### Drilling Improvements in the Second Bone Spring, NM

# CIMAREX

Spencer Bryant Drilling & Completion Engineer AADE National Technical Conference and Exhibition Oklahoma City, OK

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# Forward-looking Statements

This presentation contains projections and other forward-looking statements within the meaning of Section 27A of the U.S. Securities Act of 1933 and Section 21E of the U.S. Securities Exchange Act of 1934. These and statements projections reflect the Company's current views with respect to future events and financial performance. No assurances can be given, however, that these events will occur or that these projections will be achieved, and actual results could differ materially from those projected as a result of certain factors. A discussion of these factors is included in the Company's periodic reports filed with the U.S. Securities and Exchange Commission.

XEC Inisted NYSE

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- Quote
- Cimarex Strategy
- Delaware Bone Spring
- Typical Wellbore Design
- Median Days Historical
- Best of the Best Days
- ▲ 17-1/2" Hole
- ▲ 12-1/4" Hole
- ▲ 8-3/4" & 7-7/8" Vertical Hole
- Curve
- Lateral







If past history was all there was to the game, the richest people would be librarians.

- Warren Buffett



# Cimarex Strategy

### Grow through the drill-bit

• Generate our own drilling inventory

### Portfolio approach

 Keep a mix of opportunities...gas/oil; low-medium-higher risk projects; seek geologic and geographic diversity

### Rate of return based decisions

- Strong relative oil prices have resulted in capital shift
- Expanding Permian Basin operations and focus on liquids rich shale projects
- Growing oil and NGL proved reserves







# **Drill-Bit Production by Region**



81%

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# Permian – Delaware Bone Spring



www.beg.utexas.edu

![](_page_6_Picture_4.jpeg)

### **Typical Wellbore Design**

![](_page_7_Figure_1.jpeg)

3rd Bone Spring Carbonate Production Casing: 5-1/2" 17# P110

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![](_page_8_Picture_0.jpeg)

• 2010: 41.0

![](_page_8_Figure_2.jpeg)

![](_page_9_Picture_0.jpeg)

- 2010: 41.0 •
- 2011: 35.0 •

![](_page_9_Figure_3.jpeg)

![](_page_10_Picture_0.jpeg)

- 2010: 41.0 •
- 2011: 35.0 •
- 2012 Q1-Q2: 30.5 •

![](_page_10_Figure_4.jpeg)

# Median Days

- 2010: 41.0
- 2011: 35.0
- 2012 Q1-Q2: 30.5
- 2012 Q2-Q4: 25.3

![](_page_11_Figure_5.jpeg)

![](_page_12_Picture_0.jpeg)

- Composite performance of all wells
- Wells are divided into 10 different segments
- ▲ 2010: 20.7 Days
- ▲ 2011: 17.0 Days
- ▲ 2012: 12.2 Days

![](_page_12_Figure_6.jpeg)

# 17-1/2" Hole Section

![](_page_13_Figure_1.jpeg)

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# 12-1/4" Hole Section

![](_page_14_Figure_1.jpeg)

![](_page_14_Picture_4.jpeg)

# Vertical Deviation Solutions

#### "Old School" Solution

- Packed Pendulum BHA Drill with light weight and higher RPM to "fan" back vertical
- Decreased ROP due to light WOB

### "New School" Solutions

- Vertical Control, "Pad-Type" Tools
- Bent Motor

![](_page_15_Picture_7.jpeg)

![](_page_15_Picture_8.jpeg)

12-1/4" Hole Section – Conv. v Directional

![](_page_16_Figure_1.jpeg)

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# 8-3/4" & 7-7/8" Vertical Hole

![](_page_17_Figure_1.jpeg)

![](_page_18_Picture_0.jpeg)

### PDC Bits

- 16% utilization in 2011
- 45% utilization in 2012
- 26% ROP and footage increase per run

### Friction Reduction

- Mechanical

   Oscillation Tools
- Hydraulic
   Lubricants

![](_page_18_Picture_8.jpeg)

![](_page_18_Picture_10.jpeg)

![](_page_19_Picture_0.jpeg)

![](_page_19_Figure_1.jpeg)

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![](_page_19_Picture_3.jpeg)

![](_page_20_Picture_0.jpeg)

### Torque Reduction

- Typically TD with over 10,000 ft-lbs off-bottom torque
- Oscillation Tools
- Lubricants
- Rotary Steerable

![](_page_20_Picture_6.jpeg)

![](_page_20_Picture_7.jpeg)

NOV Agitator Tool Handbook page 4

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![](_page_20_Picture_11.jpeg)

![](_page_21_Picture_0.jpeg)

![](_page_21_Figure_1.jpeg)

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![](_page_21_Picture_3.jpeg)

![](_page_22_Picture_0.jpeg)

#### Recap:

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![](_page_22_Picture_11.jpeg)

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