A source of capital for operators since 2015

Invest in working interests (we are non-operators) through Prospect Participation Agreements governed by a JOA with a defined AMI.

Prefer opportunities in under-evaluated areas, where our technical expertise adds value

Prefer development projects where our capital can be a catalyst for growth

Strategic, long-term relationship with Yorktown Energy Partners
# Leadership

**Deep Technical Expertise in Horizontal Resource Plays and E&P Development**

<table>
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<th>Principal</th>
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| Jeff Miller, President| • Founder, 2014 – Present  
• Led Chesapeake’s Unconventional Exploration team that discovered major unconventional oil and gas plays onshore U.S.  
• Opened and managed a proprietary unconventional core analysis lab, which facilitated the company's understanding of drivers for success in unconventional plays  
• M.S. Geology, Oklahoma State University,  
• B.S. Geological and Earth Sciences/Geosciences, Southern Illinois University |
| Brad Gale, COO        | • 2016 – Present  
• Previously with C12 Energy, Chesapeake Energy, Encore Acquisitions, COP and ARCO  
• B.S. Petroleum Engineering – Marietta College |
| Bryant Patton, Principal| • Founder, 2014 – Present  
• Principal in Oakspring Energy, Vaquero Midstream and Vendera Resources.  
• Involved in creating value at TEAK Midstream, LLC, Sendero Energy Partners, LP, Savannah Energy and co-founder of Camden Resources, Inc. (CRI)  
• Nine years of institutional investment experience with AEM deploying $350 million to energy independents  
• A decade with TTE, a family owned integrated energy holding entity with 7 companies and 325 employees |
INVESTMENT FOCUS

Focused on Underserved Small to Middle Market – $20MM to $200MM Projects

1. Ability to fund multiple rounds, expansions with qualified opportunities

2. Prefer to take non-operated working interests in projects where we can add value

3. Prefer onshore North America

4. We utilize all available technology, experience and skills to define a project’s potential before committing capital.
THE OAKSPRING DIFFERENCE

Deep Understanding = Better Partner for Investors and Portfolio Companies

- Our investors realize the “trial-and-error” approach has destroyed a lot of capital and prefer to make targeted investments through Oakspring that leverage our expertise.

- No play needs to be a mystery!

- Understanding the risks of a new project at the beginning is key to designing the early data and drilling programs to know whether you can be successful with the least expenditure.

- Oakspring doesn’t take the easy path through project evaluations. We strive to understand the ‘what’ and ‘whys’ of the plays so that we get to the ‘how’ of optimizing a play’s commercial outcome while being fully cognizant that making timely decisions is important.

- Capital combined with our technical expertise helps qualified projects get started quicker and accelerates development, leading to value creation sooner.
Case Study

A Personal Anecdote – We Made Good Money for the Wrong Reason!

• One of the most uncomfortable feelings we can have as investors is to not understand the ‘why’ of an outcome that we realized.

• In many ways, the industry’s recent forays into tight reservoirs and unconventional reservoirs can leave our heads spinning without the right insights and tools.

• Our partner, Bryant Patton, has personal experience with surprise (this one ended well on several levels . . .)
  
  o In 2010, Bryant invested in three Wolfberry wells in Martin County, TX.
  
  o All wells were drilled and logged before a completion decision – the logs were railroad tracks indicating to Bryant (at the time) that the wells had no pay.
  
  o The group decided to complete the three wells for $6 million total (We are going to do what??)
  
  o The wells were successful and the group then sold the asset making 5X on the investment.
  
  o End result was a successful investment and monetization (although with the feeling of not understanding exactly what had transpired).
  
  o Another result was the realization that relying on decades of experience and rules-of-thumb might not work well in the future and that a better way to understand these plays and have calibrated expectations was important.
**CHALLENGES DEVELOPING UNCONVENTIONAL RESOURCES**

**Horizontal Resource Plays are Deceptively Complex**

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**Missing Critical Skillsets**
- Effective development of unconventional resources requires the collaboration of multiple critical skillsets, and a knowledgeable partner can help increase value faster.

**Approved Projects Fail to Produce**
- We are inundated by data, and knowledge of data quality and ability to synthesize multiple data sets in meaningful ways is critical to effective capital allocation in unconventional plays.

**Production Fails to Meet Expectations**
- Knowing which technical variables are predictive of commercially successful discoveries is essential to making accurate forecasts of production and recoveries.
Oakspring’s Proven Model for Meeting the Challenges

Rigorous Process Adds Value for Both Investors and Portfolio Companies

- Our fundamental beliefs are that oil and gas reservoirs do perform in a predictable fashion when the right set of technical lenses are applied. In the current, lower oil price world, having a fundamental understanding of what drives a play is paramount to economic success.

FLOWCHART- Oakspring’s Integrated Workflow

*All three Critical Elements must be positive for a successful well or play*

- High Quality Core Analysis
- Petrophysical Model
  - Hydrocarbons in Place Critical Element
  - Deliverability Critical Element
  - Hazard Identification Critical Element
- Well Performance Analysis Numerical Flow Simulation
- Resource Assessment, Field Development Plan, Production and Economic Performance
**Challenge: Filling the Gaps with Real-World Expertise**

- We focus on rock properties/reservoir quality. We have unique skill set having opened and managed CHK’s Reservoir Technology Center and have detailed knowledge of procedures and equipment used at all the commercial core analysis labs. Getting your core analyzed properly is a critical first step in our integrated workflow.

- Having the ability to create a robust petrophysical model tied to right core analysis takes an experienced petrophysicist. Oakspring has a full time petrophysicist as a member of our team.

- The ability to take core analysis, petrophysical, geological, the right types of production analysis and the use of numerical simulation to predict results is one of Oakspring’s core competencies.

- This integrated process using our critical skillsets and time tested workflows enhances a producer’s ability to forecast economics and allocate capital.
**Challenge: When Approved Projects Fail to Produce**

- Failure to live up to the expectations going into a new project is often a function of poor information.

- The log on the right from the initial pilot well in a play shows two core data sets:
  - Original set delivering poor results.
  - Reanalyzed set with more accurate and representative measurements.
  - Different labs use different methods and provide different quality of results – which are you paying for to set your expectations?

- Using the accurate core data set, along with log analyses calibrated to the core in offset wells and early horizontal well results would have painted the picture around commerciality of the play.
  - Lacked sufficient hydrocarbon in-place
  - Deliverability marginal

- Limited early-time data and/or lack of understanding around fluid properties often leads to non-optimal actions, especially in near-critical fluid systems and with long-term gas condensate yields.
Problem Statement

- Initial wells in a new play not performing to production rate expectations.
- Quality core data and petrophysics suggested that <20% of the performance variation attributable to permeability variations.
- Depth/pressure differences and fluid properties (low yield gas condensate) can’t explain the performance variation.

Analytical Analyses Provided a Clue

Load Recovery Behavior Varies As Well

Large Variation in Well Performance
Resolution

- The key to getting to optimal productivity was understanding that the production did not meet well-founded expectations of the flow rates.
  - Had good rock properties and fluid analyses as a foundation for modeling rates
  - Had wells with a variety of results to stimulate the questions and provide good material for analytical and numerical estimates of well performance behavior.

- The basic issue was the phenomenon of ‘water blocking’ - slick water completion fluid forced into the fracture face creates a high water saturation region that acts as a skin damage effect.
  - High capillarity in the reservoir attempts to pull the water phase away from the fractures
  - Drawdown from production attempts to pull the water phase to the wellbore
  - This tug-o-war leaves high water saturations around the fractures limiting production
  - Easiest and most certain solution is allow natural forces to disperse the water by delaying production once the well is completed.
**Challenge: Why Isn’t Production Meeting Our Expectations?**

**Problem Statement**

- How good are our forecasts of future well performance?
- Most of our plays are immature in regards to the wells being in a state to analyze appropriately.
- As an industry, we tend to apply over-simple models (Arps Decline) when it isn’t valid to use.

**Analytical Analyses Provided a Clue**

- Poor forecasting methods misstate the true value of an asset.
- Optimistic forecasts can lead to over-valuing acquisitions.
- The industry has better tools and methods to understand when to use what approach – are your teams using the best methods?

**Changing EUR with Well Maturity**

For a 30-year forecast, the EUR declines by 40%.

**Different Approaches Yield Differing Value**

Arps – optimistic early

Analytical Model

$P_{90}$ $P_{50}$ $P_{10}$
Our rigorous integrated workflow evaluation process focuses on “game-changing” variables proven to correlate with commercial success.

It can be a fast process!
WHAT OAKSPRING ENERGY CAN DO FOR YOU

We Solve the Challenges of Horizontal Resource Plays

• Our **core competency** of solving the challenges of unconventional resource play development leads to faster and more effective value creation.

• The trial-and-error approach to resource development is not a winning strategy.

Oakspring understands the game-changers and wants to provide, as a co-investor and joint venture partner, the knowledge to enable our operator partners the best ability to compete and generate quality investment opportunities in any price environment.
Are We A Good Fit?

• Oakspring wants to invest alongside highly-skilled operators in quality oil and gas projects.

• Oakspring’s strategy is to provide both capital and its’ deep technical experience and expertise to identify, develop and optimize land acquisition and field development projects.

• Oakspring believes that the depth and breadth of technical expertise that we can bring to bear on technical evaluations, well and field development planning and decision making provides a meaningful addition to any operator’s existing competencies.
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