



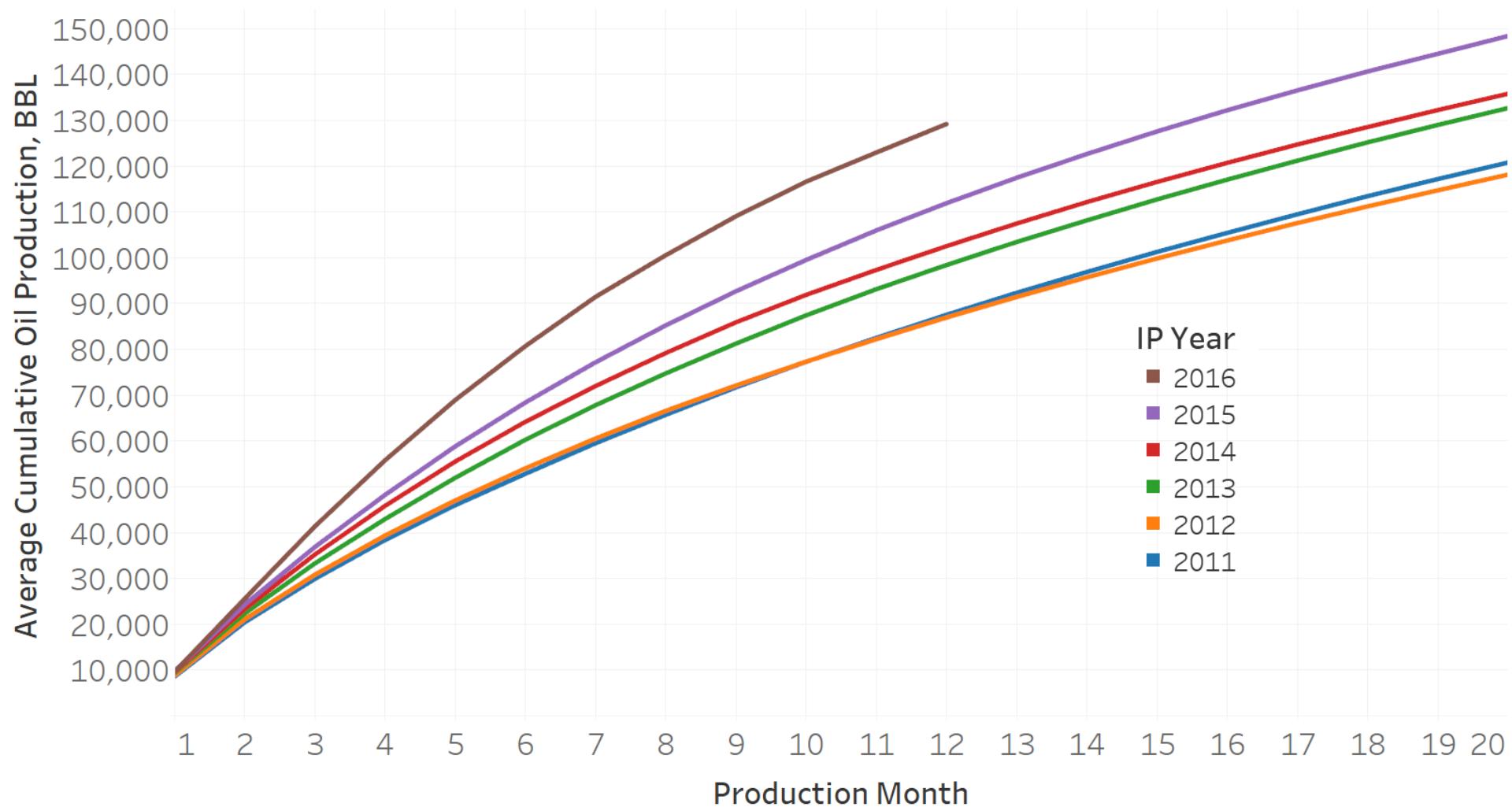
Well Performance Update

North Dakota Pipeline Authority

Justin J. Kringstad

March 8, 2017

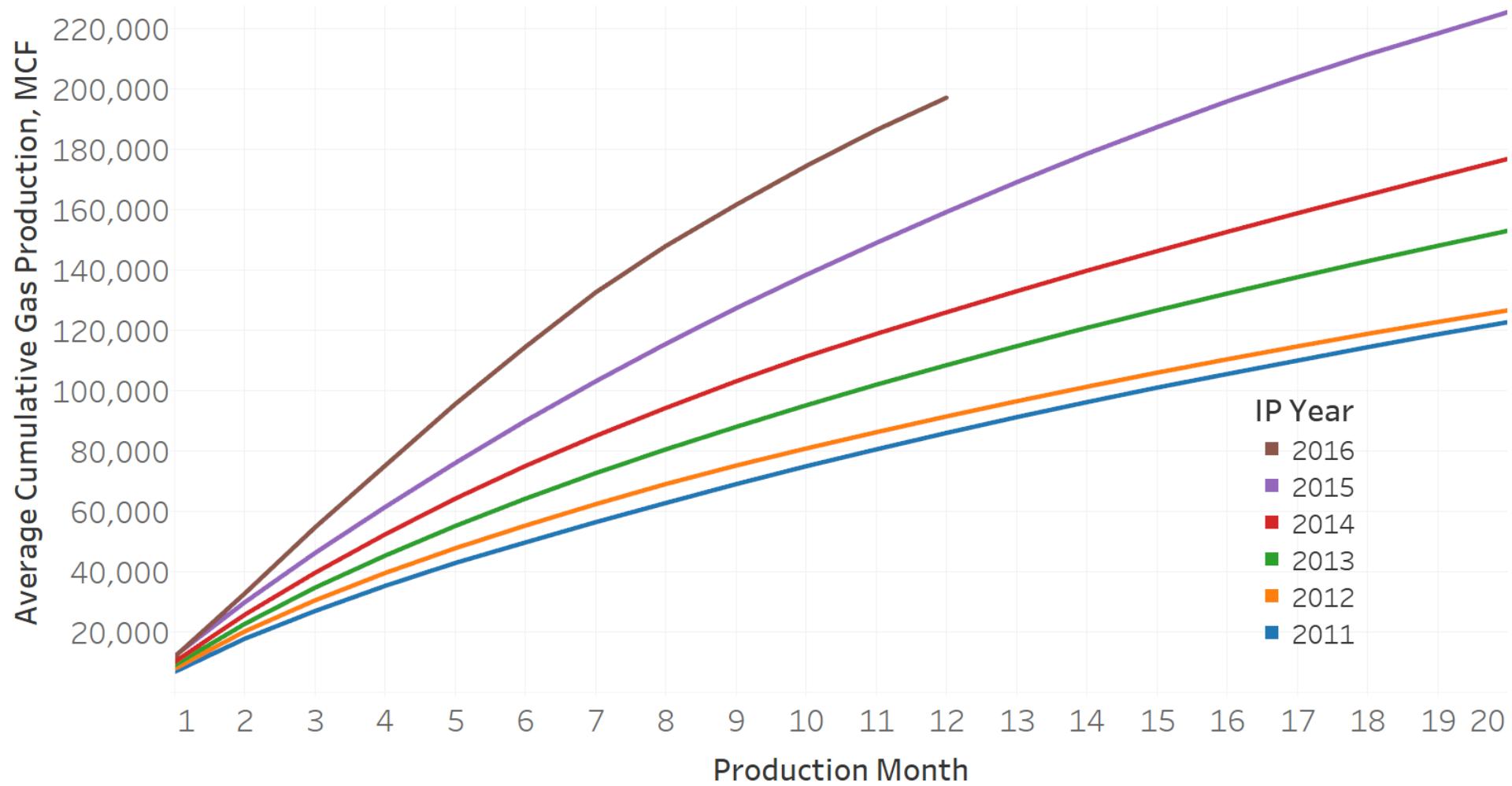
Statewide Well Performance



Average BKN/TF Well Performance in Williams, McKenzie, Dunn, & Mountrail Counties (Minimum 1 bopd)



Statewide Well Performance

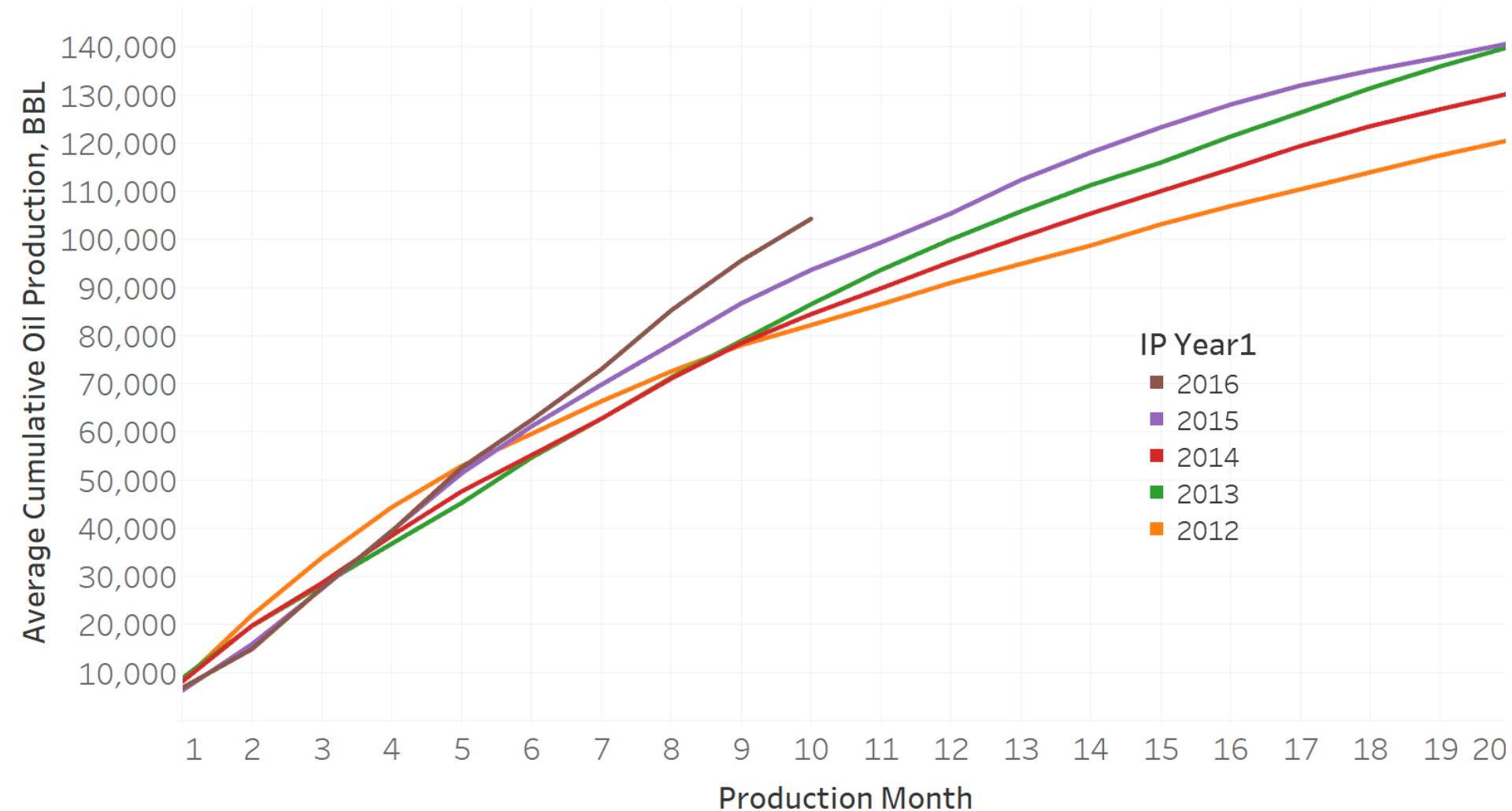


Average BKN/TF Well Performance in Williams, McKenzie, Dunn, & Mountrail Counties (Minimum 1 bopd)



N. McKenzie Well Performance

Cumulative Oil Production - Banks, Grinnell, Twin Valley, Sand Creek Fields

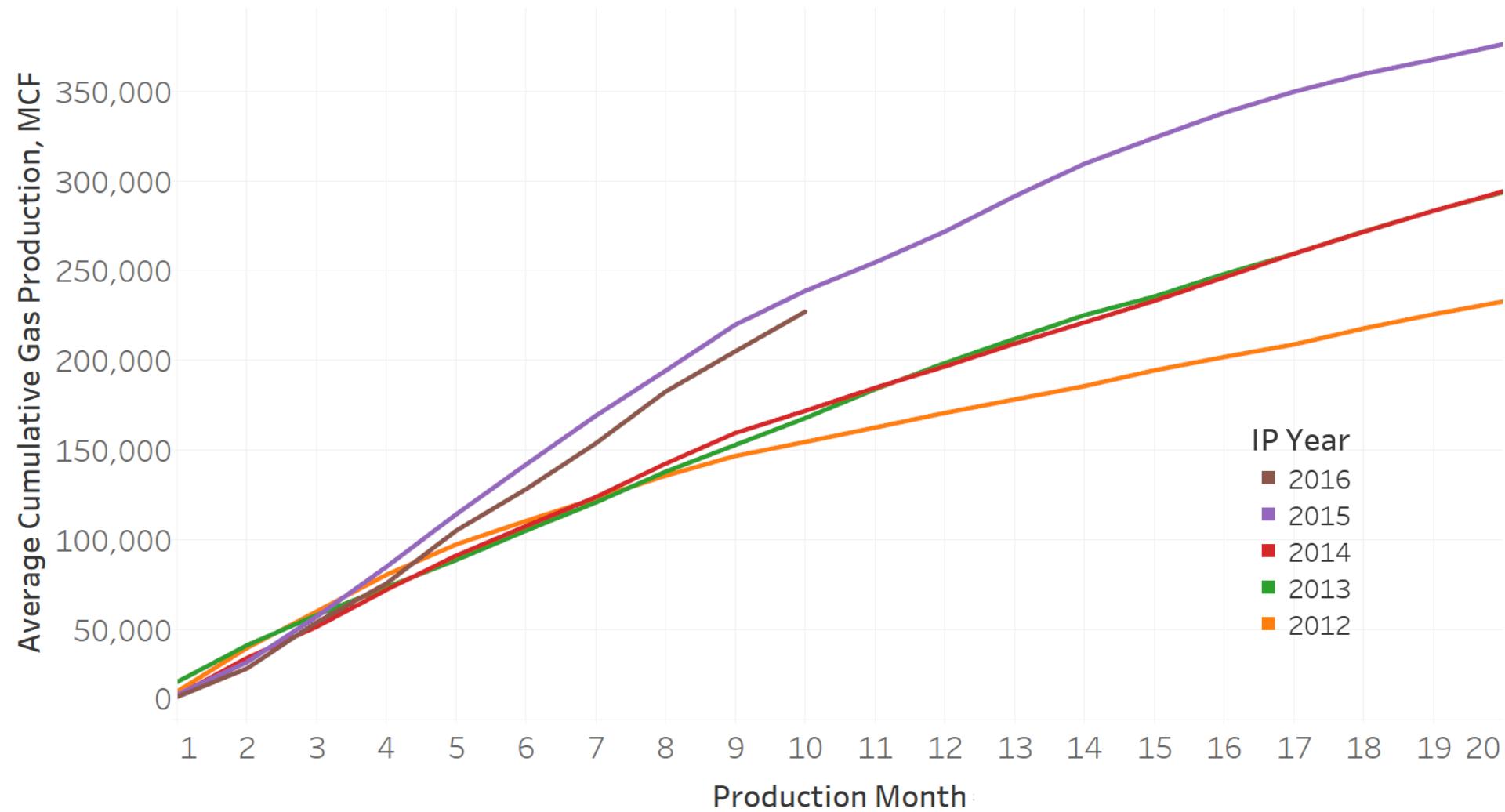


Average BKN/TF Well Performance (Minimum 1 bopd)



N. McKenzie Well Performance

Cumulative Gas Production - Banks, Grinnell, Twin Valley, Sand Creek Fields



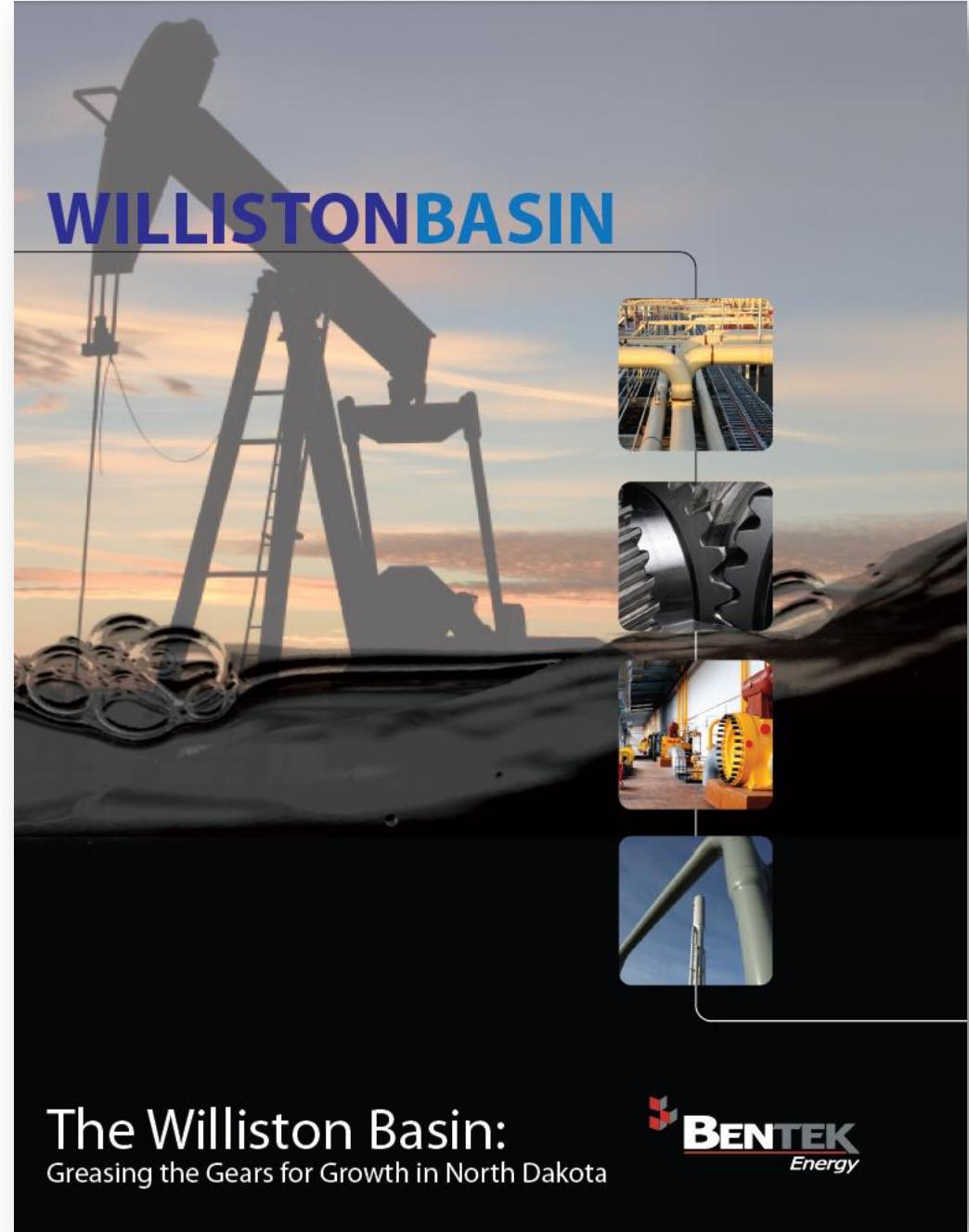
Average BKN/TF Well Performance (Minimum 1 bopd)



2012 NDPA Natural Gas Study



JJ Kringstad - North Dakota Pipeline Authority



The collage features a large oil pump jack silhouette against a sunset sky, with several inset images: a close-up of yellow pipes and a blue structure, a large metal gear, a yellow valve in a facility, and a close-up of a pipe and valve.

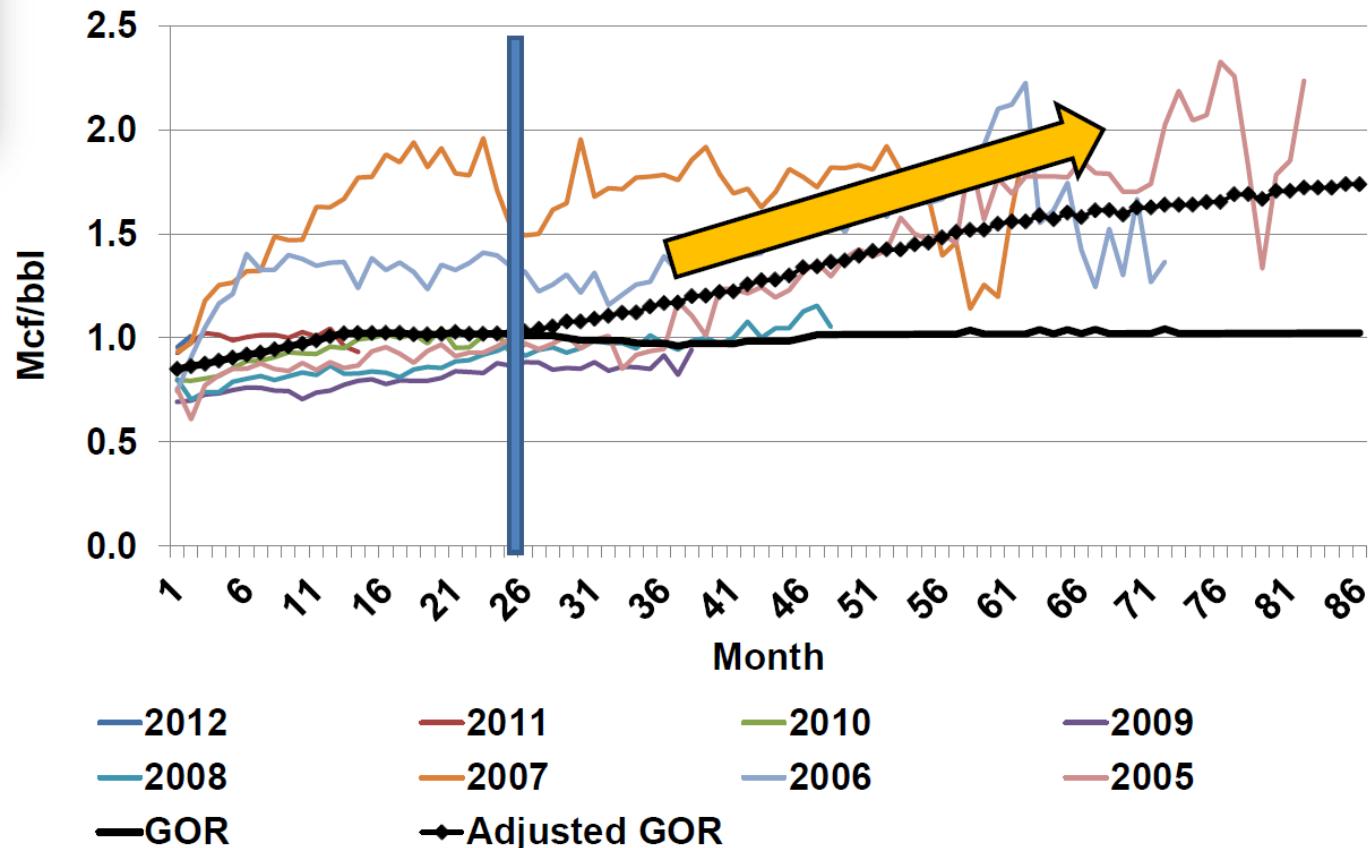
WILLISTON BASIN

The Williston Basin:
Greasing the Gears for Growth in North Dakota

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Stronger Gas Oil Ratio (GOR) Expected For ND Horizontal Oil Wells

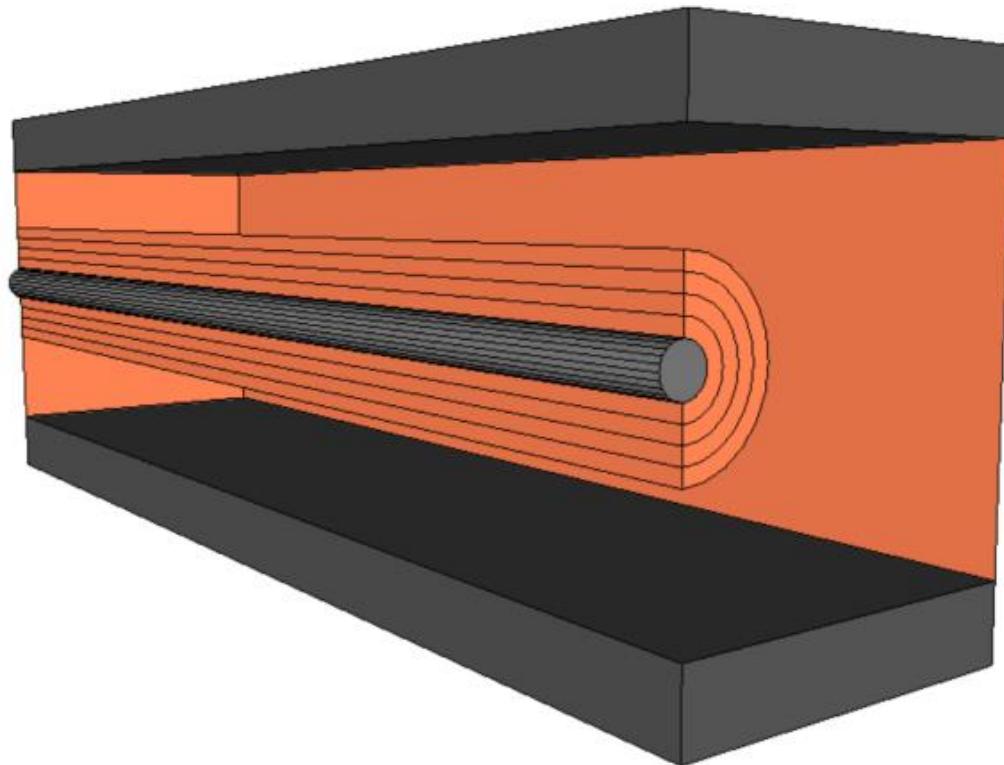


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Gas – Oil Ratio (GOR) Increasing Over Time



Horizontal Well Completed
in Target Reservoir

High
Reservoir
Pressure

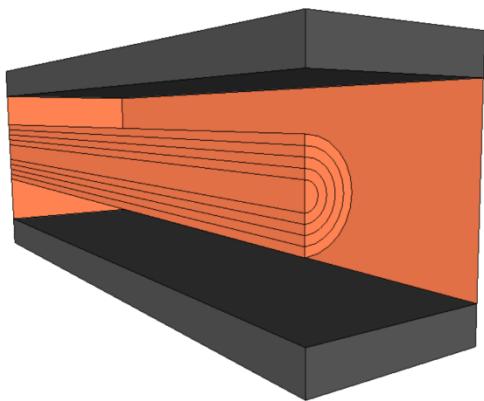
Bubble
Point
Pressure



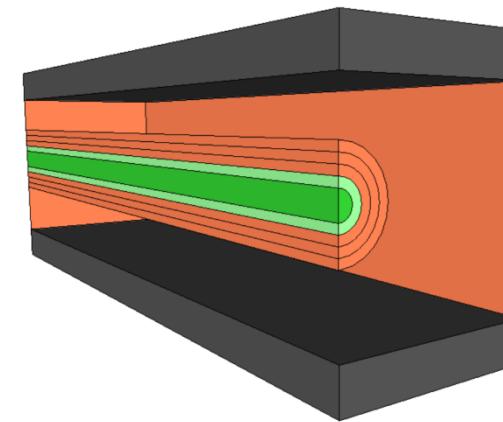
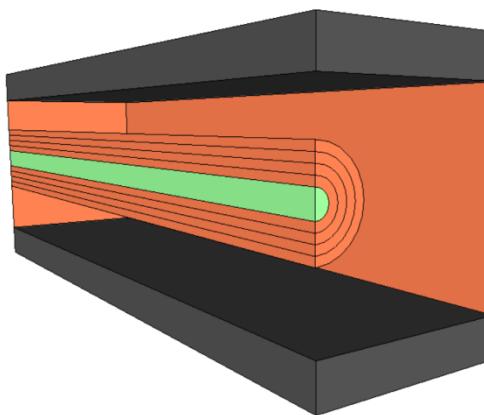
Low
Reservoir
Pressure



Gas – Oil Ratio (GOR) Increasing Over Time

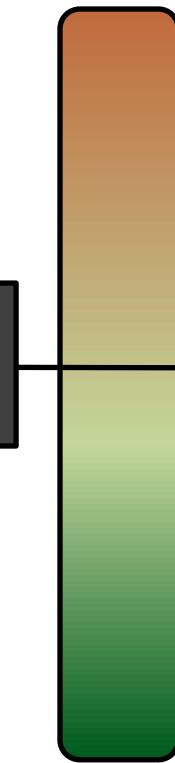
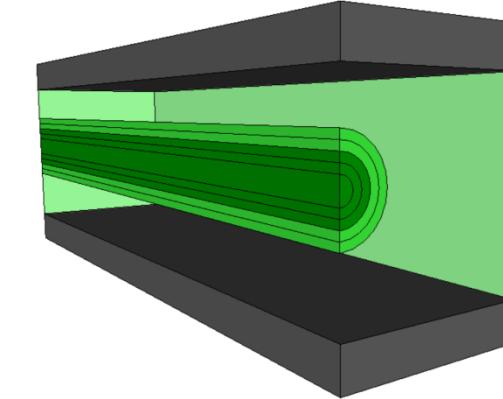
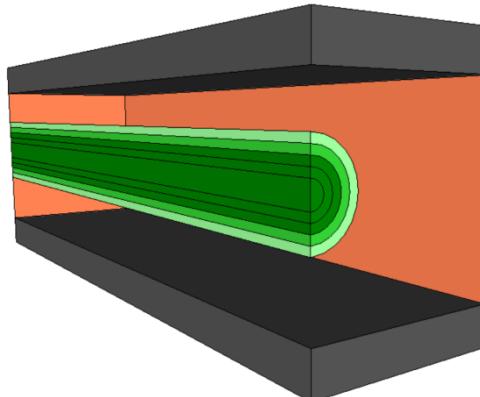
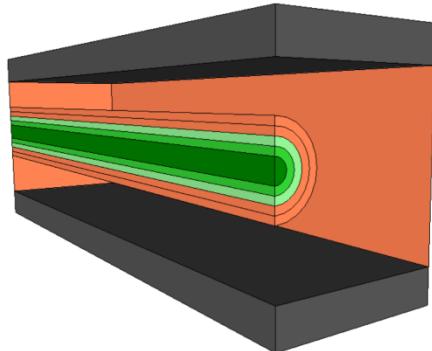


Youngest - Original Reservoir Pressure



High Reservoir Pressure

Bubble Point Pressure

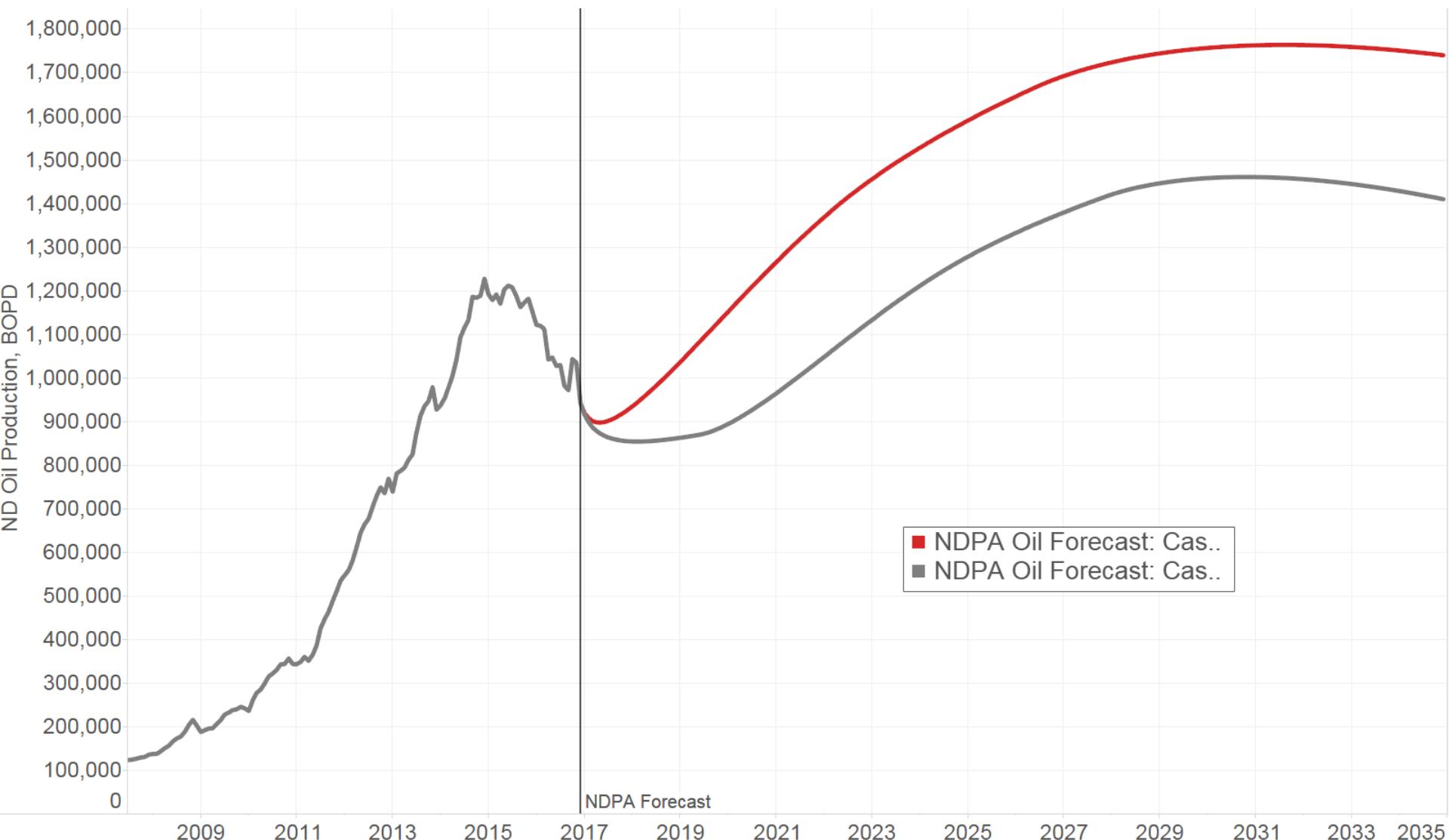


Low Reservoir Pressure

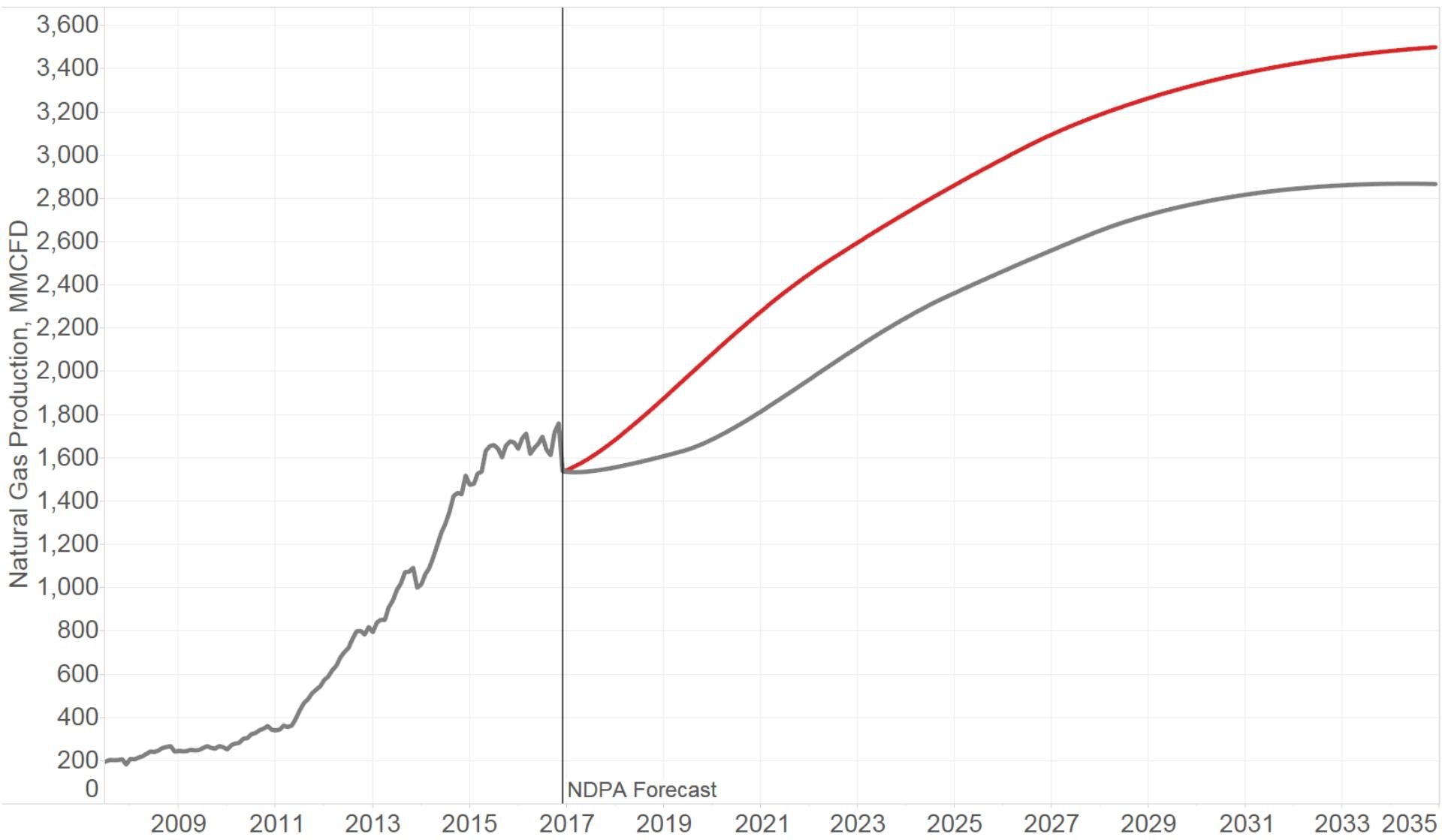
Oldest – Entire Reservoir Below Bubble Point



NDPA ND Oil Production Forecast



NDPA ND Gas Production Forecast



Contact Information

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



Websites:

www.pipeline.nd.gov

www.northdakotapipelines.com

