



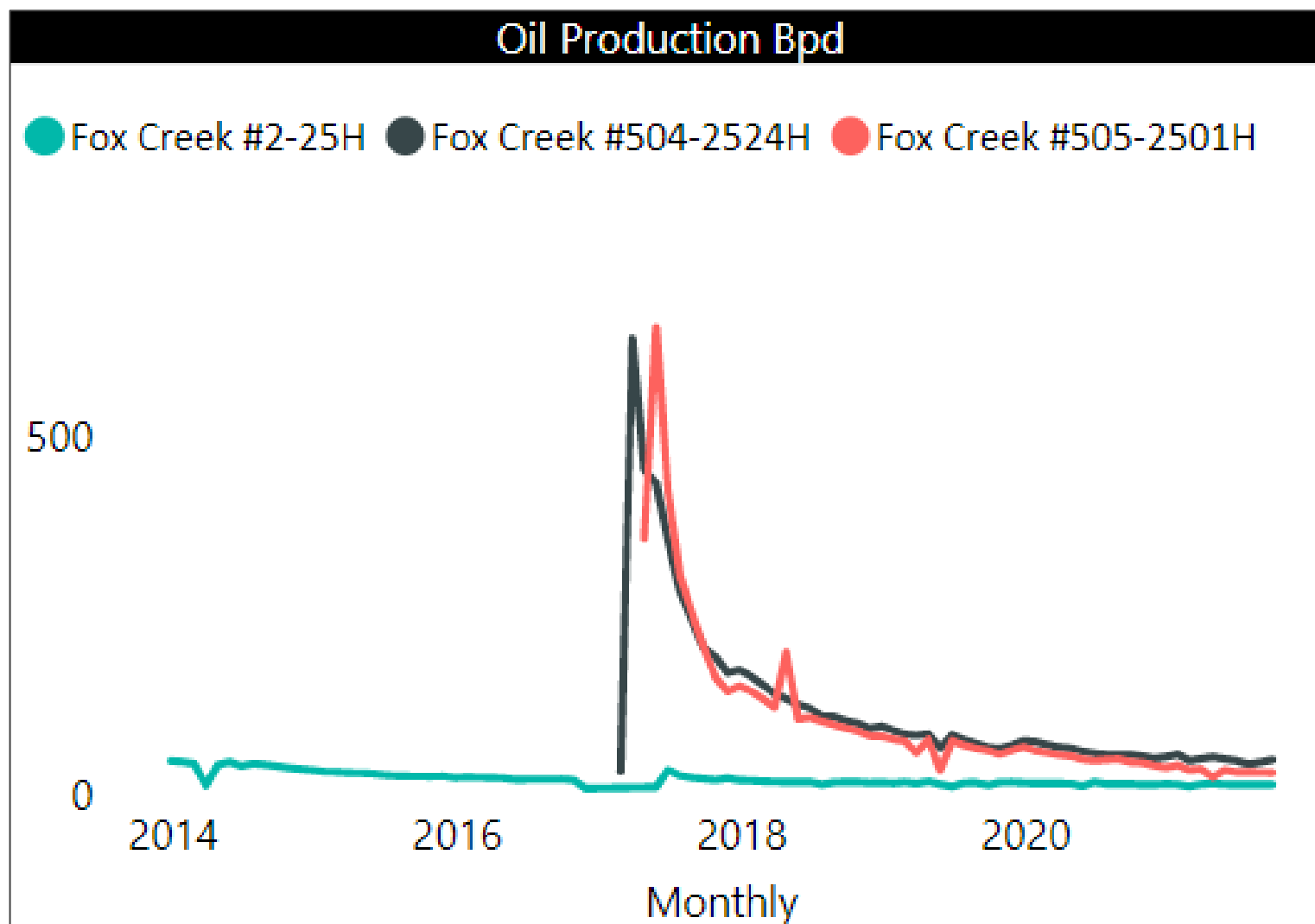
Rockies Oil and Gas Activity

Rockies NARO Convention 8/2/2022

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This presentation contains forward-looking statements. Although Blackbird BI believes that expectations reflected in such forward-looking statements are based on reasonable assumptions, no assurance can be given that such expectations will prove to be correct. If any risks or uncertainties materialize, or if underlying assumptions prove incorrect, the actual results may vary from what Blackbird BI anticipated, expected, projected, estimated, or forecasted. Blackbird shall not be responsible for the manner in which any entity applies the information gained from this analysis.

- This presentation aggregates wells up to county and Basin level to highlight activity
 - Well-level data is collected from state agencies by WellDatabase
 - Blackbird BI puts this data into online Power BI data reports so subscribers can use modern Microsoft technology to analyze oil and gas data



Oil and Gas Activity

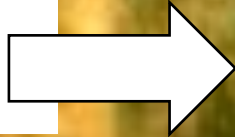
✓ Production trends

- Oil
 - DJ Basin
 - Powder River
 - Uinta
- Gas
 - Piceance
 - Green River/Overthrust
 - San Juan

✓ Rigs Drilling New Wells

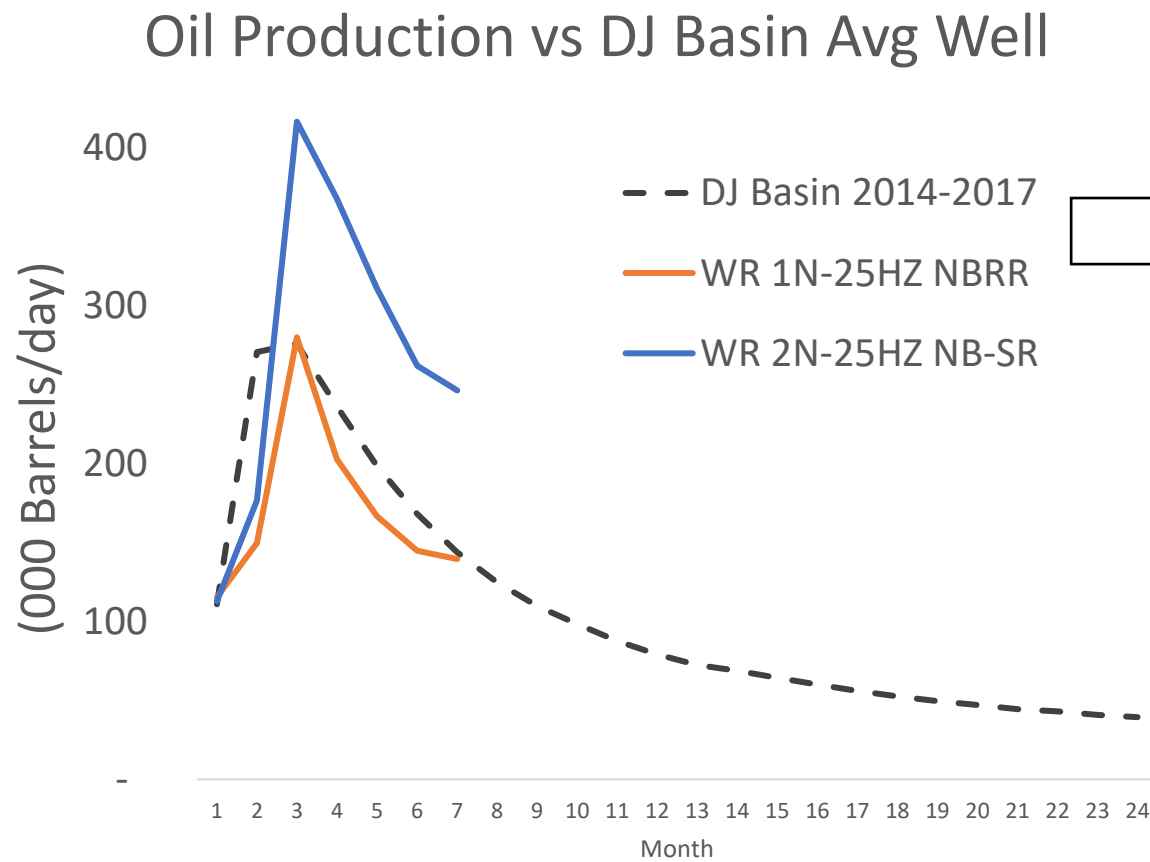
Royalty Owner Example

3 new pipes - frac water supply, oil to refinery, natural gas to processing

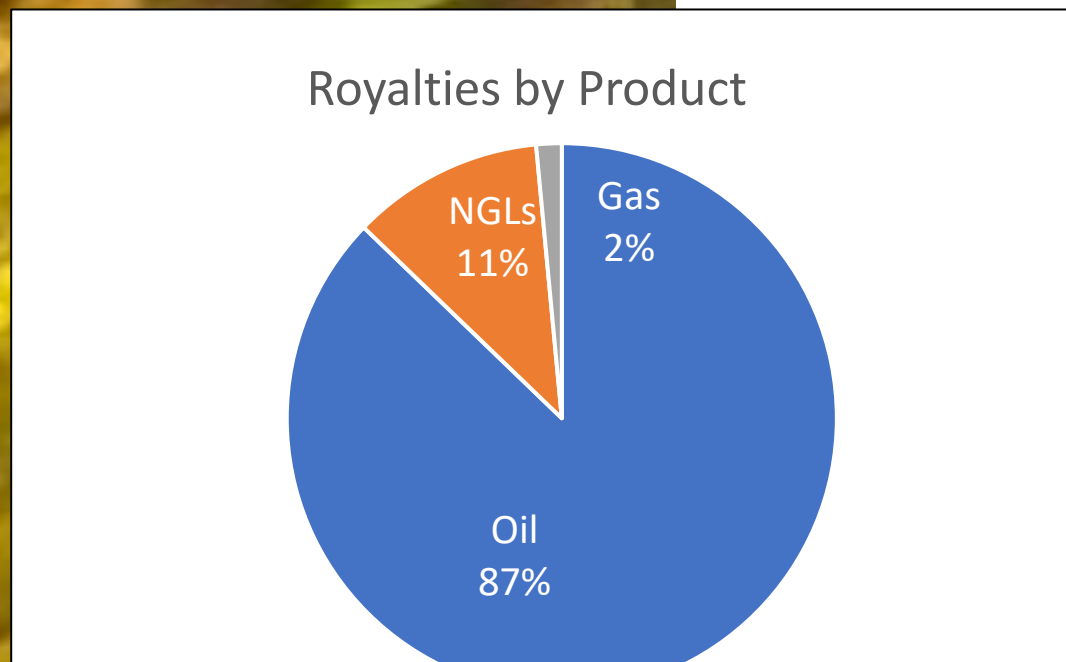


We expect them to come back and drill 9-12 wells under us someday...

★ Ben's House



Access road



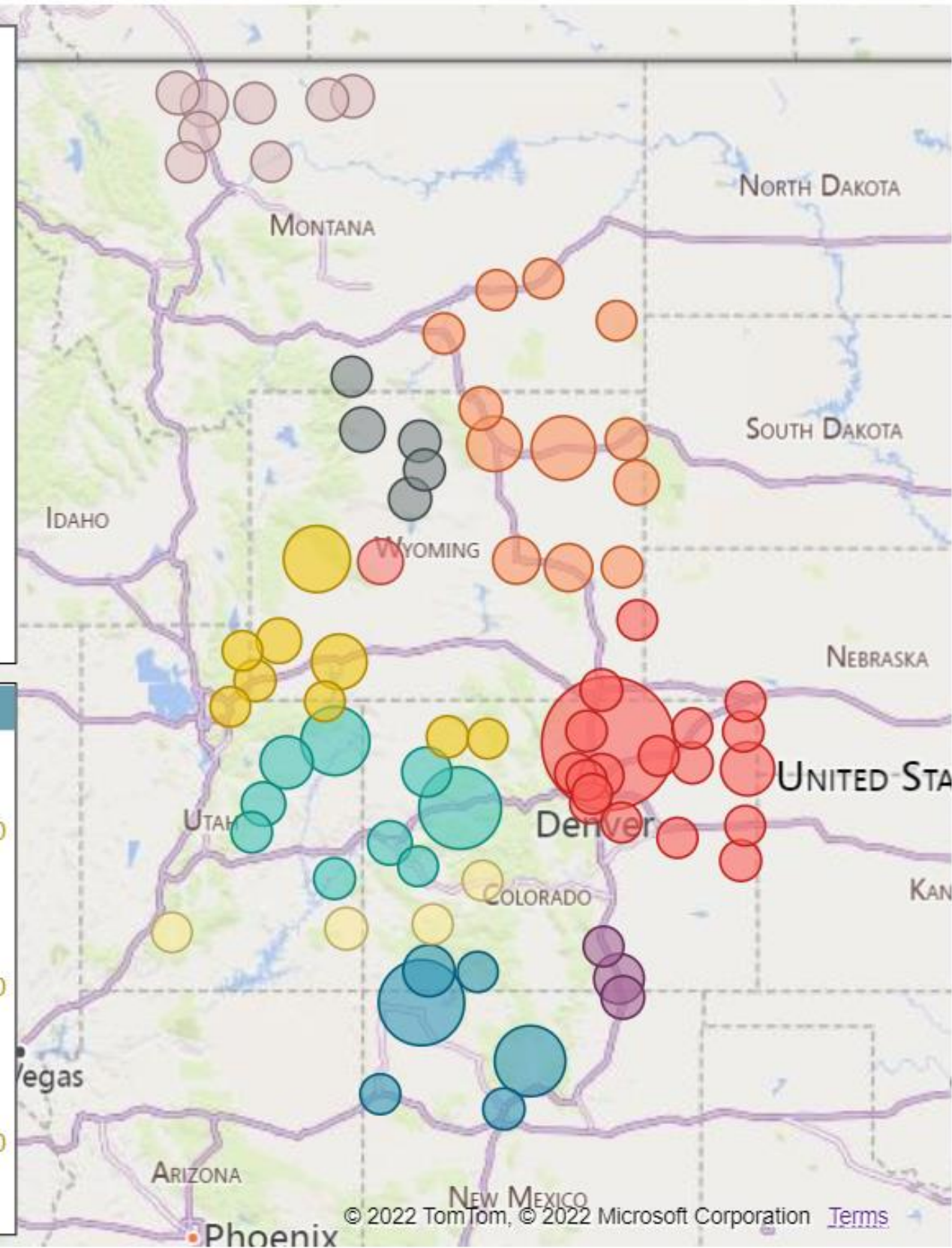
HOA received over \$100,000 in first 8 months from 1/9 production from 2 wells

Rockies Oil & Gas Activity

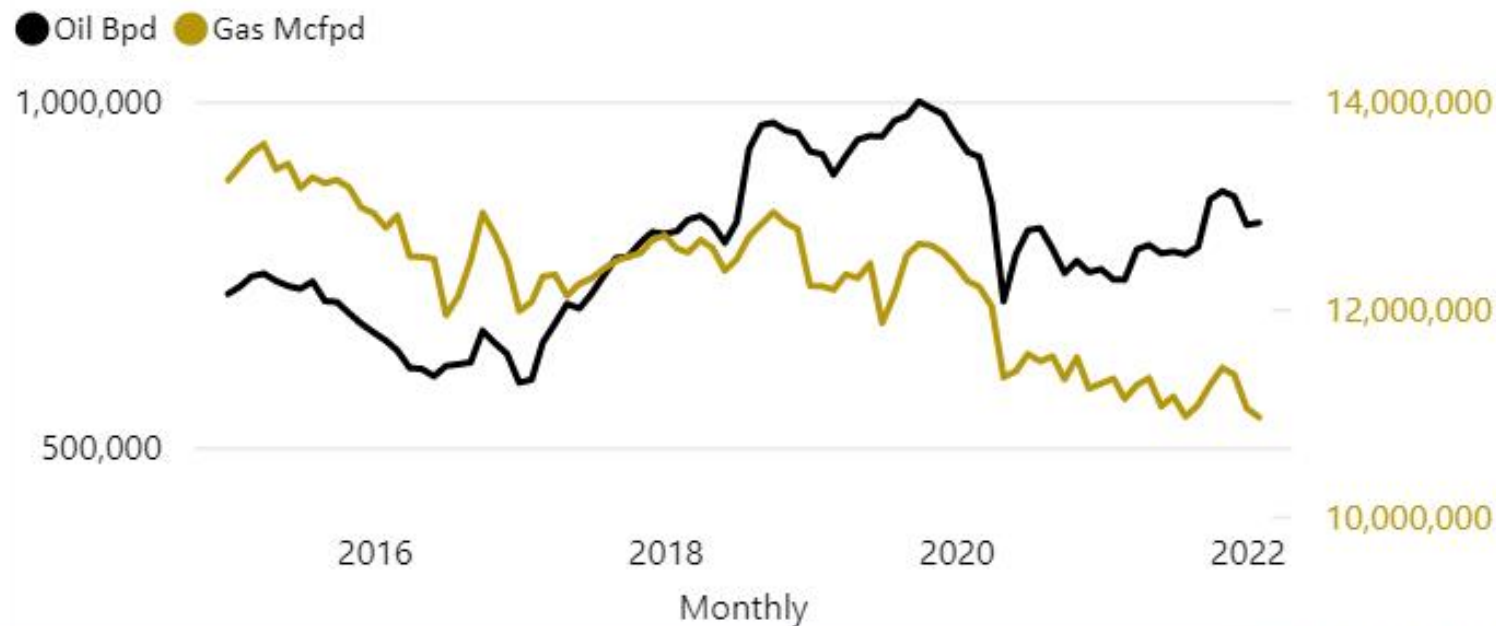
Counties Sized by Count Wells, Colored by Basin

Basin ● Big Horn ● Denver-Julesburg ● Green River/Overthrust ● Paradox ● Powder River ● Raton ● San Juan ● Sweetgrass Arch ● Uinta/Piceance ● Wind River

Basin	Count Wells Recent Full Month	Oil Bpd Recent Full Month	Gas Mcfpd Recent Full Month	BOEpd Recent Full Month	GOR (Gas % of BOE)
Denver-Julesburg	16,330	440,848	2,937,775	930,477	53%
Green River/Overthrust	11,618	21,894	2,441,925	428,882	95%
Uinta/Piceance	23,630	88,927	2,010,690	424,042	79%
San Juan	22,424	21,161	2,006,283	355,541	94%
Powder River	10,283	151,408	621,057	254,918	41%
Wind River	790	5,884	191,703	37,835	84%
Raton	3,352	0	165,061	27,510	100%
Big Horn	2,158	23,170	23,869	27,148	15%
Paradox	518	7,999	37,349	14,224	44%
Sweetgrass Arch	3,104	1,904	22,553	5,663	66%
Total	95,325	823,751	10,951,632	2,649,023	69%



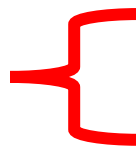
Rockies Oil and Gas Production



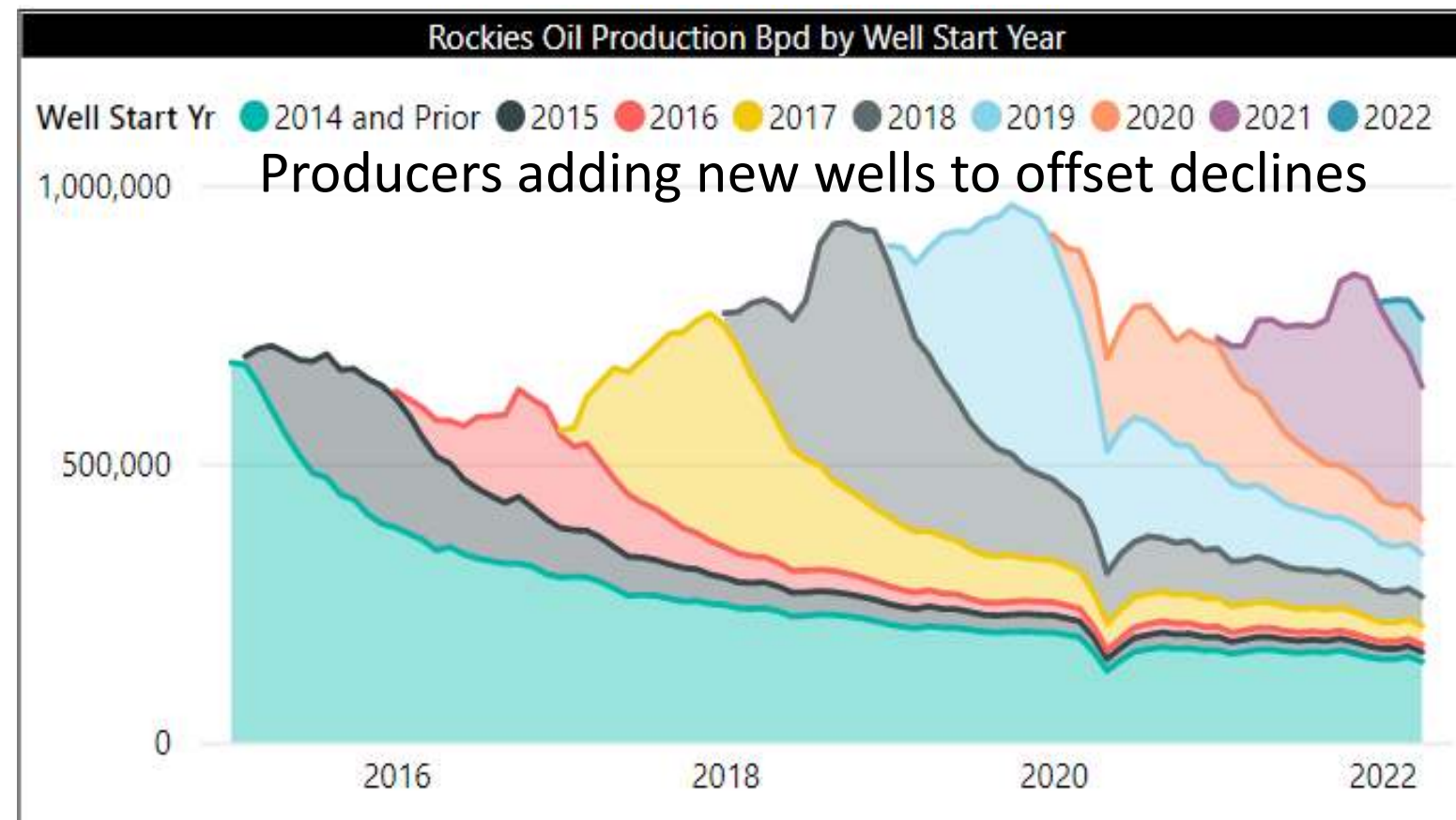
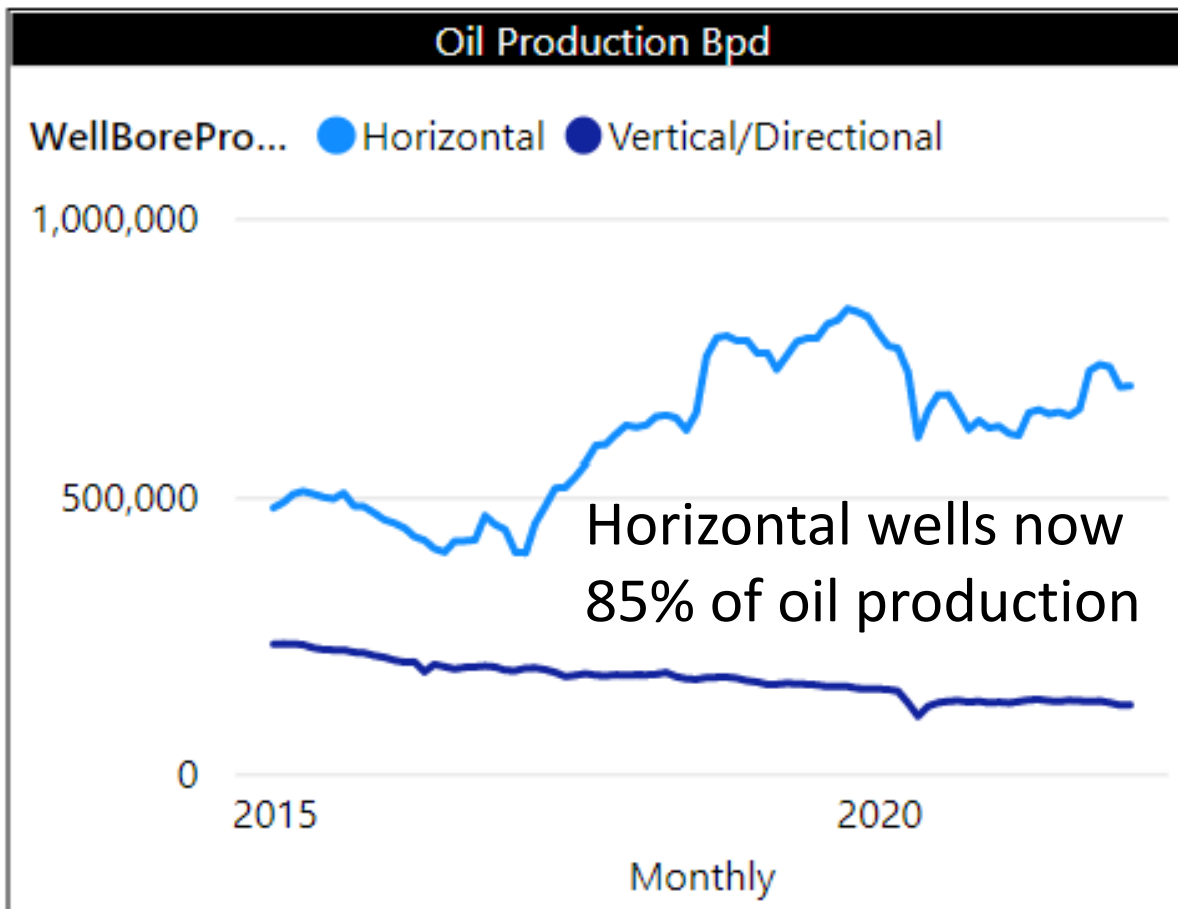
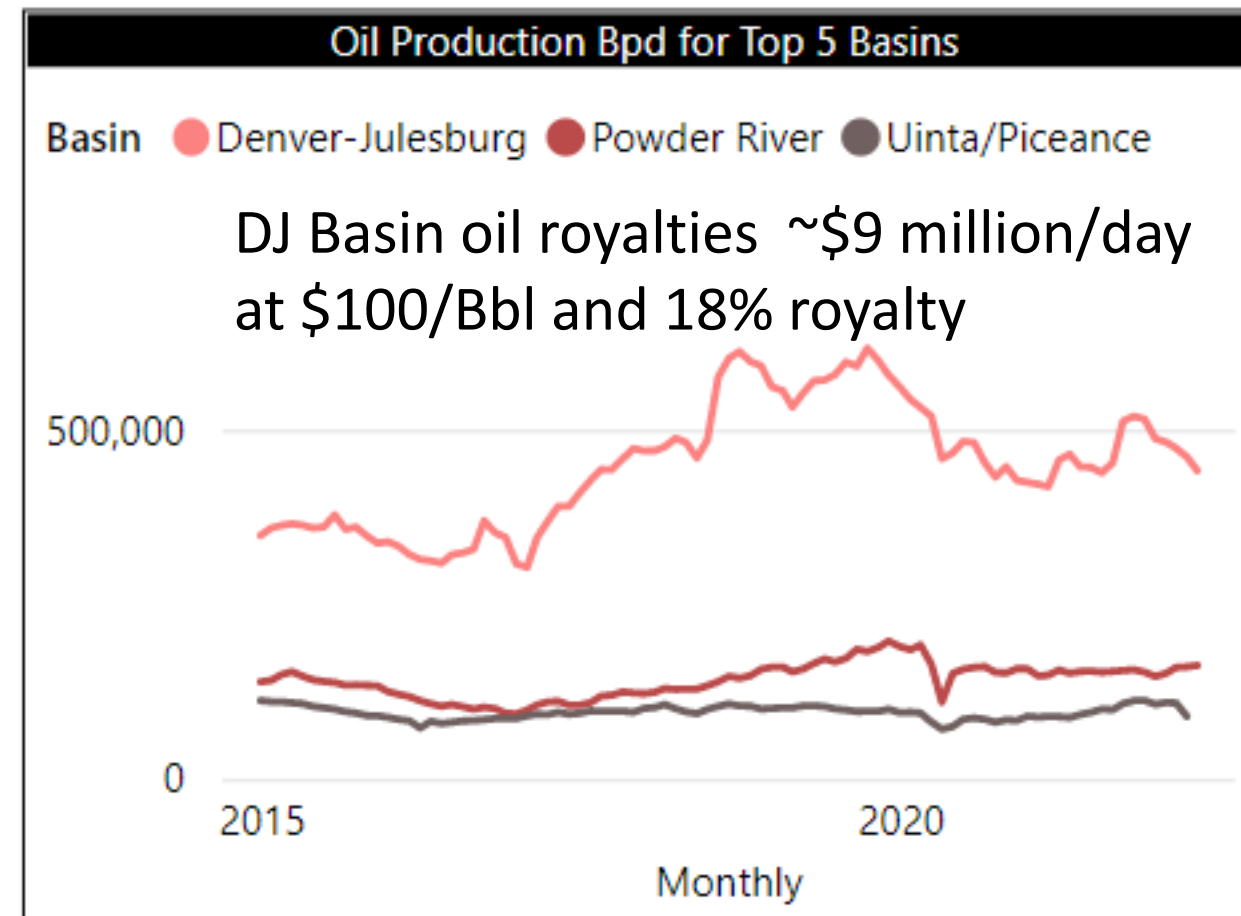
Oil Production Summary



Top 3 Basins make up 83% of Rockies production



Basin	Oil Bpd Recent Full Month	Oil Recent YoY % Chg
Denver-Julesburg	440,848	-5%
Powder River	151,408	3%
Uinta/Piceance	88,927	1%
Big Horn	23,170	3%
Green River/Overthrust	21,894	-15%
San Juan	21,161	8%
Paradox	7,999	-4%
Sweetgrass Arch	1,904	-10%
Central MT Uplift	310	-3%
Raton	0	
Total	818,046	11%



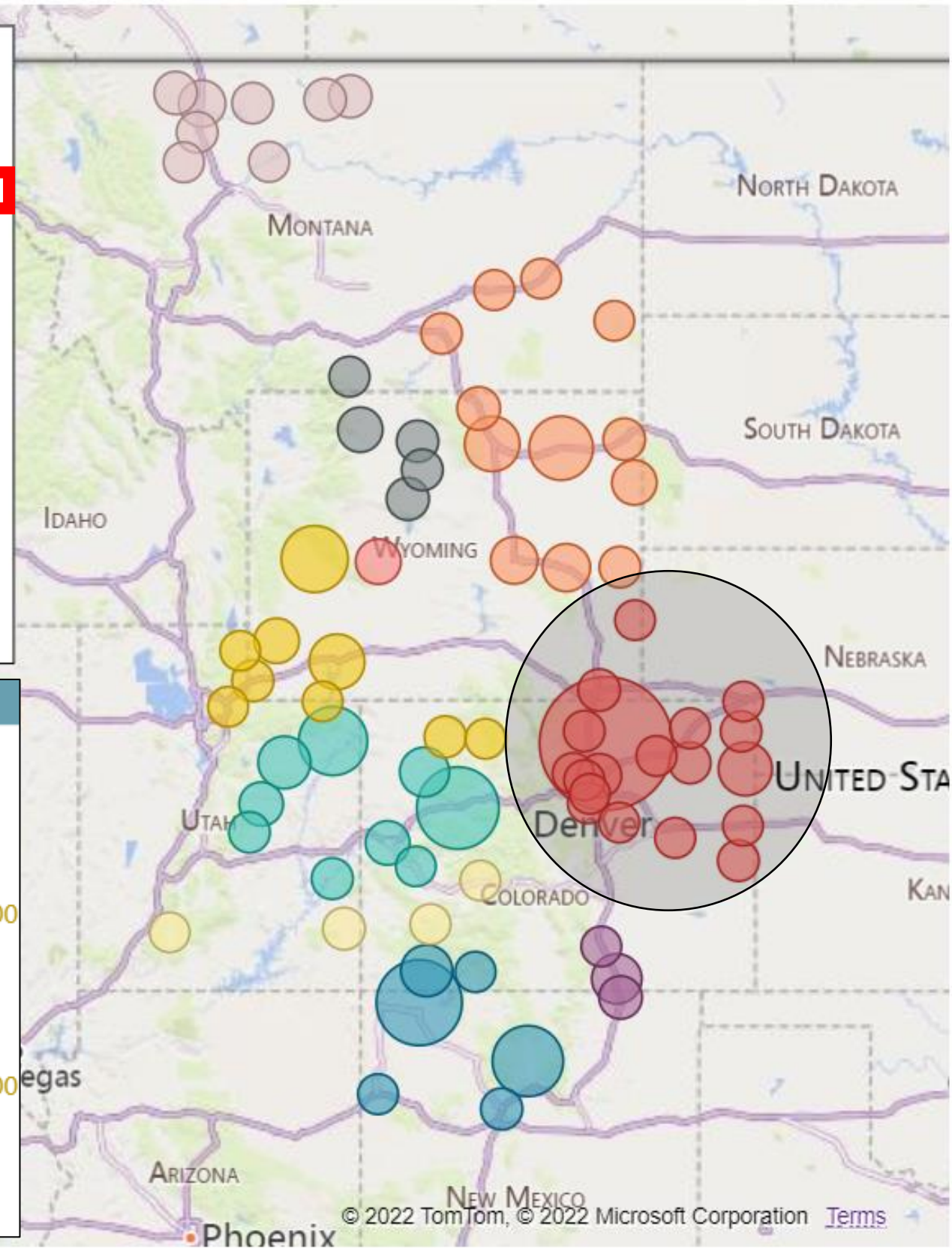
DJ Basin Oil & Gas Activity



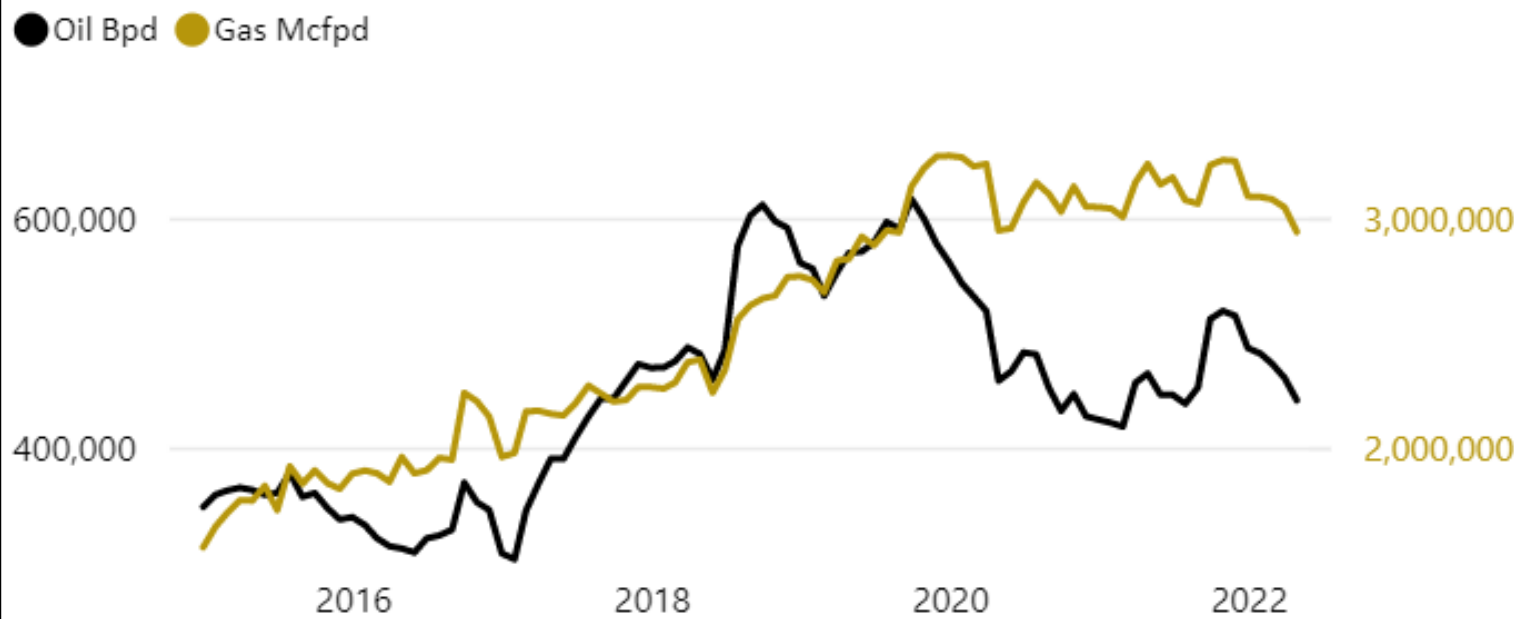
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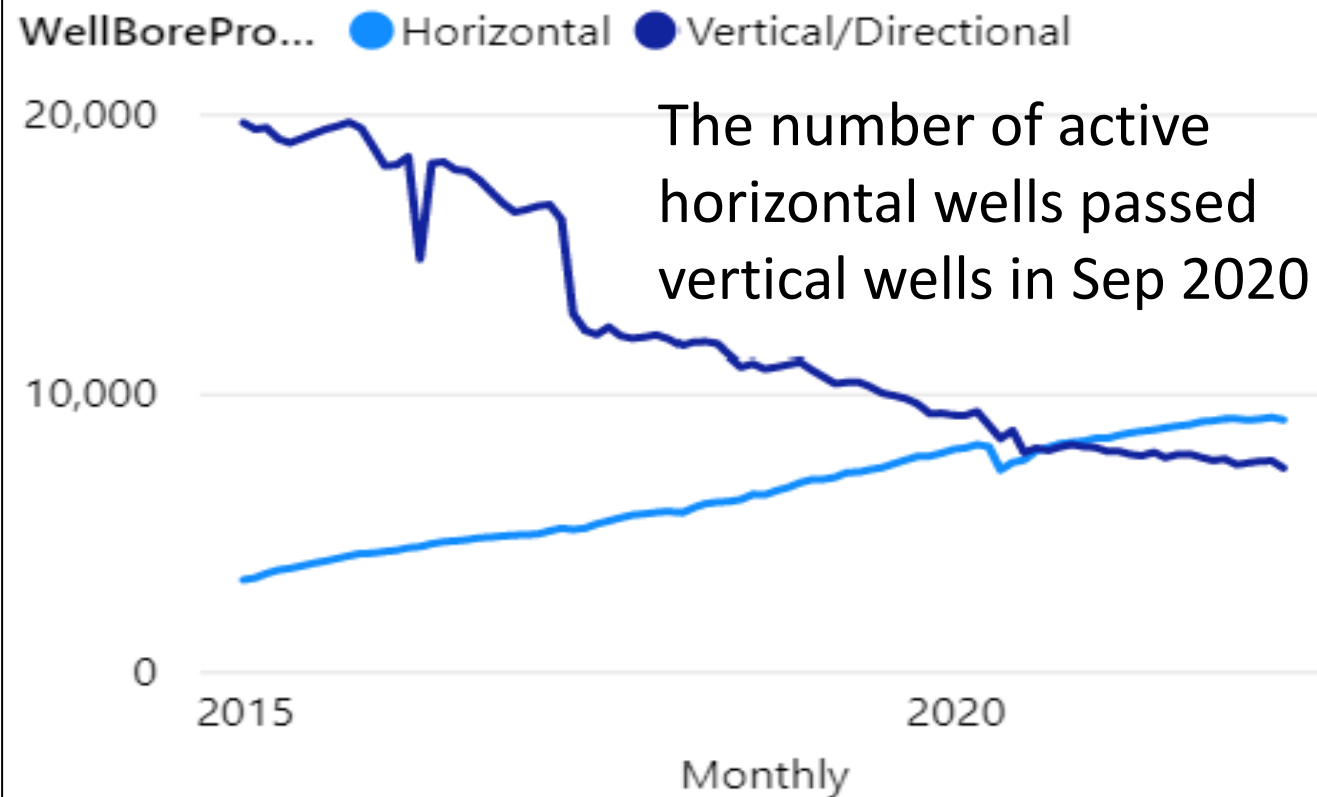
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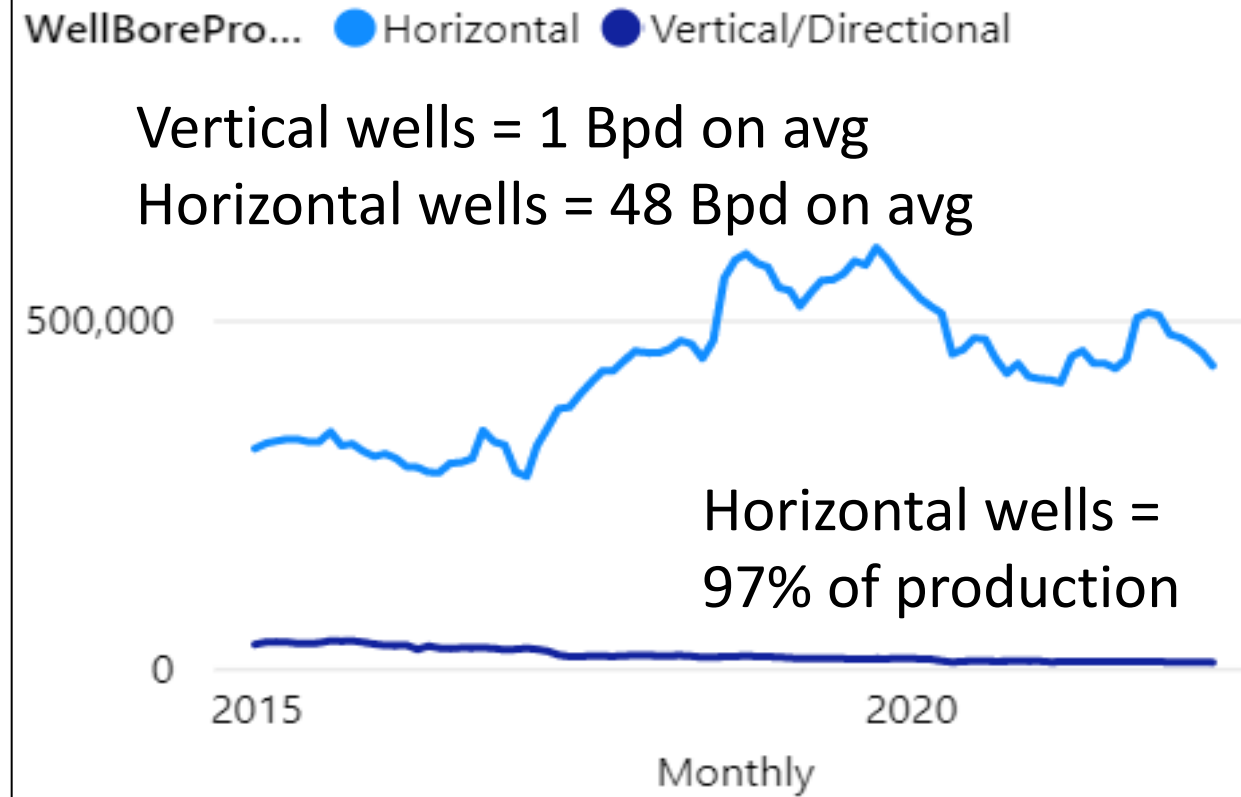
DJ Basin Oil and Gas Production



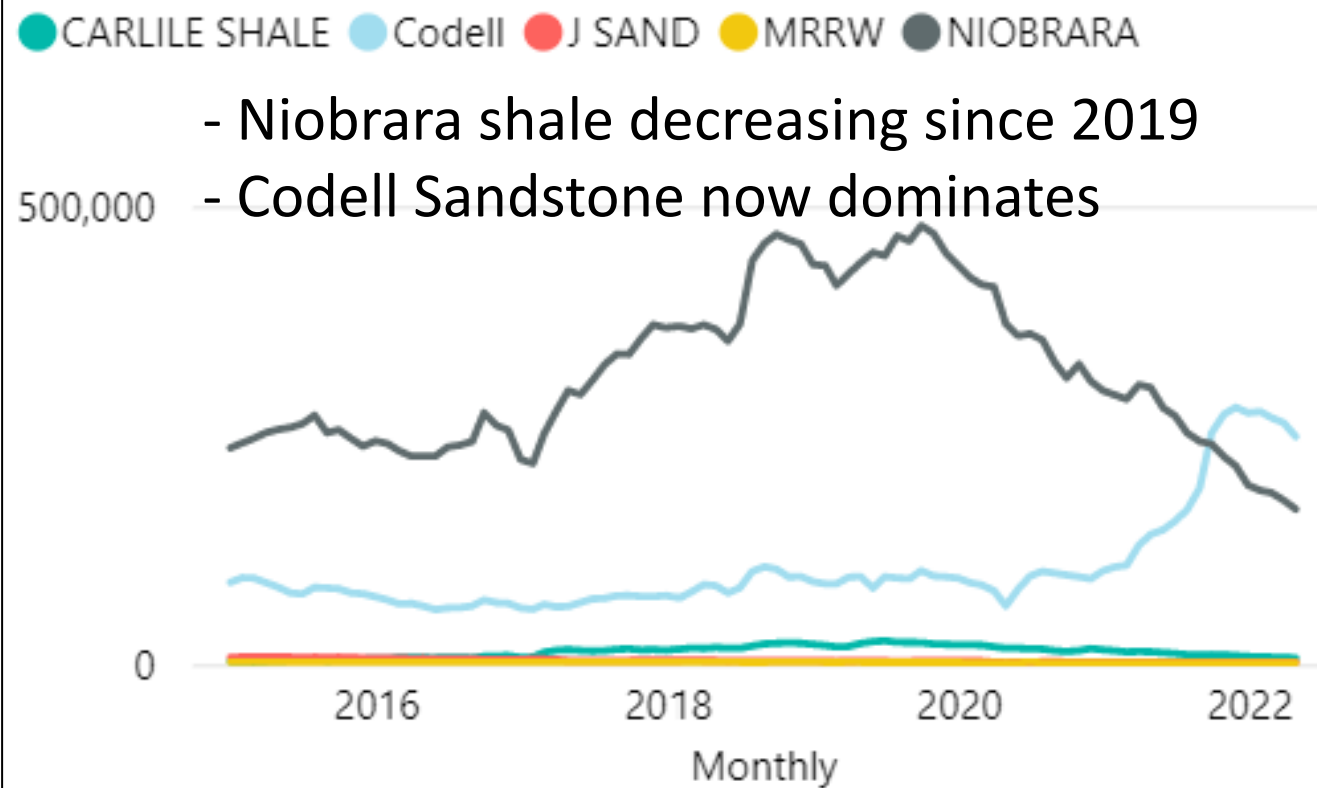
Count Wells Producing by Month or Yr



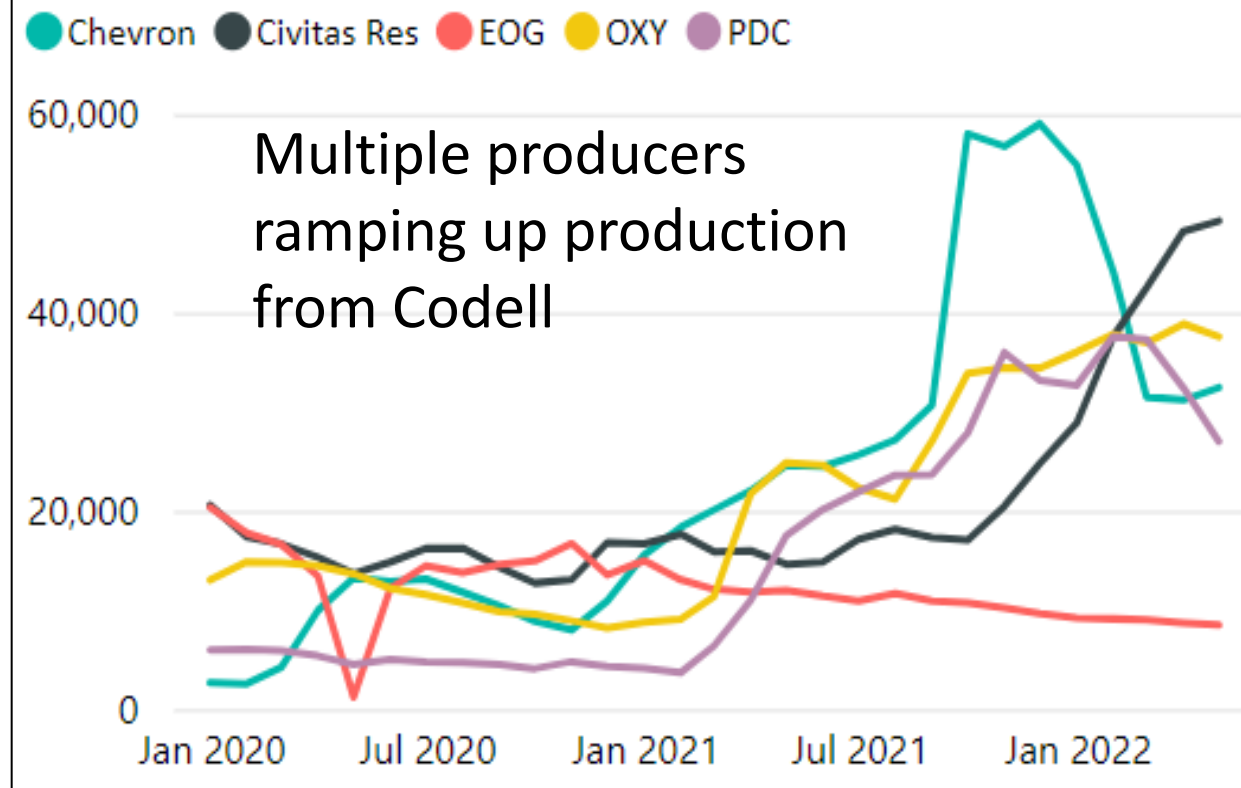
Oil Production Bpd



Oil Production Bpd for Top 5 Formations

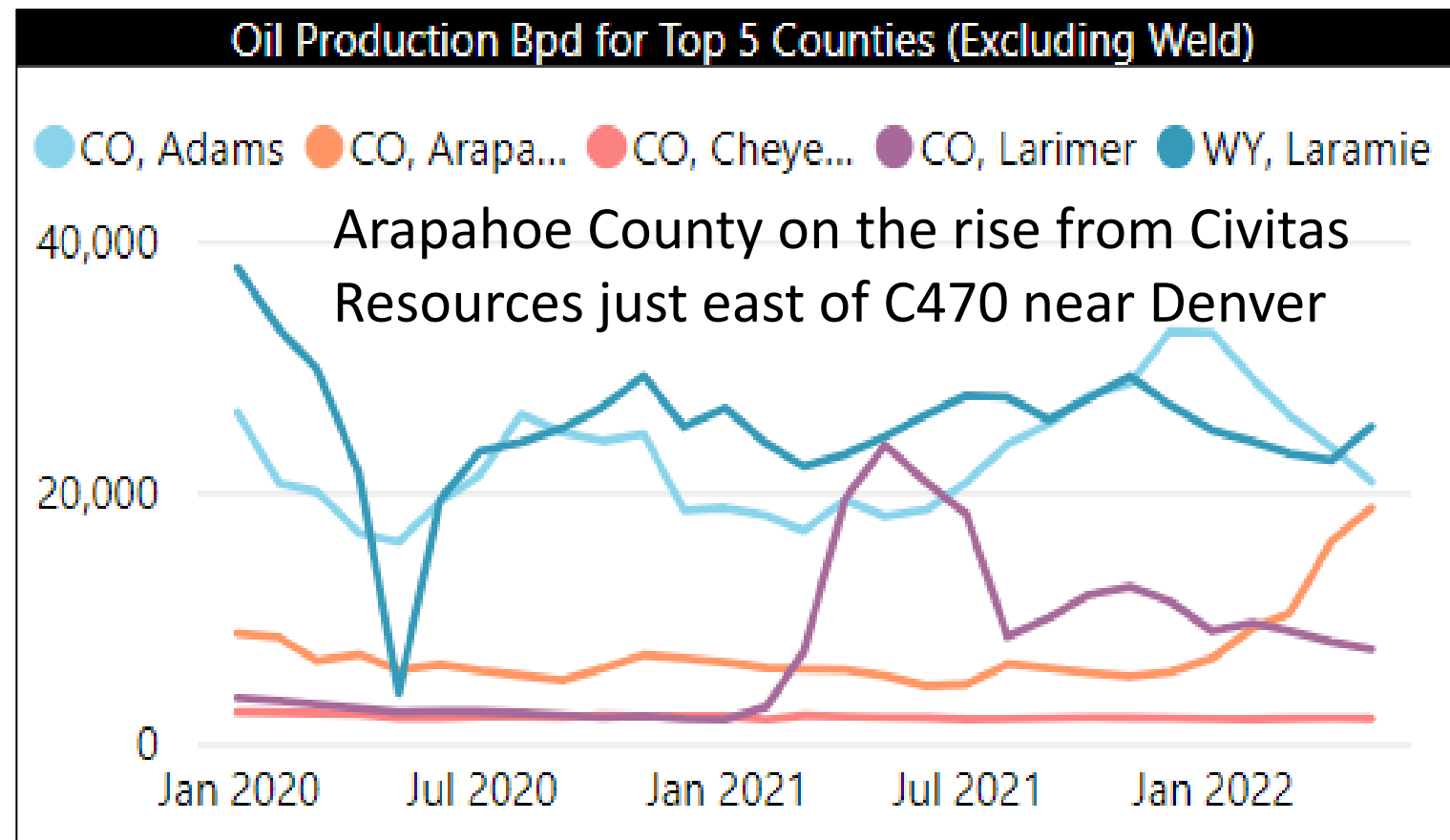
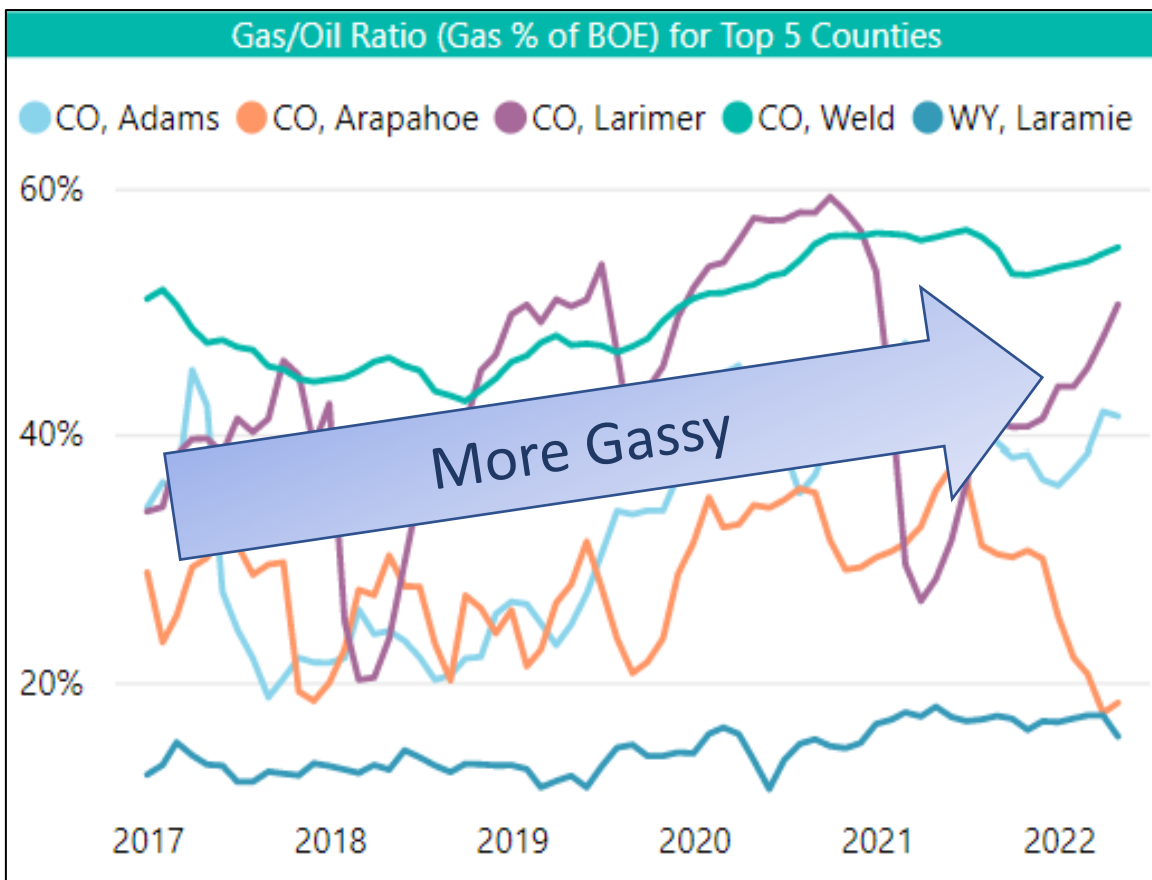
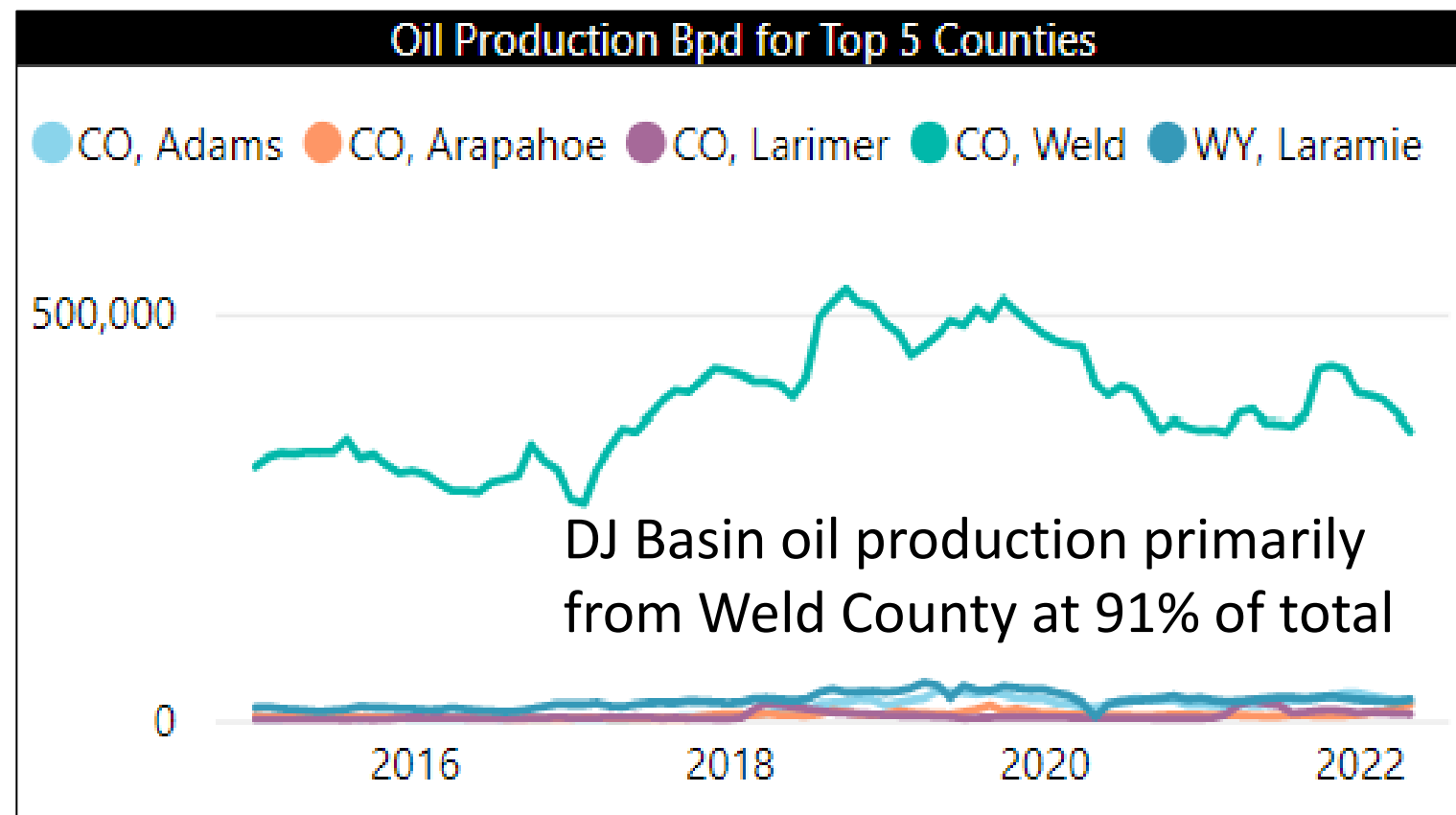


Codell Oil Production Bpd for Top 5 Operators



DJ Basin Oil Production Cont.

ST, County	Count Wells Recent Full Month	Oil Bpd Recent Full Month	Gas Mcfpd Recent Full Month
CO, Weld	10,664	356,574	2,651,251
WY, Laramie	462	25,147	27,468
CO, Adams	303	20,783	88,178
CO, Arapahoe	127	18,663	25,096
CO, Broomfield	66	8,224	40,789
CO, Larimer	143	7,446	45,386
CO, Cheyenne	269	1,934	17,985
CO, Washington	326	855	2,752
CO, Lincoln	64	659	185
CO, Logan	60	286	532
Total	16,330	440,848	2,937,775



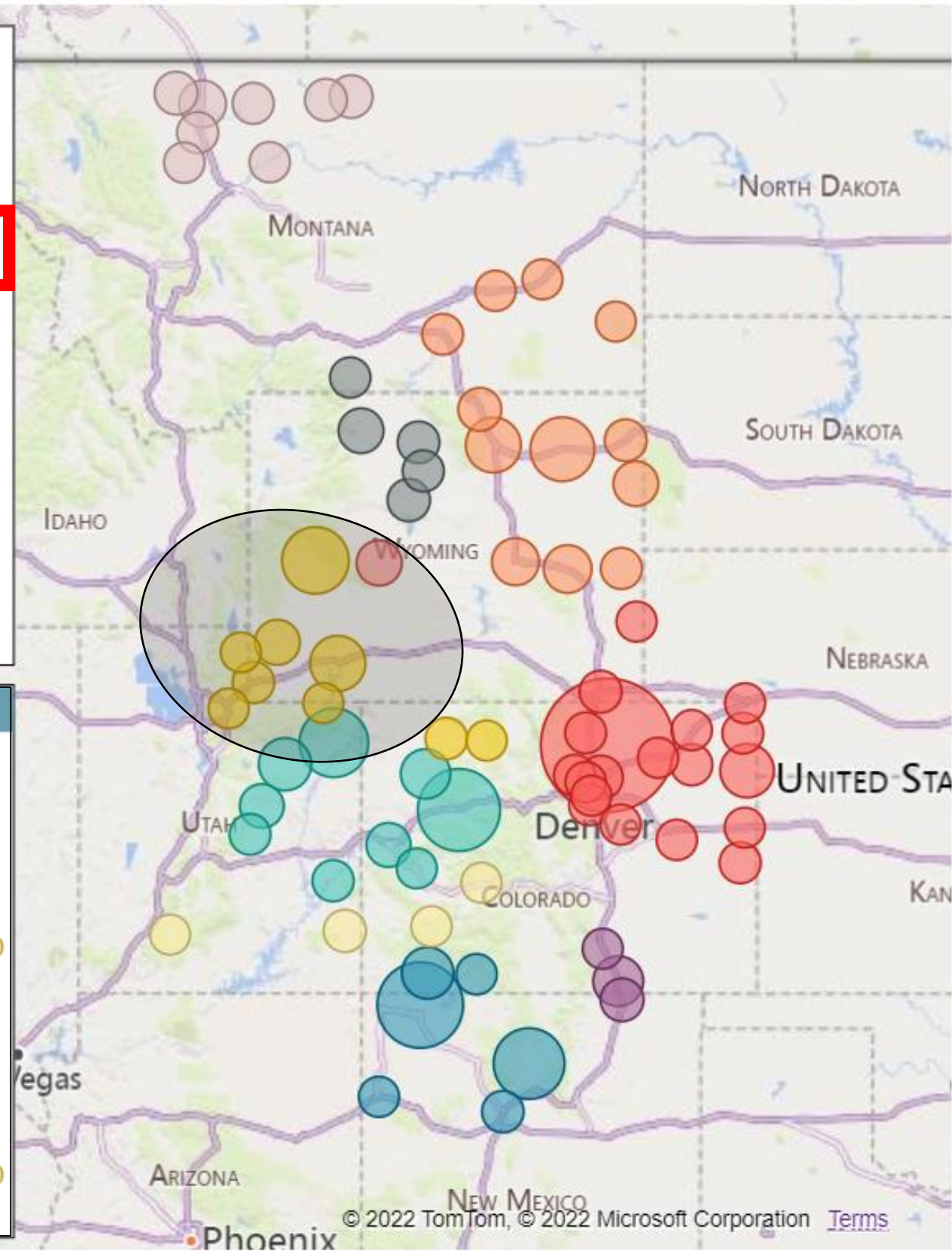
Green River/Overthrust Oil & Gas Activity



Counties Sized by Count Wells, Colored by Basin

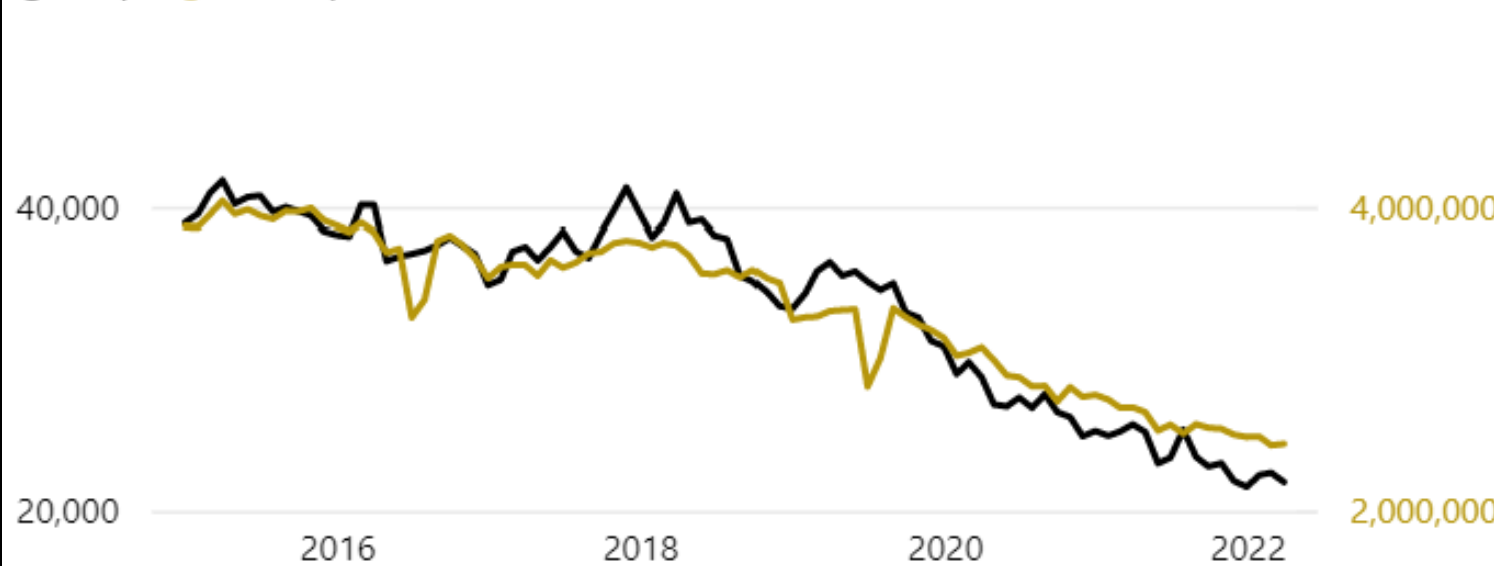
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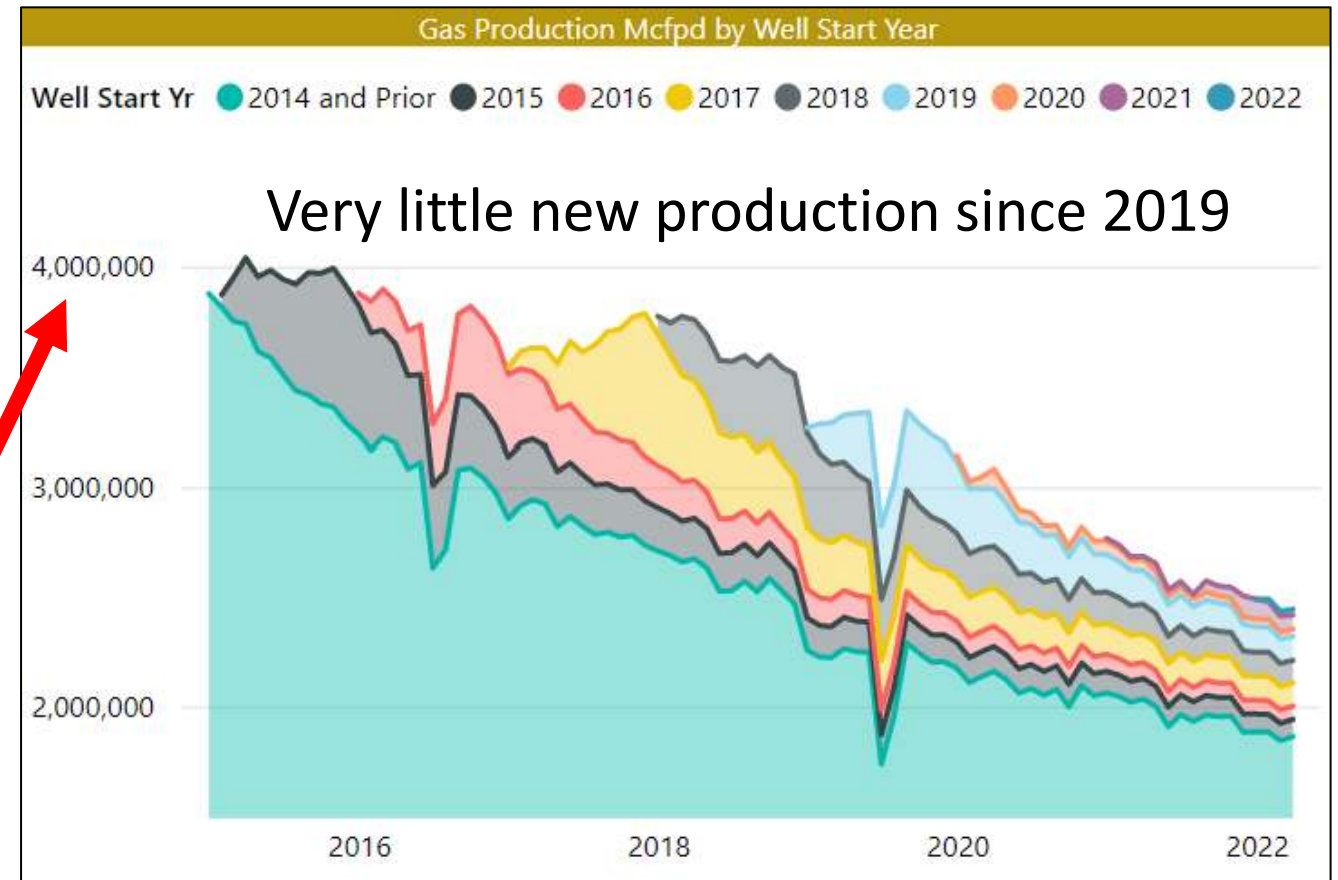
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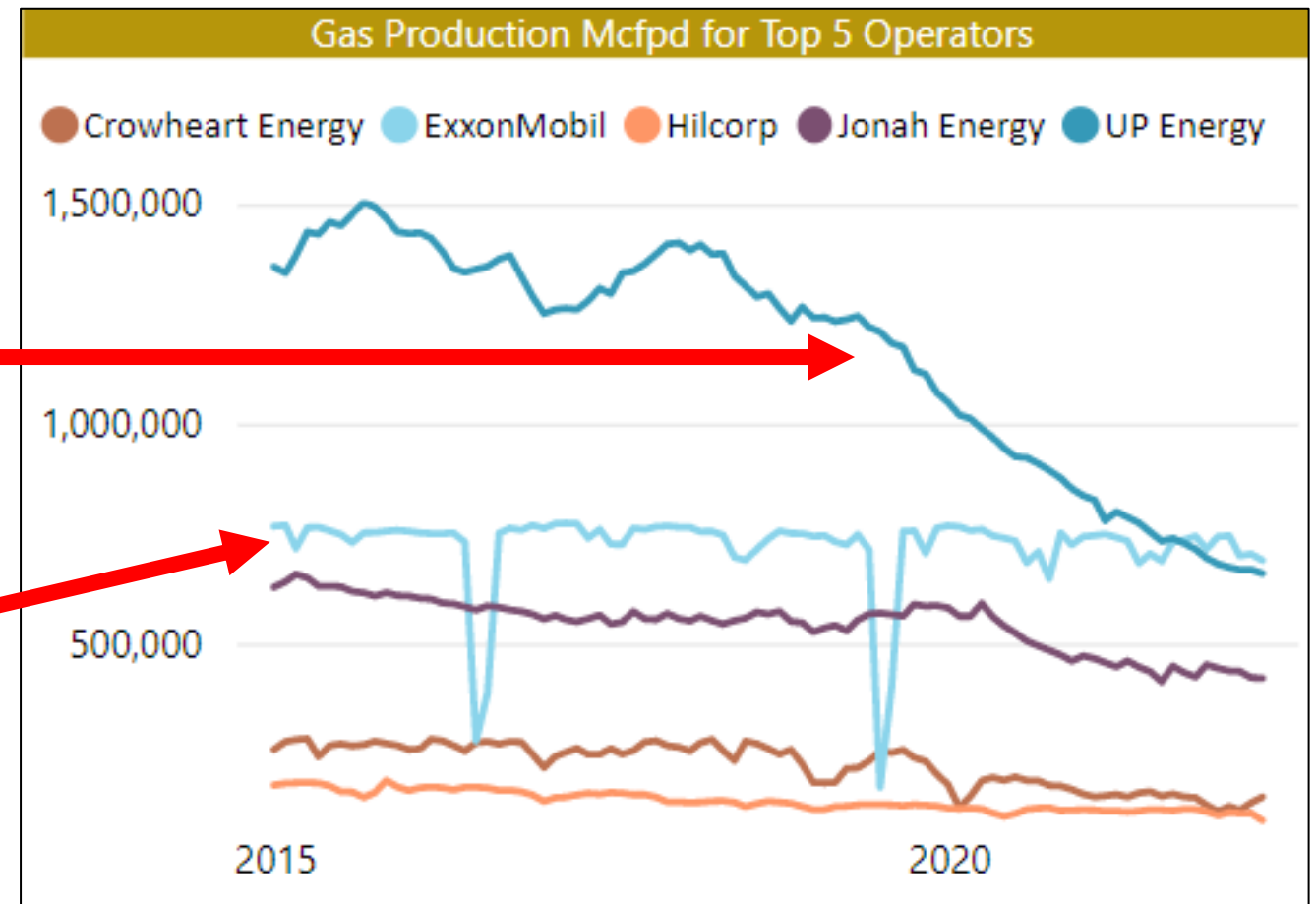
Green River/Overthrust Oil and Gas Production

● Oil Bpd ● Gas Mcfpd





- Gas production down from 4 Bcf/d in 2015 to only 2.4 Bcf/d currently
- UP Energy's (PureWest) horizontal wells declining fast since quit drilling in 2019
- ExxonMobil's vertical wells in the Madison formation have some of the shallowest declines in the world

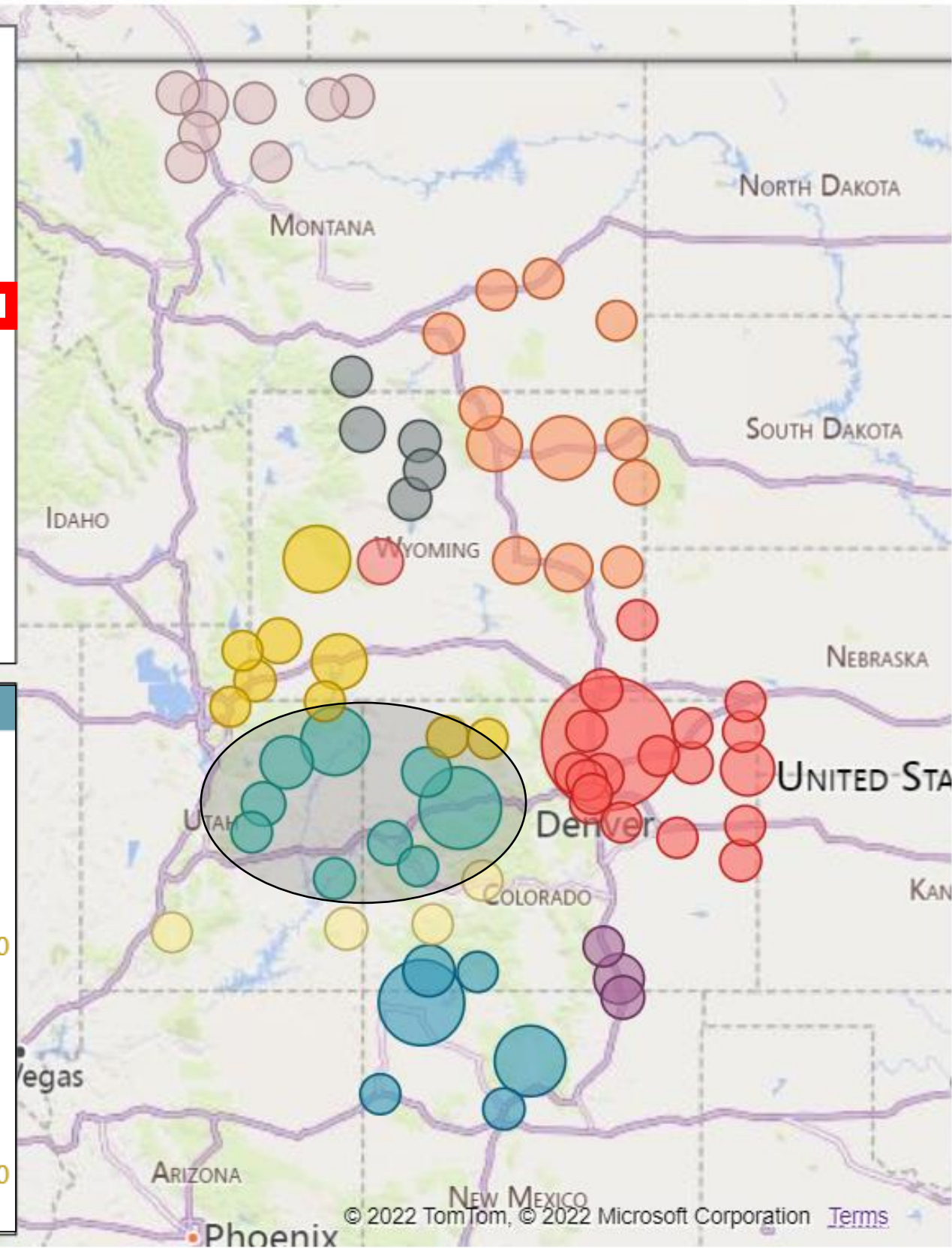


Uinta/Piceance Oil & Gas Activity

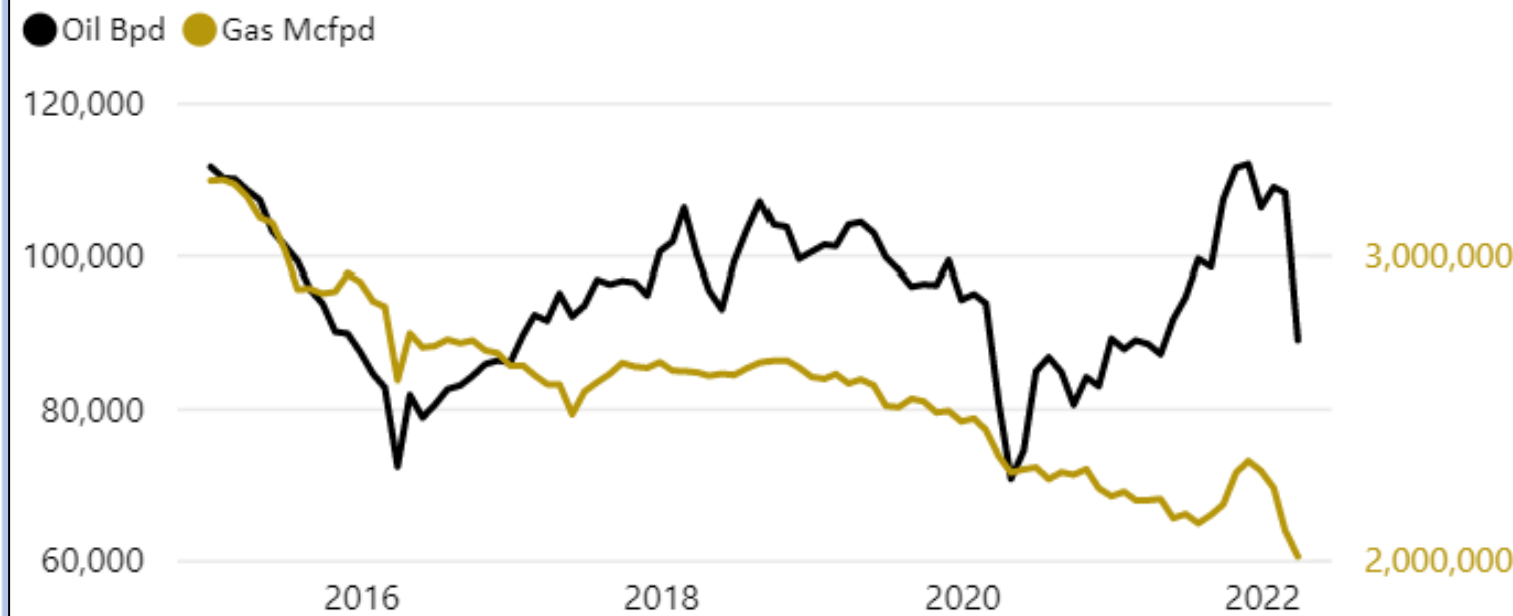
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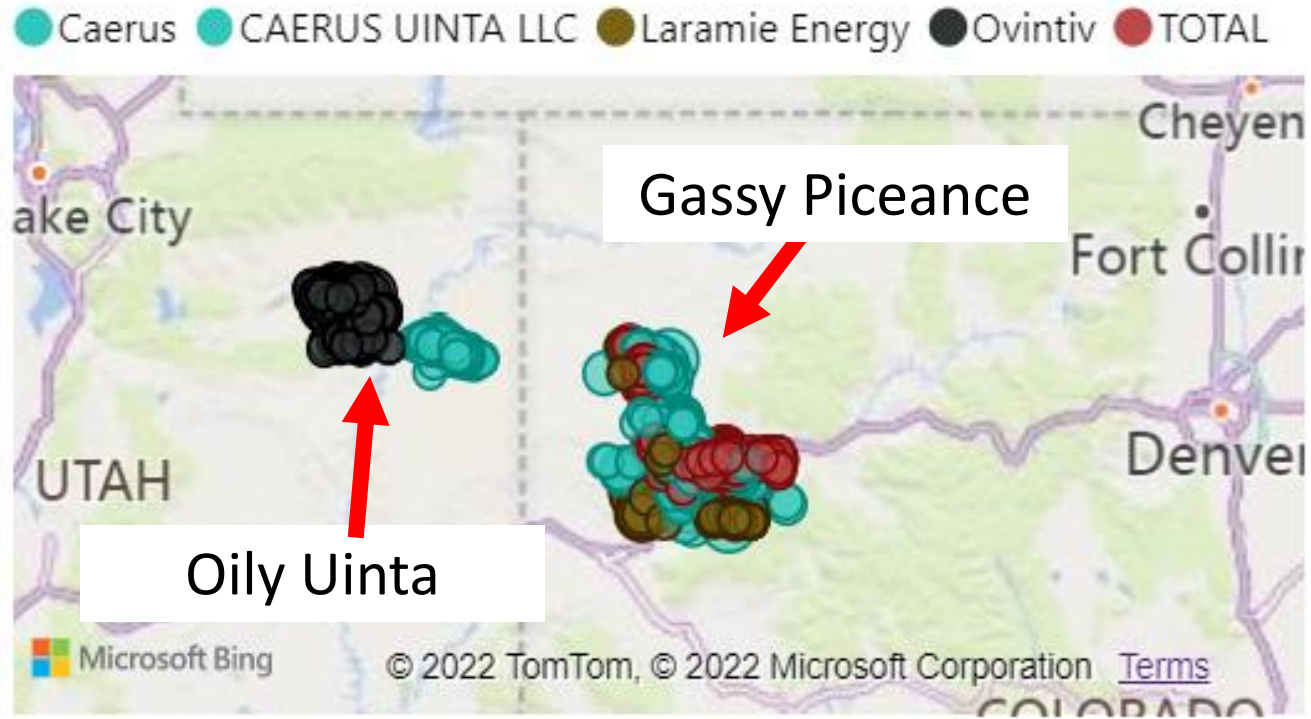
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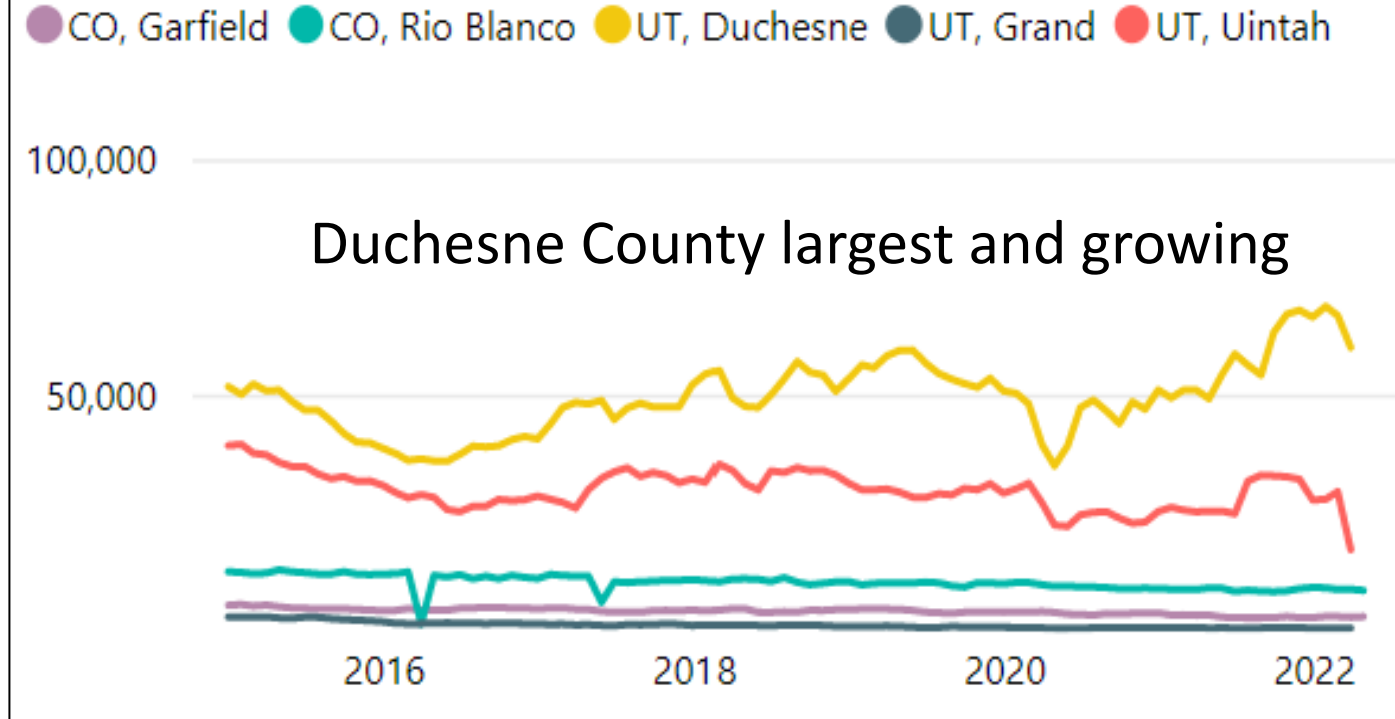
Uinta/Piceance Oil and Gas Production



Wells Sized by Cum BOE Prod Since 2013 for Top 5 Operators

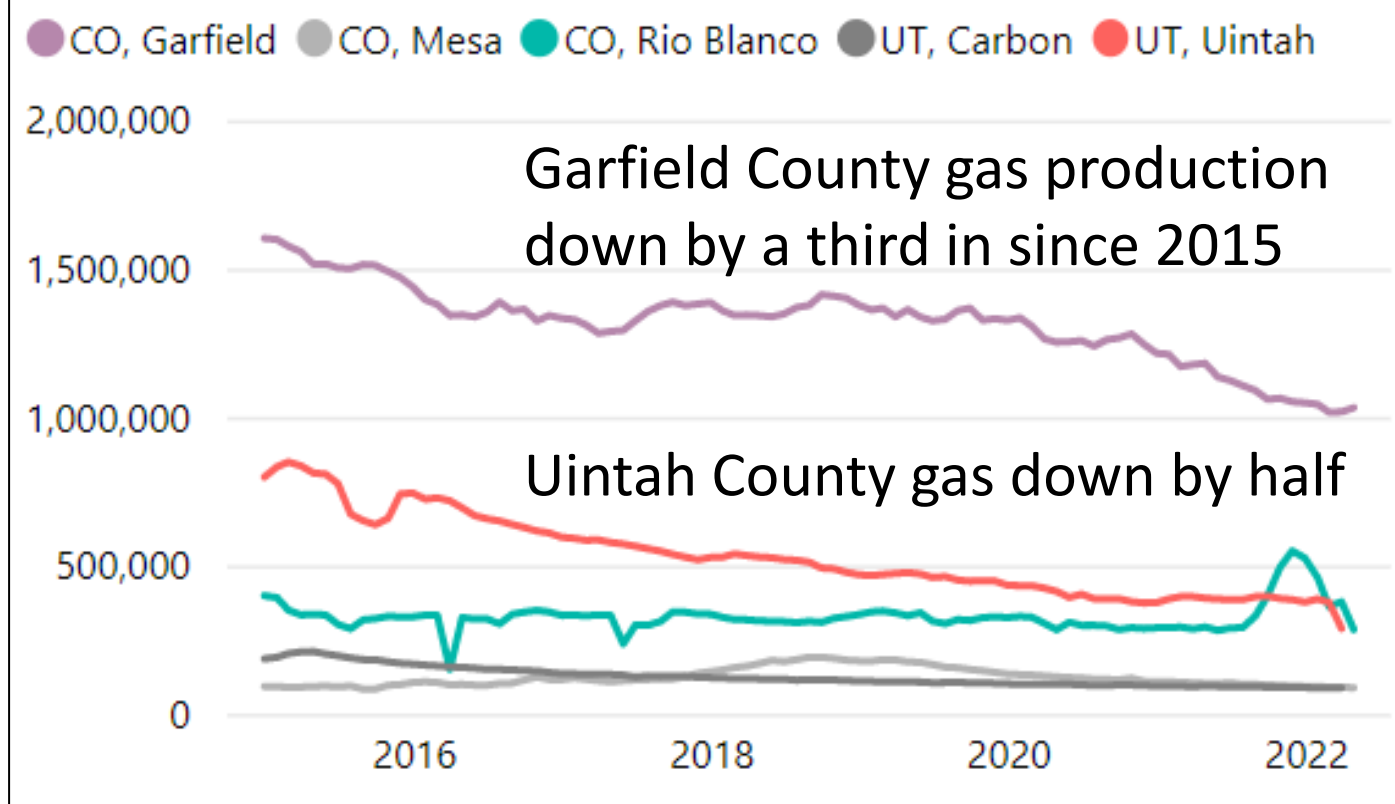


Oil Production Bpd for Top 5 Counties



- Production in other counties dominated by gas
- Garfield county has the most BOEpd since gas production is so high

Gas Production Mcfpd for Top 5 Counties



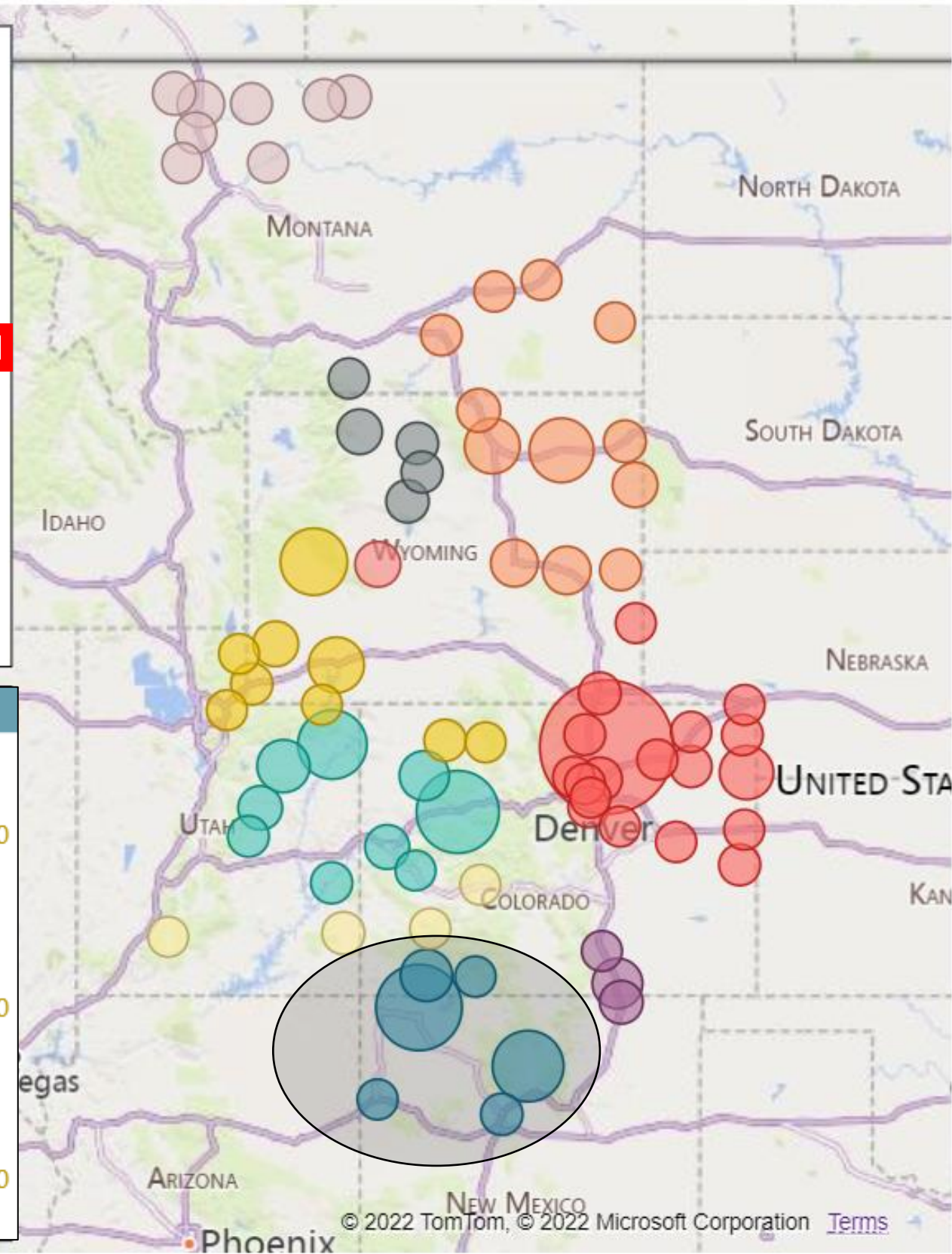
ST, County	Count Wells Recent Full Month	Oil Bpd Recent Full Month	Gas Mcfpd Recent Full Month	BOEpd Recent Full Month	GOR (Gas % of BOE)
CO, Garfield	11,138	2,822	1,030,283	174,536	98%
UT, Duchesne	2,659	59,952	133,008	82,120	27%
UT, Uintah	5,238	17,057	286,464	64,801	74%
CO, Rio Blanco	2,103	8,380	282,727	55,501	85%
CO, Mesa	1,025	168	86,864	14,646	99%
UT, Carbon	1,039	88	86,659	14,531	99%
UT, Emery	231	0	14,667	2,445	100%
UT, Grand	231	383	7,854	1,692	77%
CO, Delta	1	0	36	6	100%
Total	23,630	88,927	2,010,690	424,042	79%

San Juan Basin Oil & Gas Activity

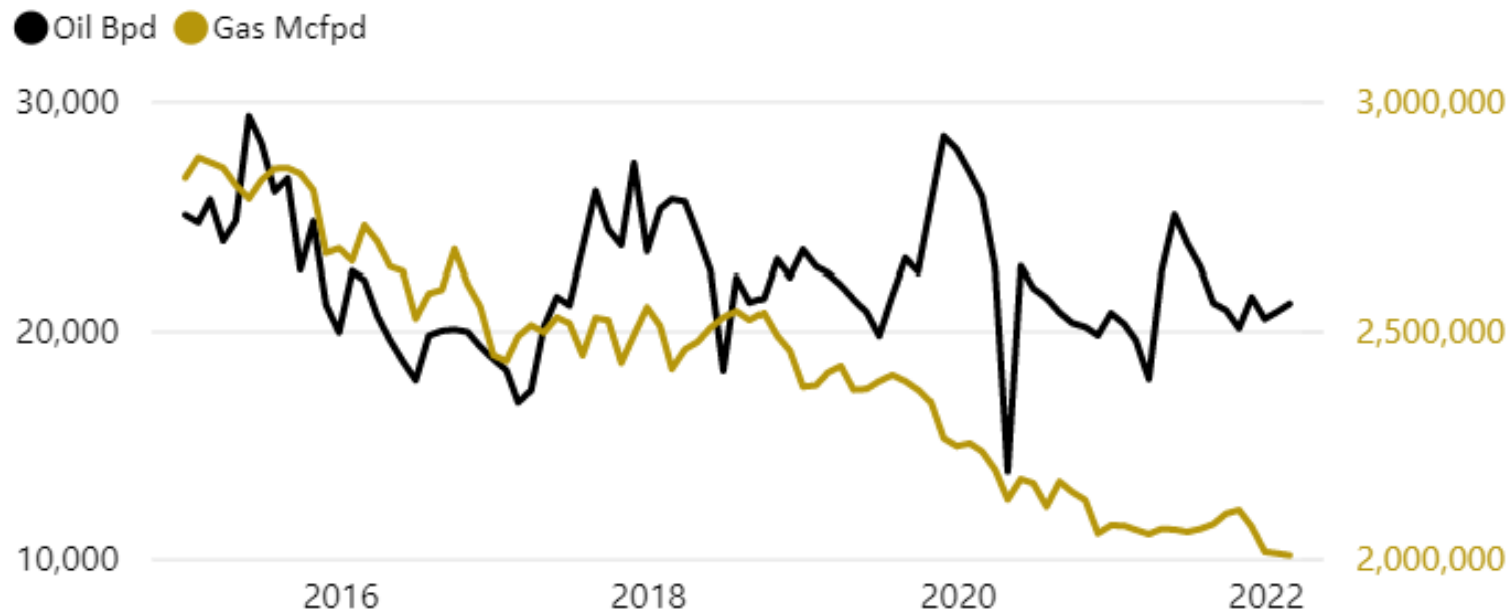
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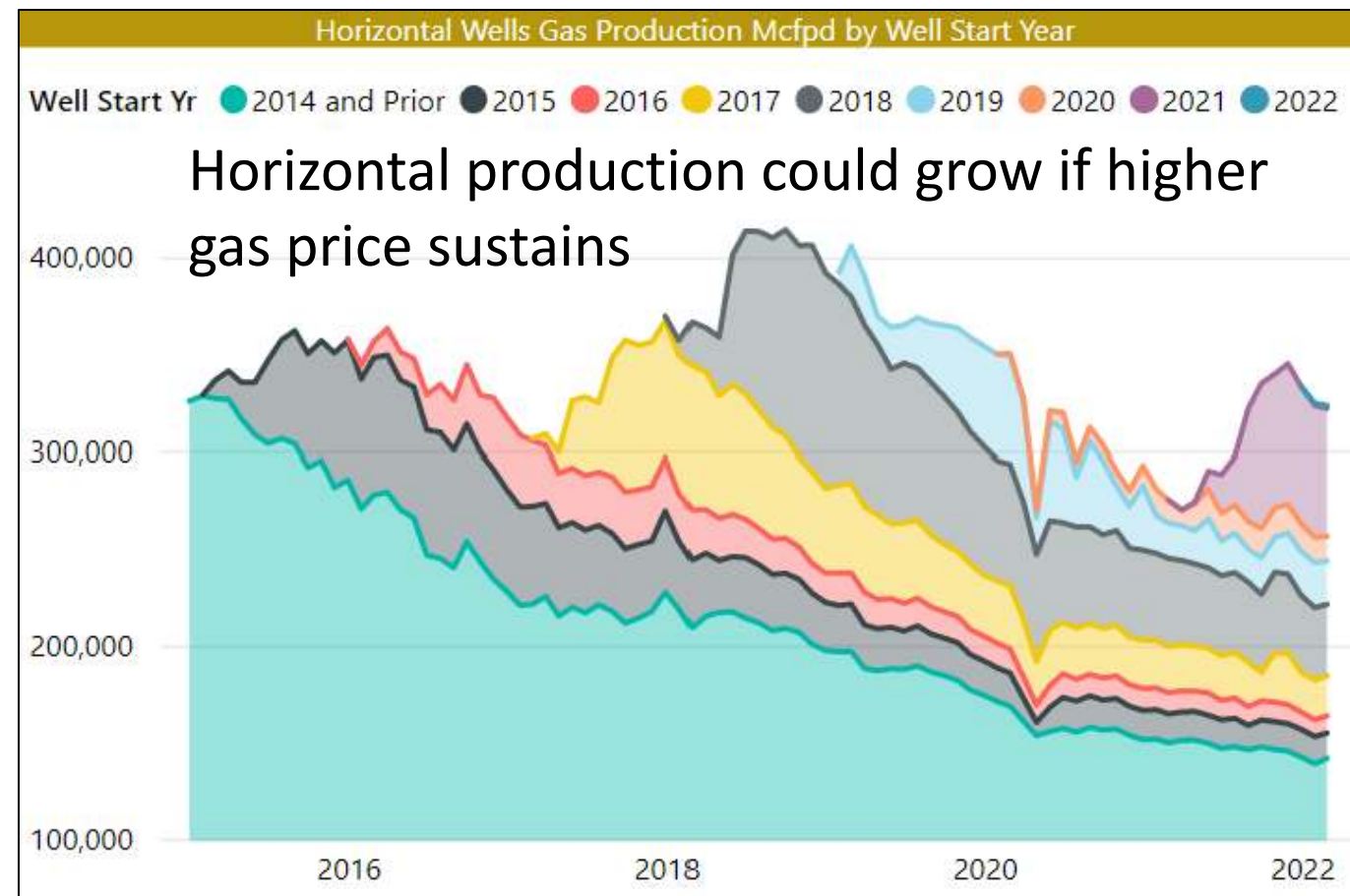
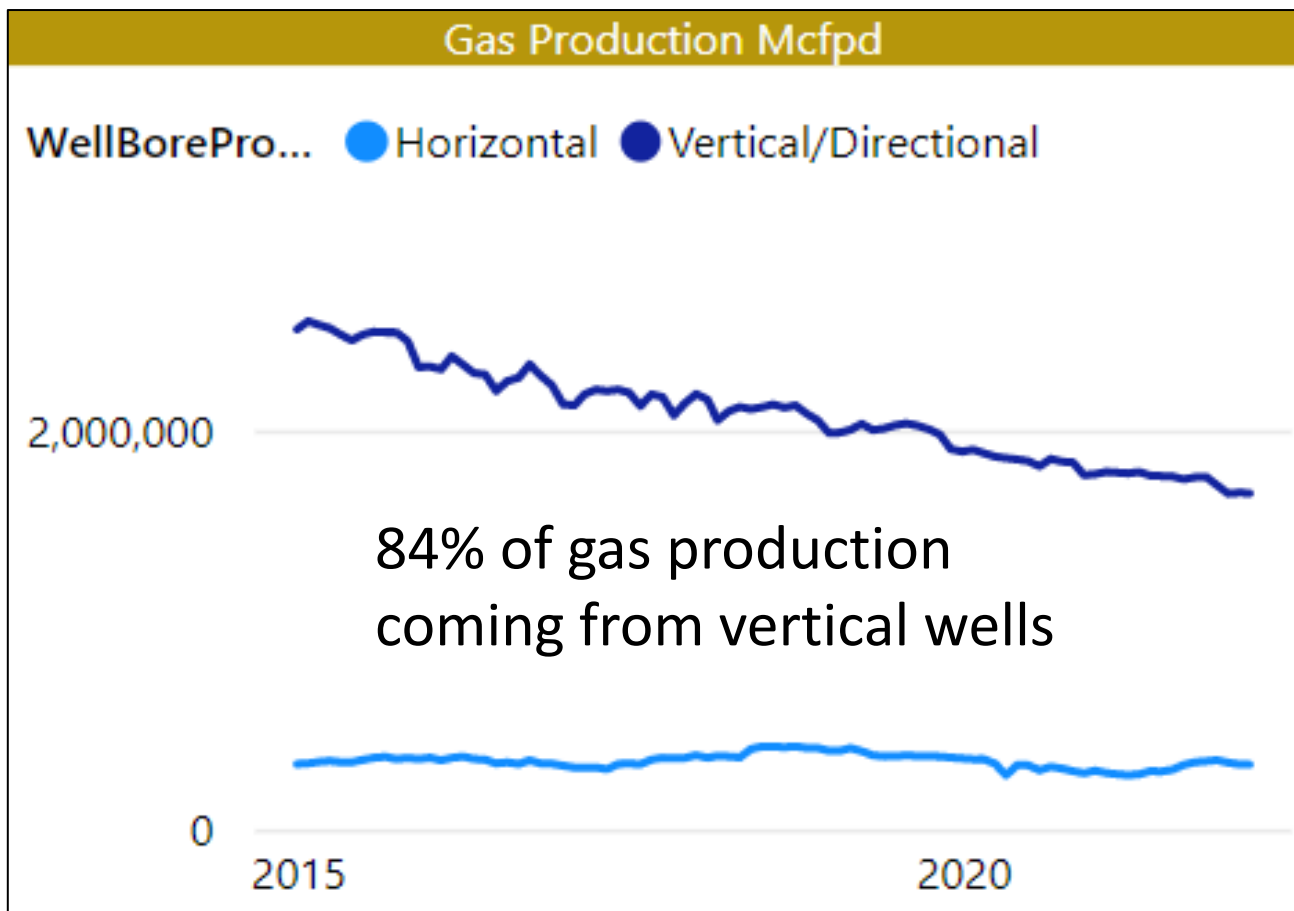
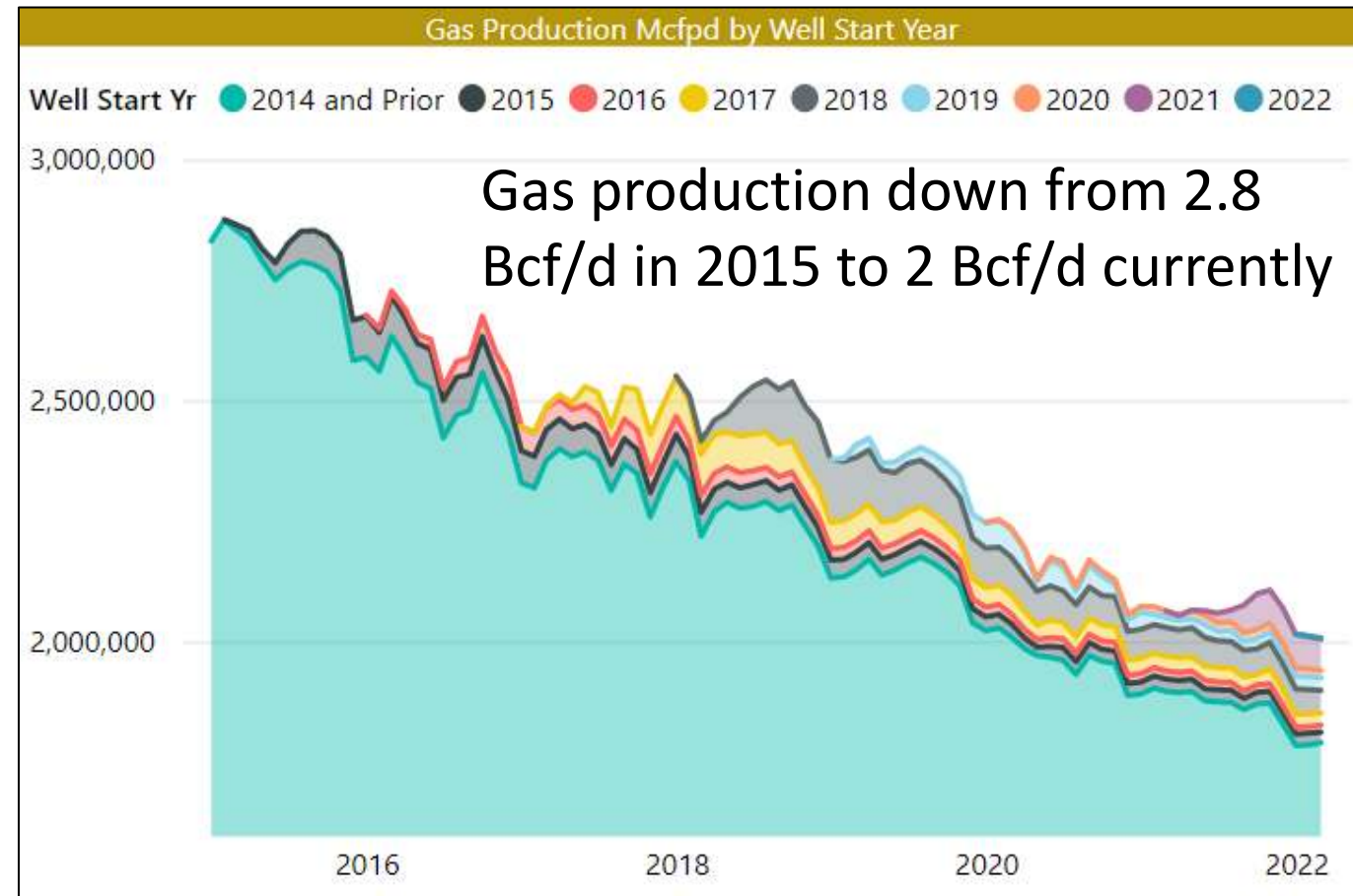
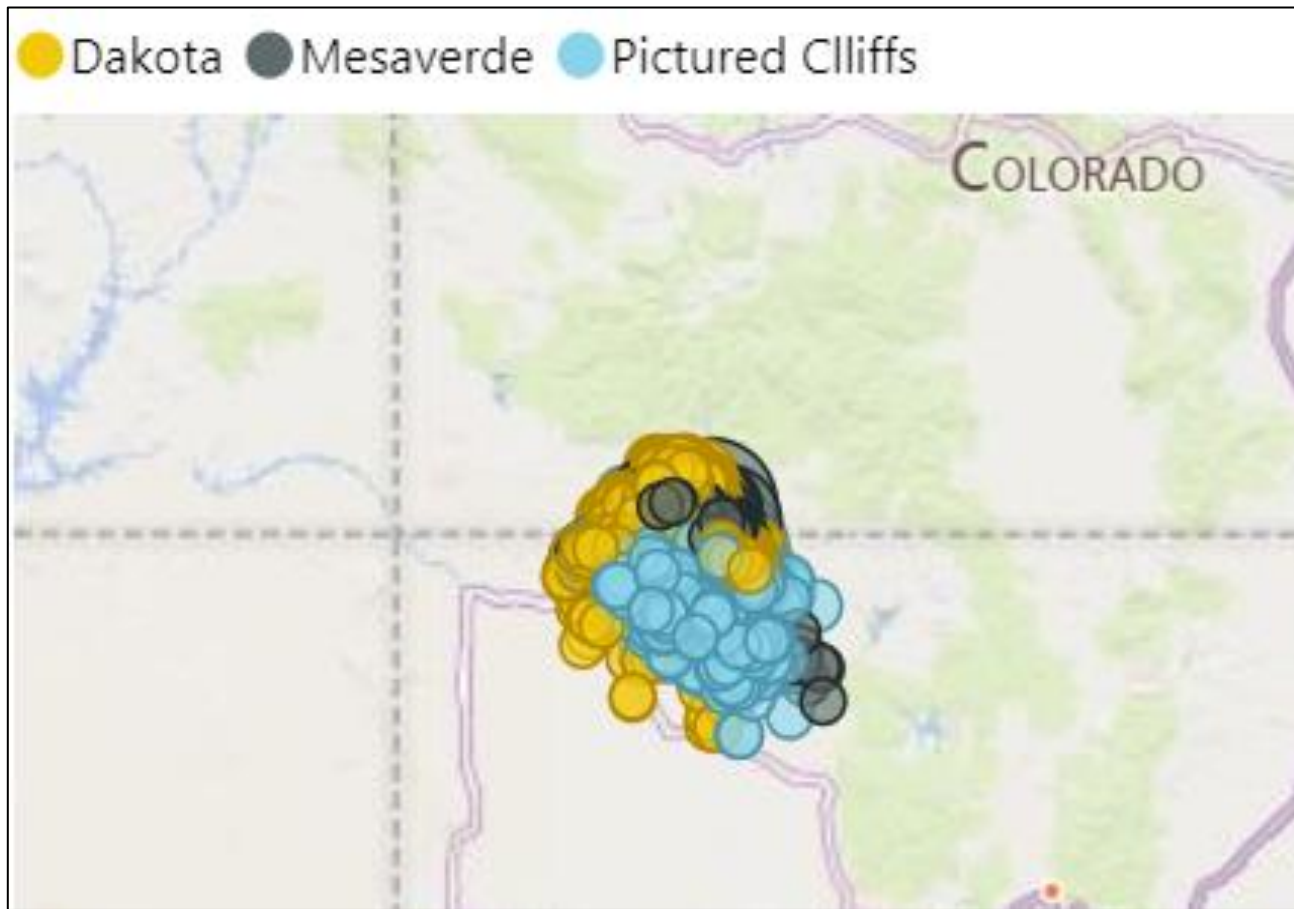
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San Juan Basin Oil and Gas Production



San Juan Basin Gas Production

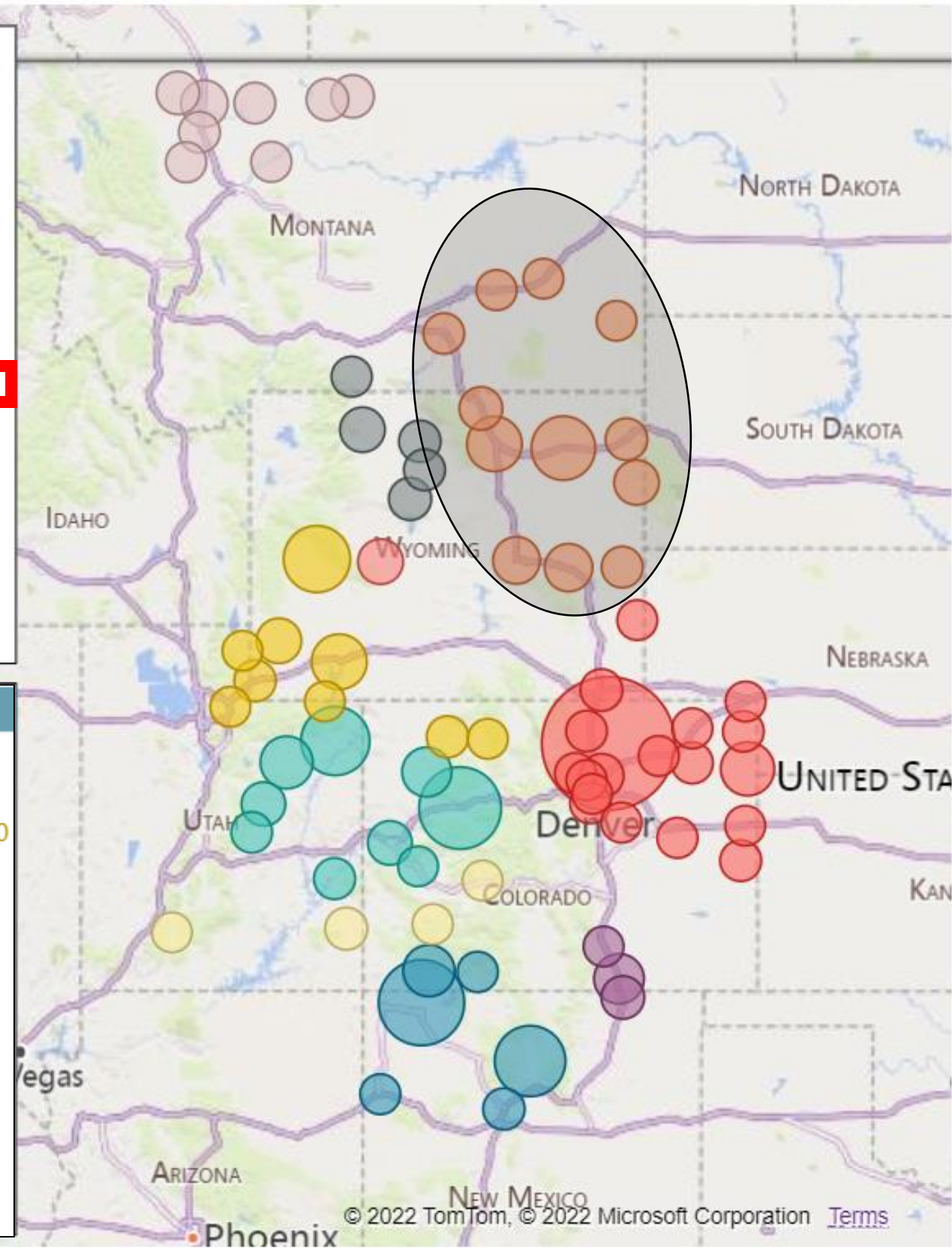


Powder River Oil & Gas Activity

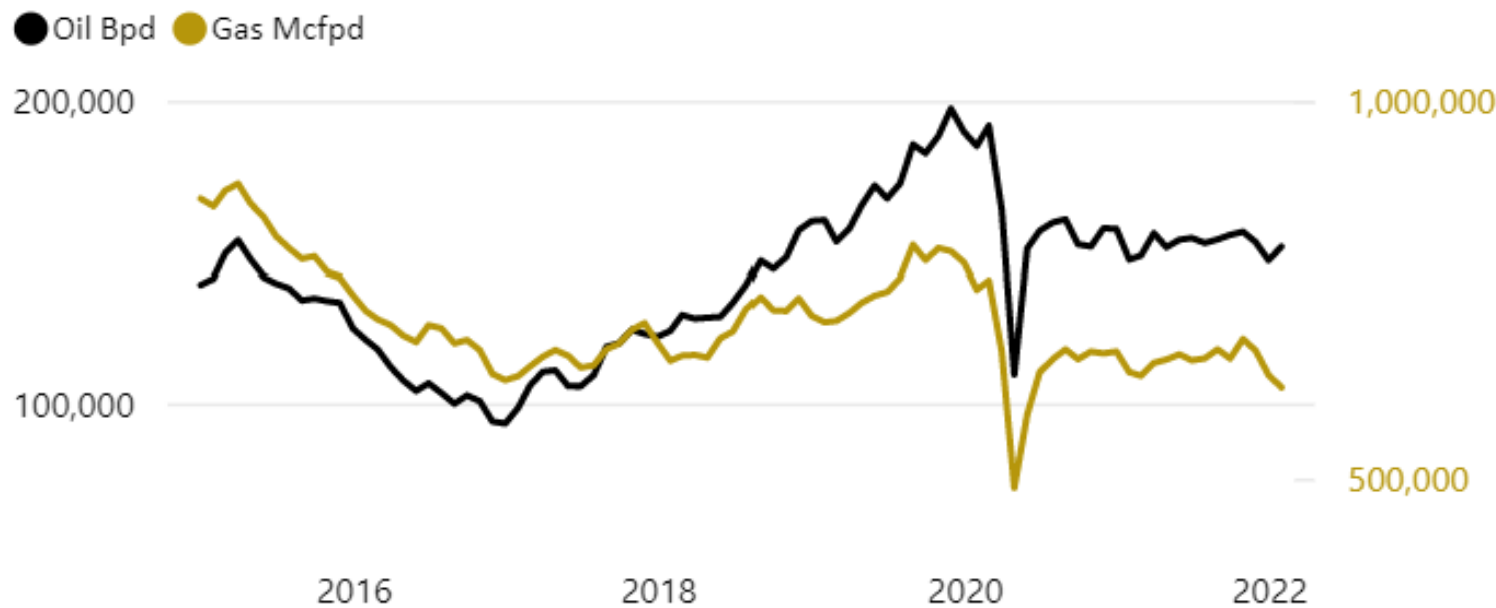
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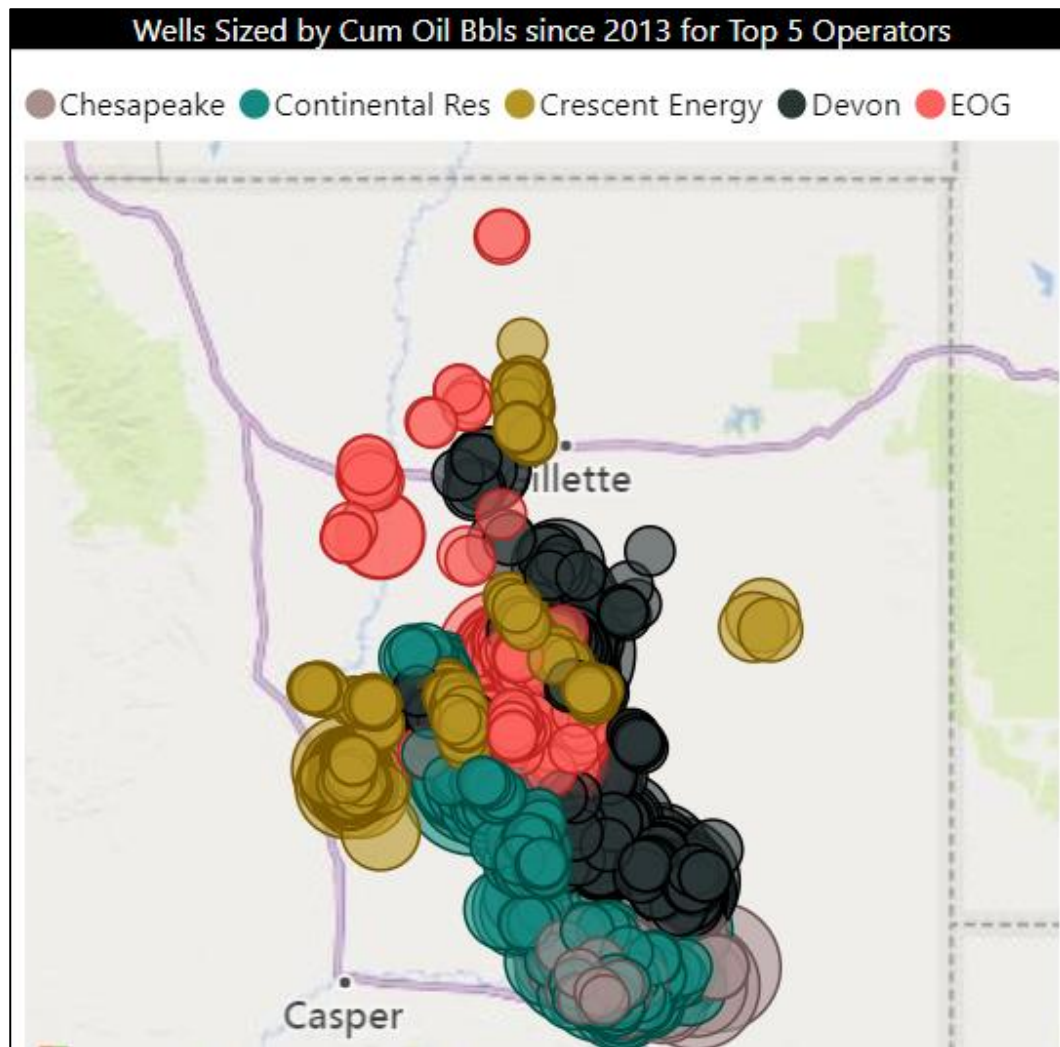
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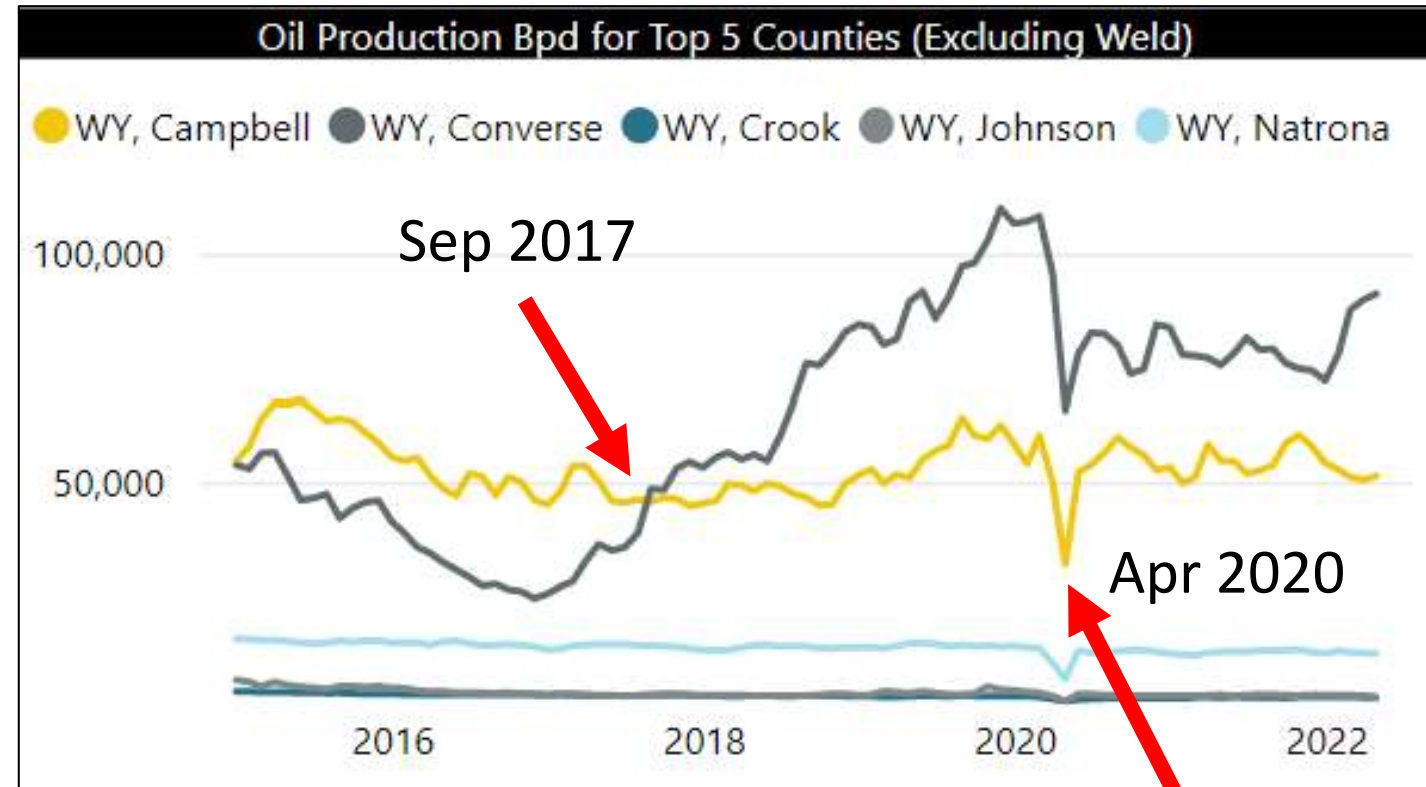
Powder River Oil and Gas Production



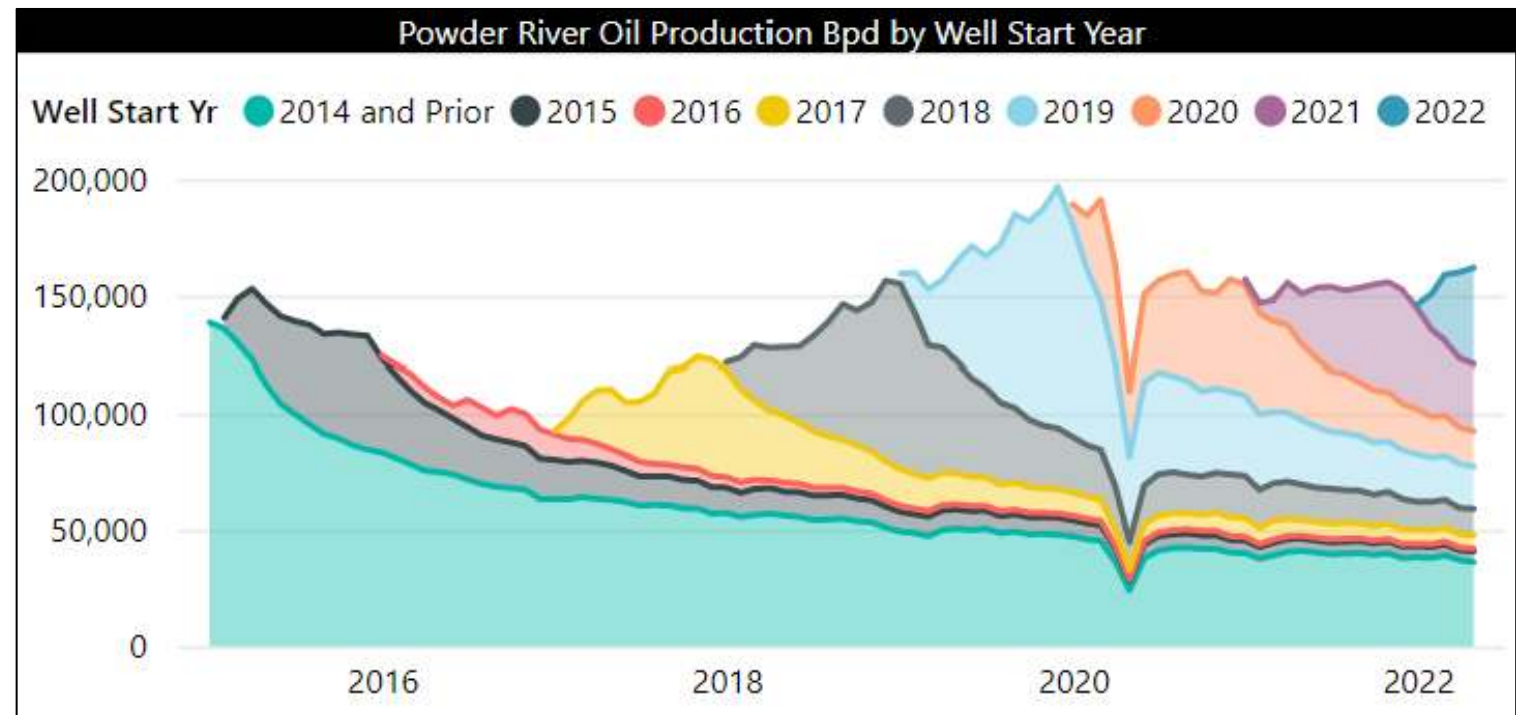
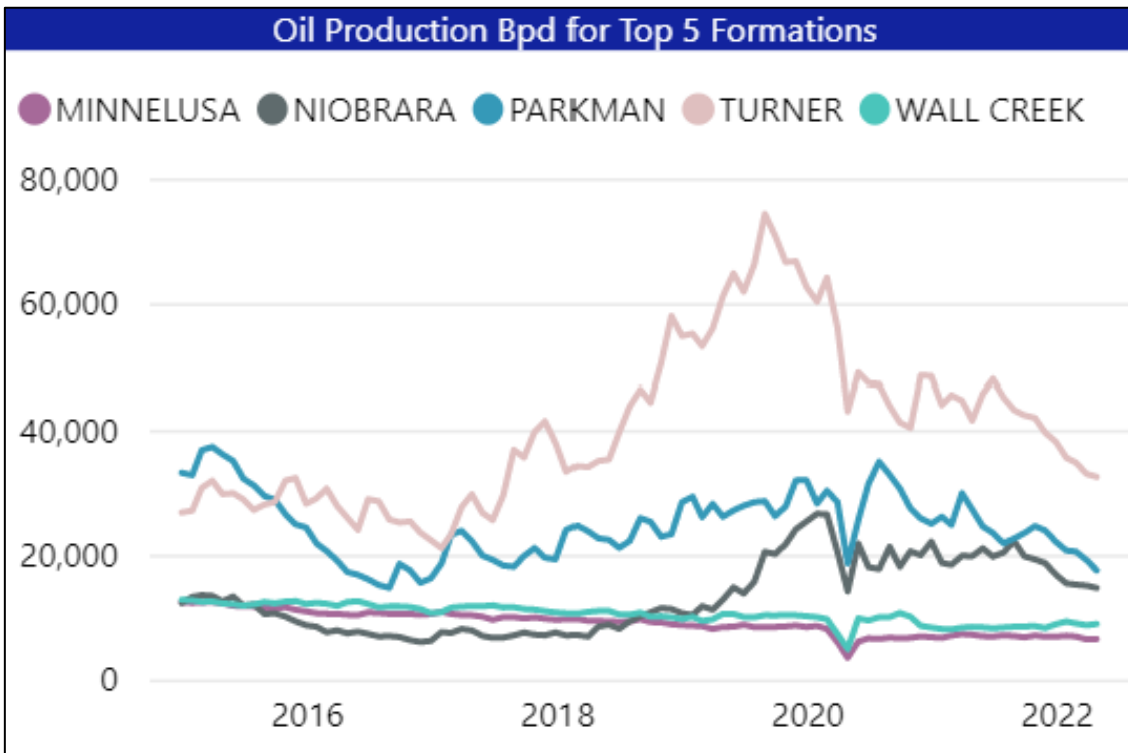
Powder River Oil Production



- Converse County became top producer in Sep 2017
- Campbell County remains mostly flat near 55 MBpd



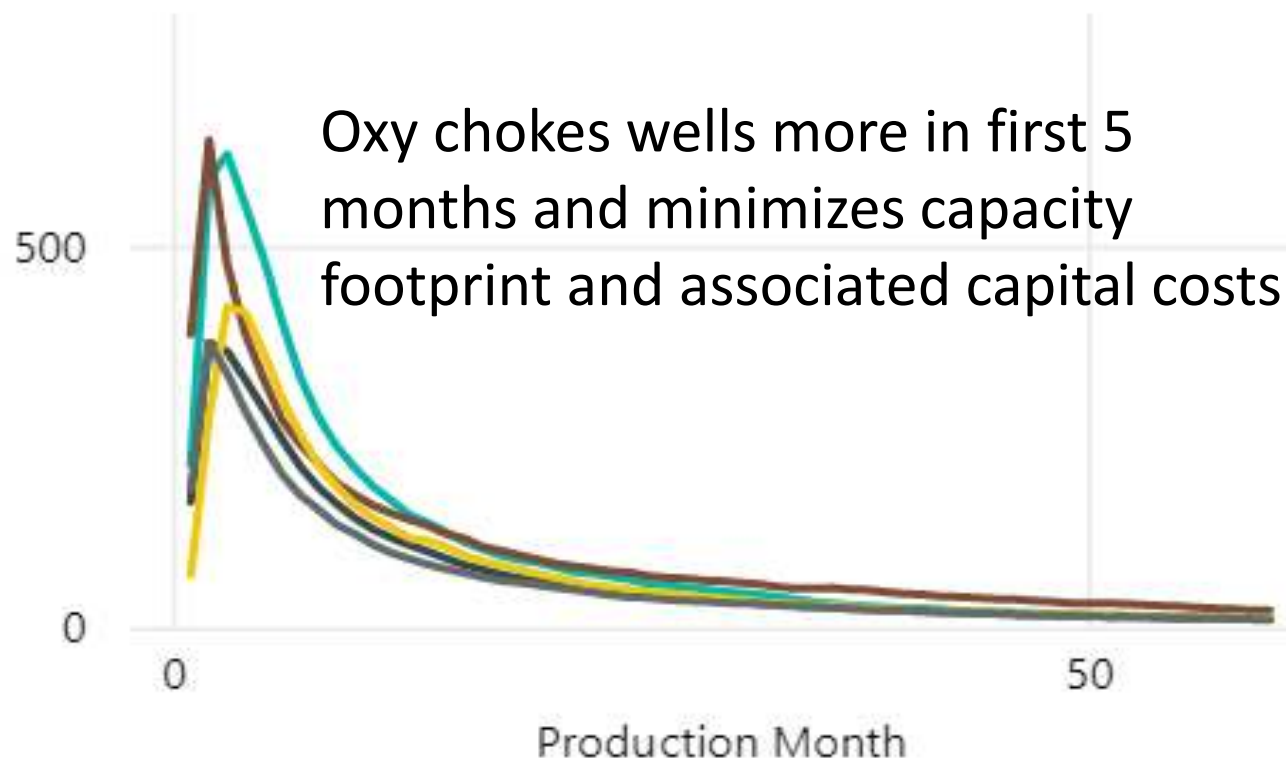
Good job EOG shutting in production when price plummeted



Oil Prod Bpd /Well by Age for Top 5 Operators

● Chevron ● Civitas Res ● EOG ● OXY ● PDC

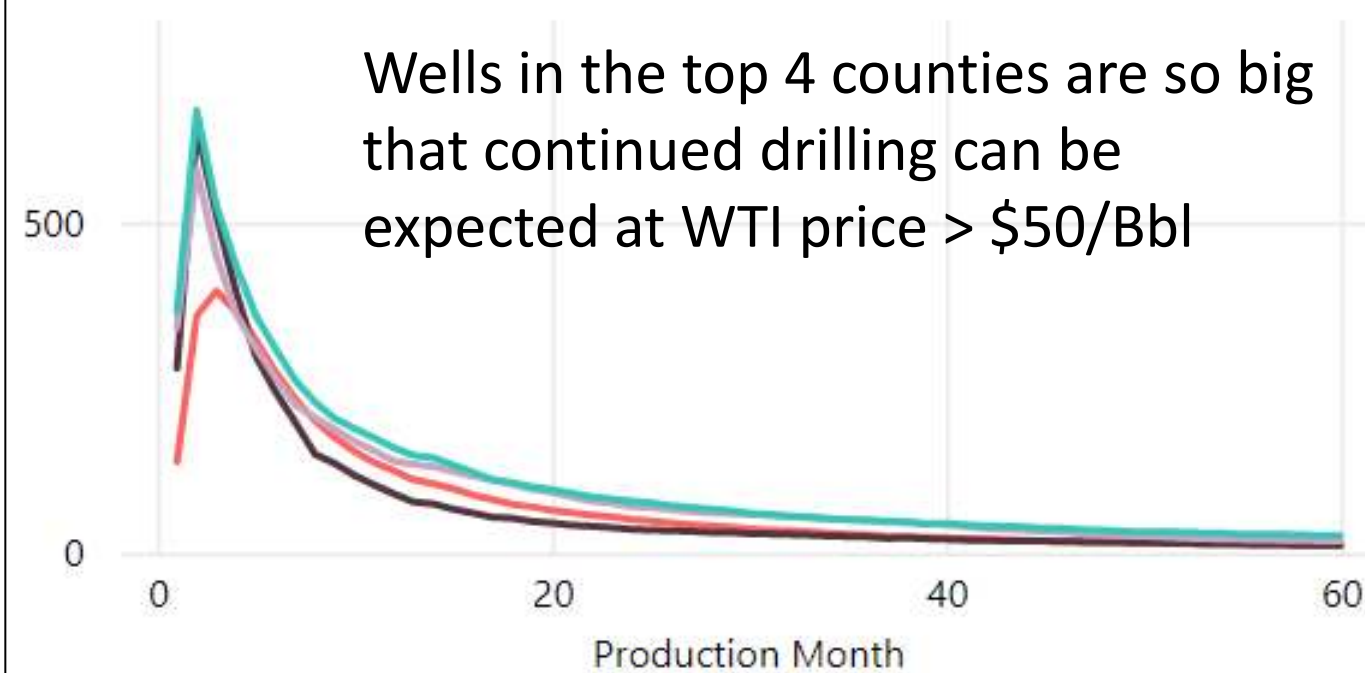
Oxy chokes wells more in first 5 months and minimizes capacity footprint and associated capital costs



Oil Prod Bpd /Well by Age for Top 4 Counties

ST, County ● CO, Weld ● UT, Duchesne ● WY, Campbell ● WY, Converse

Wells in the top 4 counties are so big that continued drilling can be expected at WTI price > \$50/Bbl

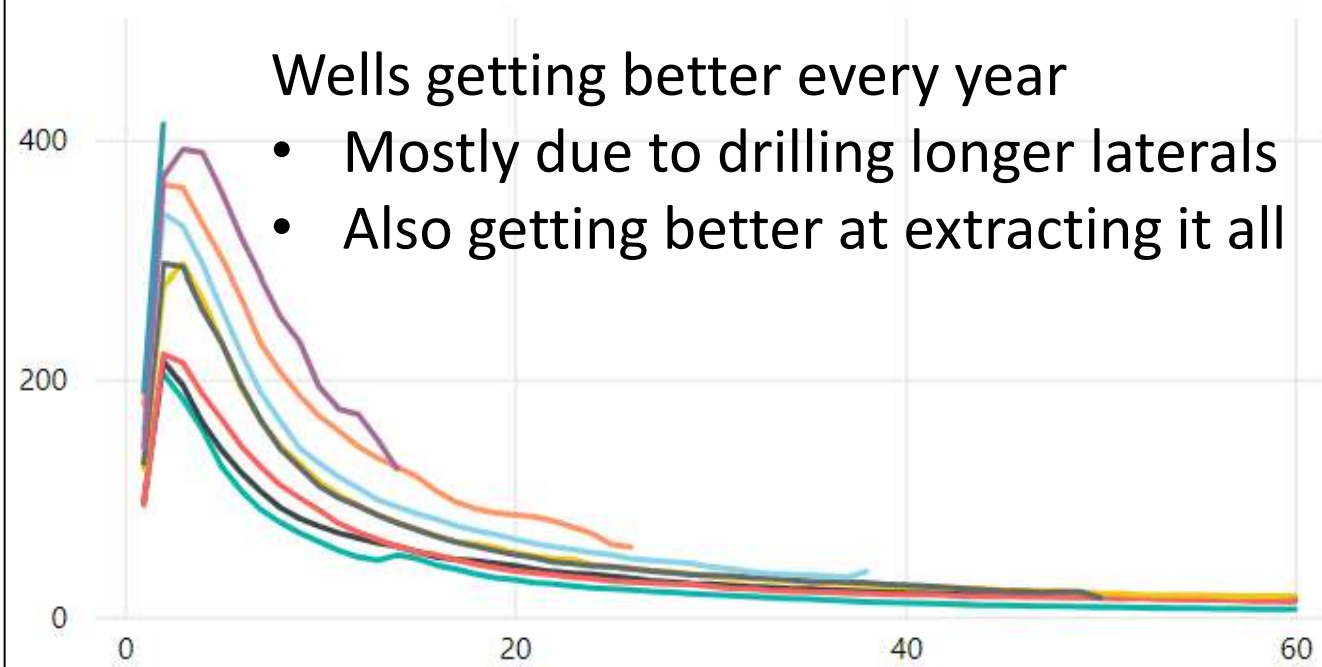


Oil Prod Bpd /Well by Age

Well Start Yr ● 2014 and P... ● 2015 ● 2016 ● 2017 ● 2018 ● 2019 ● 2020 ● 2021 ● 2022

Wells getting better every year

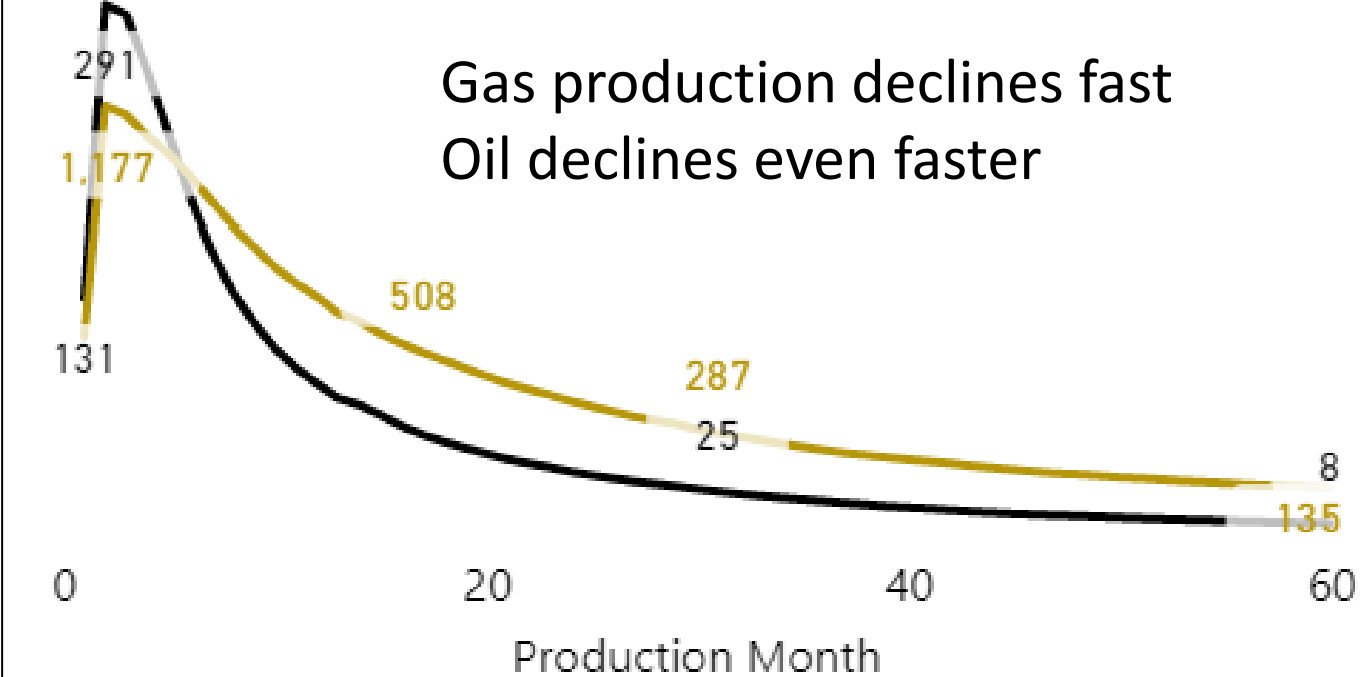
- Mostly due to drilling longer laterals
- Also getting better at extracting it all



Oil and Gas Production Curves for First 60 Months

● Oil Bpd /Well Avg ● Gas Mcfcpd /Well Avg

Gas production declines fast
Oil declines even faster

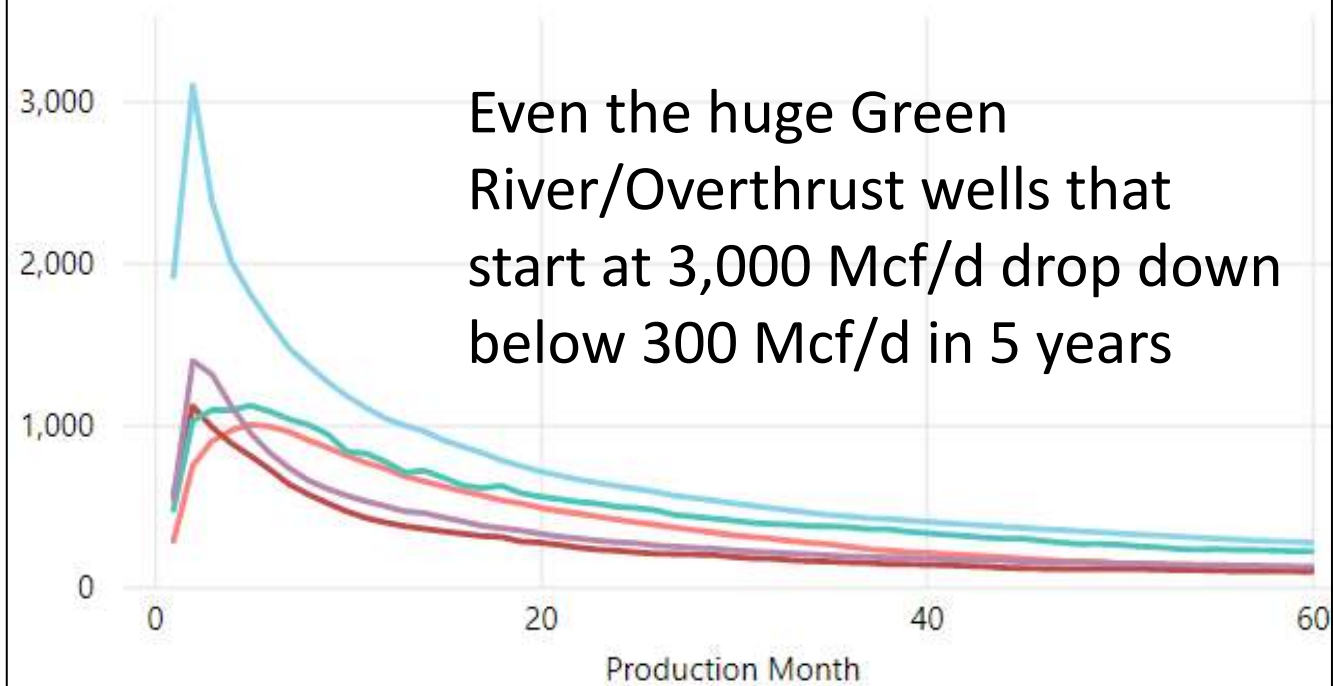


Production Declines – Rockies Gas



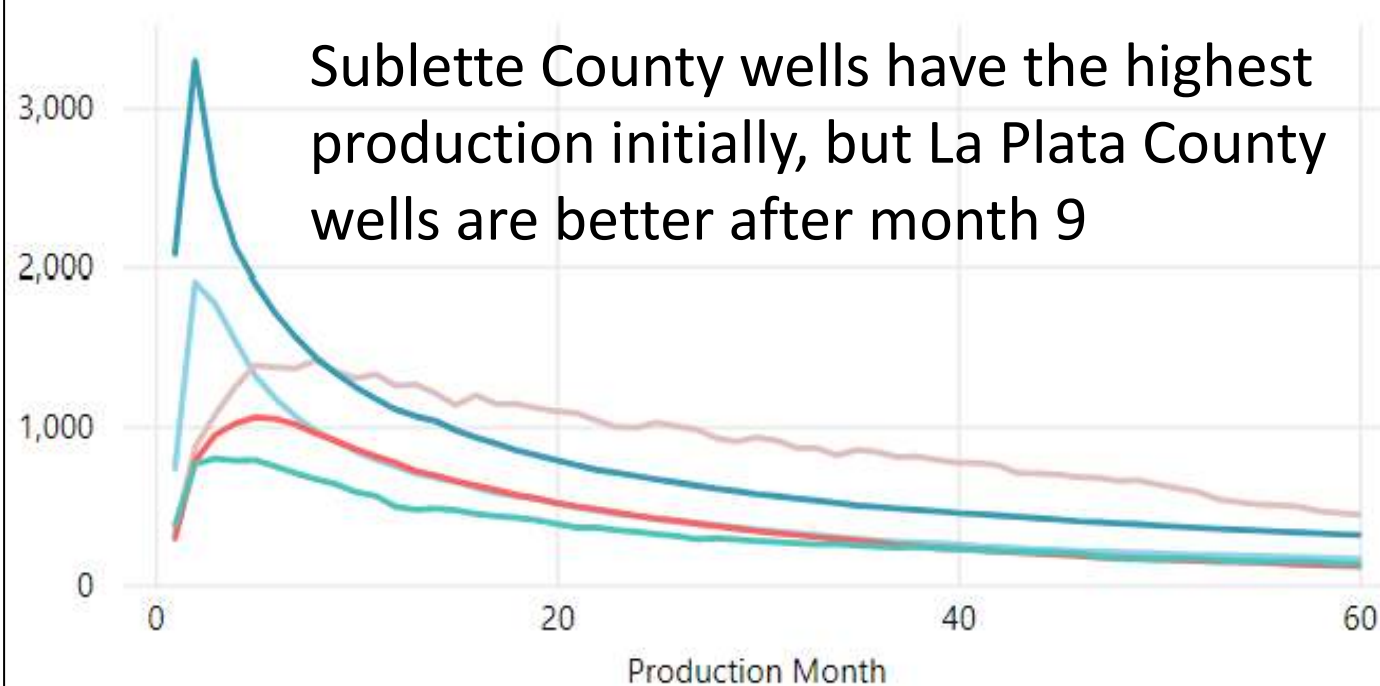
Gas Prod Mcf/d /Well by Age for Top 5 Basins

Basin ● Denver-Julesburg ● Green River/O... ● Powder River ● San Juan ● Uinta/Piceance



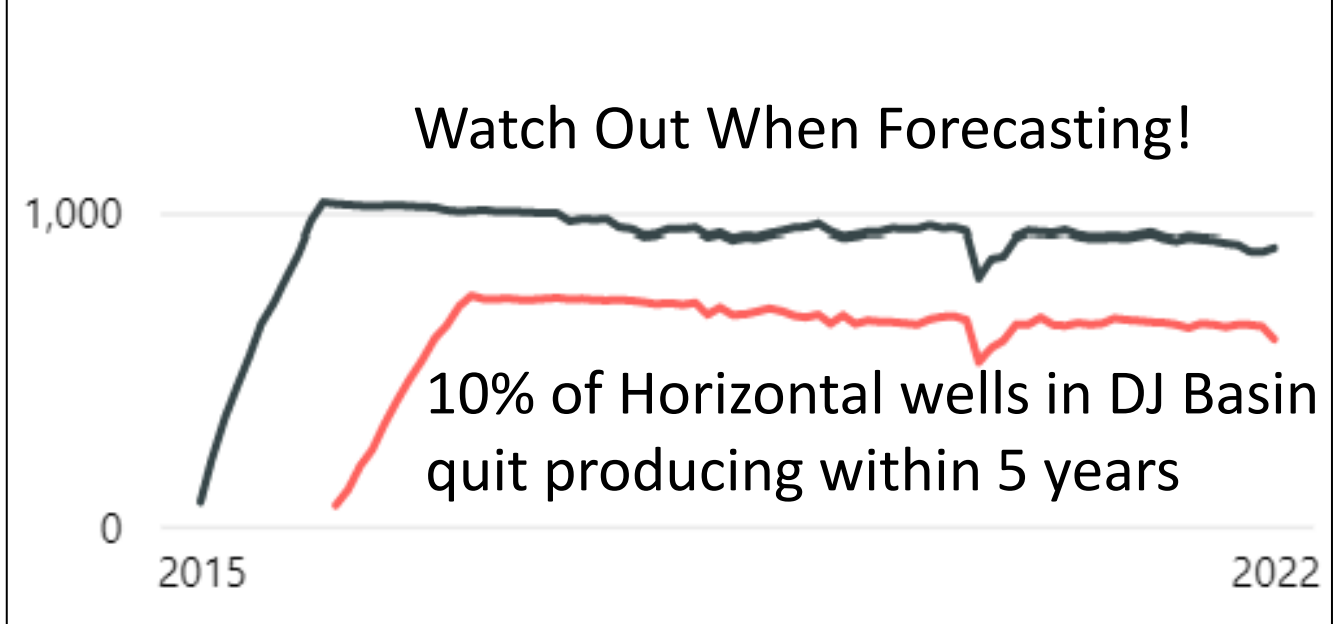
Gas Prod Mcf/d /Well by Age for Top 5 Counties

ST, County ● CO, Garfield ● CO, La Plata ● CO, Weld ● NM, San Juan ● WY, Sublette



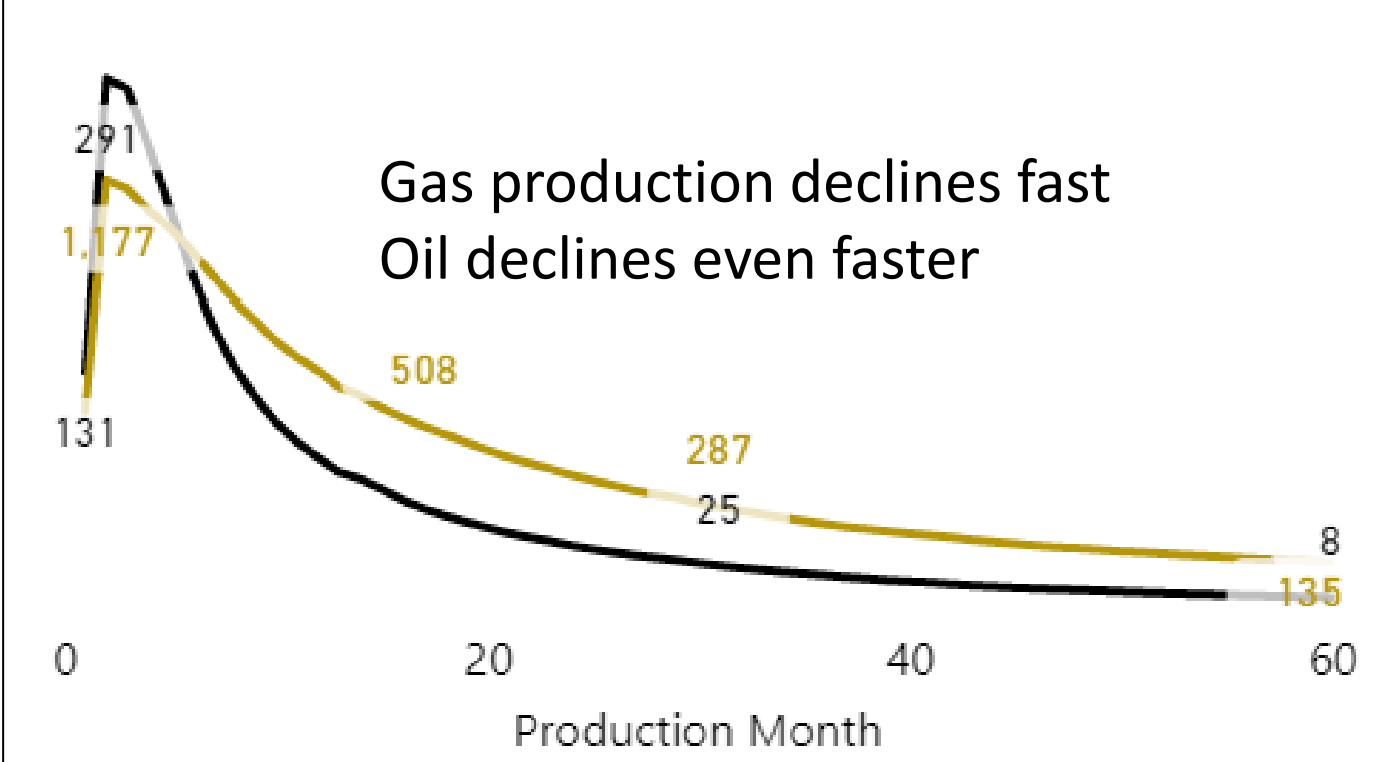
Count Wells Producing by Well Start Year

Well Start Yr ● 2015 ● 2016



Oil and Gas Production Curves for First 60 Months

● Oil Bpd /Well Avg ● Gas Mcf/d /Well Avg



Higher Oil and Gas Prices Bringing Rigs Back



WTI Crude Oil Price in \$/Bbl (Prompt Month CME)

● Historic ● STEO Forecast

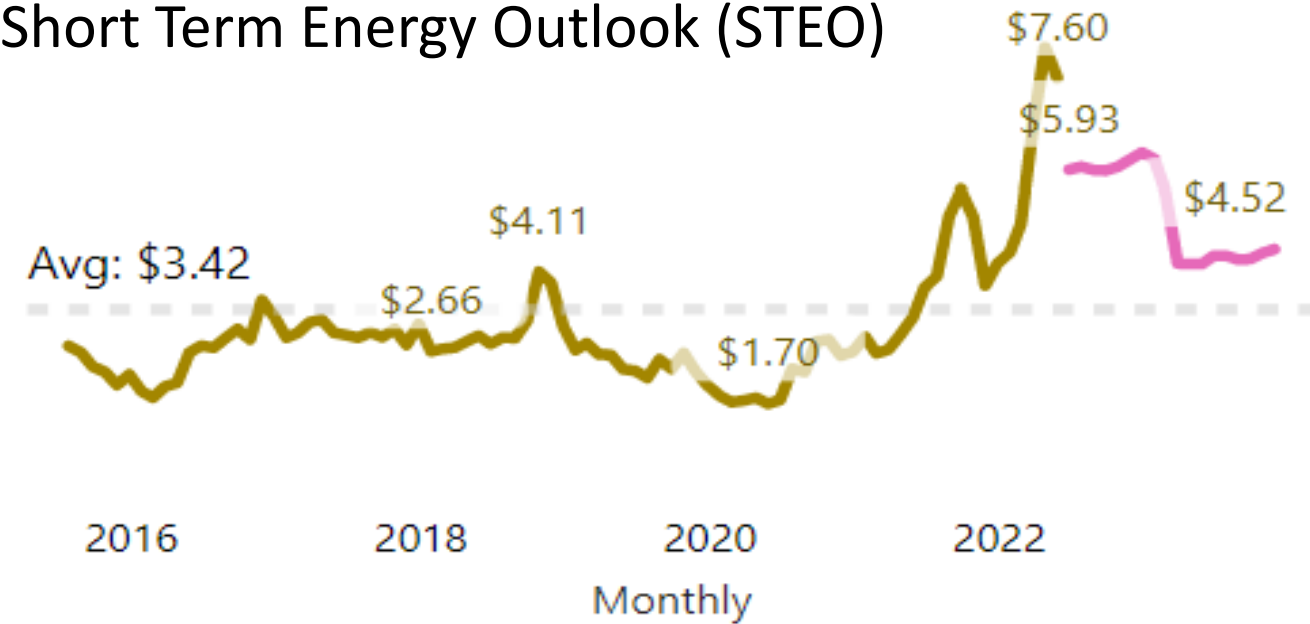
Continued price strength expected through 2024 by the U.S. Energy Information Administration (EIA)



Henry Hub Natural Gas Price in \$/MMbtu (Prompt Month CME)

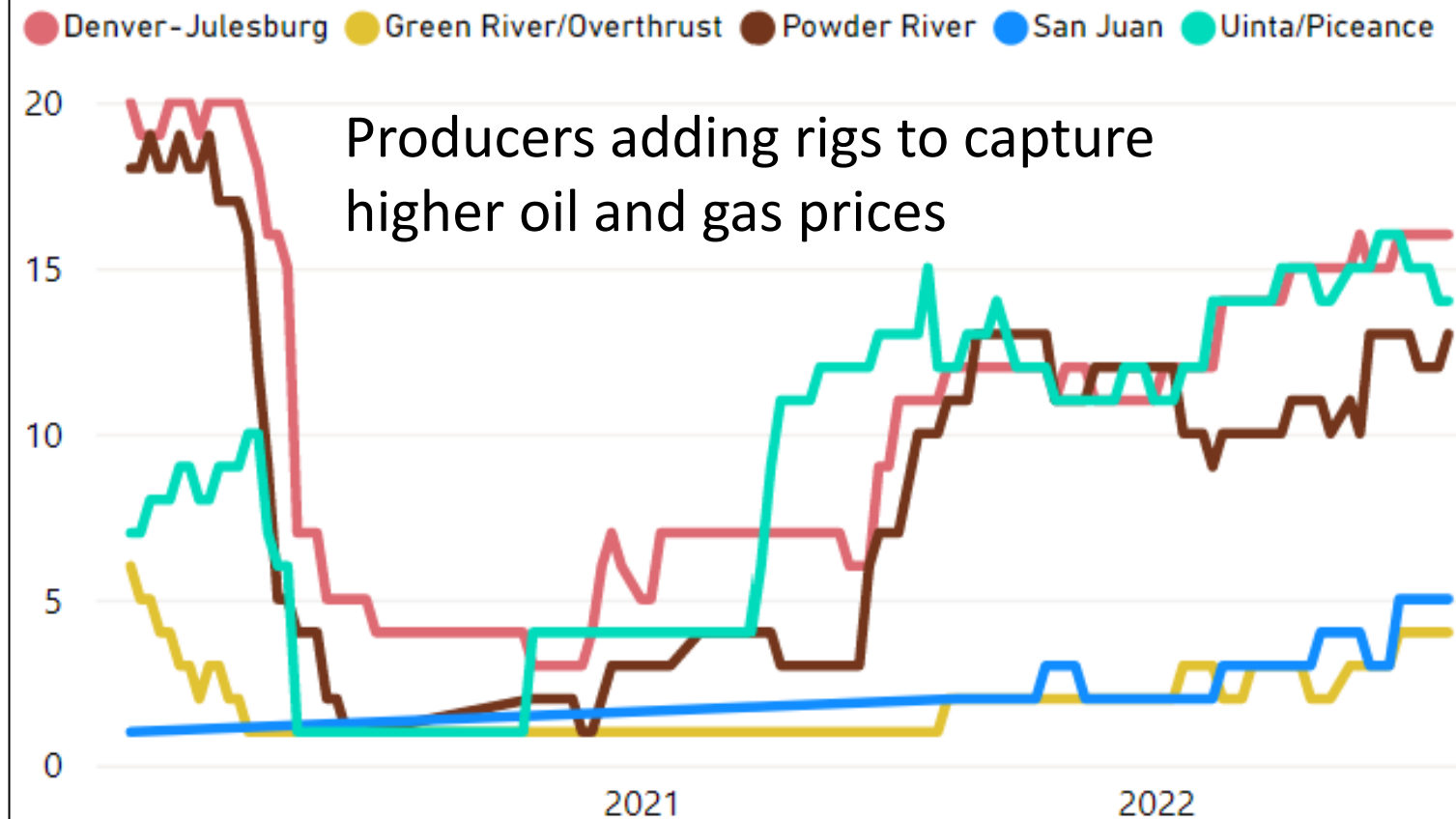
● Historic ● STEO Forecast

Short Term Energy Outlook (STEO)



ST, County	Rigs This Week ▼ 7/29/2022
WY, Converse	11
CO, Weld	9
UT, Duchesne	7
UT, Uintah	4
CO, Garfield	3
CO, Adams	2
CO, Broomfield	2
CO, La Plata	2
WY, Campbell	2
WY, Laramie	2
WY, Sublette	2
WY, Sweetwater	2
CO, Arapahoe	1
NM, Rio Arriba	1
NM, San Juan	1
NM, Sandoval	1
Total	52

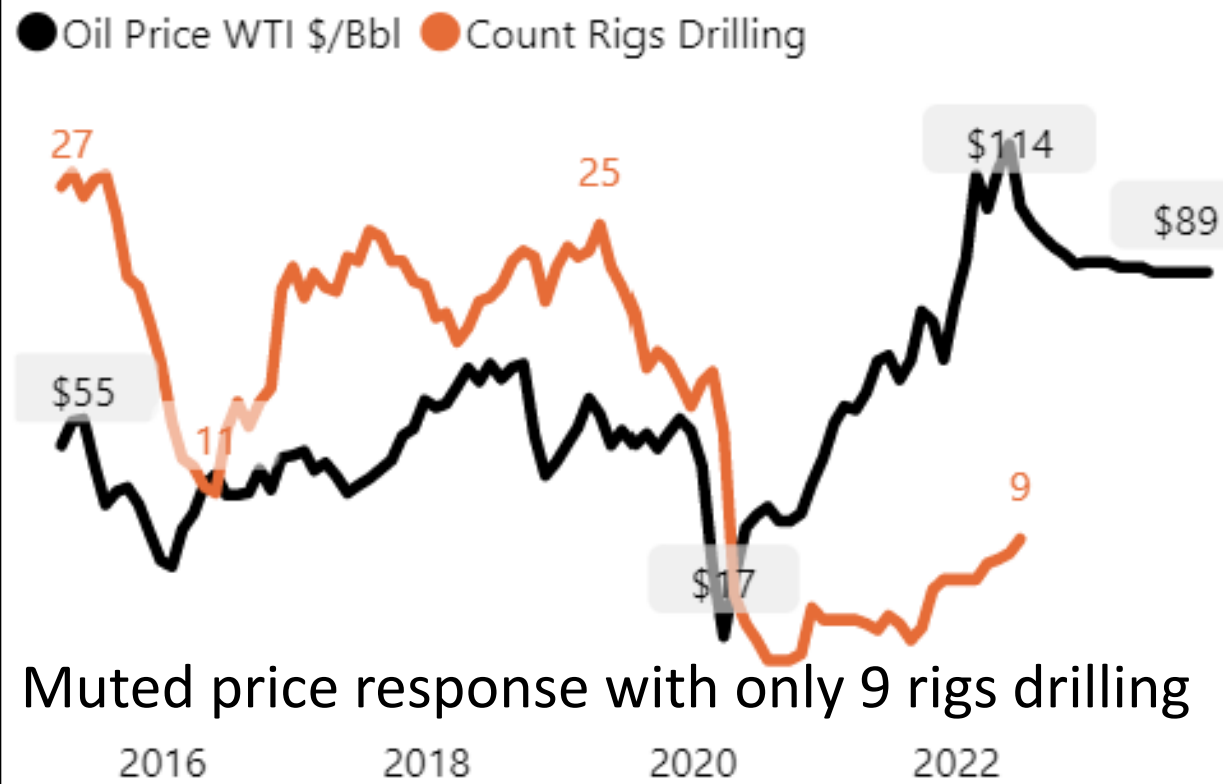
Rigs Drilling by Top 5 Basins



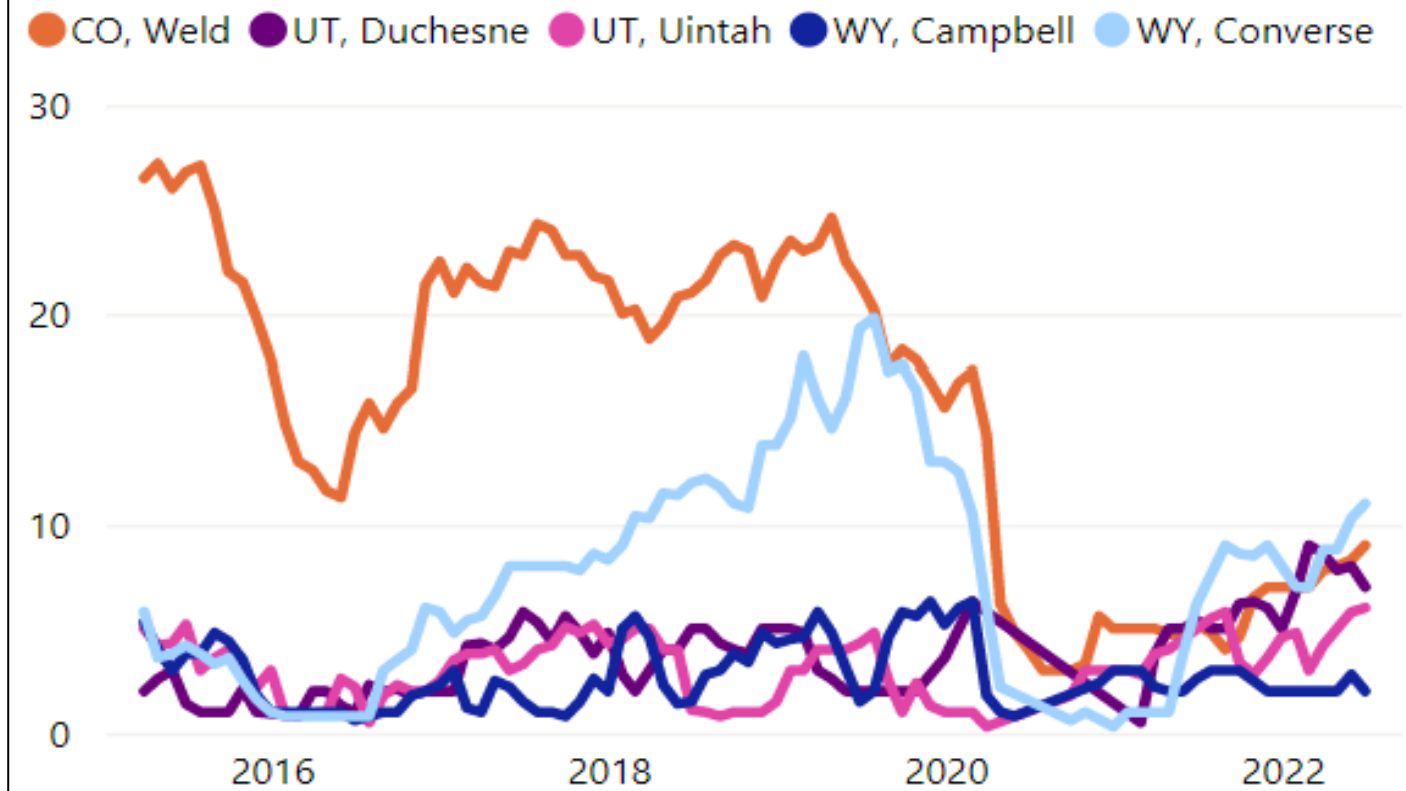
Count of Rigs Drilling for Oil and Gas



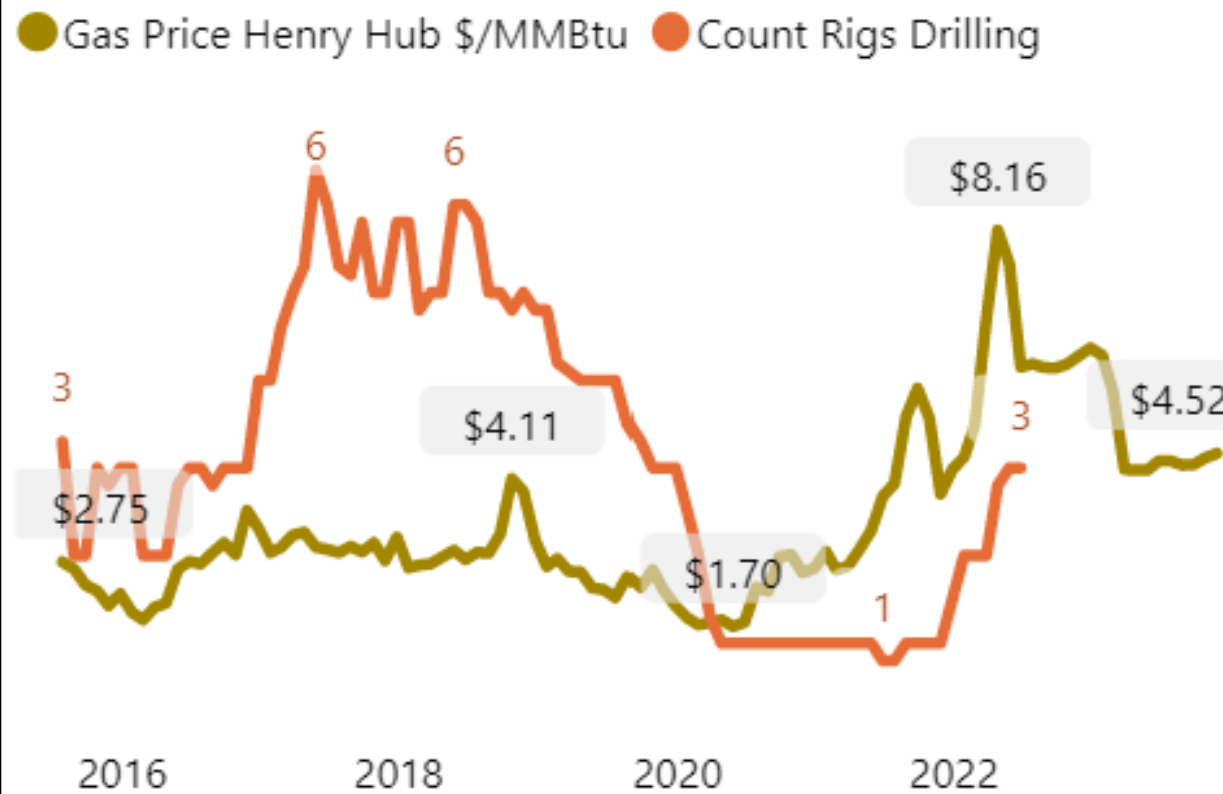
Weld County Rig Count vs Oil Price



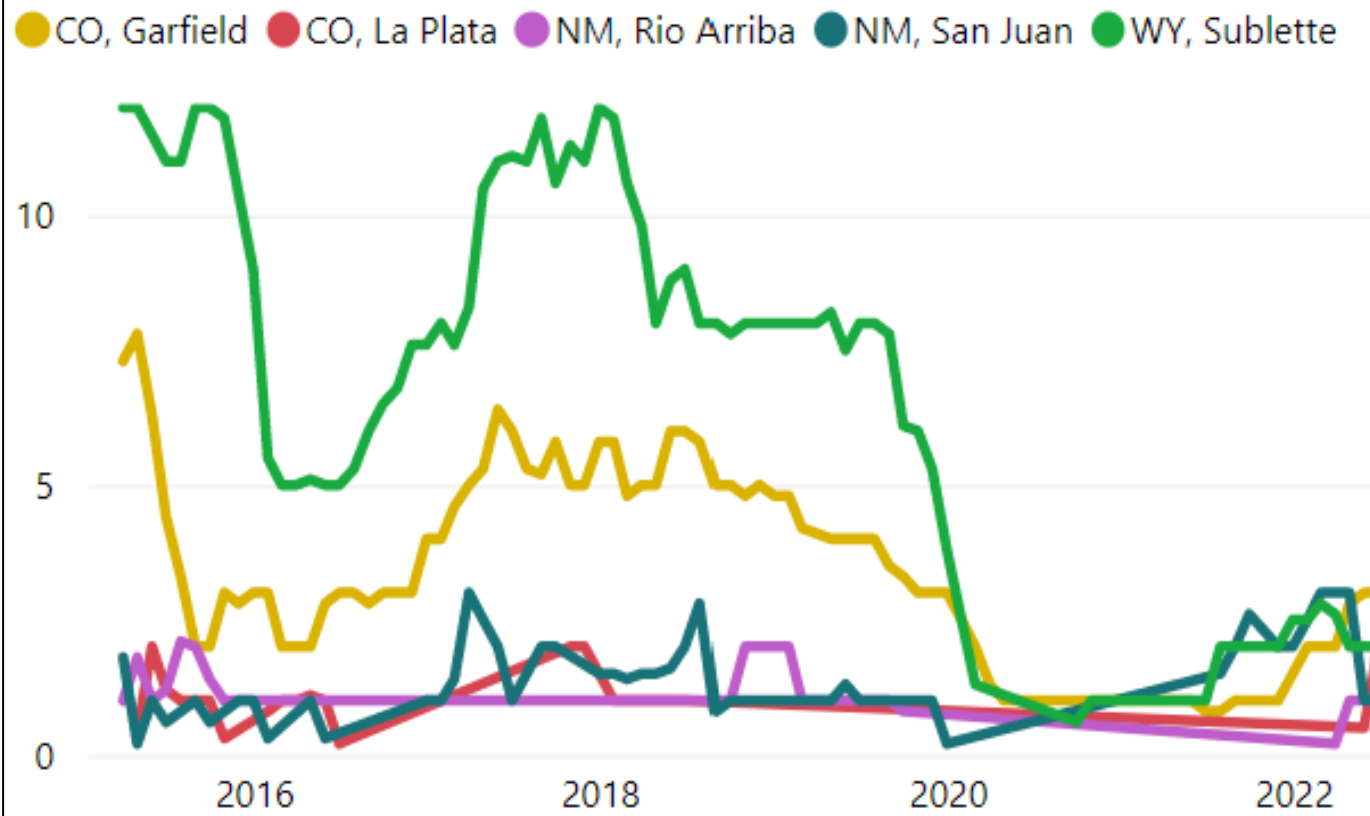
Count Rigs Drilling by Month



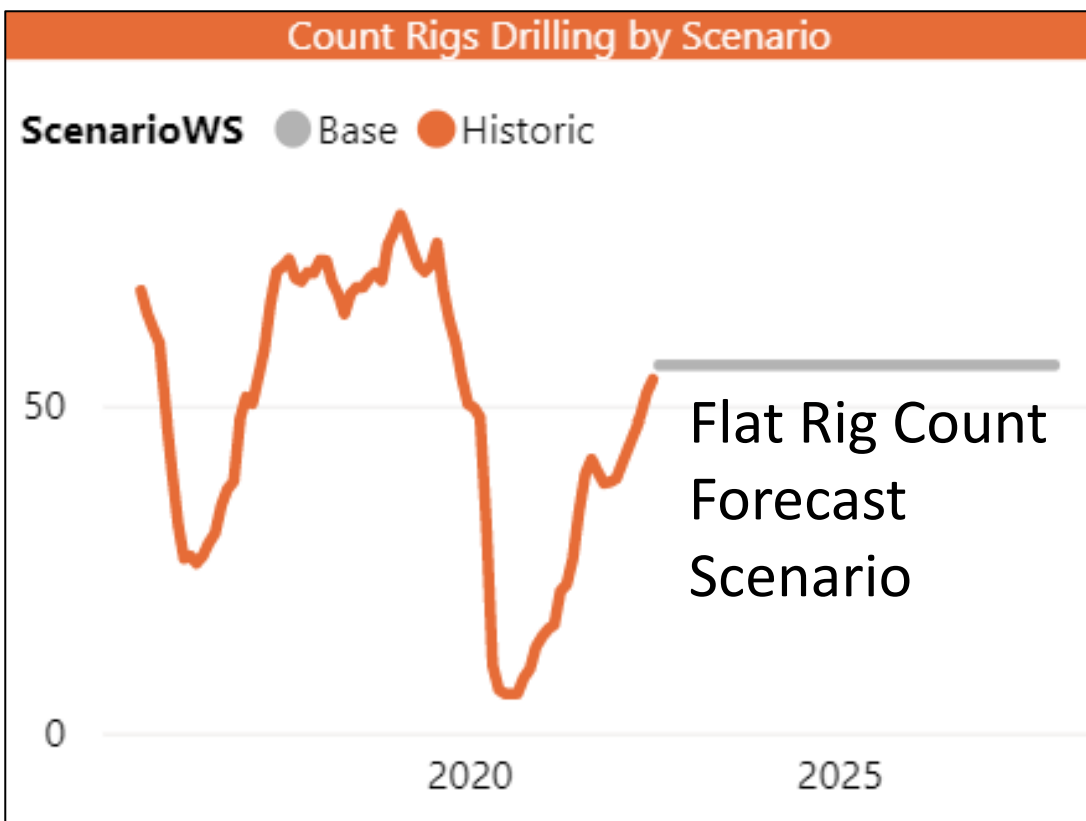
Garfield County Rig Count vs Gas Price



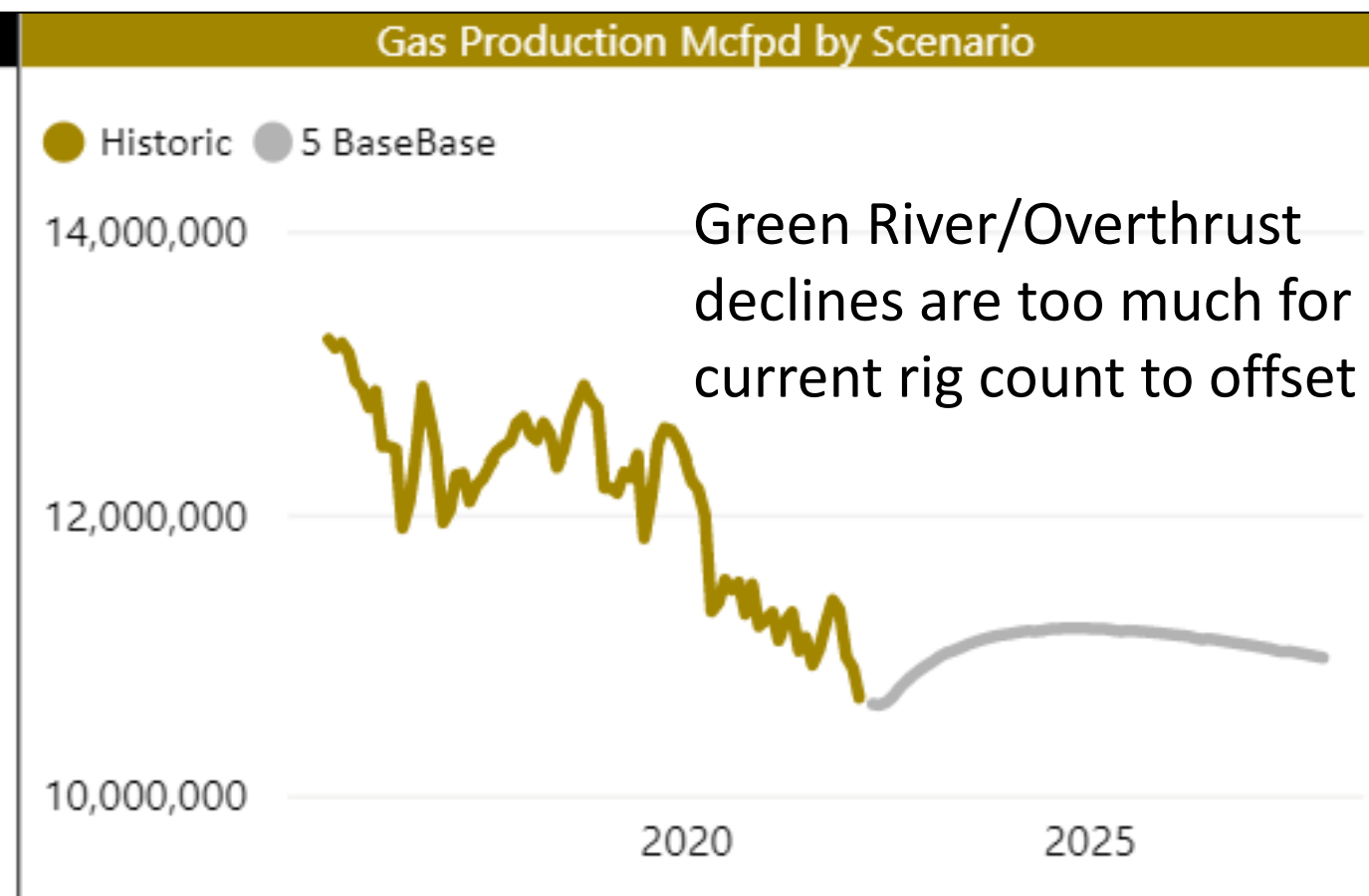
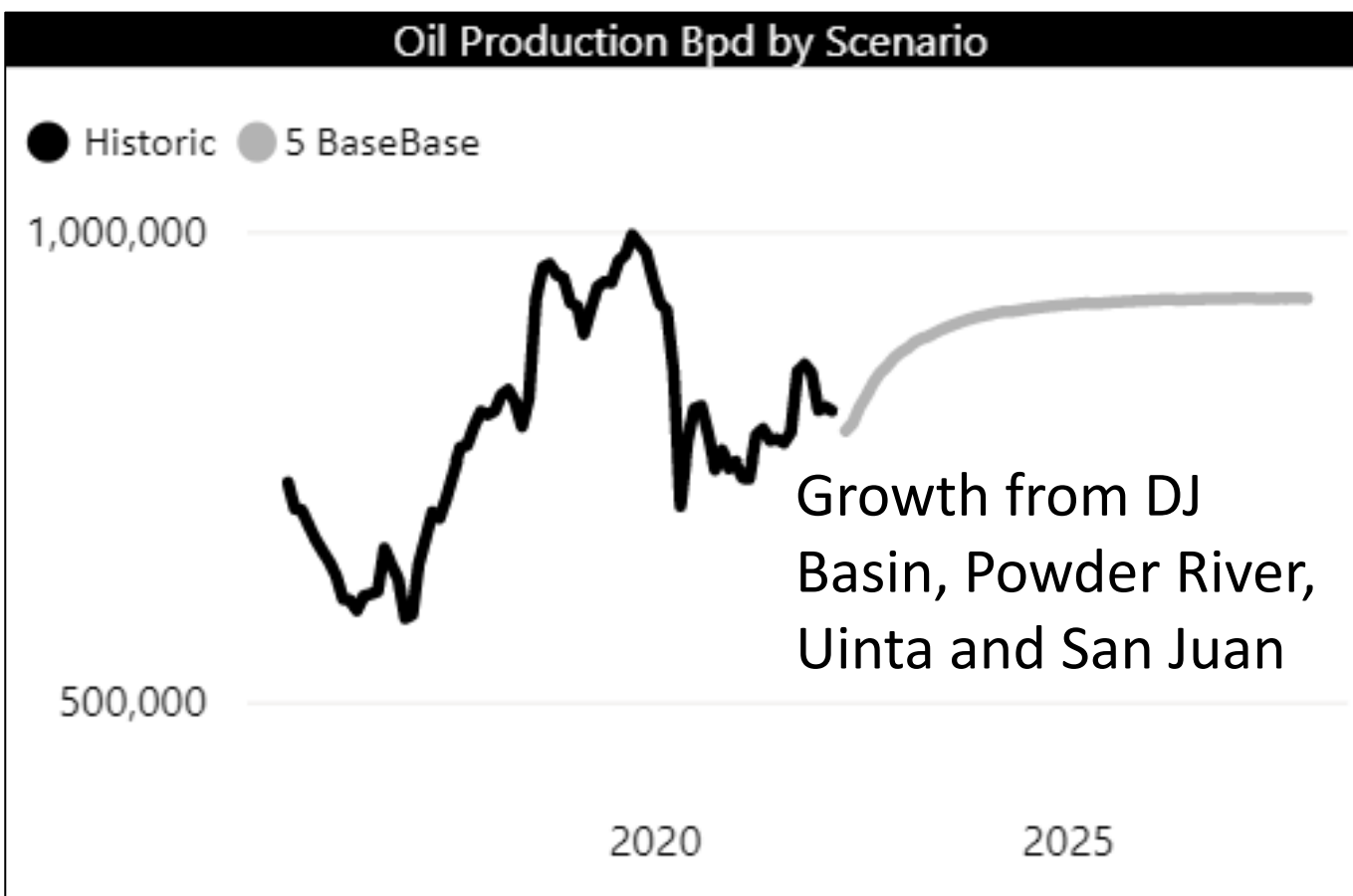
Count Rigs Drilling by Month



Rockies Oil and Gas Forecast



Basin	Oil Bpd 2022	Oil Bpd 2027 vs 2022 CAGR	Oil Bpd 2027	Gas Mcfpd 2022	Gas Mcfpd 2027 vs 2022 CAGR	Gas Mcfpd 2027
Denver-Julesburg	461,342	1.4%	493,980	3,050,801	2.1%	3,386,598
Powder River	163,040	3.5%	193,566	636,241	0.3%	644,775
Uinta/Piceance	111,081	7.4%	158,995	2,171,586	1.1%	2,291,065
San Juan	27,165	10.0%	43,779	2,053,974	5.0%	2,620,586
Green River/Overthrust	21,318	-7.6%	14,340	2,307,230	-5.5%	1,740,024
Big Horn	21,483	-8.2%	14,005	20,736	-7.1%	14,312
Paradox	7,612	-8.1%	4,992	38,448	-0.0%	38,380
Wind River	5,789	-8.5%	3,713	260,695	-7.2%	179,713
Raton	0		0	160,365	-7.8%	107,092
Total	818,830	2.5%	927,370	10,700,074	0.6%	11,022,545





Rockies Oil and Gas Activity

Rockies NARO Convention 8/2/2022

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