

Private Equity and Ever-Changing Resource Valuations



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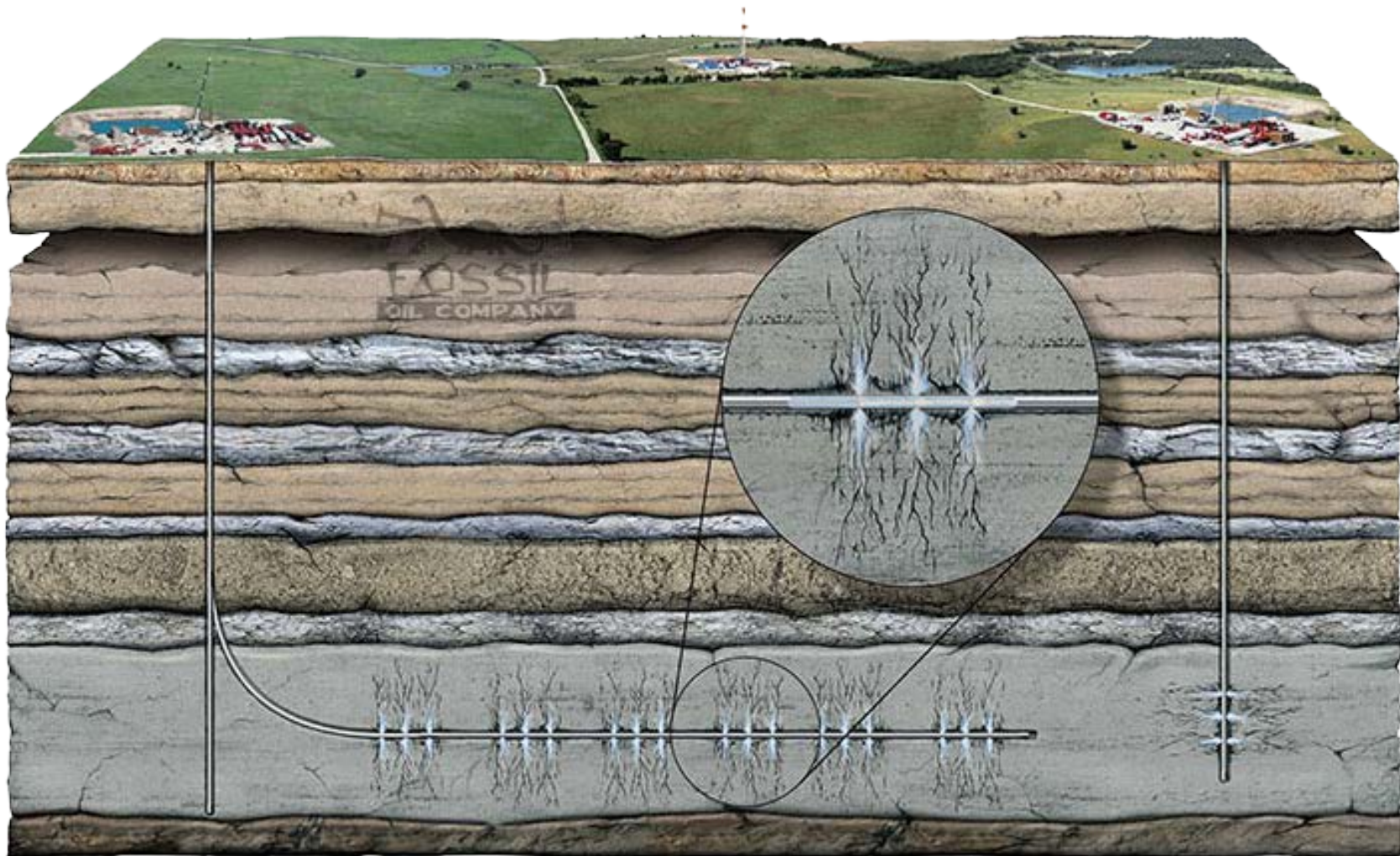
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Resource Plays are Transforming the U.S Oil & Gas Industry

TECHNOLOGICAL ADVANCEMENTS HAVE CHANGED THE GAME

HORIZONTAL DRILLING AND MODERN FRAC TECHNOLOGY HAS CREATED AN AMERICAN ENERGY RENAISSANCE

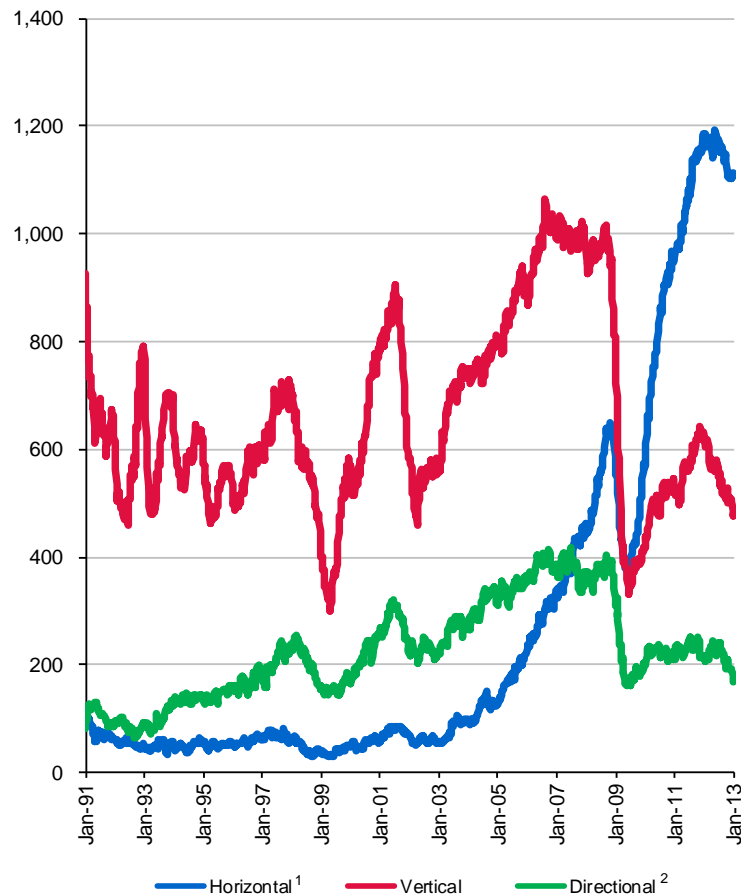
- Horizontal drilling allows producers to expose the wellbore to dramatically higher percentages of the reservoir than vertical drilling
- This is particularly helpful in low permeable (or “tight”) formations such as shales



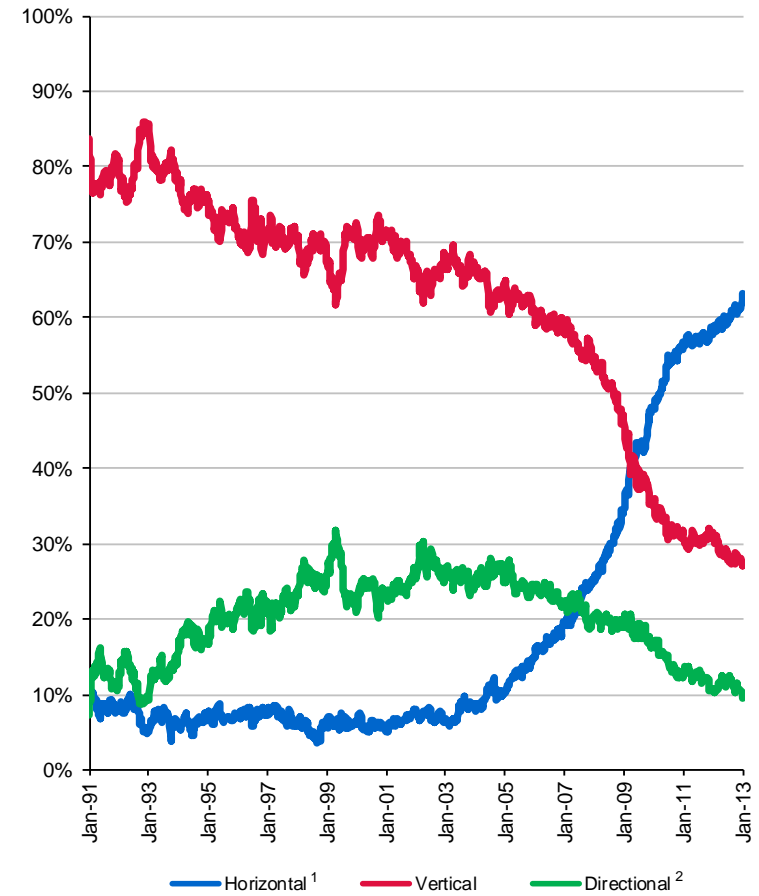
Source: Fossil Oil Company.

HORIZONTAL DRILLING IS NOW THE MOST COMMON METHOD

RIG COUNT BY DRILLING TYPE - #



RIG COUNT BY DRILLING TYPE - %



Source: Baker Hughes, Inc.

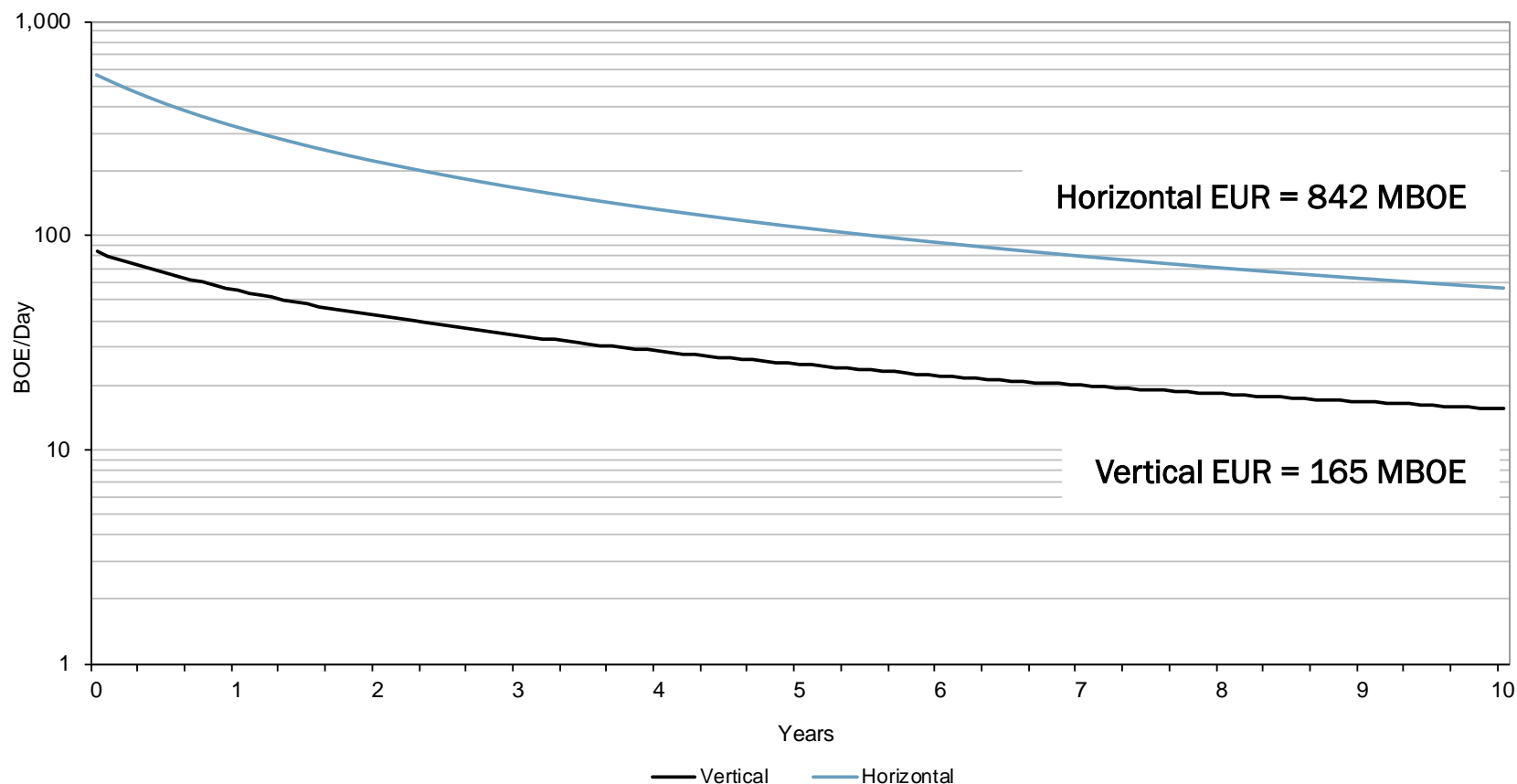
(1) Horizontal wells are drilled to increase the length of the well that contacts the reservoir in order to increase the productivity of the well.

(2) Directional wells are typically drilled when the surface location of the well cannot be located directly above the reservoir.

The use of horizontal drilling has exploded since 2006 and now accounts for 63% of all drilling activity...

HORIZONTAL DRILLING AND FRACTURE STIMULATION – BREATHING LIFE IN OLD, TIRED, AND “TIGHT” RESERVOIRS

TEXAS PANHANDLE GRANITE WASH EXAMPLE – VERTICAL VS. HORIZONTAL



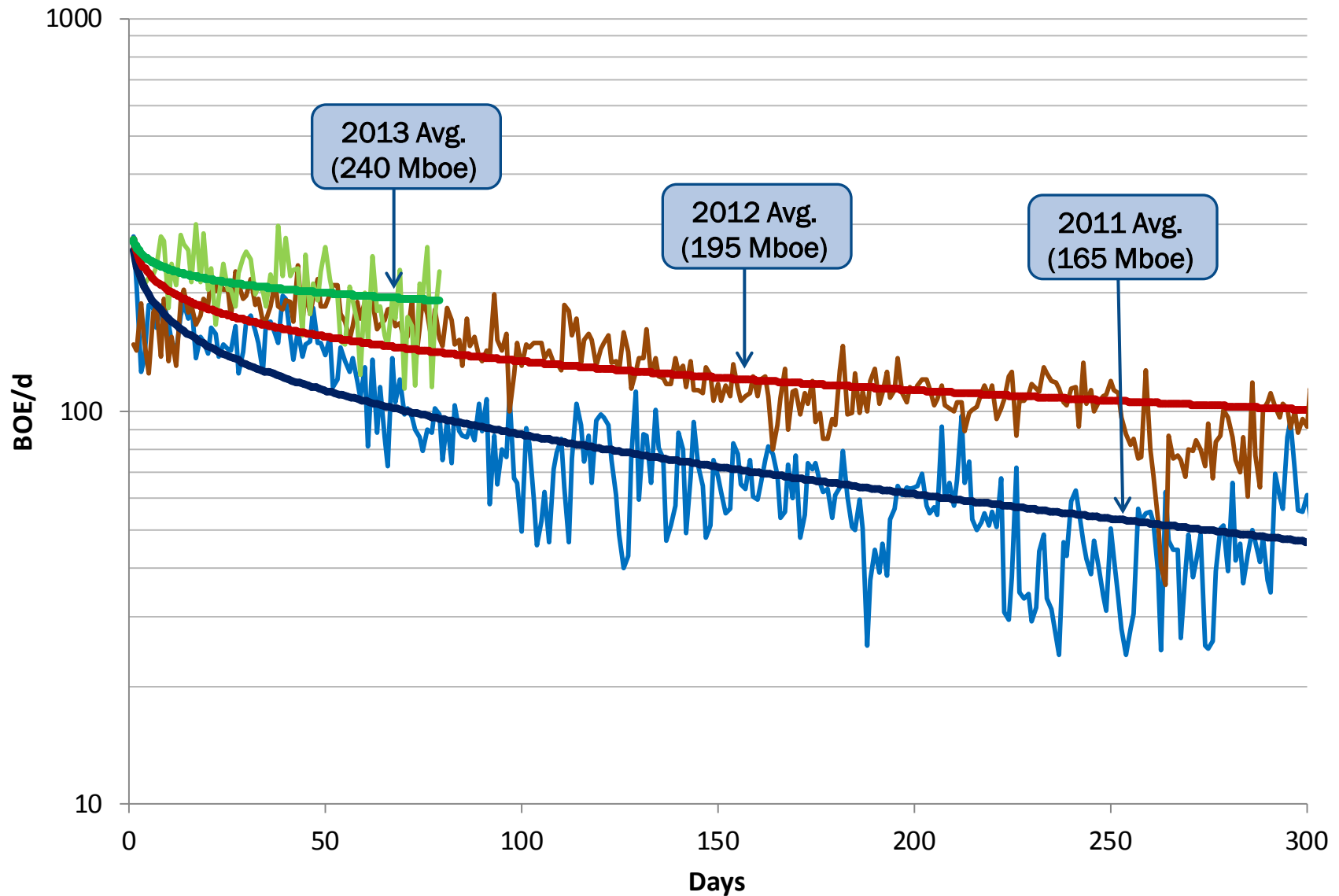
Texas Panhandle - Granite Wash Single Well Economics

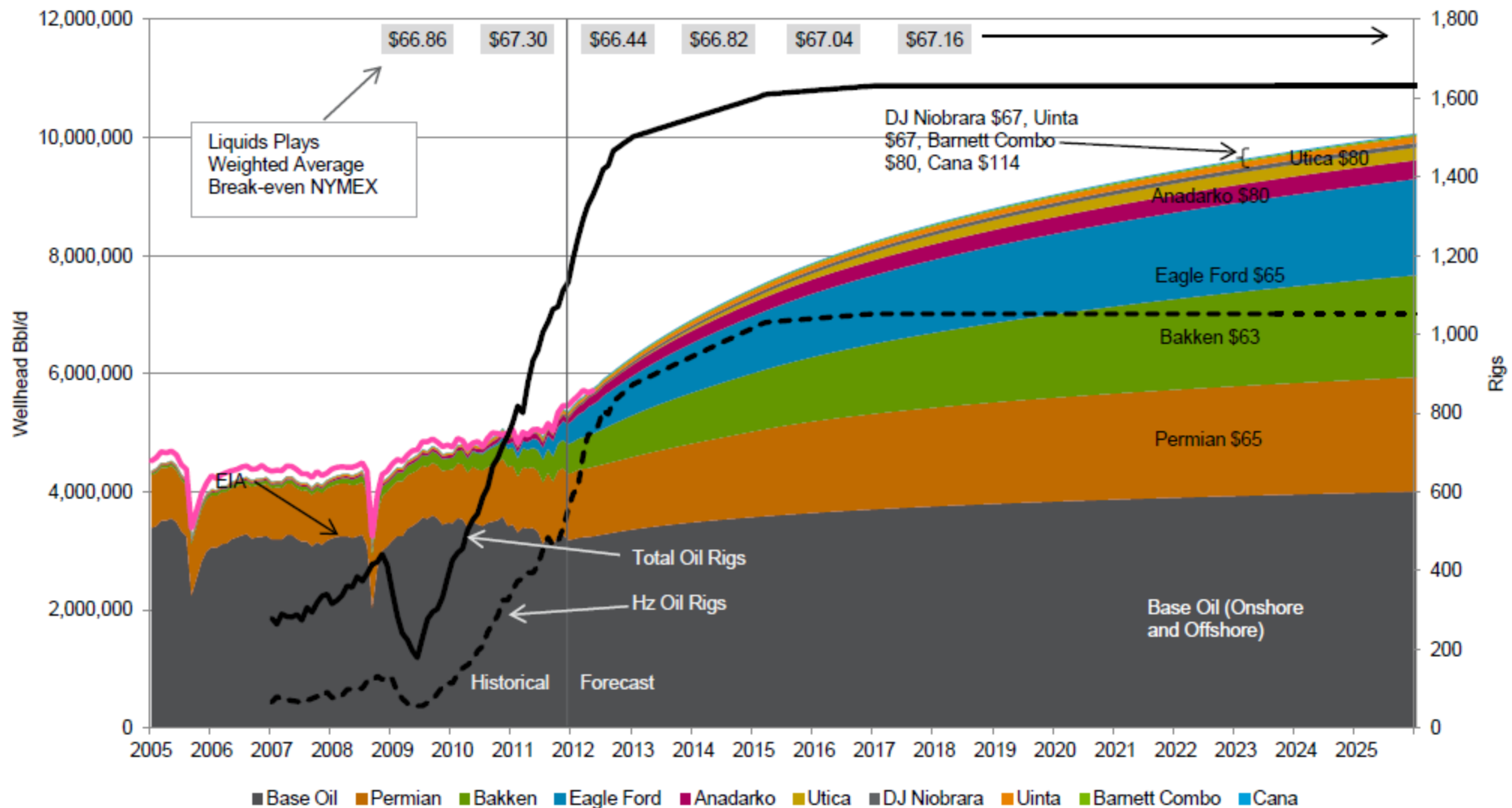
	Vertical	Horizontal	Difference
EUR (MBOE)	165	842	5.1x
IP Rate (BOE/D)	90	620	6.9x
D&C Cost (\$000s)	\$1,800	\$3,500	1.9x
IRR (%)	12.6%	>100%	
ROI (x)	1.1x	4.0x	
PV-10% (\$000s)	\$128.7	\$10,339	
PV-20% (\$000s)	(\$280.0)	\$7,469	

Source: Great Plains Operating.

Note: Flat NYMEX price deck of \$85.00/bbl for oil and \$4.00/MMBtu for gas.

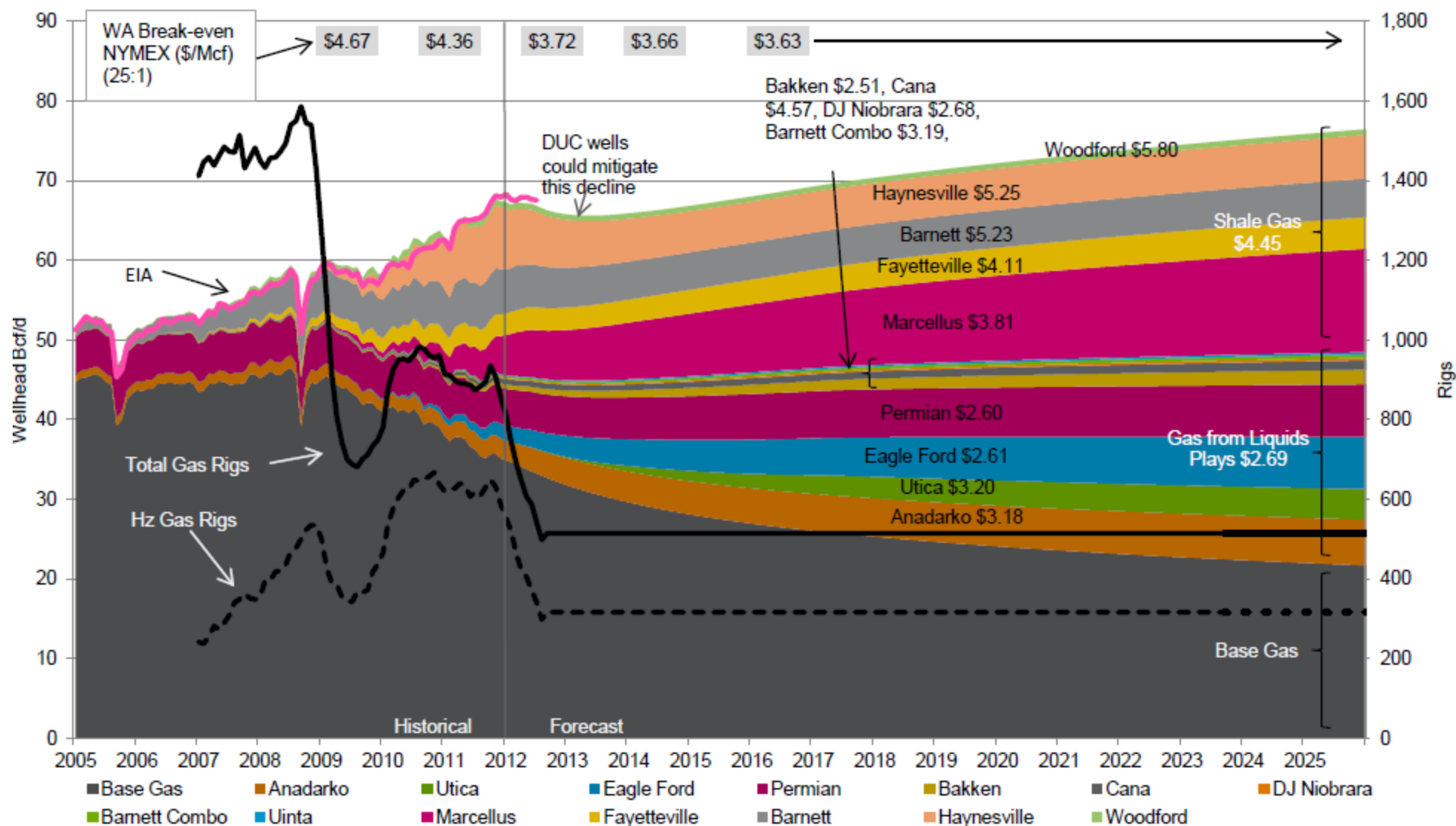
Example of Horizontal Mississippiian Production Performance





Source: ITG

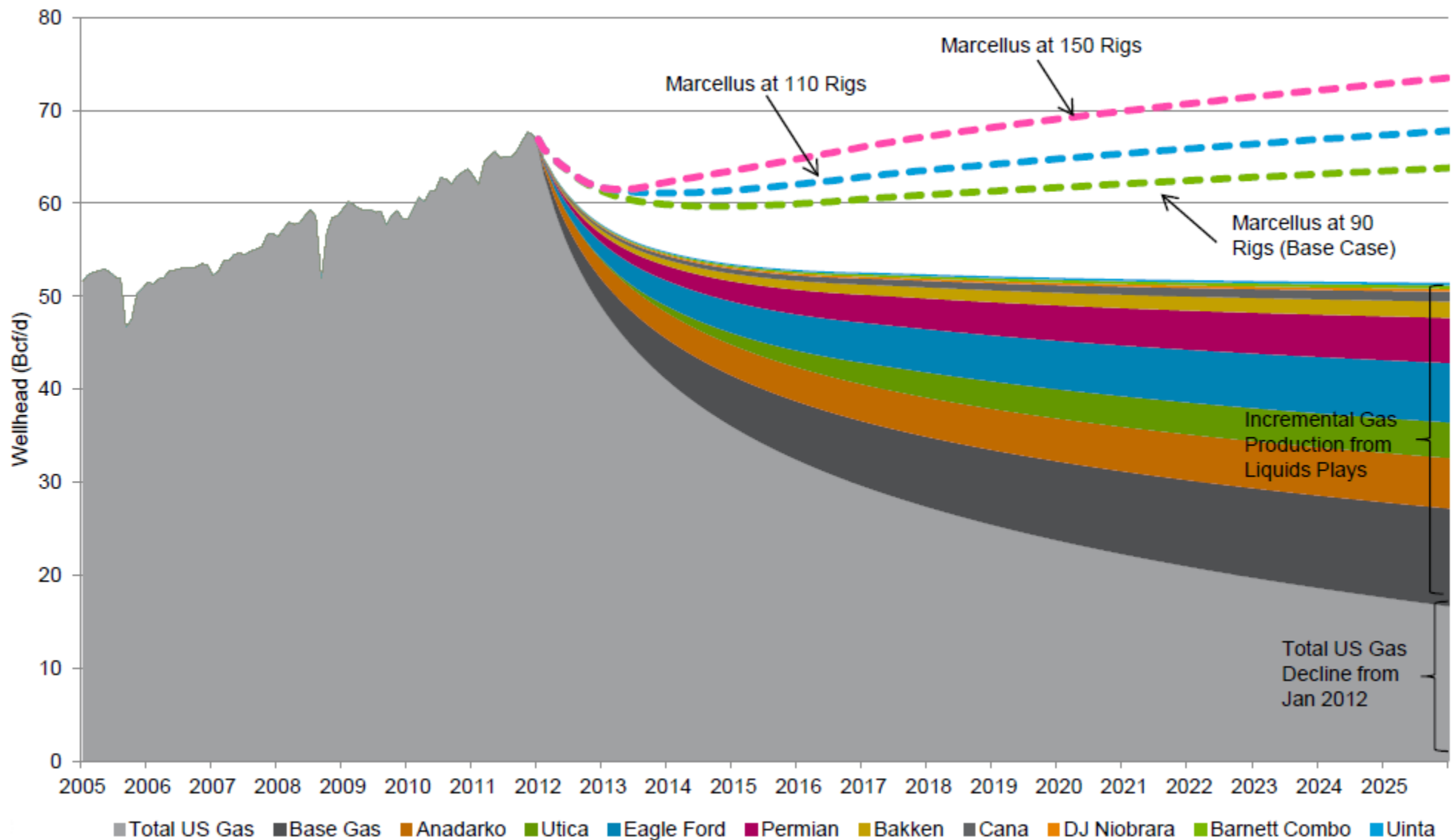
Success from horizontal drilling technology in oil weighted resource plays has changed the outlook for domestic oil production from that of precipitous decline to substantial growth.



Source: ITG

Improved well productivity and associated gas production from liquids rich plays will likely continue to dilute the supply side impacts from a decline in gas drilling.

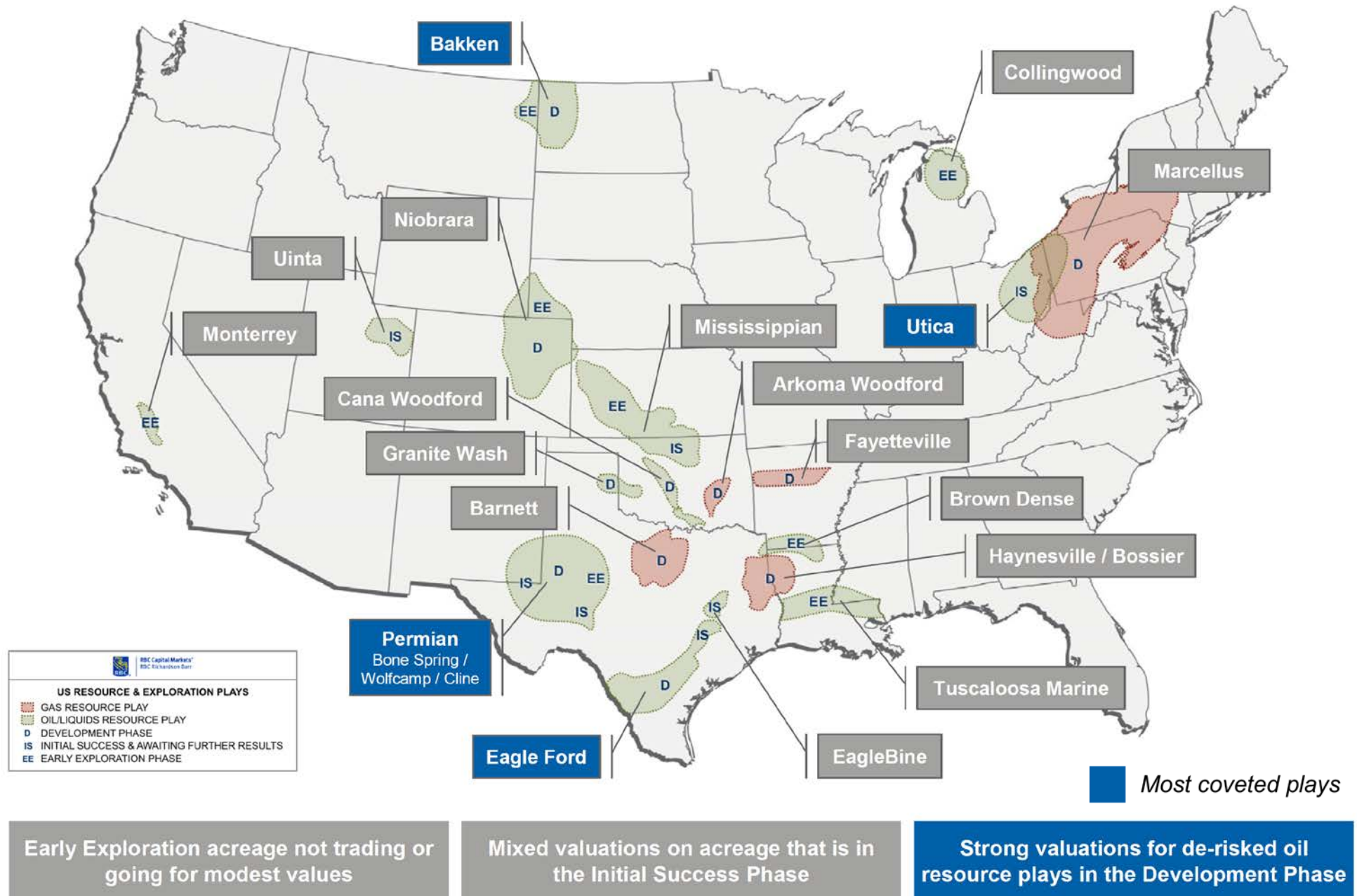
THE POTENTIAL IMPACT OF THE MARCELLUS SHALE ON U.S. PRODUCTION/SUPPLY IS ENORMOUS



Source: ITG

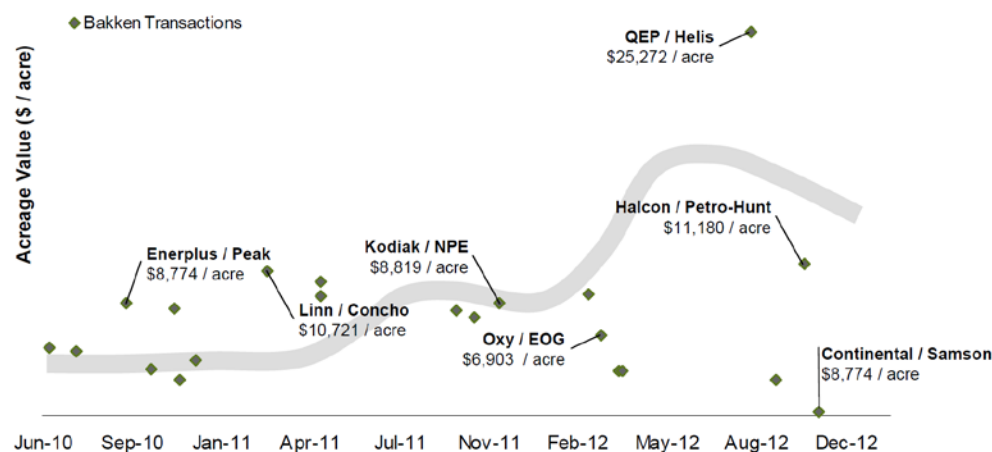
Unconventional Valuations

BUYERS ARE FOCUSED ON OIL RESOURCE PLAYS

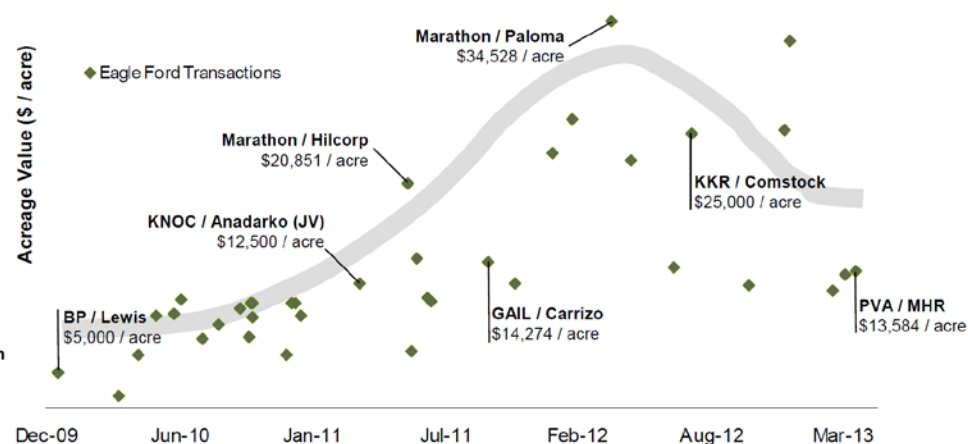


COVETED RESOURCE PLAYS CONTINUE TO COMMAND PREMIUM VALUATIONS

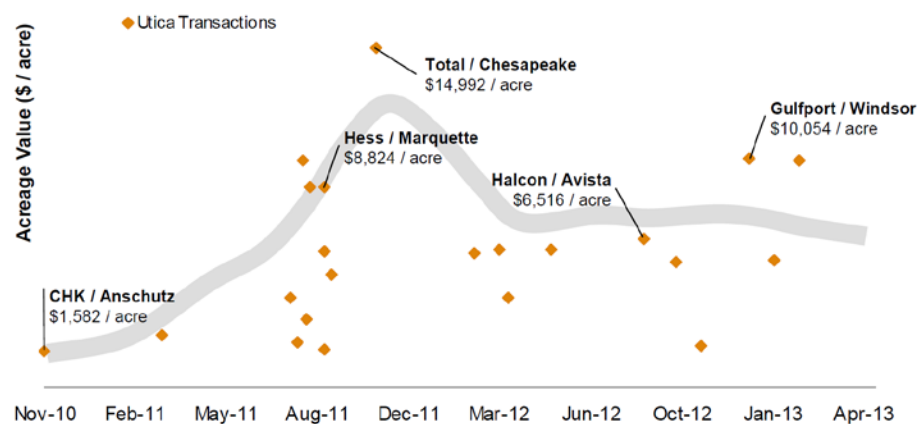
Bakken Shale



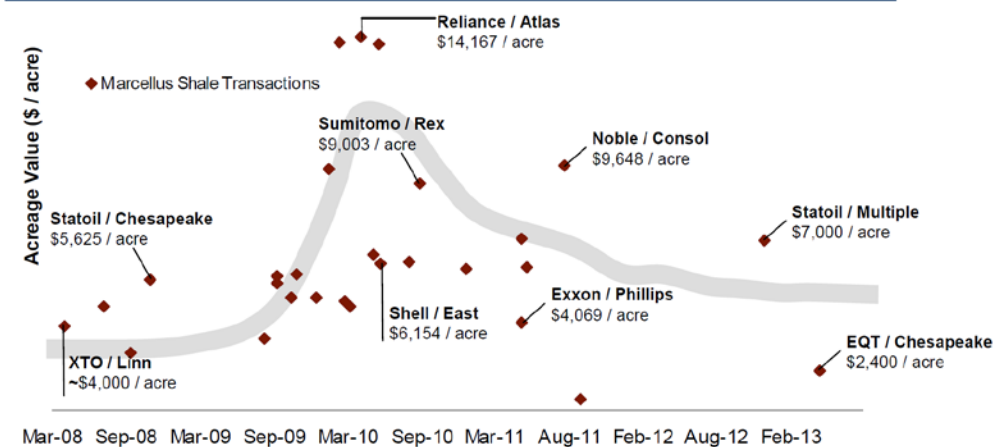
Eagle Ford Shale



Utica Shale



Marcellus Shale



- Single Well Economics
- Asset Maturity (i.e., how much of the acreage do you deem prospective and how much has been derisked?)
- Well Spacing (i.e., how many wells can you fit on the acreage position?)
- Time Value of Money (i.e., how long will it take you to drill up the acreage?)

Bakken Type Curve Assumptions

EUR (Mboe)	580.0
D&C Cost (\$000)	\$7,500
Working Interest (%)	100.0%
NRI (%)	75.0%

Single Well Economics

PV-10% (\$000)	\$10,084
IRR (%)	133%
ROI (x)	3.6x

Acreage Valuation

		Well	
PW (%)	PW (\$000)	Spacing ¹	\$/acre
10.0%	\$10,084	426.7	\$23,635
15.0%	\$7,915	426.7	\$18,551
20.0%	\$6,399	426.7	\$14,997
25.0%	\$5,277	426.7	\$12,368
30.0%	\$4,413	426.7	\$10,344
40.0%	\$3,173	426.7	\$7,438

¹ Assumes 3 wells per 1,280 acres (source: Whiting).

Eagle Ford Type Curve Assumptions

EUR (Mboe)	400.0
D&C Cost (\$000)	\$6,000
Working Interest (%)	100.0%
NRI (%)	75.0%

Single Well Economics

PV-10% (\$000)	\$6,760
IRR (%)	129%
ROI (x)	3.0

Acreage Valuation

		Well	
PW (%)	PW (\$000)	Spacing ¹	\$/acre
10.0%	\$6,760	64.0	\$105,632
15.0%	\$5,388	64.0	\$84,190
20.0%	\$4,400	64.0	\$68,752
25.0%	\$3,654	64.0	\$57,092
30.0%	\$3,071	64.0	\$47,977
40.0%	\$2,219	64.0	\$34,679

¹ Assumes 10 wells per 640 acres (source: EOG Resources).

THE TIME VALUE OF MONEY CAN GREATLY IMPACT RESOURCE PLAY VALUATIONS

Bakken "Drill Out" Example

# of Acres	50,000
Well Spacing (acres/well) ¹	426.7
# of Potential Drilling Locations	117
# Wells Drilled per Rig per Year ²	14.0

Single Well Acreage Valuation (\$/acre)

PV-20%	\$14,997
PV-30%	\$10,344

Discounted Acreage Valuation @ PV-20%

# of Rigs	Years to Drill Out	Discount Factor	Implied \$/acre
1	8.3	20.0%	\$7,695
2	4.2	20.0%	\$10,486
3	2.8	20.0%	\$11,755

Discounted Acreage Valuation @ PV-30%

# of Rigs	Years to Drill Out	Discount Factor	Implied \$/acre
1	8.3	30.0%	\$4,187
2	4.2	30.0%	\$6,273
3	2.8	30.0%	\$7,333

¹ Assumes 3 wells per 1,280 acres (source: Whiting).

² Source: Continental Resources.

Eagle Ford "Drill Out" Example

# of Acres	50,000
Well Spacing (acres/well) ¹	64.0
# of Potential Drilling Locations	781
# Wells Drilled per Rig per Year ²	20.0

Single Well Acreage Valuation (\$/acre)

PV-20%	\$68,752
PV-30%	\$47,977

Discounted Acreage Valuation @ PV-20%

# of Rigs	Years to Drill Out	Discount Factor	Implied \$/acre
1	39.1	20.0%	\$9,639
2	19.5	20.0%	\$18,746
3	13.0	20.0%	\$26,248

Discounted Acreage Valuation @ PV-30%

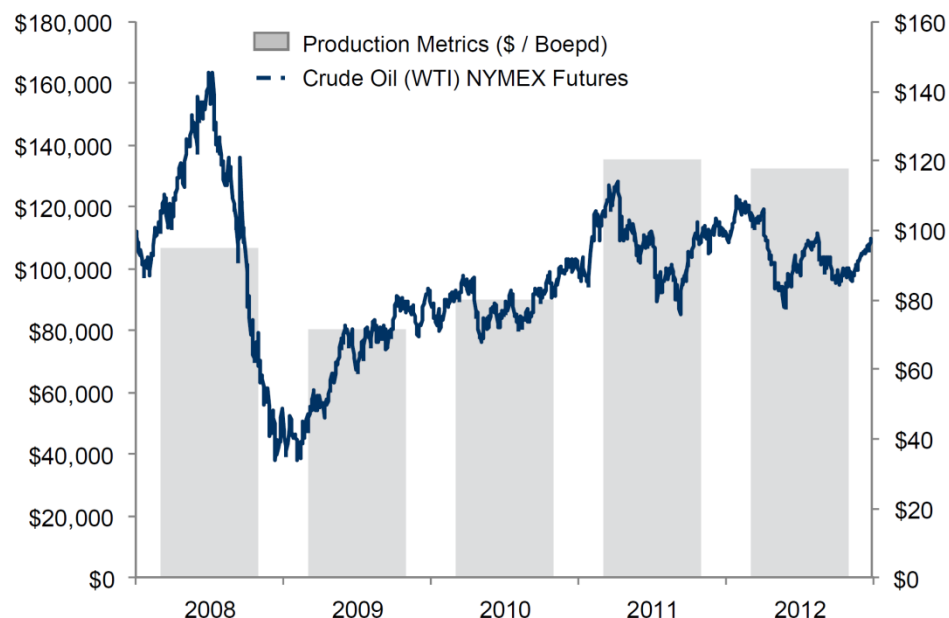
# of Rigs	Years to Drill Out	Discount Factor	Implied \$/acre
1	39.1	30.0%	\$4,674
2	19.5	30.0%	\$9,292
3	13.0	30.0%	\$13,562

¹ Assumes 10 wells per 640 acres (source: EOG Resources).

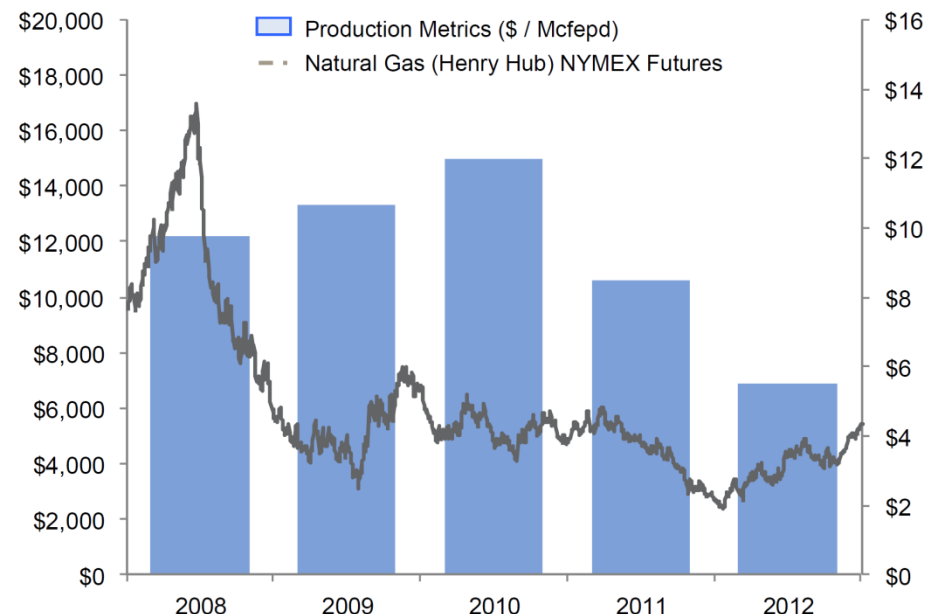
² Source: EOG Resources.

CONVENTIONAL OIL ASSETS REMAIN IN FAVOR WHILE GAS ASSETS STRUGGLE TO ATTRACT BUYERS

Conventional Oil Asset Sales – Production Multiples



Conventional Gas Asset Sales – Production Multiples



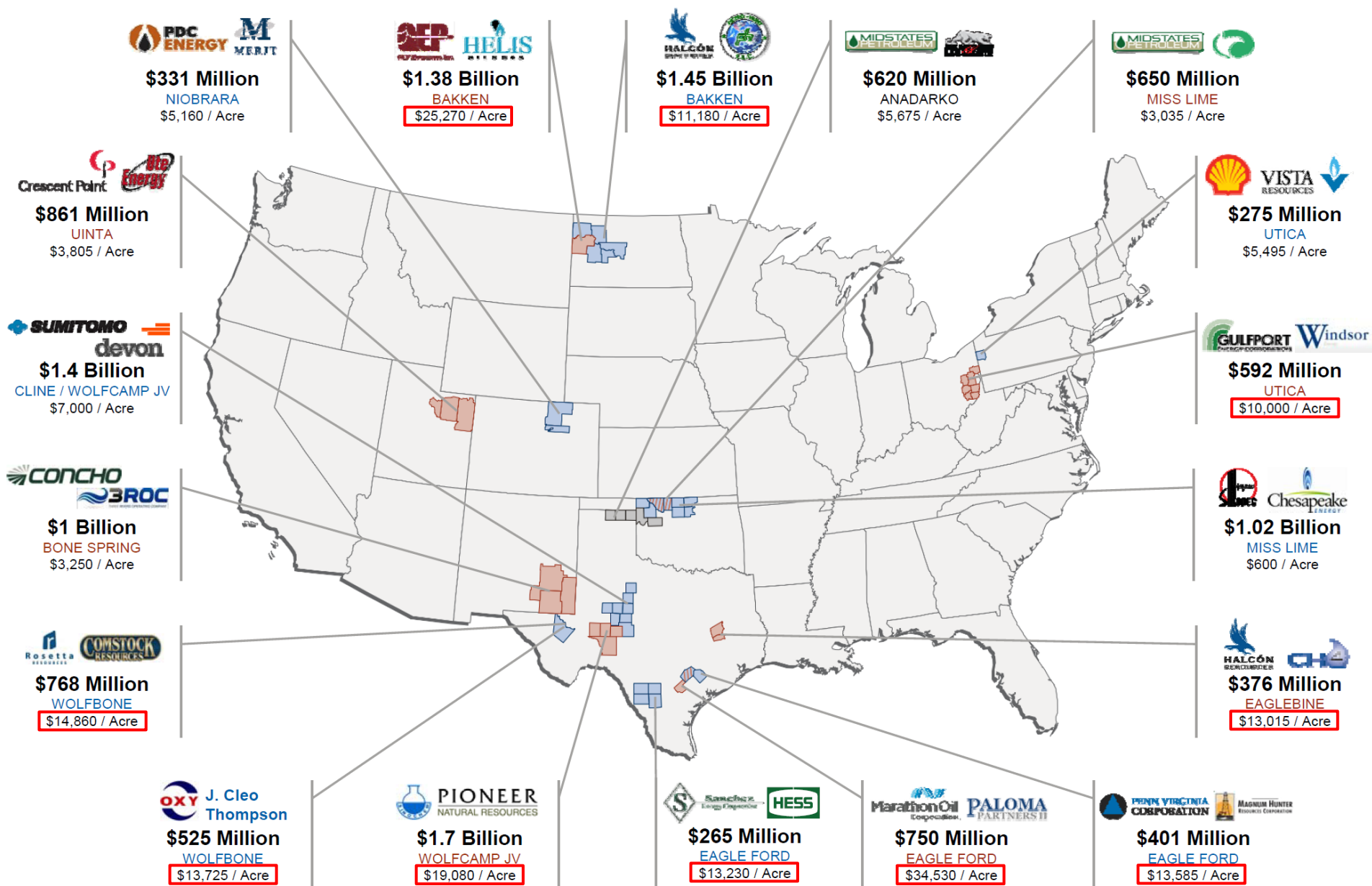
Conventional Oil – Illustrative Discount Rates

Reserve Category	Present Value (\$MM) At Varying Discount Rates					
PDP	PV ₅	PV ₈	PV ₁₀	PV ₁₂	PV ₂₅	PV ₃₀
PNP	PV ₅	PV ₈	PV ₁₀	PV ₁₂	PV ₂₅	PV ₃₀
PUD	PV ₅	PV ₈	PV ₁₀	PV ₁₂	PV ₂₅	PV ₃₀

Conventional Gas – Illustrative Discount Rates

Reserve Category	Present Value (\$MM) At Varying Discount Rates				
PDP	PV ₁₀	PV ₁₂	PV ₁₅	PV ₂₅	PV ₃₀
PNP	PV ₁₀	PV ₁₂	PV ₁₅	PV ₂₅	PV ₃₀
PUD	-	-	-	-	-

Source: Bloomberg and RBC Richardson Barr.

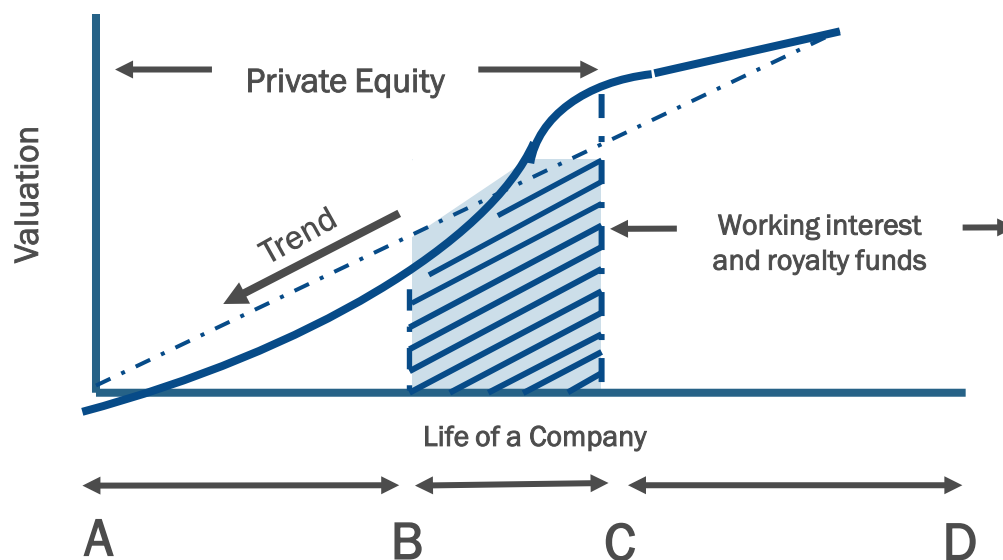


Source: RBC Richardson Barr.

Overview of Energy Private Equity

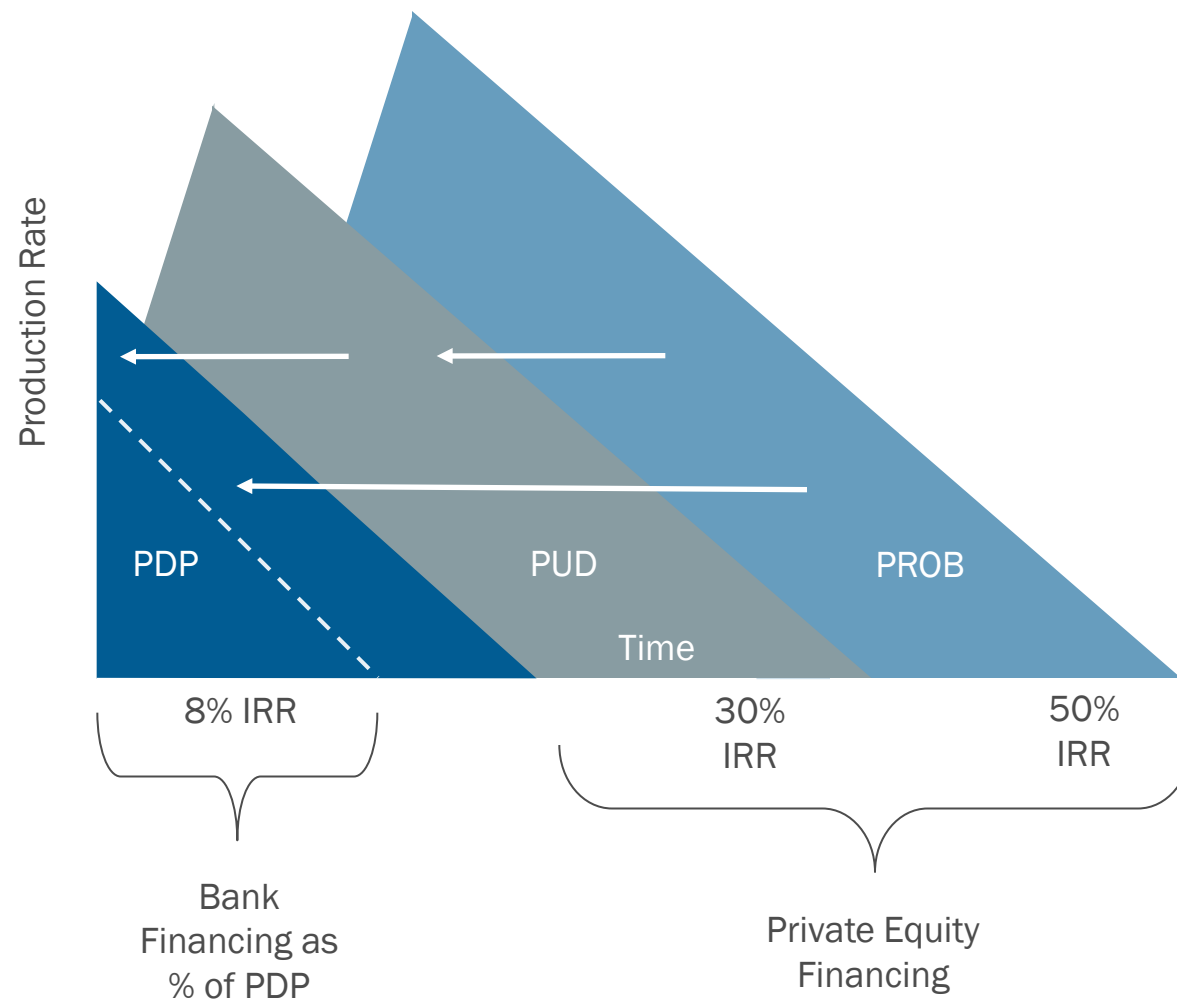
LIFE CYCLE OF SMALL TO MEDIUM SIZED OIL AND GAS COMPANIES

- Private equity helps finance A to B and B to C opportunities, however A to B situations require a more complex understanding of the reserves



Risk Profile:	High	Medium	Low
Risk Type:	Engineering Geologic	Drilling Operational	Operational Commodity Price
Fund Type:	Private Venture	Private	Mezzanine Tranche B
Expected IRR:	30-50%	15-30%	10-15%
Investment Horizon:	2-6 years	2-4 years	7+ years

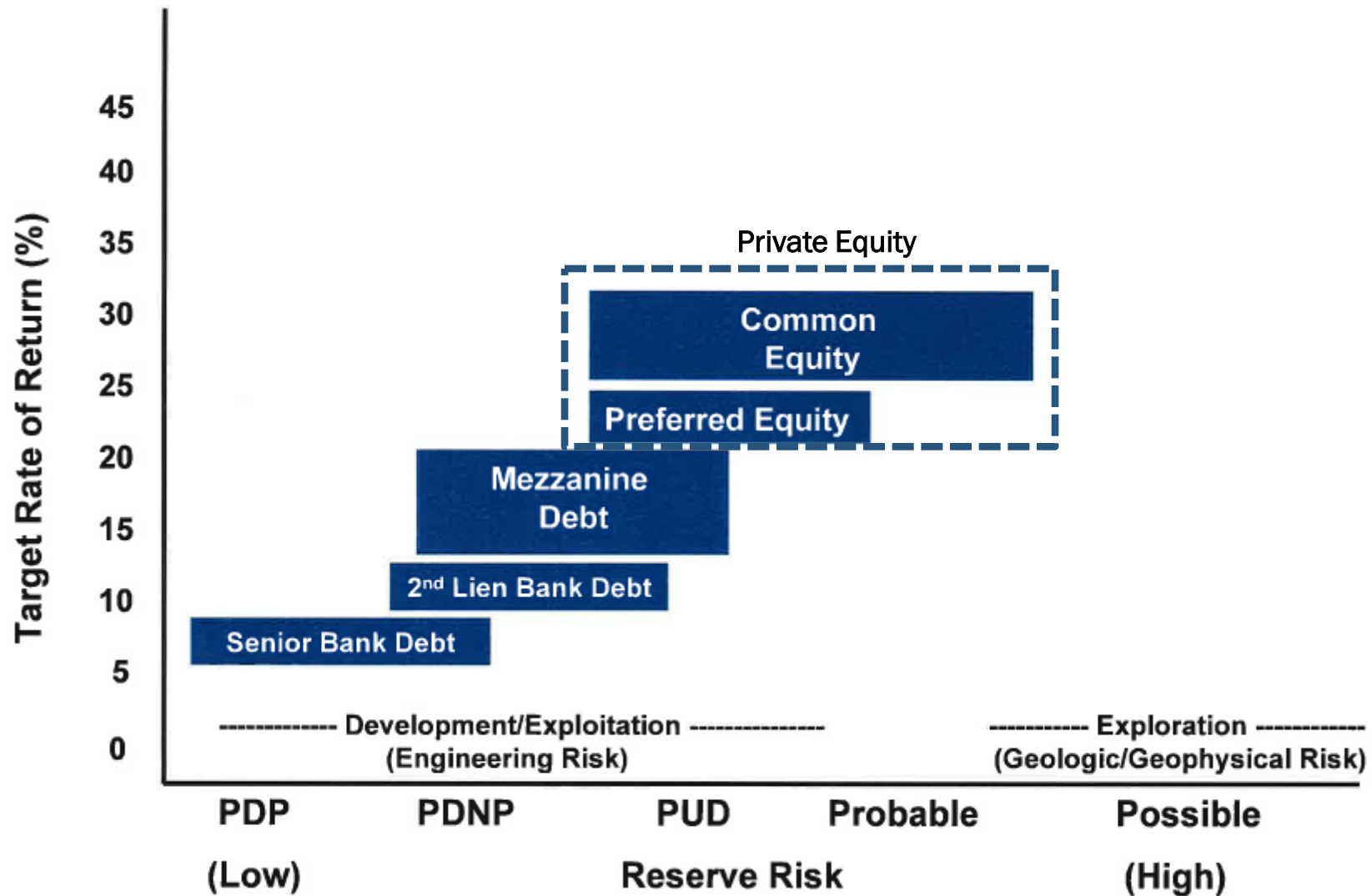
- Private equity is typically used to accelerate a company's reserve and production growth



PDP Proven Developed Producing reserves, which are reserves attached to drilled wells

PUD Proven Undeveloped reserves for which wells need to be drilled, greater than 90% chance of success

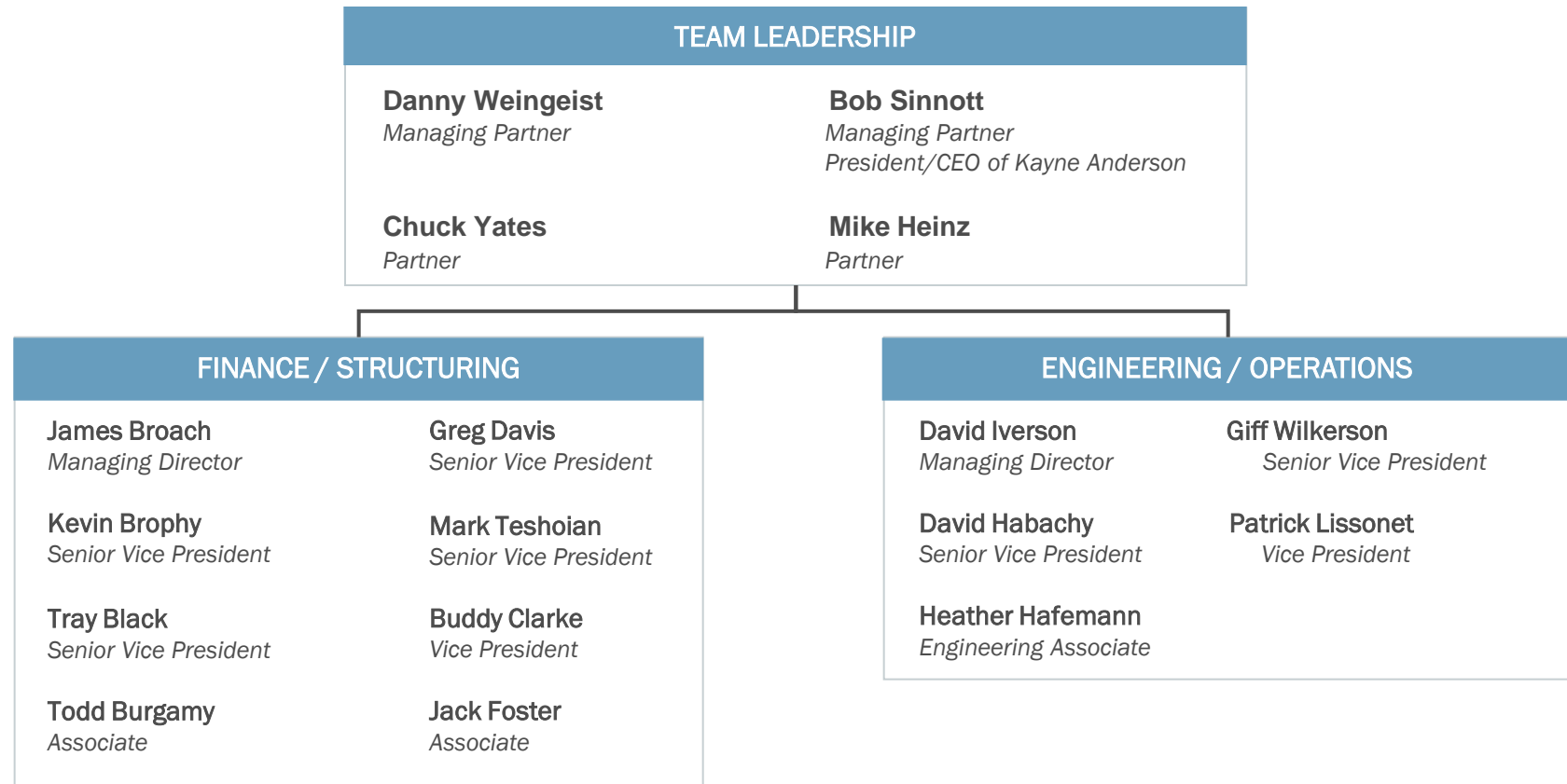
PROB Probable reserves for which wells need to be drilled, greater than 50% chance of success



Kayne Anderson

Energy Funds

Kayne Anderson Energy Funds

**Prior Work Experience:**

- Akin Gump
- Credit Suisse First Boston
- Goldman Sachs
- JP Morgan
- Lehman Brothers
- Simmons & Company
- Stephens

Prior Work Experience:

- ARCO
- Exxon
- Manti Resources
- Netherland Sewell
- Vastar

- **Investment strategy**

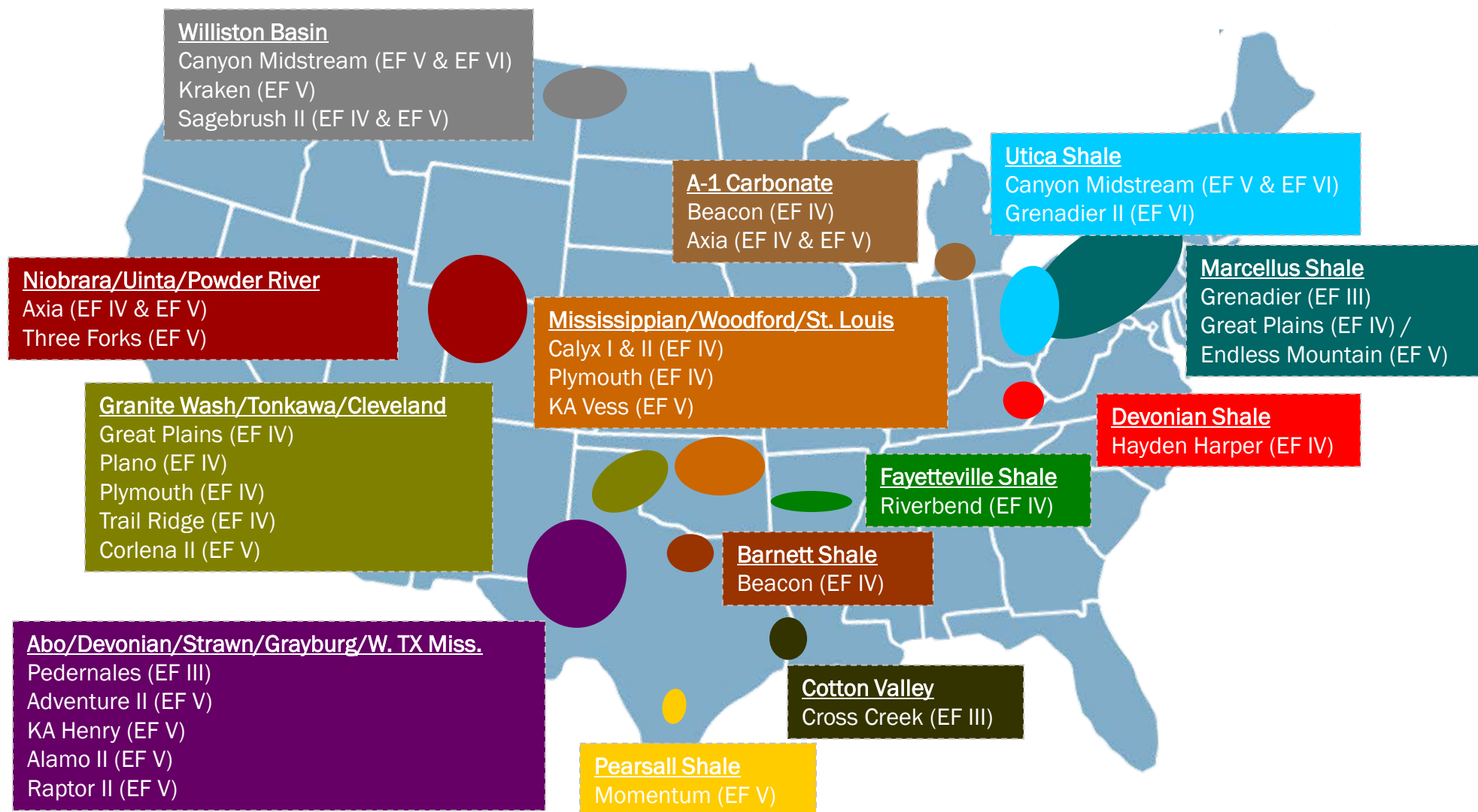
- Operator-focused investments in private oil and gas companies
- Proven management teams – experienced in 1-2 basins
- Diversified portfolio, although portfolio companies are not necessarily geographically diversified
- “Equity” return upside and “quantifiable” risk

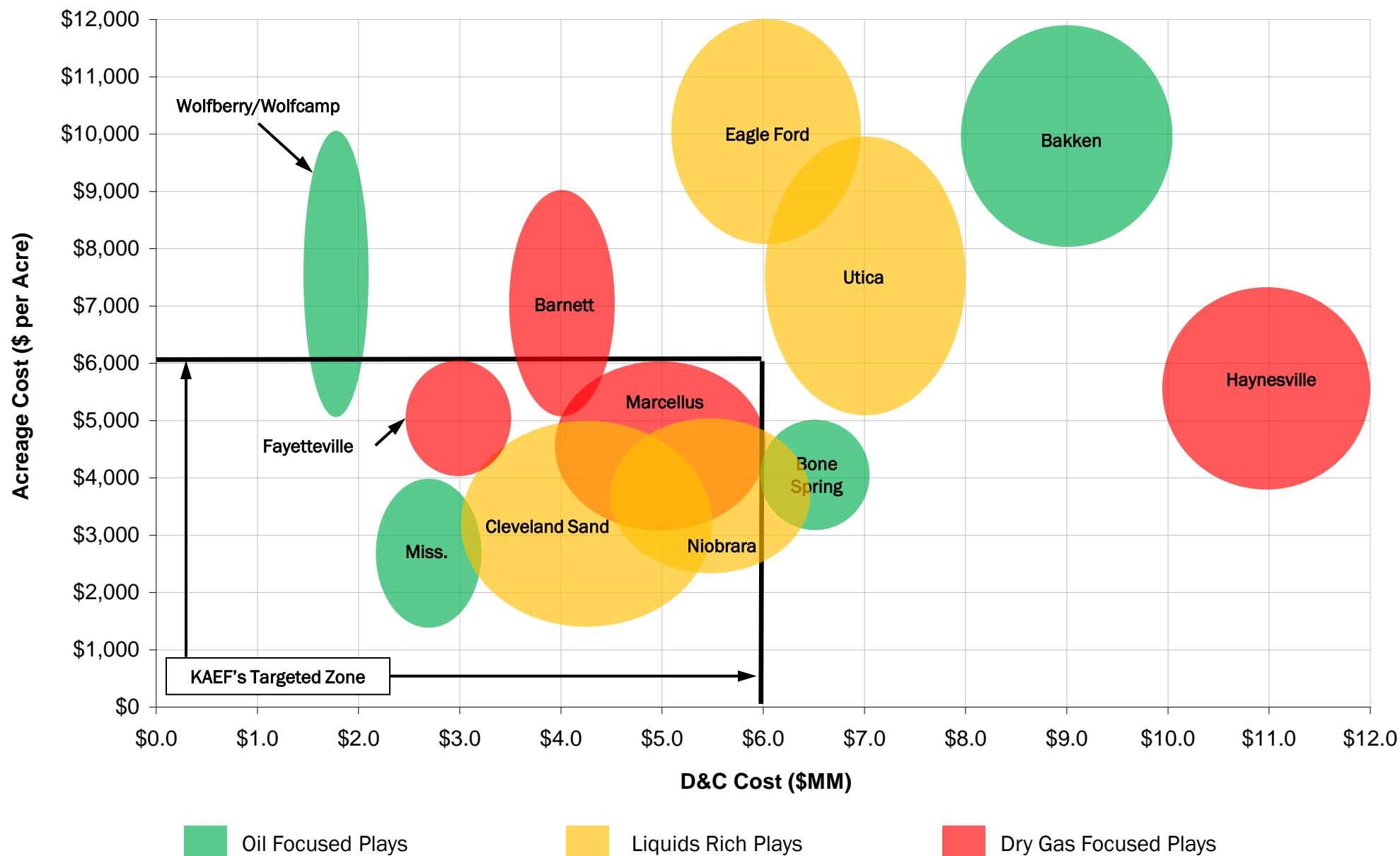
- **Investment structure**

- Investment size \$50 to \$150 million
- Returns primarily from capital appreciation
- Targeted gross ROI of 2.0x to 2.5x and gross IRR of 20% to 30%
- Typical holding period of three to five years
- Active investor (usually with majority control)
- Typically common investments through LLCs

- **Outstanding Track Record**

- 43 realizations since inception (over \$2.0 billion of total value)
- 2.4x ROI and 52% IRR from realized investments





**Tremendous
Investment
Opportunity in
Energy**

- Resource play revolution is driving a “game changing” transformation in energy
- E&P industry requires trillions of dollars of capital to fully develop the resource plays
- Companies will continue to sell non-core assets to help fund resource play development programs

**Why Kayne
Anderson?**

- ALWAYS maintained a consistent strategy
 - Onshore North America
 - Middle market private oil and gas companies
- Team – competitive advantage
 - Close-knit culture (no turnover)
 - Technically-focused with 6 petroleum engineers
- Conservative bias
 - Focused on risk mitigation and capital preservation
 - Active partner with our management teams
- Outstanding track record in energy private equity
 - Committed over \$3.4 billion to 87 investments since inception
 - 43 realizations since inception (over \$2.0 billion of total value)
 - 2.4x ROI and 52% IRR from realized investments

Kayne Anderson

Energy Funds

Q&A
