



Rushmore: Shale Performance Review

World's leading community of peer-to-peer
benchmarking for global shale plays

“Rushmore’s Shale Performance Review (SPR), from IHS Markit is a global data set covering drilling, completions, and hydraulic fracturing, containing the key technical, time and cost data to encompass all multistage frac’ing of horizontal wells.”

What does the Shale Performance Review provide?

- Access to proprietary Industry Data and Competitor Intelligence
- Data set covering drilling, completion and frac’ing (multi-staged frac’ed wells)
- Contains key technical, time and cost data that Operators found most useful
- Data from more than 25 Operators in 8 countries for approximately 14,000 wells
- IHS Rushmore facilitates the SPR where Operators decide what data to share, the rules for sharing, yearly changes needed, and how additional value can be gained

Operators use the data to:

- Improve the design, planning and budgeting of well operations in order to make time and cost savings
- Compare performance amongst peer groups in times, costs and processes
- Identify and learn from top quartile performers and set measurable targets for performance improvement
- Identify successful new technologies and techniques
- Identify potential partners
- Plan new ventures

How does participation work?

- Only Operators can participate
- Must accept the T&C’s/rules that are agreed by the participating Operators
- Must provide 100% of the required data on ALL wells for any Review/country/year of participation
- Access to data in the Reviews/years/countries in which you are an Operator and are participating
- Do not gain access to data in Reviews/years/countries in which you are an Operator and are not participating
- Access to data for countries in which you are not an Operator

SPR Metrics:

Data driven analytics

- Event based
- Quartile performance
- Physical & material frac'ing attributes

Drilling Metric	P10	Q1	Q2	Q3	P90	Min	Max	Max	Units
Drilling Days	11.6	14.3	17.9	21.7	30.9	4.4	39.0	93.0	1:20
Days / 10000ft	2.7	6.9	10.9	13.5	17.5	4.9	15.1	47.7	3:20
Feet / Day	1,296	1,529	919	739	571	209	626	2,332	3:20
Drilling NP / Days	0.5	0.9	1.7	3.6	6.9	3.0	3.0	17.4	3:20
Drilling NP / Days / 10000ft / Ave	0.2	0.4	1.1	2.1	4.0	0.9	1.8	5.2	3:20
Drilling % NP	1.5	4.5	9.0	18.7	27.2	0.2	14.9	38.4	3:20
Drilling Cost (in USD)	9.75	2.39	3.23	4.07	4.82	0.33	13.49	17.01	3:20
Drilling Cost / Day (in USD)	126	142	969	197	200	34	186	418	3:20
Drilling Cost / Foot (USD)	122	119	193	222	277	39	201	820	3:20
MFD (ft)	13,120	16,160	16,791	16,110	19,120	9,810	16,137	22,326	3:20
USD (ft)	7,432	9,140	11,062	12,209	13,206	5,652	12,090	16,259	3:20
Number of Sections	2	2	2	2	2	2	2	4	3:20
Length of Lateral Sections (ft)	4,154	4,654	5,340	6,244	7,144	1,103	5,003	50,739	3:11

Drilling Metric	P10	Q1	Q2	Q3	P90	Min	Max	Max	Units
Completion NP / Days	0.0	0.3	0.3	1.8	3.9	0.0	1.1	49.3	2:43
Completion Cost (in USD)	2.46	2.12	2.81	4.08	5.94	0.30	5.62	9.81	2:43
Fracturing Stages	12	11	9	10	11	7	17	31	2:43
Fracturing Treated Length (ft)	4,024	4,624	4,154	4,252	5,151	2,044	4,429	50,962	2:43
Fracturing Treated Rate (gpm)	65	61	71	80	97	25	71	181	2:43
Fracturing Water Pumped (in bbl)	7,161	7,009	6,463	9,332	10,132	2,497	8,840	15,581	2:43
Well Cross Fluid Pumped (bbl) / Stage	60	65	70	141	105	16	121	241	2:43
Proppant Paced (in lbs) / Stage	4,434	6,122	6,483	7,327	11,097	1,216	4,963	16,817	2:43
Proppant / Cross Treated Length (lbs / ft)	700	801	1,162	1,240	1,326	166	1,064	2,222	2:43
Proppant / Net Treated Length (lbs / ft)	697	148	1,011	1,960	1,032	188	1,049	1,101	2:43
Cost / Cross Treated Length (USD / ft)	417	642	229	652	1,034	93	229	1,544	2:43
Cost / Net Treated Length (USD / ft)	490	721	814	627	1,054	191	869	1,905	2:43
Cost (in USD) / Stage	164	179	229	277	320	23	229	960	2:43
Stages Perced / Day Rate / Low Present	1.7	2.1	2.3	4.9	5.5	0.4	3.1	99.2	1:52
Fracturing Days	3.63	3.46	4.87	4.30	10.21	0.17	9.71	49.34	1:52

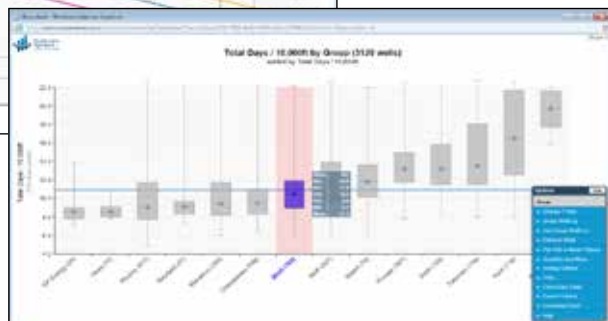
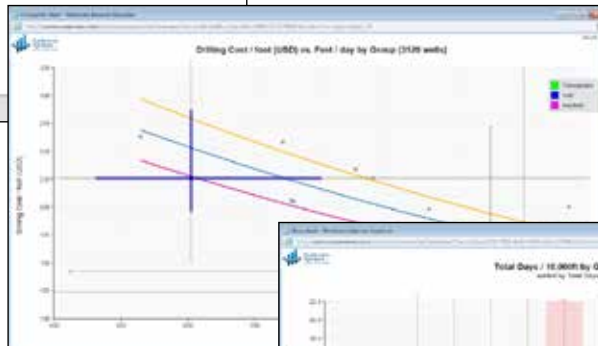
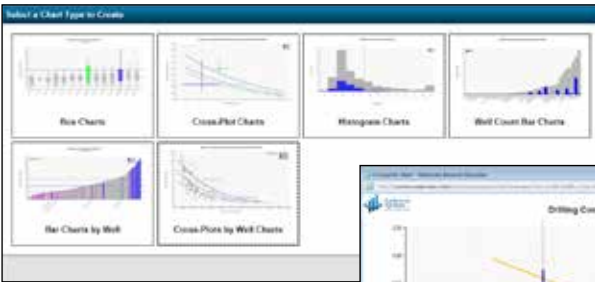
SPR Key Performance Indicators

Performance charts available

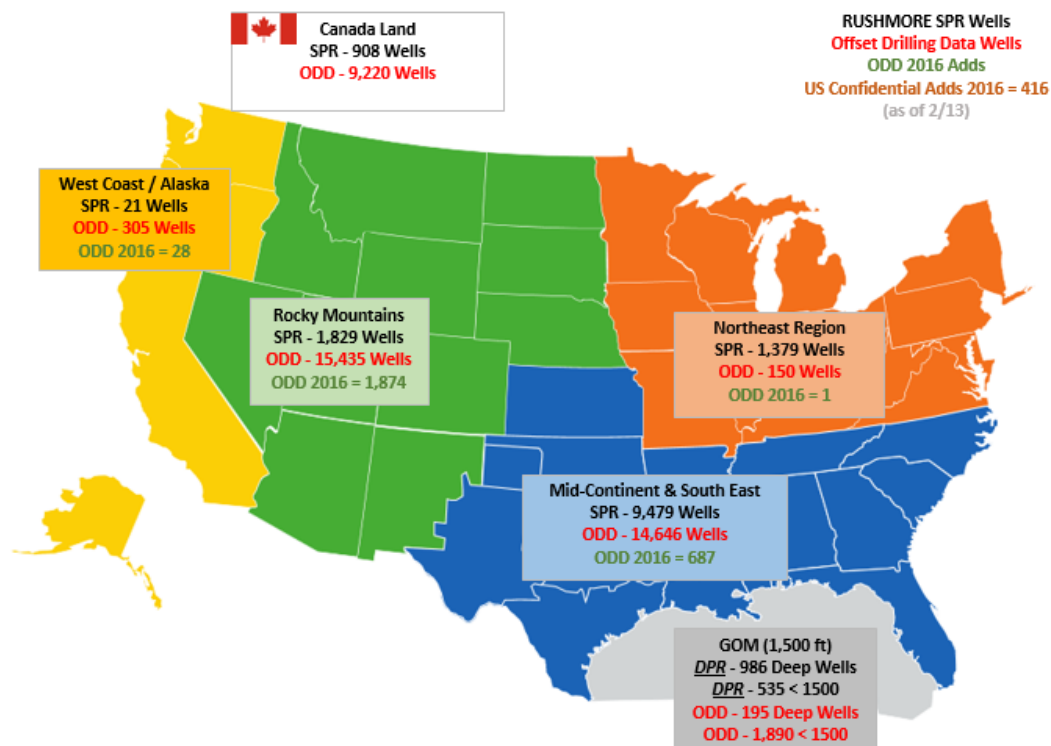
- Time versus depth
- Frac'ing materials and lengths
- Costs and 12 months of Production

Compare

- Drilling, Completions, and Frac'ing metrics
- Stages, Treated Length, # of Sleeves, Fluids pumped, # of Perforated Clusters and Proppants
- Compare Production levels to all Drilling, Completions, and Frac'ing data & costs



SPR Participants and wells:



Operators per North American Region since 2012

WC AK	RM		Mid SE		NE	CA
1	13		20		7	9
Chevron	Chesapeake	Liberty	Apache	Midstates	Chesapeake	Chevron
	Chevron	Marathon	BHP	Murphy	Chevron	Nexen
	Devon	NewField	Chesapeake	Newfield	Hunt	Encana
	Encana	Samson	Chevron	Pioneer	Reliance	Hunt
	EP Energy	Shell	Devon	Samson	Shell	Husky
	Hess	Statoil	Encana	Shell	Statoil	Murphy
	Hunt		EP Energy	Statoil	Talisman	Shell
			Hess	Swift		Suncor
			Hunt	Talisman		Talisman
			Marathon	Tema		

For more information www.ihsmarket.com

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