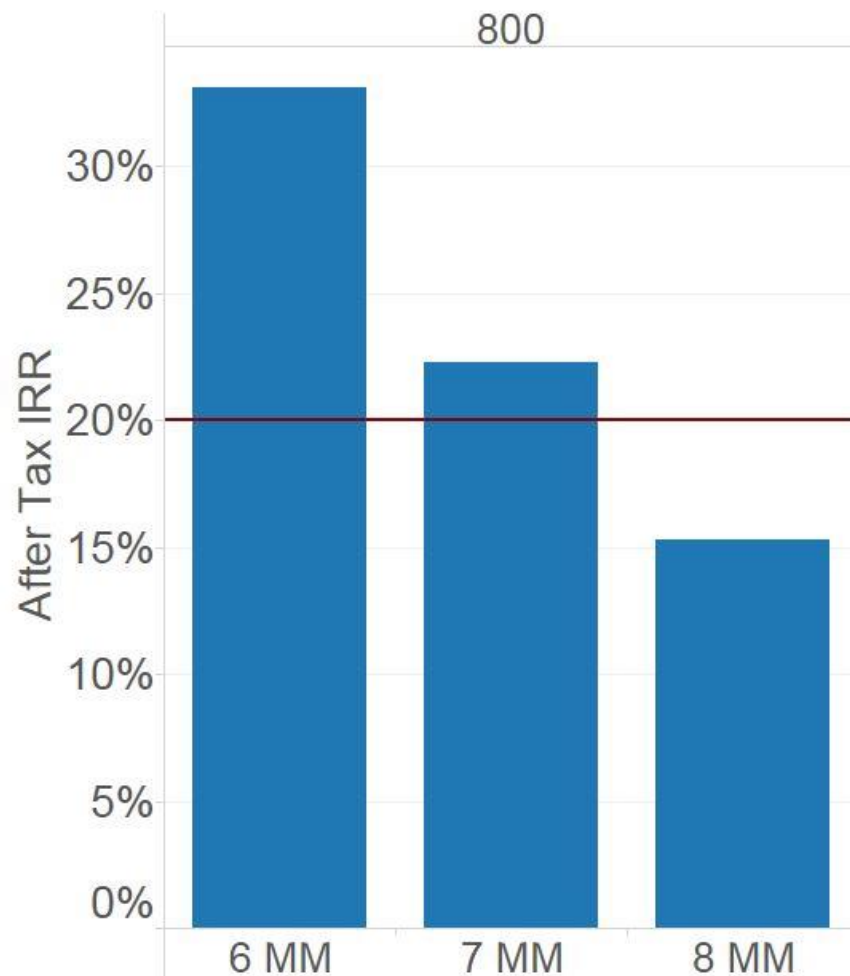


# Peak Month Minimum 800 BOPD



Peak Month BOPD / Well Cost

800

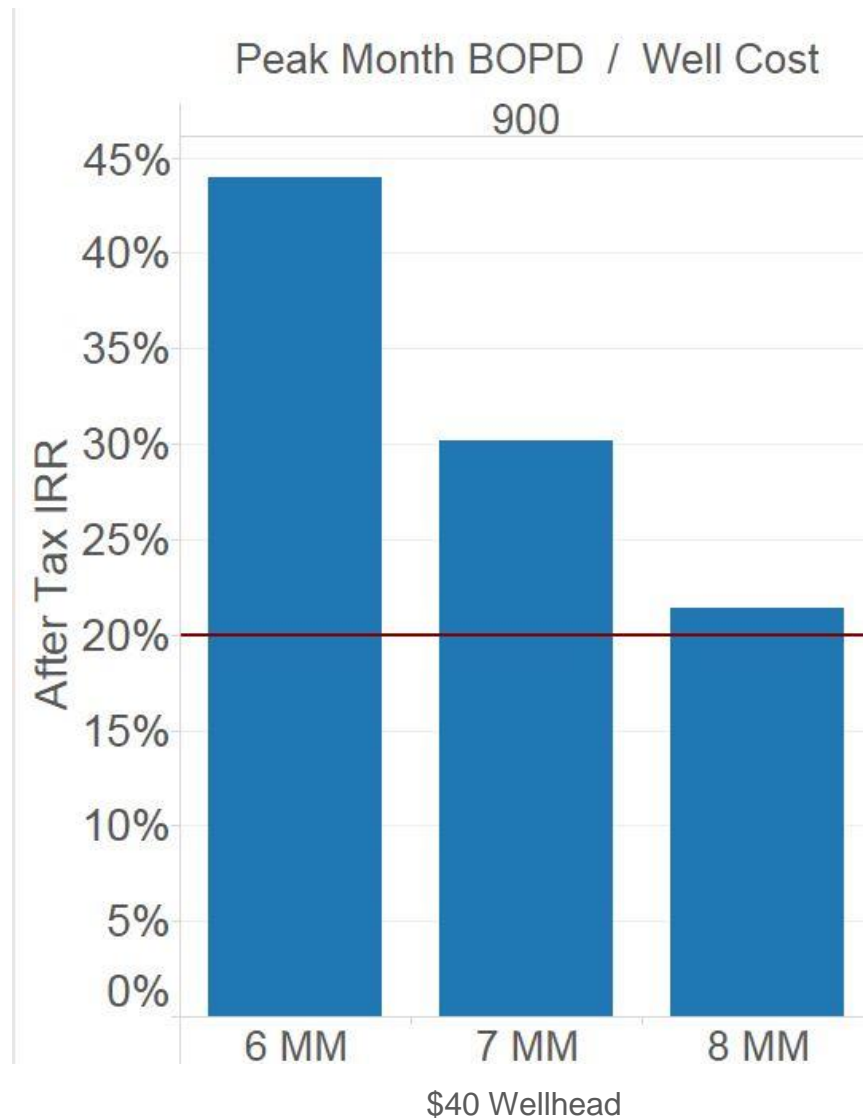
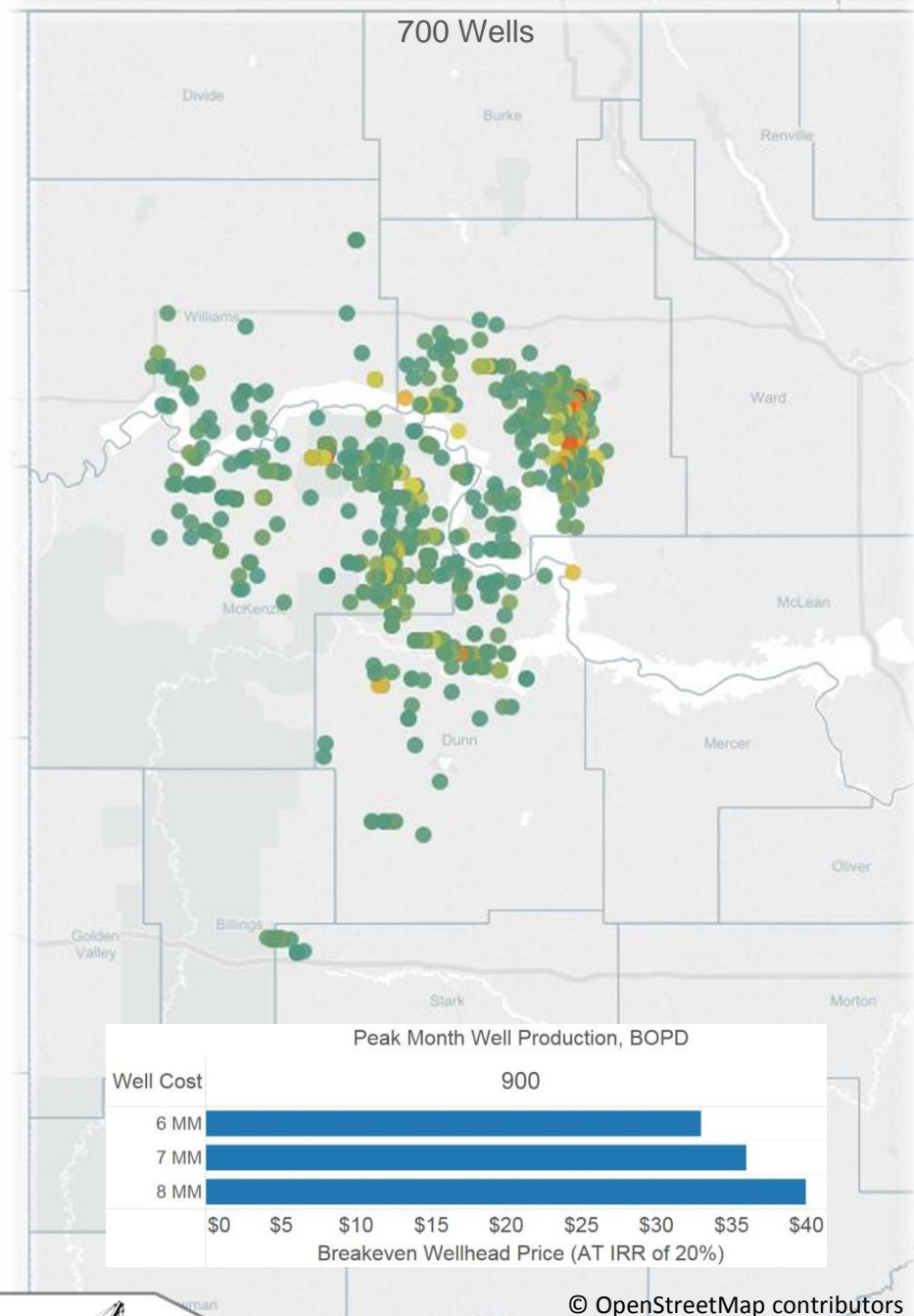


\$40 Wellhead

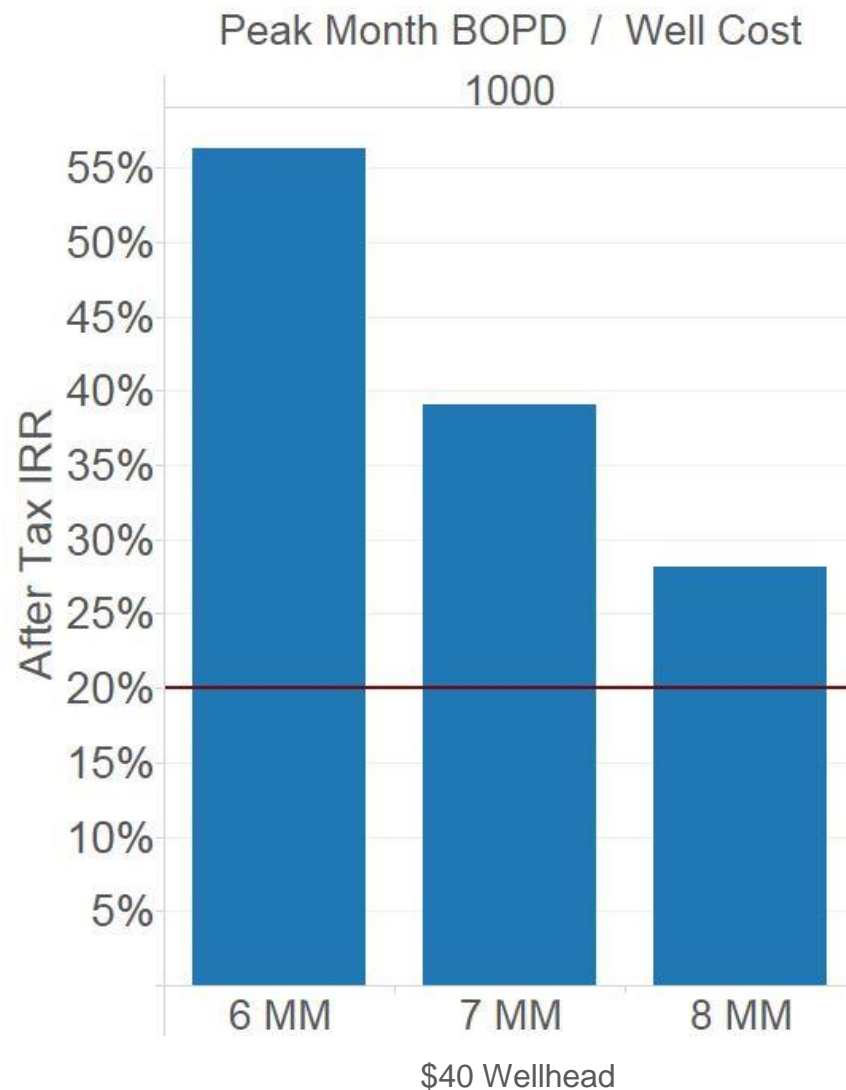
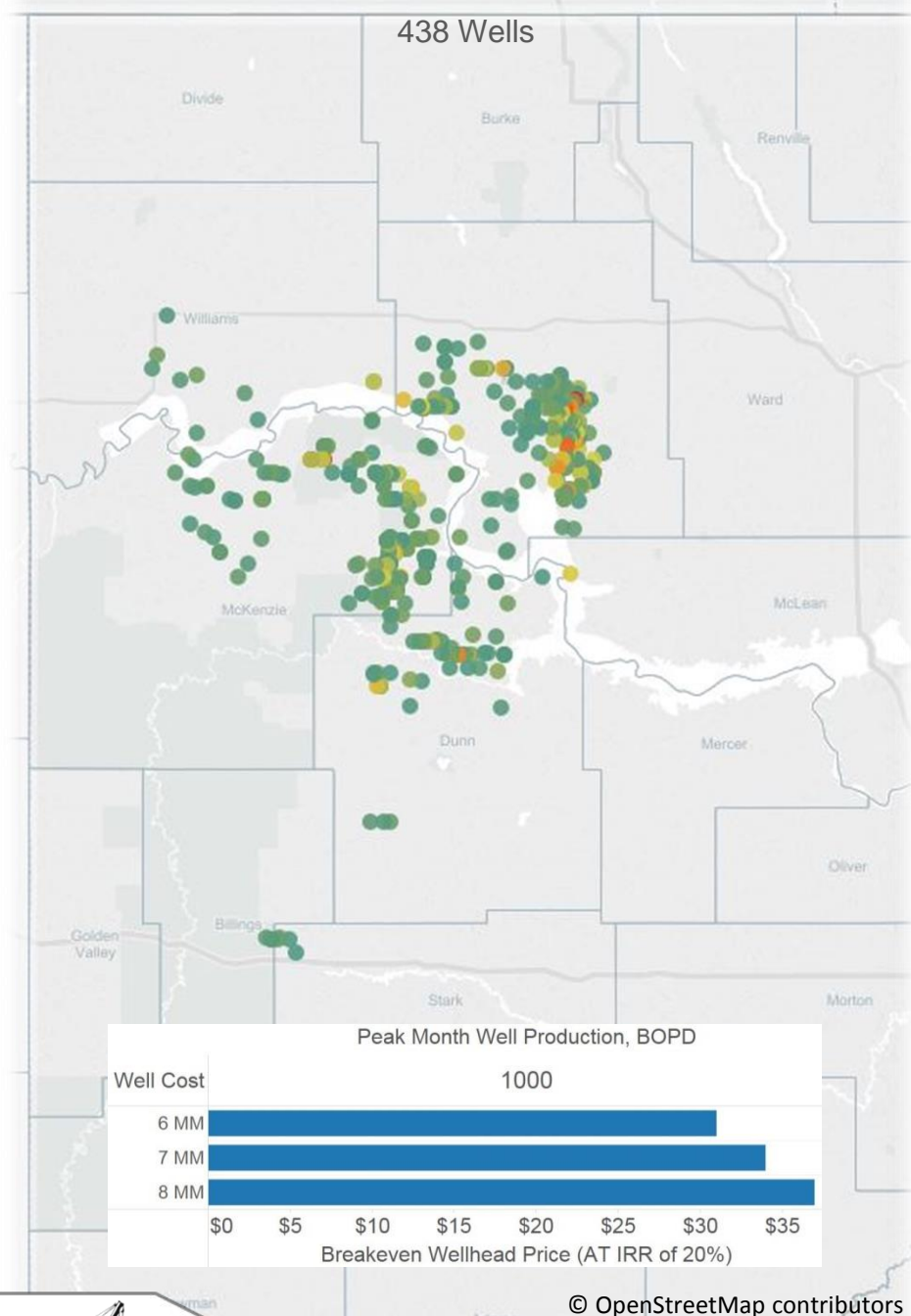




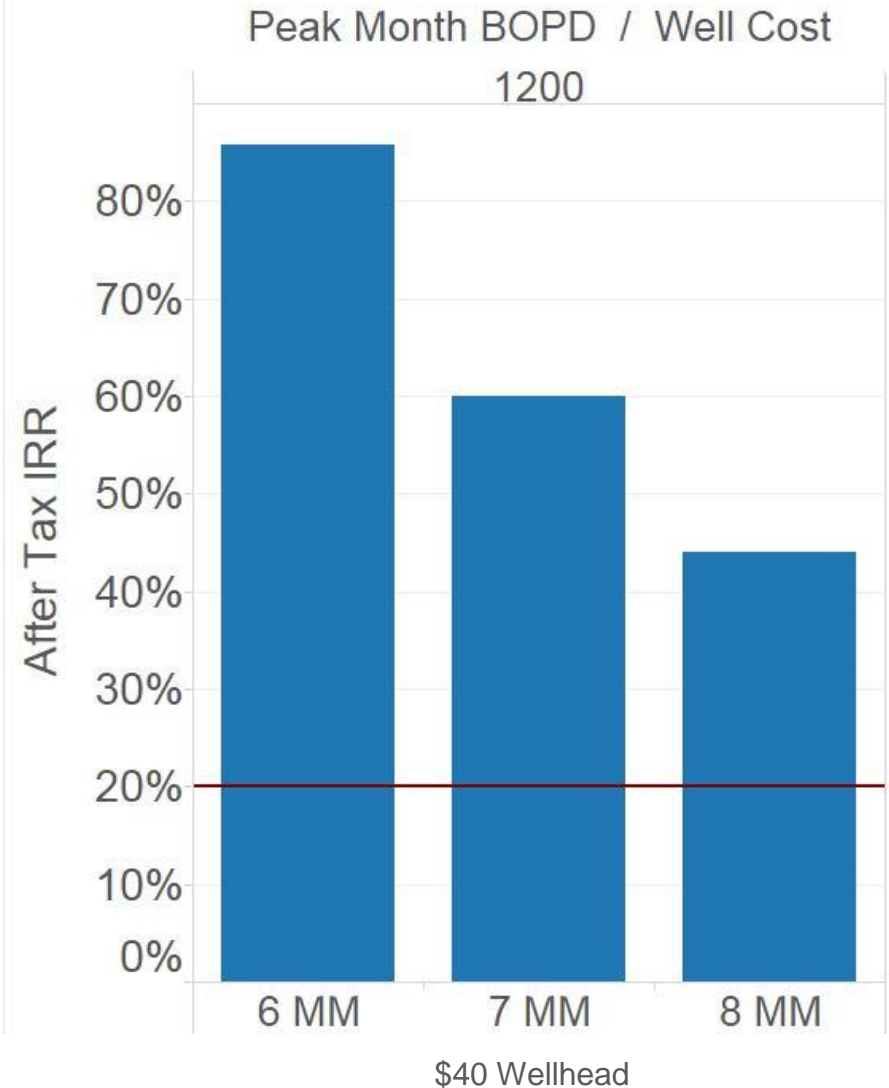
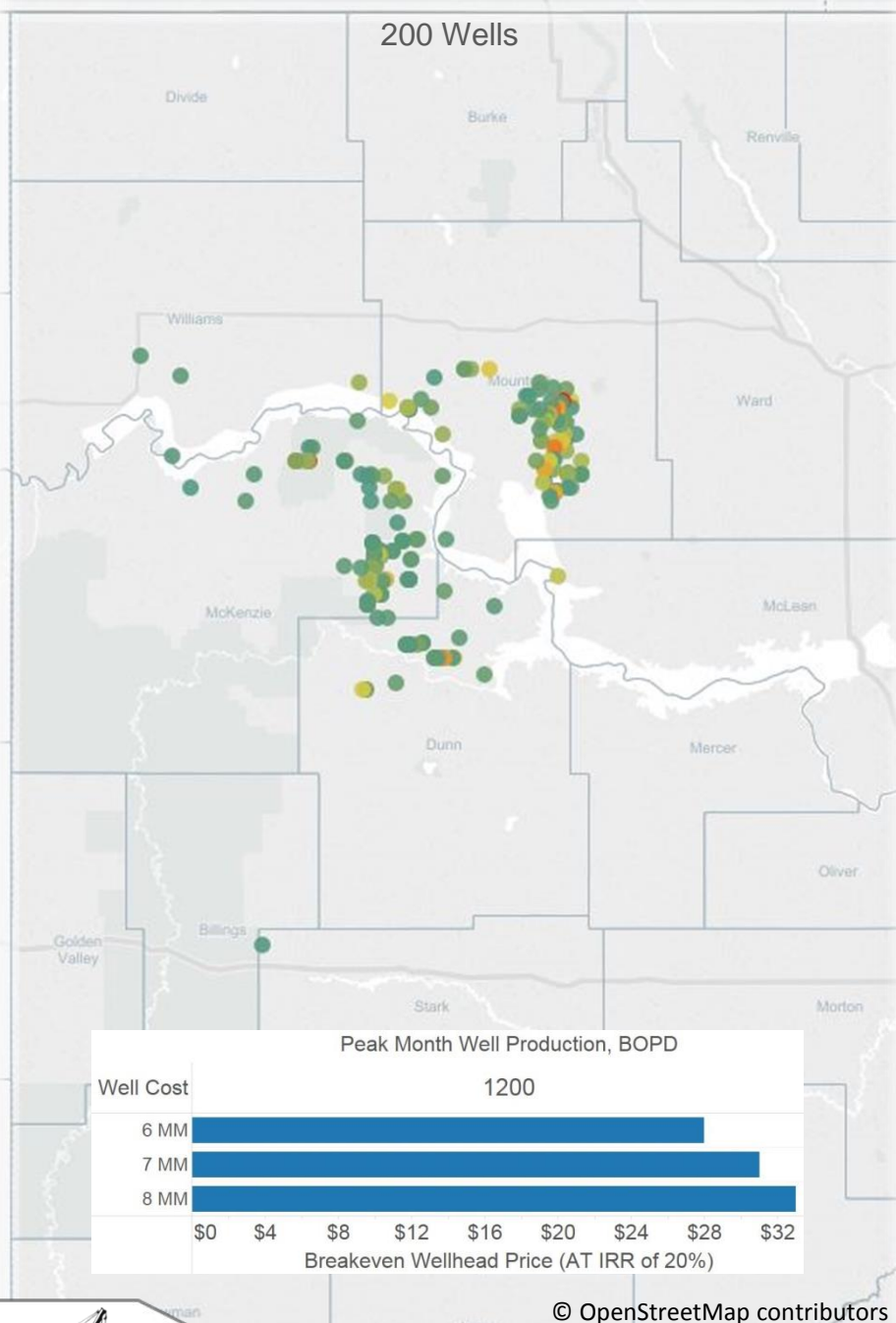
# Peak Month Minimum 900 BOPD



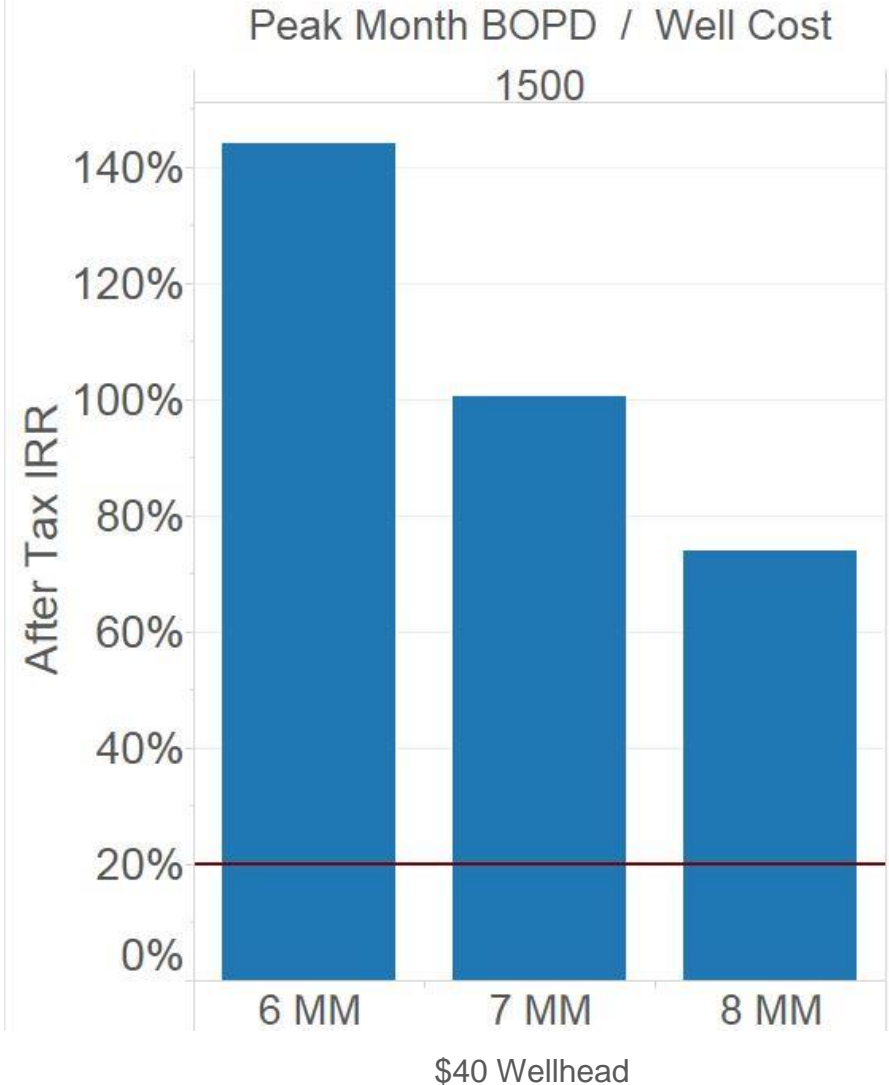
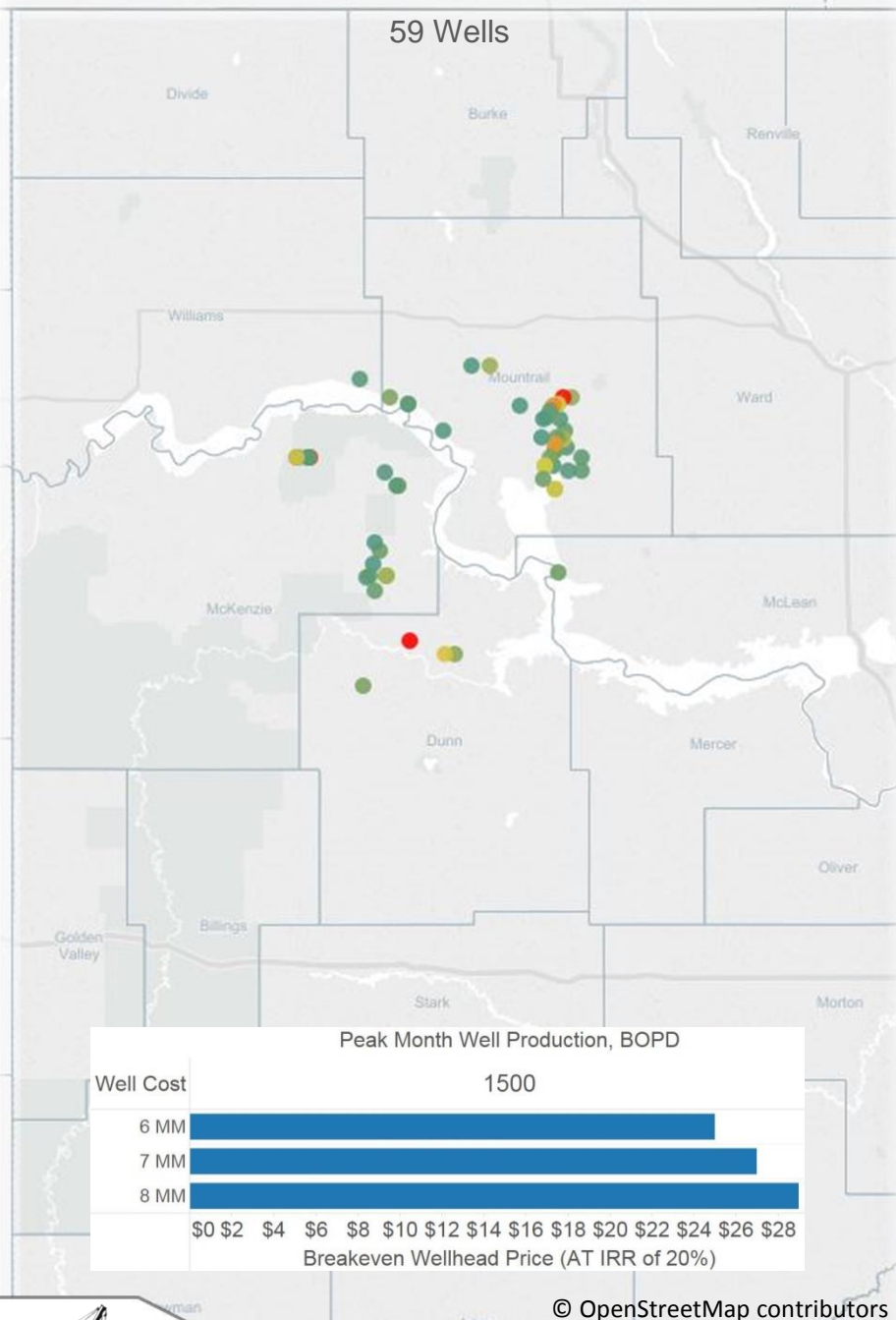
# Peak Month Minimum 1,000 BOPD



# Peak Month Minimum 1,200 BOPD

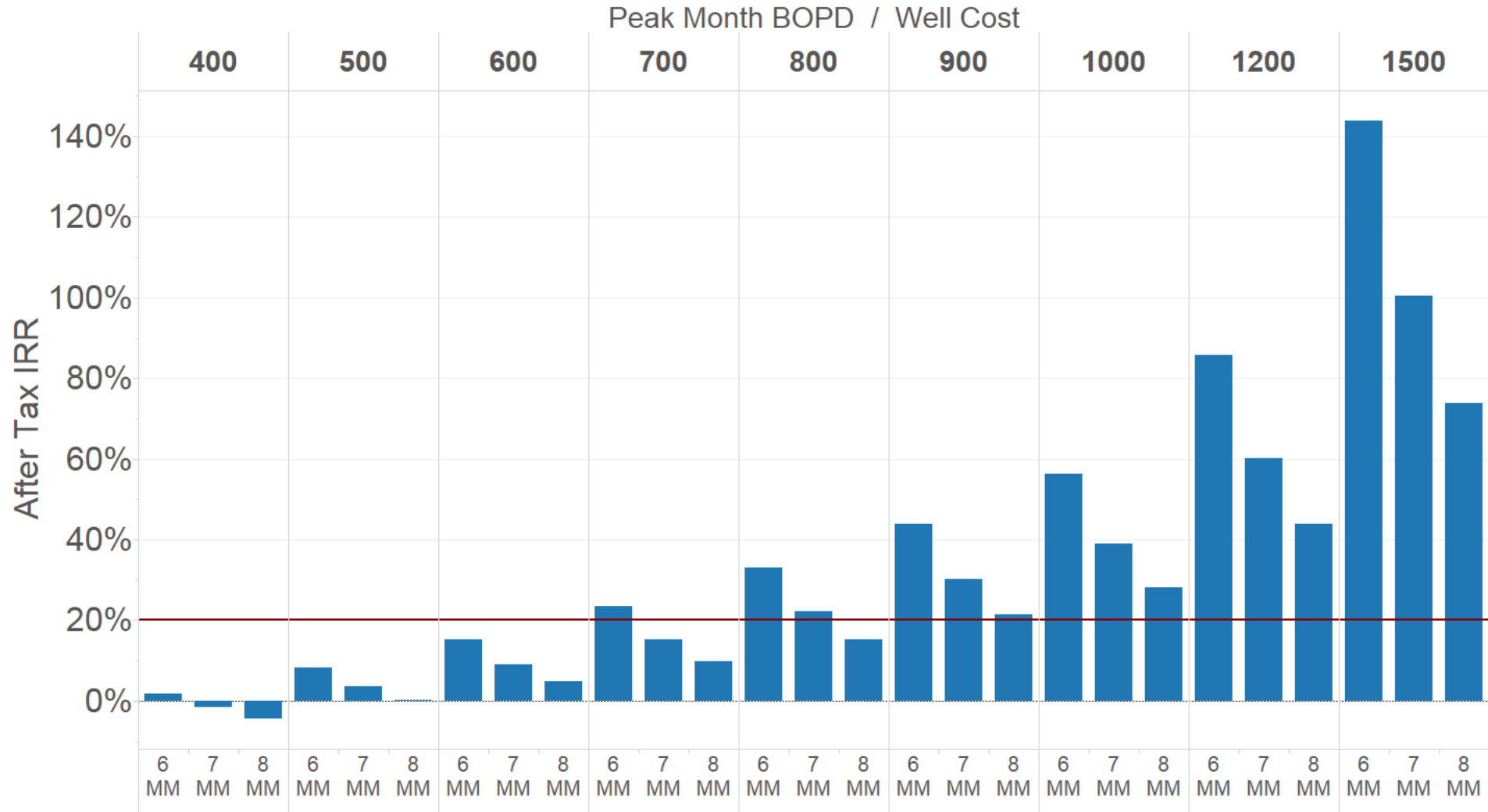


# Peak Month Minimum 1,500 BOPD



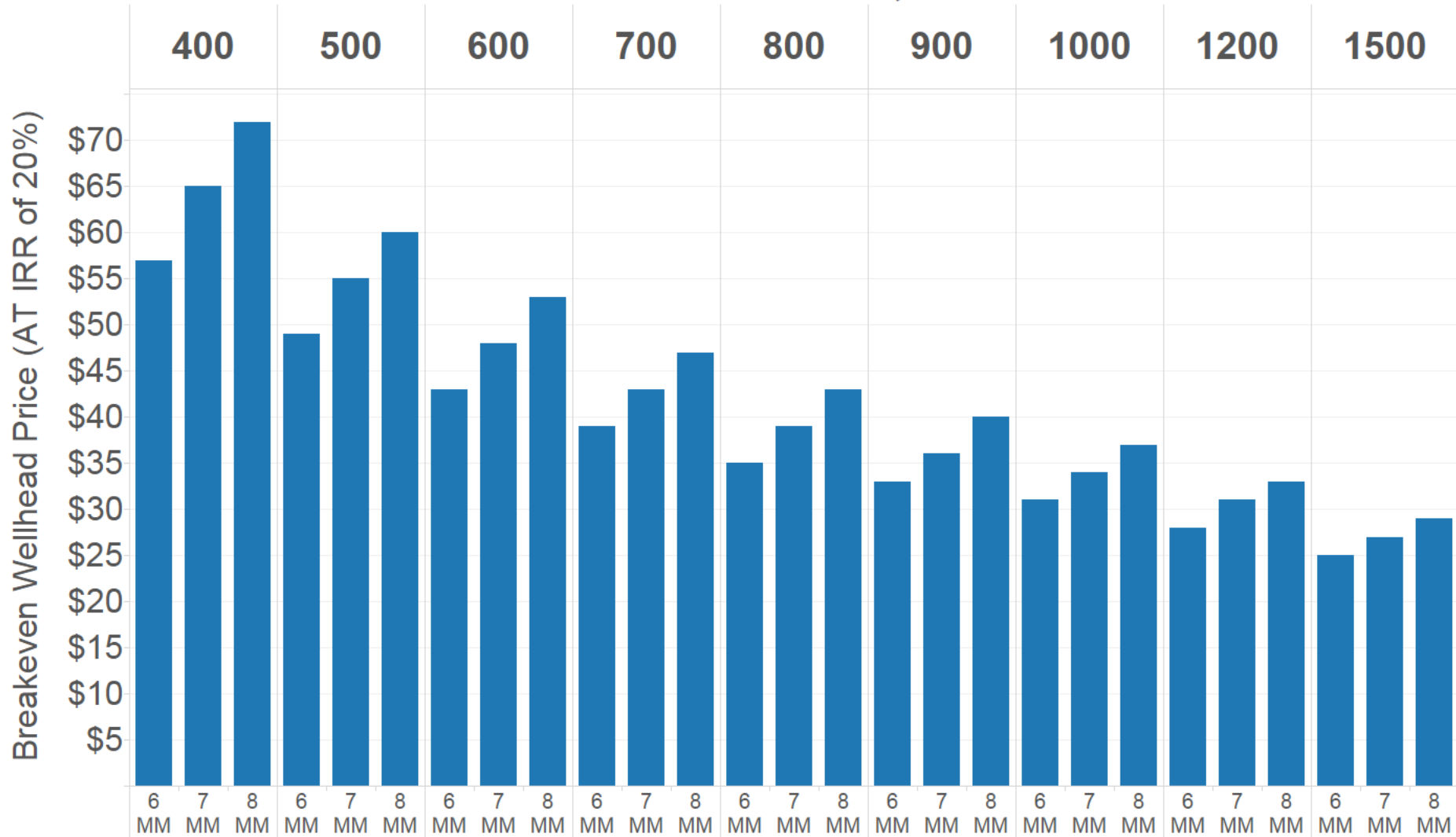


# Summary of \$40 Wellhead Oil



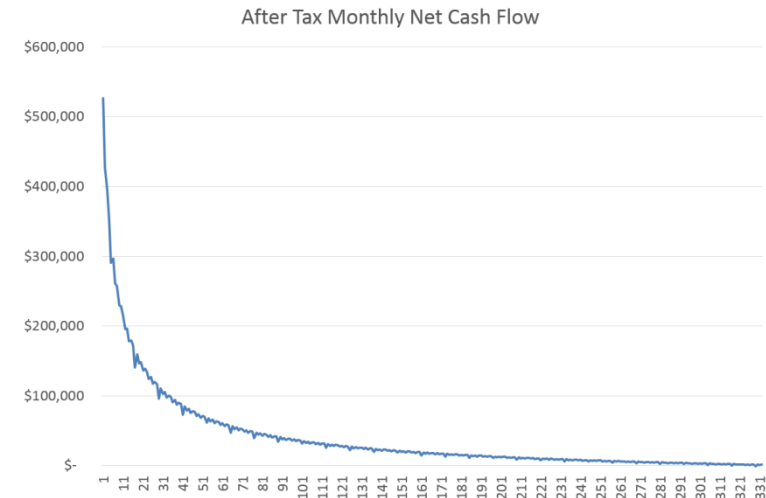
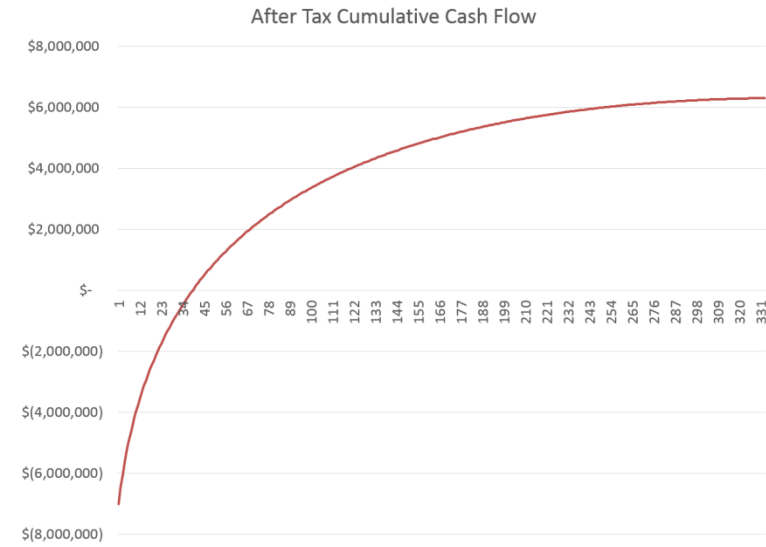
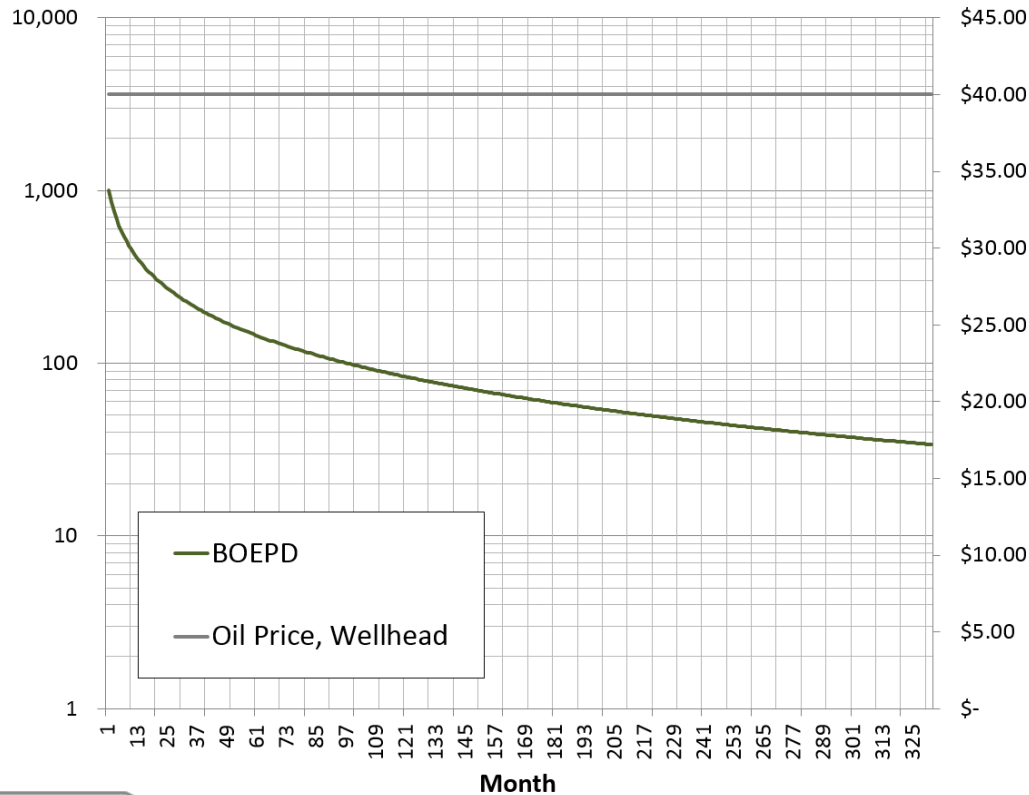
# Breakeven Summary

Peak Month Well Production, BOPD / Well Cost



# 800 BOPD Well Example

- \$7 MM Well
- \$40/bbl oil and \$3.50/mcf gas
- AT IRR = 23%
- AT NPV (10) = \$2.13 MM
- Simple Payback = 3.3 Years

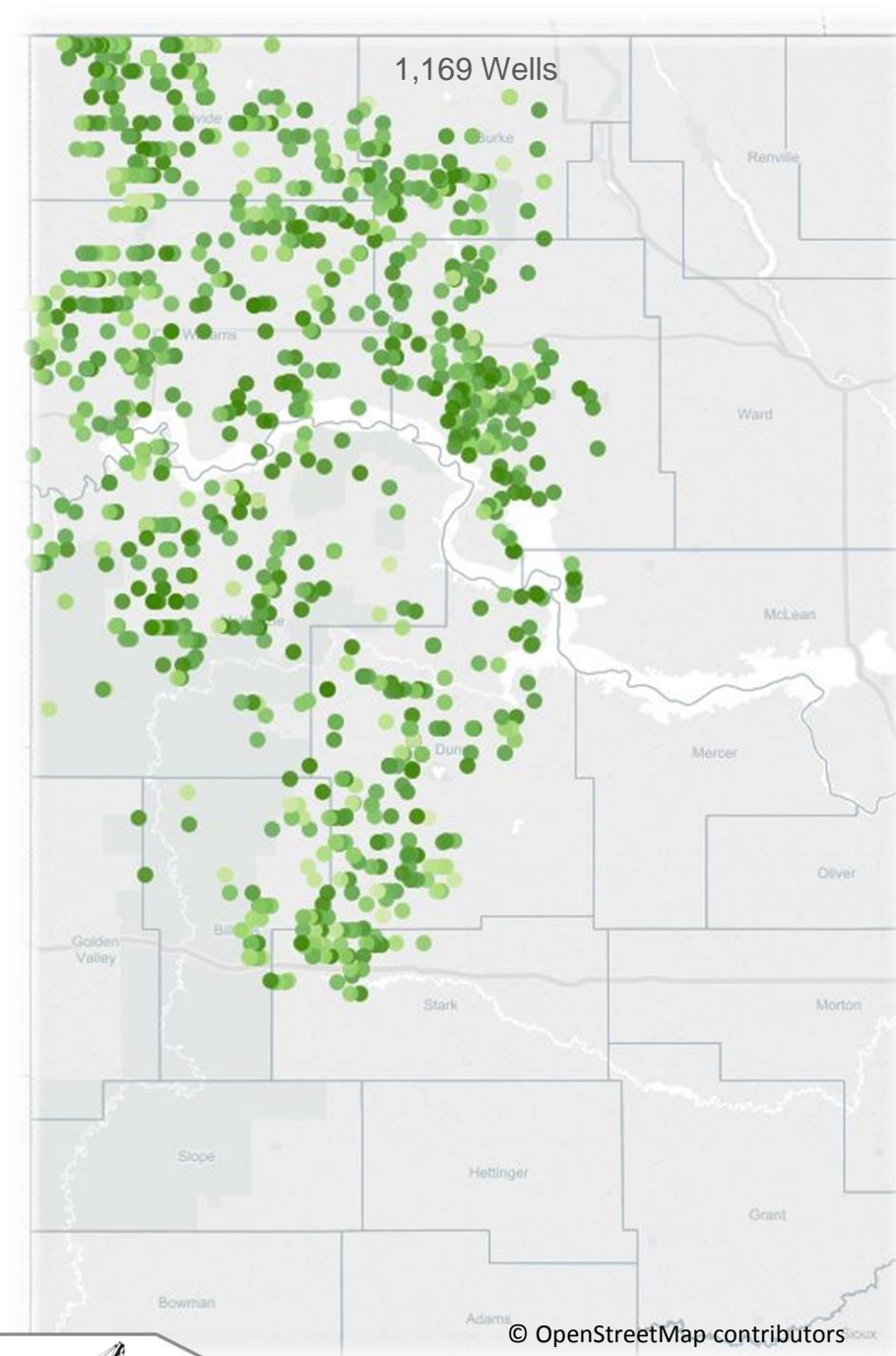


# Arguments

- Well economic assumptions too optimistic or conservative
  - Jump to lower or higher well performance footprints
- Some rigs are not drilling Bakken/Three Forks wells
  - No economics were run on wells in other formations







# Peak Month: 100-300 BOPD\*

\*Low production wells also occur in areas deemed “Core” or “Hot Spot”.

Risk is still present in most areas.

Mapped wells drilled  
2012-2014



# Contact Information

Justin J. Kringstad, Director  
North Dakota Pipeline Authority

600 E. Boulevard Ave. Dept. 405  
Bismarck, ND 58505-0840

Phone: (701)220-6227

Fax: (701)328-2820

E-mail: [jjkringstad@ndpipelines.com](mailto:jjkringstad@ndpipelines.com)

Websites:

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

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



**Know what's below.  
Call before you dig.**

