



IPAA Conference

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An investment in Vortus funds is speculative and involves a high degree of risk. Opportunities for withdrawal and transferability of interests are restricted, so investors may not have access to capital when it is needed. There is no secondary market for the interests, and none is expected to develop. The portfolio, which is under the management and discretionary authority of Vortus, is primarily concentrated in growth equity, and this lack of diversification may result in higher risk. **An investor should not make an investment unless it is prepared to lose all or a substantial portion of its investment.** The fees and expenses charged in connection with this investment may be higher than the fees and expenses of other investment alternatives and may offset profits. Nothing presented herein is intended to constitute investment advice, and no investment decision should be made base on any information provided herein. Important risks are further discussed later in this document. Please see slide titles “Risk Factors Summary”.

Past performance does not guarantee future results. Portfolio characteristics and other information are provided as of the dates set forth herein. Current or future characteristics and other information may vary significantly from those provided herein and the firm undertakes no obligation to notify the recipient of any such variances. The terms of investment products listed herein are subject to change. This document contains forward-looking statements and projections that are based on our current beliefs and assumptions and on information currently available that we believe to be reasonable, however, such statements necessarily involve risks, uncertainties and assumptions, and prospective investors may not put undue reliance on any of these statements. Due to various risks and uncertainties, actual events or results or the actual performance may differ materially from those reflected or contemplated in any such forward-looking statements.

Portfolio company information presented herein is for informational purposes only and not intended to be a guarantee of certain investment results. There is no guarantee that Vortus will be able to source similar investments and achieve comparable performance in the future. Portfolio company performance data is not necessarily indicative of overall fund performance. Portfolio level performance may not factor in certain fund level expenses such as management fees, carried interest, audit fees and other expenses that will reduce overall performance of a fund.

The firm does not represent that the information herein is accurate, true or complete, makes no warranty, express or implied, regarding the information herein and shall not be liable for any losses, damages, costs or expenses relating to its adequacy, accuracy, truth, completeness or use.

There is a possibility for loss as well as the potential for profit when investing in the funds described herein.

Vortus

Asset-Focused • Lower Mid-Market • Onshore U.S. • Operated E&P

- ~\$1 billion under management¹
- \$50 - \$100 million equity per deal
- Headquartered in Fort Worth, Texas; Founded by Jeffrey W. Miller and Brian C. Crumley
- Target 3x gross returns with downside protection from specialist investment approach

Asset Focused

Identified asset, partnership, execution

- Identification of assets and upside potential at underwriting
 - Investing in high quality assets alongside management teams with history in basin
 - Consistent, proactive approach to creating privately negotiated, off-market transactions
- Incumbent management teams' preferred partner
 - Vortus' E&P expertise and network help secure transactions and advantaged buy-in valuations
- Visible path to maximize value
 - Value creation plan agreed in collaboration with management pre-investment

Proven Team

Broad team skill set of technical and financial expertise

- Extensive team network enhances deal flow, asset understanding and industry best practices
- Repeatable investment strategy through the cycle
- 70+ years of global energy industry expertise: technical, operational and financial

Identified Asset - Optimize - Exit

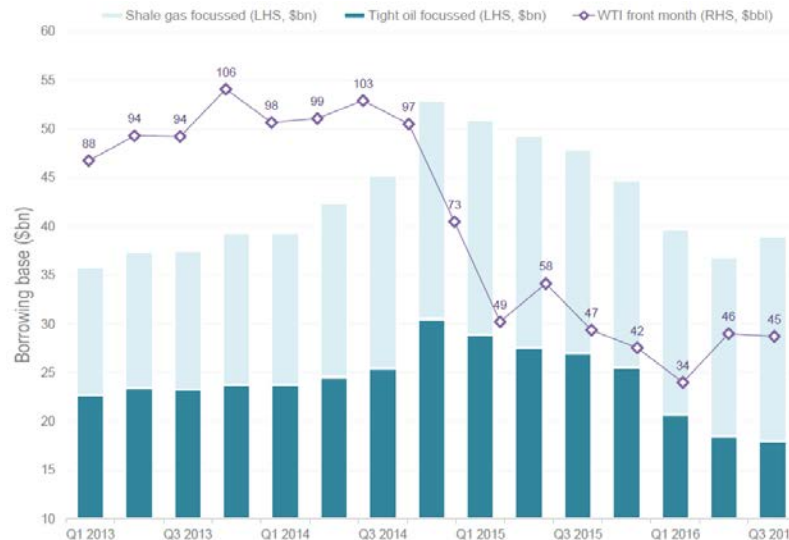
¹Includes Vortus-managed co-investment

Debt Capital Markets Have Tightened

Increasing equity financing requirement

- Access to financing has tightened driven by regulatory change
 - Traditional reserves based lending (RBL) replaced by cash flow-based lending
 - Total leverage now includes senior debt plus other interest bearing debt including mezzanine financing
- Priority of accessing lowest cost capital increases equity's role in capitalizing industry growth

Credit facilities have been cut to smaller US E&P

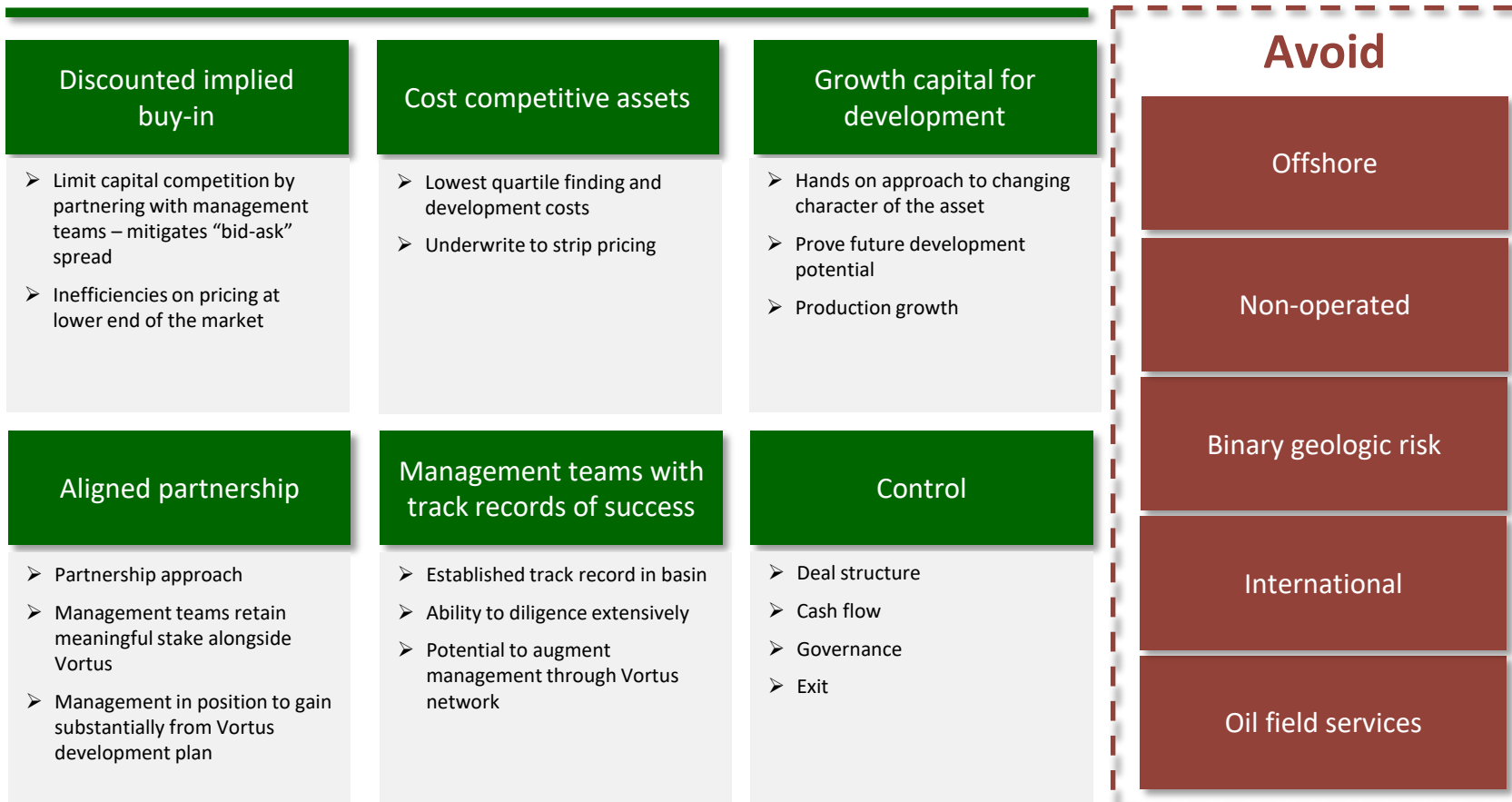


Source: LEA, Bloomberg, Company Data

Equity to fund larger portion of development capital

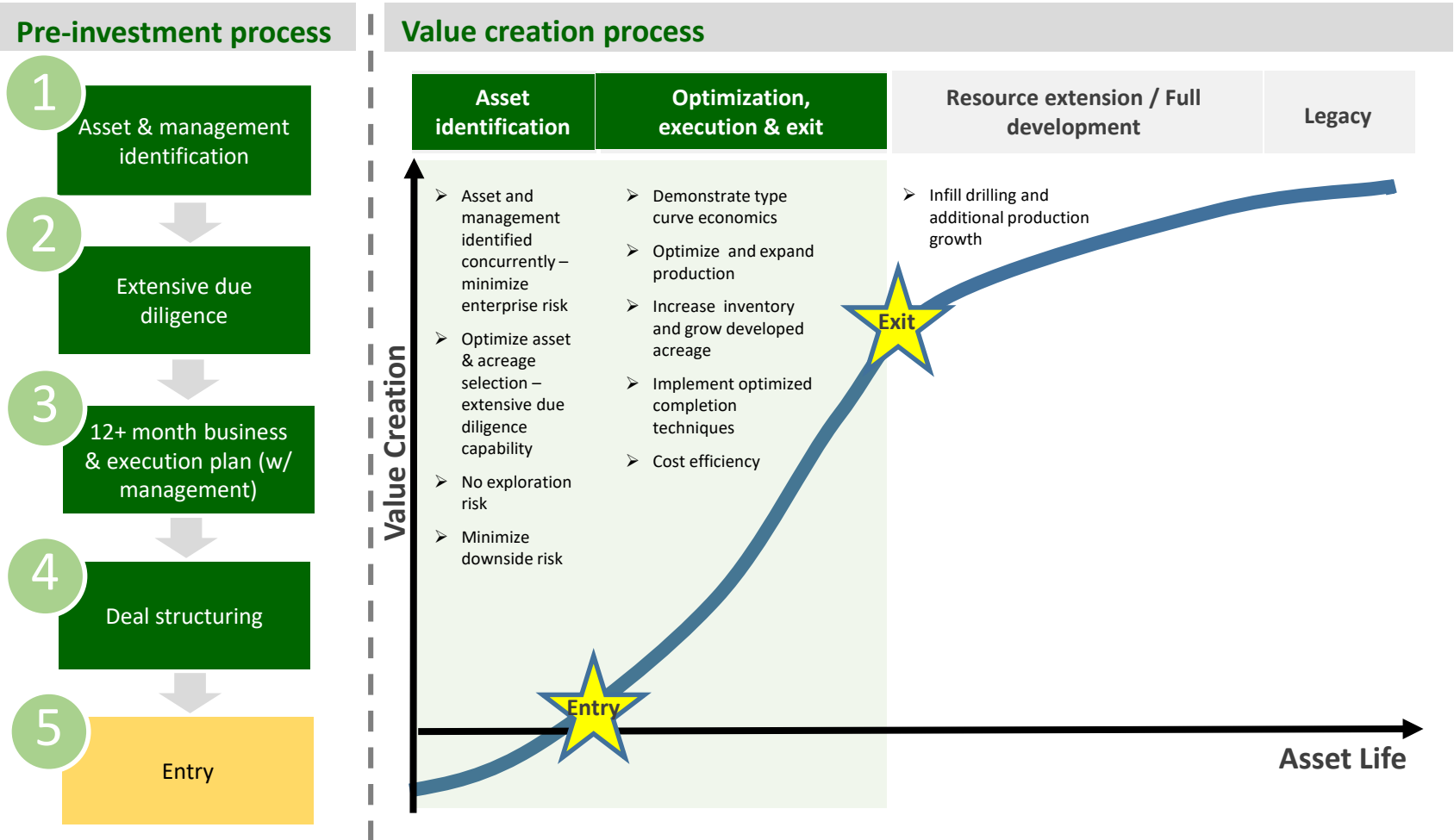
Characteristics of a Vortus Deal

Vortus



Pre-investment process & value creation

➤ Assets optimized through enhanced well economics & expansion of undeveloped inventory



Current and Previous Investments



(Permian Basin)



(East Texas & North Louisiana)



(Williston Basin)



(South Texas)



(Arkoma Basin)



(Permian Basin)



(Arkoma Basin - Minerals)



(Permian Basin)

Vortus is actively looking for new investment opportunities across the U.S.

Why Vortus?

Asset Focused Strategy

Consistent, proactive approach to creating privately negotiated, off-market transactions with clear path to value creation

Team Capabilities

Breadth and depth of technical, operational and financial energy industry expertise

Extensive Network

Relationships built over careers in the sector

Strong Track Record

Attractive and consistent returns across multiple cycles while prudently managing downside risk for investors with repeatable investment approach

Successful Execution

Completion of investments during multiple points of the commodity price cycle

Less Competition

Other energy managers focus on much larger transactions and compete with strategic buyers

Our Team

Investment Team



Jeffrey W. Miller
CEO/Managing Partner
31+ years of experience



Brian C. Crumley
Managing Partner
19+ years of experience



Brian E. Hansen
Principal
13+ years of experience



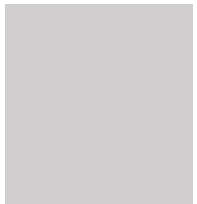
Porter D. Pursley
Vice President
9+ years of experience



Frank D. Lamsens
CFO/CCO
13+ years of experience



Rhonda Lutt
Office Manager &
Accounting
Assistant



Garrison R. Allen
Associate
3 years of experience



Intern Program
Relationship with TCU Energy Institute

Back Office Support

Blue River Partners LLC
~12 Compliance & Fund Administration professionals

- Over 31 years of financial, managerial, operational and technical experience in the global upstream industry
- Upstream industry experience includes private equity, investment banking and petroleum engineering

Professional Experience

➤ Mercuria Energy Group (2008-2012)

Director of Upstream and Investments in Fort Worth, Texas and Geneva, Switzerland

- Global responsibility of inherited and new upstream portfolio located in the Americas, Europe and Africa
 - Largely monetized through a series of divestitures, farm-ins and mergers
- New upstream investments included a joint venture with North Plains Energy in the Bakken (USA) and a partnership with Roch S.A. for the acquisition of conventional assets in the Austral Basin (Argentina) from Chevron

➤ Moncrief Oil International (MOIL)/Moncrief Minerals Partnership (MMP) (2004-2008)

President of MOIL and Managing Partner of MMP in Fort Worth, Texas

- MOIL owned the Moncrief family's assets in the Former Soviet Union. These FSU assets were merged for a minority equity share of Nations Energy in 2003 and sold to Citic Group for \$1.9 billion in 2006
- MMP was founded in 2005 to purchase mineral interests and non-operated working interests in the Barnett Shale, an unconventional natural gas basin in North Texas. MMP's operated assets sold to Fortress and the remaining assets were sold to Rimrock, a NGP portfolio company, in late 2007 for approximately \$100 million

➤ UBS/Dillon Read (1993-2004)

Managing Director – Investment Banking in Dallas, Texas and New York, NY

- Primary focus: upstream and oilfield services globally
- Significant M&A and capital markets transaction expertise

- **Lehman Brothers and Chase Manhattan Bank** (1990-1993)
Associate – Investment Banking and Energy Lending Division in New York, NY
- **Exxon USA** (1985-1988)
Senior Project Engineer in Houston, Texas
 - Reservoir and Production Petroleum Engineer with P&L responsibilities for several onshore Gulf Coast oil and natural gas fields
- **Chevron USA** (Summer 1983 and Summer 1984)
Production Engineer/Various operator roles in Denver, Colorado and West Texas

Education

- **Columbia Business School** – M.B.A. in Finance
- **Texas A&M University** – B.S. in Petroleum Engineering with *Magna Cum Laude* distinction

Other

- Co-Chair of Industry Advisory Board: Texas A&M Petroleum Engineering School
- Elected to the Texas A&M University Petroleum Engineering Academy of Distinguished Graduates in 2015
- Appointed to Audit Committee of Society of Petroleum Engineers (“SPE”) in 2017
- Member of the Board of Directors of MI Energy, prior TPG portfolio company and one of the leading Chinese upstream companies with assets in China, Kazakhstan and the U.S. Hong Kong ticker: 1555

Brian C. Crumley, Managing Partner



- Over 19 years of successful principal investment experience in the energy industry including private and public equity, debt and distressed investing across several cycles
- Portfolio management responsibilities have included sourcing, evaluating, structuring, monitoring and exiting energy investments

Professional Experience

➤ Luther King Capital Management (2006-2012)

Founding Partner of LKCM Private Discipline Partners, LP (“LKCM PDP”) in Fort Worth, Texas

- \$15 billion asset management firm founded with an initial client in 1979
- LKCM PDP launched with approximately \$100 million in 2006
- Long term, fundamentals-based investment discipline applied to energy private and public equity investments
- Portfolio management responsibilities included sourcing, evaluating, structuring, monitoring and exiting the partnership’s energy investments
- Energy investments in both private equity and public equity were accretive to LKCM PDP’s solid absolute and relative returns since inception

➤ Sirios Capital Management (2002-2006)

Analyst in Boston, Massachusetts

- One of seven investment professionals at fundamentals-based, long bias hedge fund
- Primary responsibility for energy industry investments helping drive solid absolute and relative performance as assets grew from less than \$1 billion to approximately \$2.5 billion
- Active daily role in sourcing, evaluating, monitoring, and exiting the partnership’s energy investments enabled him to develop and maintain relationships with a broad network of senior energy company executives which was extended while at LKCM PDP
- Considerable time spent sourcing, analyzing, and structuring long and short fixed income and capital structures arbitrage related energy investments, including distressed situations in post-Enron/recession investment environment

Brian C. Crumley (cont'd)

➤ **Natural Gas Partners** (1998-2000)

Investment Associate in Fort Worth, Texas

- Global leader in energy private equity with cumulative capital raised of \$13 billion
- One of just five NGP investment professionals from 1998 to 2000 in the Fort Worth, Texas offices of Richard E. Rainwater
- Developed foundation of cautiously contrarian energy investment approach which has driven investment discipline and strategy throughout career
- Responsibilities included sourcing, evaluating and recommending new investment opportunities, active participation in raising the \$370 million NGP VI fund, and working extensively with and advising portfolio company management teams regarding annual/quarterly budgets and capital structure
- Structured, executed, and negotiated portfolio company capital markets and M&A activity

Education

- **Stanford University** – M.B.A. with a certificate in the Global Management Program
- **Princeton University** – B.A. in Politics while earning a certificate from the Program in Political Economy

Other

- Cook Children's Health Foundation - Board of Trustees: Finance, Trusteeship, and Audit committees
- Fort Worth Country Day School – Board of Trustees
- STAR Sponsorship Program - Board of Trustees: provides educational access to underprivileged local students

Brian E. Hansen, Principal

- Former senior executive with a large independent oil and gas operator with over 13 years of successful strategy management, asset valuation, field development, multi-disciplinary leadership and petroleum engineering
- Worked with executive management on various finance initiatives, including acquisitions and divestitures spanning bolt-on acreage to large scale international joint ventures focused on domestic, onshore E&P assets

Professional Experience

➤ Pioneer Natural Resources (2004-2014)

Vice President, Subsurface & Development – Permian Asset Team

- Led team of 50 engineers, geologists, technicians and analysts to maximize the value of the Permian Basin assets
- Established and implemented the long-term development strategy of Pioneer's emerging horizontal drilling program in over six target intervals across a 600,000-acre position
- Directed transition from a NAV-focused appraisal program to a production-growth-focused development program

Reservoir Engineering Manager – Permian Field Strategy

- Key technical contact during a \$1.7 billion joint venture with China-based Sinochem, establishing a new benchmark for a Wolfcamp-only transaction

Senior Business Analyst – Executive Operations

Senior Engineer – Business Development

Reservoir and Operations Engineer – South Texas & Permian Basin

Education

- Southern Methodist University – M.B.A. in Finance
- Texas A&M University – B.S. in Petroleum Engineering with *Cum Laude* distinction

Porter D. Pursley, Senior Associate



- Over 9 years of banking and investment experience primarily focused on the domestic onshore E&P industry
- Experience has included in depth bottom-up fundamental valuation, communicating investment recommendations and identifying key value drivers for E&P companies

Professional Experience

➤ Raymond James & Associates (2011-2014)

Senior E&P Research Associate - Houston, Texas

- Primary Associate covering approximately 15 mid-cap to large-cap independent E&P companies
- Responsible for maintaining detailed financial models, developing and cultivating key relationships with company management as well as communicating public equity investment recommendations to institutional clients
- Developed extensive knowledge of the macro commodity environment focused on oil/gas fundamentals

➤ Plains Exploration & Production Company (Summer 2010)

Intern in Treasury Group while pursuing M.B.A. - Houston, Texas

- Analyzed company and peer debt structures and assisted in the negotiation of a \$1.6 billion revolving credit facility

➤ Houlihan Lokey (2006-2008)

Analyst - Dallas, Texas

- Primary responsibilities included property and real estate valuation, working with clients to develop scope and valuation methodology, and leading domestic and international due diligence efforts as well as site visits

Education

- Tulane University, Freeman School of Business – M.B.A. in Finance with an Energy Specialization
- The University of Alabama – B.Sc. in Commerce and Business Administration in Accounting

Frank D. Lamsens, CFO/CCO



- Certified Public Accountant with over 13 years of diverse industry and cross-functional expertise in corporate finance and accounting
- Prior leadership roles with an industry leading private equity firm and a top tier public accounting and consulting firm

Professional Experience

➤ TPG (formerly Texas Pacific Group) (2010-2014)

Controller, New Business Platforms in Fort Worth, Texas

- Coordinated the integration and ongoing financial and operational support of emerging alternative asset platforms. Cross-functional collaboration with Tax, Legal, Treasury, Operational Risk Control and IT

Controller, Global Finance

- Responsible for a global partnership structure with local statutory reporting requirements in Europe, Asia and South America. Led process improvement efforts of the financial close process and the financial systems to support a new firm cost architecture and a major legal entity restructure

Associate Director

- Managed the preparation of quarterly LP reporting for the funds, including the calculation of fund performance.

➤ KPMG (2004-2010)

Manager – Assurance Services in Chicago, Illinois

- Directed multiple client engagements for a variety of companies, including SEC filings, financial statement audits, SOX controls and compliance reviews

Education

- University of Notre Dame – M.Sc. in Accountancy; Emphasis in Financial Reporting and Assurance Services
- Texas Christian University – B.B.A. in Finance and Accounting

Other

- Certified Public Accountant, State of Illinois

- Over 3 years of banking and investment experience primarily focused on the domestic onshore E&P industry
- Experience has included in depth bottom-up fundamental valuation, communicating investment recommendations and identifying key value drivers for E&P companies

Professional Experience

➤ Raymond James & Associates (2015-2017)

Senior E&P Research Associate - Houston, Texas

- Provided research coverage of large and SMID-cap domestic oil and gas exploration and production companies
- Responsible for maintaining detailed financial models, developing and cultivating key relationships with company management as well as communicating public equity investment recommendations to institutional clients
- Maintained macroeconomic supply/demand models, specifically proprietary bottom-up domestic oil and gas production by play models, to establish near and long-term oil and natural gas price forecasts

➤ Luther King Capital Management (Summer 2013)

Equity Analyst Intern – Fort Worth, Texas

- Analyzed financial statements of various public companies and completed multiple reports on public companies across various sectors.

Education

➤ The University of Texas – BBA in Finance

Risk Factors Summary

An investment in the fund ("Fund") will entail substantial risks, including, but not limited to, those listed below, and a prospective investor should carefully consider the following summary of certain risk factors below and carefully consider the section of the Fund's Confidential Private Offering Memorandum entitled "Certain Risk Factors and Potential Conflicts of Interest," in determining whether an investment in the Fund is suitable:

Illiquidity of Interests. An investment in the Fund is suitable only for certain sophisticated investors who have no need for immediate liquidity in their investment. Interests in the Fund represent highly illiquid investments and should only be acquired by investors able to commit their funds for an indefinite period of time. Interests in the Fund are not freely transferable. There are no secondary markets for the interests in the Fund and none are expected to develop.

Speculative Investment and High Degree of Risk. The Fund's investment program is speculative and entails substantial risks. Since market risks are inherent in all securities investments to varying degrees, there can be no assurance that the investment objective of the Fund will be achieved. In fact, certain investment practices described herein can, in some circumstances, potentially increase the adverse impact on the Fund's investment portfolio. The Fund's activities could result in substantial losses under certain circumstances.

Oil and Natural Gas Exploration and Development Risks. The Fund may invest in businesses that engage in oil and natural gas exploration and development, a speculative business involving a high degree of risk. Oil and natural gas drilling may involve unprofitable efforts, not only from dry holes, but also from wells that are productive but do not produce sufficient net revenues to return a profit after drilling, operating and other costs. Acquiring, developing and exploring for oil and natural gas involves many risks. These risks include encountering unexpected formations or pressures, premature declines of reservoirs, blow outs, equipment failures and other accidents in completing wells and otherwise, cratering, sour gas releases, uncontrollable flows of oil, natural gas or well fluids, adverse weather conditions, pollution, fires, spills and other environmental risks. In addition, in making these investments, the Fund must rely on estimates of oil and gas reserves. The process of estimating oil and gas reserves is complex, requiring significant decisions and assumptions in the evaluation of available geological, geophysical, engineering and economic data for each reservoir. As a result, these estimates are inherently imprecise.

Only Qualified Persons May Invest in the Fund. An investment in the Fund is not suitable or desirable for all investors. Investors that are U.S. persons must qualify as "accredited investors" and "qualified purchasers". Other suitability/eligibility criteria may apply.

Relevance of Past Performance. There can be no assurance that the Fund will realize returns comparable to those achieved by Vortus, or the principals of the Vortus, in the past.

No Review or Approval by Regulators. Neither the Fund's offering documents, nor the offering of interests, have been reviewed or approved by any regulators. The Fund is not subject to the same regulatory requirements as mutual funds.

Limited Operating History. The Fund has a limited operating history. As a result, investors will only be able to examine the limited performance history of the Fund.

Advisory Fees May Be Substantial. The advisory compensation due to Vortus may be substantial regardless of whether the Fund has a positive return.

Dependence on Key Personnel. The success of the Fund will be dependent on certain key personnel. The loss of certain key individuals may have a material adverse effect on the performance of the Fund.

Projections. The Fund may rely on projections and forecasts developed by Vortus. Such projections are based on assumptions with respect to future events. The actual future events may differ from the assumptions.

Complexity of Legal and Financial Analysis. The financial and legal frame work for the Fund's investments is extremely complex. There is no certainty that the Fund will correctly judge the nature and magnitude of factors that result in successful investments.

Business and Regulatory Risks of Private Investment Fund. Legal, tax and regulatory changes could occur during the term of a Fund that may adversely affect such Fund.

General Economic Conditions. The Fund's investment activity is affected by general economic conditions including the current contraction in global markets. The Fund may be subject to substantial losses in the event of a serious recession in the economies in which the Fund invest.

Concentration of Investments. Since the Fund's investments will be concentrated within the energy industry, an investment in the Fund may be subject to greater market fluctuations than an investment in a portfolio of securities representing a broader range of industries. This concentration risk may be compounded to the extent the Fund concentrates investments in a particular geographic region, industry sector or type of security and such concentration of risk may increase the losses suffered by the Fund.

Vortus Has Sole Discretion Regarding Allocation of the Fund's Assets. Vortus has sole discretion regarding the allocation of the Fund's assets.

Possible Delays in Reporting of Tax Information. The Fund's investment strategy may cause delays in important tax information being sent to investors.

No Requirement to Provide Pricing or Valuation Information. The Fund is not required to provide periodic pricing or valuation information to investors.

Volatility. The Fund's performance may be volatile.

Hedging Transactions. While the Fund and its portfolio companies may enter into hedging transactions to seek to reduce risk, such transactions may not be fully effective in mitigating the risks in all market environments or against all types of risk (including, without limitation, unidentified or unanticipated risks), thereby incurring losses to the Fund. In addition, such hedging transactions may result in a poorer overall performance for the Fund than if it had not engaged in any such hedging transactions. Moreover, it should be noted that (1) the Fund may not hedge against, or may not anticipate, certain risks and (2) the portfolio will always be exposed to certain risks that cannot be hedged, such as credit risk (relating both to particular securities and counterparties).

Leverage. The Fund may use leverage or otherwise obtain financing for its investments. Leveraging or financing a Fund's investments magnifies gains and losses attributable to other investment policies and practices. At times, the Fund may be unable to obtain leverage, or may be unable to obtain leverage at attractive prices or favorable terms.

Competition. Certain markets in which the Fund may invest are extremely competitive for attractive investment opportunities and, as a result, the Funds might not be able to identify or successfully pursue attractive investment opportunities in such environments.

Illiquidity of Investments. The oil and gas investments to be made by the Fund are likely to be illiquid. Dispositions of such investments also may be subject to limitations on transfer or other restrictions that would interfere with the subsequent sale of such investments or adversely affect the terms that could be obtained upon any disposition thereof. In addition, the Fund may invest in securities of privately held companies for which there is no public market. The Fund will generally not be able to sell these securities unless such securities are registered under applicable securities laws or unless an exemption from such registration requirements is available. In some cases, the Fund may be prohibited by contract from selling securities for a period of time. There is also the risk that the Fund will be unable to dispose of such securities at attractive prices or otherwise execute a successful exit strategy.

Conflicts of Interest. Certain conflicts of interest exist between Vortus and its affiliates on one hand and the Funds on the other hand. Such conflicts include but are not limited to, the existence of the carried interest to be paid to Vortus or its affiliates, which may potentially or actually cause Vortus to engage in investment transactions that are more speculative than those Vortus might otherwise engage in absent such carried interest. A prospective investor should carefully consider the section of the applicable Fund's Confidential Private Offering Memorandum entitled "Certain Risk Factors and Potential Conflicts of Interest" before investing in such Fund.

THIS GENERAL INVESTMENT FUND RISK DISCLOSURE IS NOT COMPLETE. THE ABOVE SUMMARY IS NOT A COMPLETE LIST OF THE RISKS AND OTHER IMPORTANT DISCLOSURES INVOLVED IN INVESTING IN THE FUNDS AND IS SUBJECT TO THE MORE COMPLETE DISCLOSURES CONTAINED IN EACH FUND'S CONFIDENTIAL PRIVATE PLACEMENT MEMORANDUM, WHICH MUST BE REVIEWED CAREFULLY.

Contact Information



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