Abstract

Since the mid 2000’s, the application of horizontal drilling and the development of horizontal completion technology has allowed for the significant rise in daily oil and gas production across the US. Wyoming and the Rocky Mountains have benefited from the development and application of these technologies and daily production has grown as a result. This presentation will review the recent activity, history and results of horizontal drilling and completion technologies within Wyoming on a formation/play basis.

References Cited


Update of Horizontal Plays in Wyoming
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Total Wells Drilled By County 2010-2016
TD > 500’

GFA
Percentage of Horizontal Wells Drilled By County 2010-2016

TD > 500’
Top 10 Active Operator By Total Wells Drilled 2010-2016

- Ultra: 820
- Anadarko: 810
- QEP: 642
- BP: 570
- Jonah: 544
- WPX: 296
- FDL: 287
- EOG: 228
- Chesapeake: 202
- Devon: 200
Top 10 Active Operator By Horizontal Wells Drilled 2010-2016

- ANADARKO: 222
- EOG: 222
- CHESAPEAKE: 199
- SAMSON: 111
- DEVON: 148
- SM ENERGY COMPANY: 146
- PEAK POWDER RIVER: 53
- KAISER FRANCIS: 55
- BALLARD: 55
- YATES: 80
- RKI: 96
Powder River Basin

Teapot
3.6 MMBO
2.5 BCFG
47 Wells

Parkman
20 MMBO
14.5 BCFG
192 Wells

Sussex
8.7 MMBO
12.8 BCFG
78 Wells

Shannon
8.2 MMBO
5.7 BCFG
83 Wells

Niobrara
14.2 MMBO
78.8 BCFG
181 Wells

Frontier/Turner
37.7 MMBO
125.9 BCFG
290 Wells

Mowry
1 MMBO
9.3 BCFG
18 Wells
Parkman
20 MMBO
14.5 BCFG
192 Wells
Shannon
8.2 MMBO
5.7 BCFG
83 Wells
Niobrara
14.2 MMBO
78.8 BCFG
181 Wells
Mowry
1 MMBO
9.3 BCFG
18 Wells
DJ Basin

Niobrara
3.9 MMBO
3.5 BCFG
95 Wells

Codell
8.3 MMBO
6.5 BCFG
89 Wells

GFA
DJ Basin Stratigraphic column

Sonnenberg and Weimer
Niobrara
3.9 MMBO
3.5 BCFG
95 Wells

GFA
Codell
8.3 MMBO
6.5 BCFG
89 Wells
DJ Basin Horizontal Production

Codell

Niobrara

GFA
Wyoming Wells Drilled
Vs
Horizontal Wells Drilled 2010-2016
With % from horizontals

Wells Drilled Per Year


GFA
Wyoming Cumulative Oil Production Vs Horizontal Oil Production 2010-2016 With % Production from horizontals

- 2010: 0.7%
- 2012: 5%
- 2014: 33%
- 2016: 30%

GFA
Converse County has been most active county for horizontal development (oil)
Sublette County has been most active county for vertical development (gas)
Horizontal drilling peaked in 2014 at 481 wells (prices)
Horizontal production peaked in 2015 at 31.7 MMBO (completion lag time)
Growth in oil production has been dominated by horizontal wells
Horizontal production has declined sharply due to higher decline rates in horizontal wells and drop in price
Higher decline rates mean growth in production depends on active drilling programs to replace production
These plays typically don’t go cash positive until drilling has stopped-beware of price collapse
Wyoming produced 497 MMBO total and 106 MMBO from horizontal wells (20%)
Approximately 7,525 total wells and 1,500 horizontal wells were drilled (20%)
Acknowledgements

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