

Valuing Undeveloped Minerals

In Active Shale Plays

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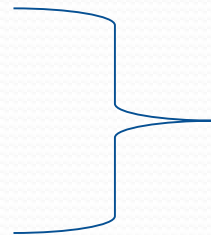


Questions

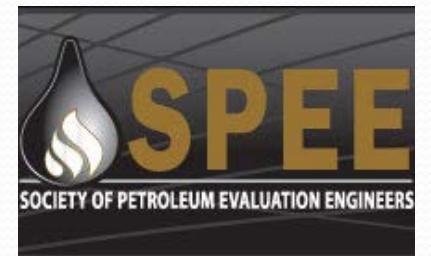
- “I just received an offer of 1,000 months of current income....Do you think I should sell?”
- “I have an offer to purchase my royalty interest in Martin Co., can you beat it?”
- “I need you to evaluate these Midland Co. royalties for Estate Tax purposes, and I need a true Fair Market Value Appraisal.”
- “I am gifting some minerals to my children, and I need a realistic Fair Market Value Appraisal.”

Fair Market Value Appraisal

- Midland Basin
 - Nine HZ wells Waiting on Completion
 - Sixteen Vertical wells PDP
- No horizontal direct offsets
- Proved Value = \$ 60,000
- Total FMV = \$ 1,100,000

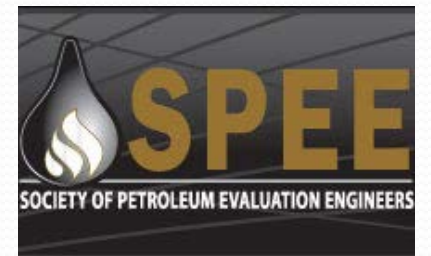


Big Disconnect



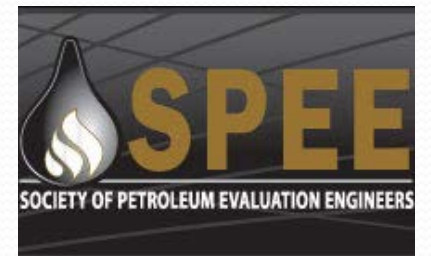
Time Value of Money

- Cold hard cash is precious...”opportunity” TVM
- Your money can be tied up in an illiquid asset for many years
- Shale plays are huge.
 - Pioneer inventory: 40+ years
 - Endeavor inventory: 40+ years
- Non producing minerals have no loan value
- Tank or Cube drilling means delays in acreage development
- Next to well performance, TIME is your biggest value driver



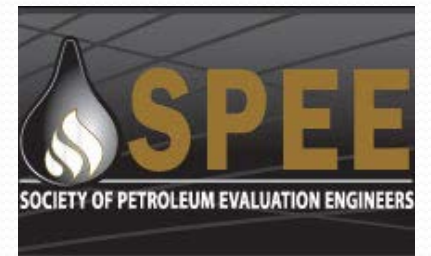
What is a Royalty Acre?

- A royalty acre is an industry defined term
- One mineral acre leased at 1/8 royalty
- Example
 - 100 net mineral acres leased at 1/4 royalty equals 200 net royalty acres (NRA)
 - 3/16 royalty equates to 150 NRA
- Equate an ORRI to an equivalent NRA
 - 1 % ORRI in 640 acres equates to 51.2 NRA
 - $51.2/640 \times 0.125 = .01$
- Compare similar buy/sell transactions in the area



Location, Location, Location

- Core vs. edge areas
- Number of proven shale benches
- Thermal maturity
- Gassy or oily
- Best in class operator standing
- Likelihood of acreage being pooled
- Focus area by operator
- Analogous data availability
- Are wells economic to the working interest



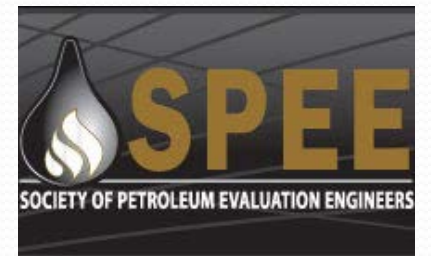
Data Analytics

- Lateral lengths and perforated intervals
- Normalize data to anticipated new well drilling lengths
- Well vintage...Pre 2016 +/- performance < Current performance
- Shale zones perform differently in many cases
 - Spraberry vs. Wolfcamp
 - Bone Springs vs. Wolfcamp
 - Woodford vs. Springer
 - Pressure differences
 - Steeply dipping beds, shallow dead oil to deep dry gas
- Parent-Child performance degradation



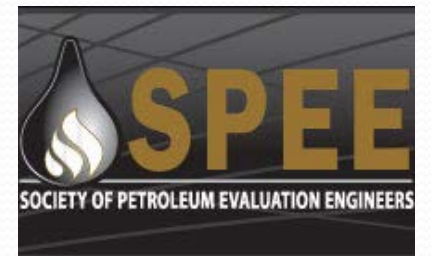
Actual Deal Offering

- Loving County, Pecos River area, near Reeves/Lea corners
- One PDP HZ well
- No new well permits
- 0.02 ORRI in one section HBP by one older WC HZ well
- 102.4 NRA equivalent
- Have offer of \$ 1.43 MM (\$ 14,000/NRA), can you beat it?
- PDP PV 10 value = \$ 2,000 per NRA (Ask= 7 X PDP value)

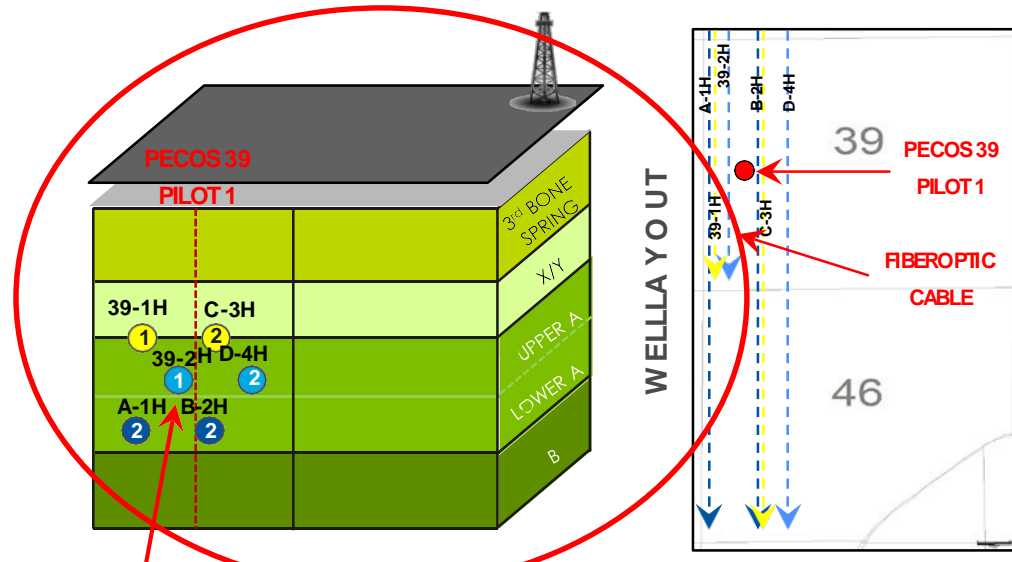


Investor Presentation Data

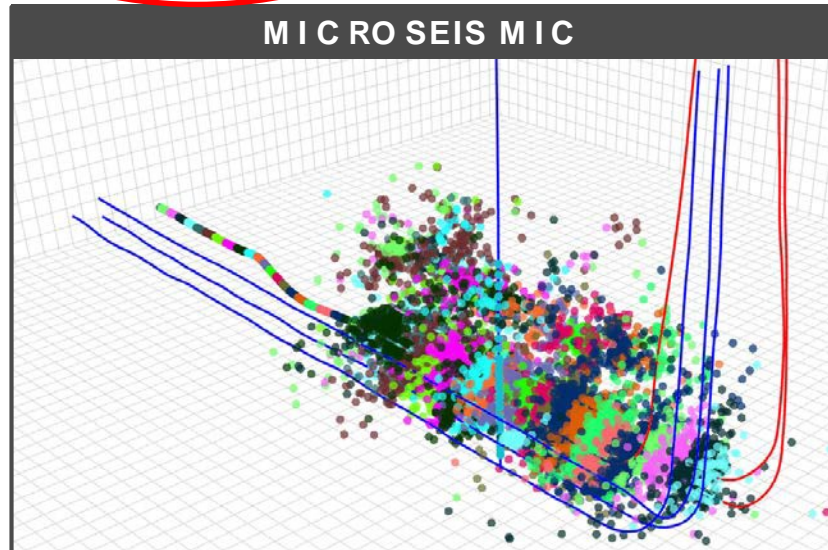
- Find nearby public company
- Review technical data
- BS, X-Y, WC A, WC B bench development
- Tight spacing based on core and micro seismic data
- Most likely 20 + wells per section ultimate density
- Cum oil vs. Time graph
- Recent well results



Real-Time Analytics Driving Well Design



FIBER OPTIC CABLE



PECO SSTA TEM ONITORING PROJECT

PILOT/MONITOR WELL

- Contiguous 806' core running from 3rd Bone Spring through Wolfcamp B
- Equipped with Microseismic geophones, permanent external pressure & temperature gauges
- Strategically placed to monitor fracs during completion, overall well performance and depletion through life of the well

PERMANENT DAS-DTS FIBEROPTIC INSTALLATION

- Successfully installed in the Pecos State 39 -2H well and completed all frac stages without damaging the fiber

BENEFITS

- Optimize well spacing and landing targets
- Improve completion design
- Develop best practices for choke and flow management
- Optimize artificial lift

Building Operational Momentum in Stateline

THIRD BONESPRING UPDATE



CBR 11-2 1H

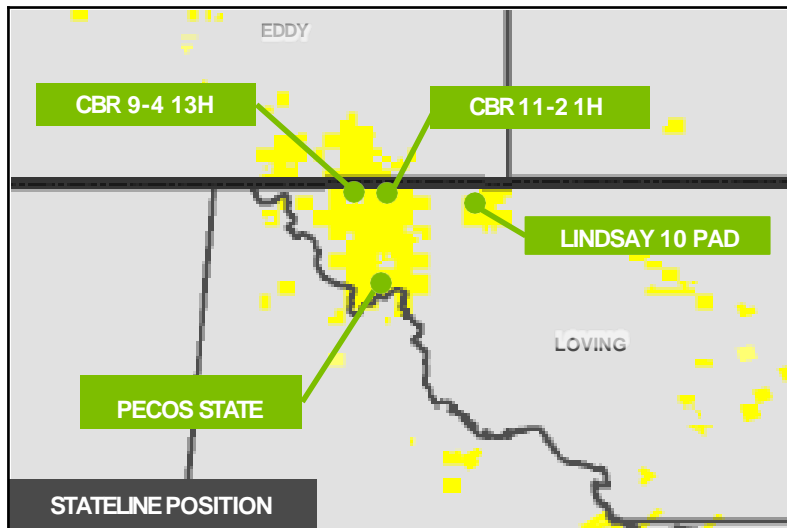
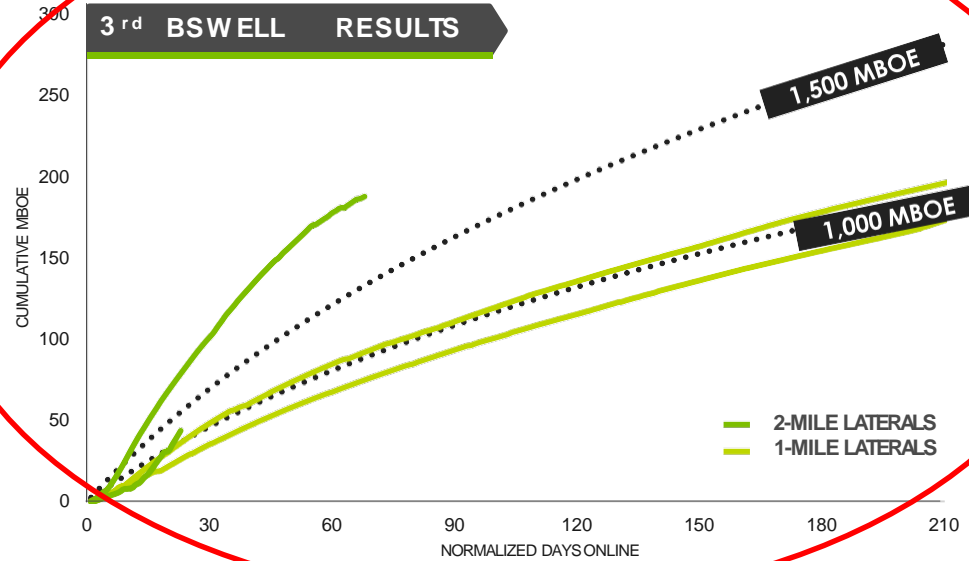
2-MILE LATERAL
60-DAY AVG: 2,955 BOE/D (52% OIL)



CBR 9-4-13H

2-MILE LATERAL
PRODUCED ~44,000 BOE (54% OIL) AFTER 23 DAYS

- 3rd BS INCREASING TIER 1 INVENTORY
- UPCOMING STATELINE SPACING TEST IN 3rd BS
- 3rd BS INCLUDED IN FUTURE DEVELOPMENT



DELAWARE 3Q HIGHLIGHTS



LINDSAY 10-3B-2H (X/Y)

90-DAY AVG: 3,141 BOE/D (54% OIL)



LINDSAY 10-3G-7H (UPPER WC A)

60-DAY AVG: 3,575 BOE/D (53% OIL)

- FIRST 200 MMCF/D TRAIN COMPLETED IN SEPTEMBER
SECOND 200 MMCF/D TO BE COMPLETED MID- 2019
- 3rd QUARTER AVERAGE REALIZED OIL PRICE 98% WTI¹
\$1.59 OFF WTI INCLUDING MIDLAND BASIS SWAPS

¹ Includes the impact of Midland basis swaps.

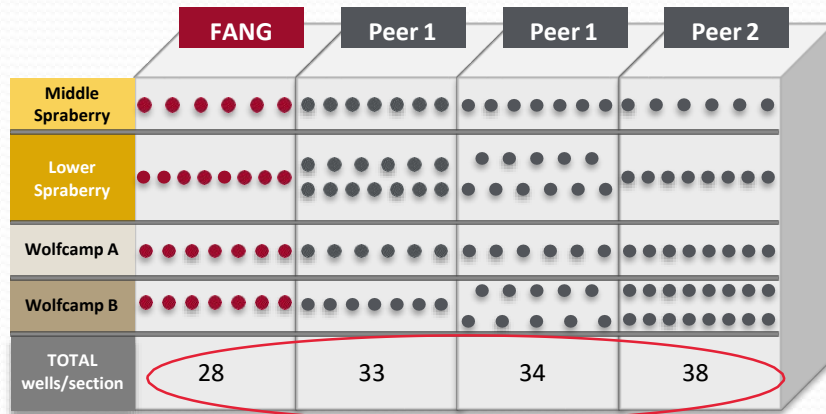
Net Midland Basin Location by Zone / Lateral⁽¹⁾

| | 5,000'+ | 7,500'+ | 10,000'+ | Total | Avg. Lateral |
|--------------|--------------|--------------|--------------|--------------|---------------|
| MS | 184 | 229 | 289 | 702 | 7,500' |
| LS | 252 | 302 | 352 | 906 | 7,400' |
| WCA | 193 | 246 | 307 | 746 | 7,500' |
| WCB | 175 | 246 | 311 | 732 | 7,600' |
| Other | 438 | 356 | 450 | 1,245 | 7,200' |
| Total | 1,243 | 1,379 | 1,709 | 4,330 | 7,400' |

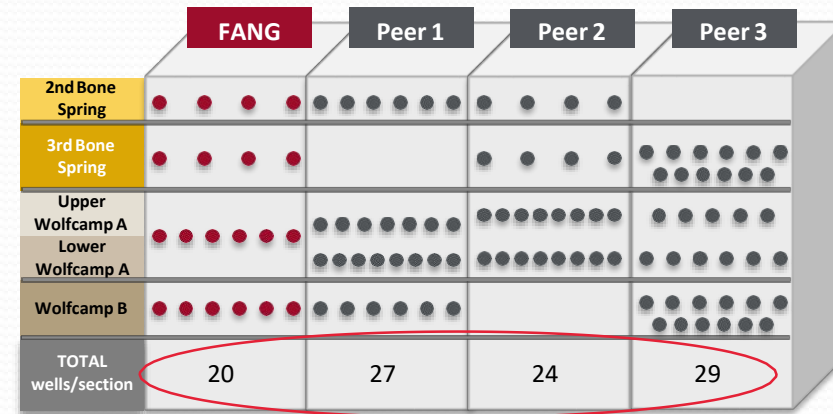
Net Delaware Basin Locations by Zone / Lateral⁽¹⁾

| | 5,000'+ | 7,500'+ | 10,000'+ | Total | Avg. Lateral |
|--------------|--------------|------------|--------------|--------------|---------------|
| 2BS | 141 | 96 | 115 | 353 | 7,200' |
| 3BS | 357 | 203 | 247 | 806 | 7,000' |
| WCA | 302 | 229 | 248 | 779 | 7,200' |
| WCB | 229 | 215 | 242 | 686 | 7,400' |
| Other | 305 | 208 | 167 | 680 | 6,700' |
| Total | 1,334 | 951 | 1,018 | 3,303 | 7,100' |

Midland Basin Premium Zone Spacing Assumptions vs. Peers⁽²⁾



Delaware Basin Premium Zone Spacing Assumptions vs. Peers⁽²⁾



Conservative spacing assumptions and depth of Tier One, long lateral inventory to drive capital efficient growth

⁽²⁾

Type Curve Preparation

- Wolfcamp and Bone Springs offset development
 - Wolfcamp
 - Ten wells
 - Lateral lengths 1, 1.5, 2.0 miles
 - Vintages < 1 year, 1-2 years, 2 + years
 - Bone Springs
 - Three wells
- Normalize data based on lateral lengths
- Build Type Curve (IP 30, 1-YR, 2-YR Rates)
- Run PV 10 DCF on one well, one NRA (PV 10 per well per NRA)

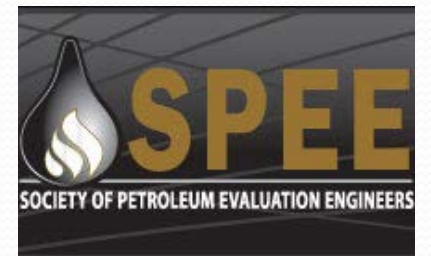
Value Assessment

- Start Date 1/1/2021
- IP 30 = 700 BOPD/4,300 MCFD, YR ONE = 200 BOPD/1,300 MCFD
- \$ 50 oil, \$ 3.00 gas
- 0.000195 NRI (1 NMA X 0.125 / 640 AC)
- PV 10 = \$ 3,300 per NRA
- \$ 14,000 less \$ 2,000 PDP value = \$ 12,000 per NRA
- So, I would have to **prepay** for ~ 4 future wells to be competitive



Business Decision

- How many wells should I prepay for?
- How far should I stretch, how much do I want to part with my cold hard cash?
- Do I really believe in the ultimate well density?
- Can acreage be pooled or traded in a reasonable timeframe?
- How likely is the operator to drill up the acreage?
- How long will it take to drill up the acreage?
 - Industry shift to “Up Spacing”
 - Operators must live within cash flow



SANITY CHECK!

Viper Energy Partners 2018 Acquisitions

| <u>County</u> | <u>Operator</u> | <u>Size (\$ MM)</u> | <u>Price per NRA</u> |
|---------------------|-----------------|---------------------|----------------------|
| Eddy | Marathon | \$ 21 | \$ 14,500 |
| Loving, Reeves, Lea | Various | \$ 36 | \$ 20,200 |
| Midland, Glasscock | Various | \$ 23 | \$ 16,300 |
| Reeves, Ward | Noble | \$ 15 | \$ 12,100 |
| Loving, Reeves, M/M | Various | \$ 150 | \$ 14,200 |
| Average | | | \$ 15,460 |

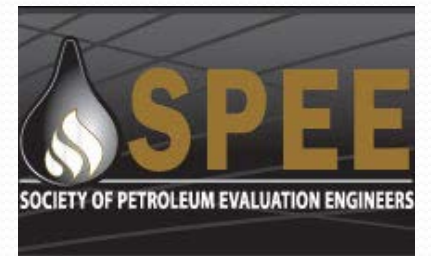
Why Invest in Minerals?

Upside:

If we are right and well density is 20, then with development over the next 3-4 years, and at a purchase price of \$ 14,000 per NRA, the IRR = 50 %, ROI = 10:1

Downside:

Limited except for TIME if we stay in core area



THAT'S ALL FOLKS!

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