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***Acquisition and Divestitures  
2010 Overview and Valuation  
Methodology Discussion***

**HAPL Technical Workshop**

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**April 28, 2010**

**Houston, Texas**

# Topics

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- **The Clearinghouse**
- **Overview – 2010 A&D Marketplace**
- **A&D Valuation Methodologies**
- **Reserve Risking and Considerations**
- **Final Thoughts**

# Overview

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## The Clearinghouse

### *Services and Approach to Marketing*

# Multiple Divestment Services

The Oil & Gas Asset  
**CLEARINGHOUSE**

## Auctions

- Geographically diverse properties
- Operated & non-operated working interests
- Premiums for royalties & minerals
- Individual property values up to \$20 MM+
- Primarily PDP reserves (70%+)
- Online and Hybrid (live + online)

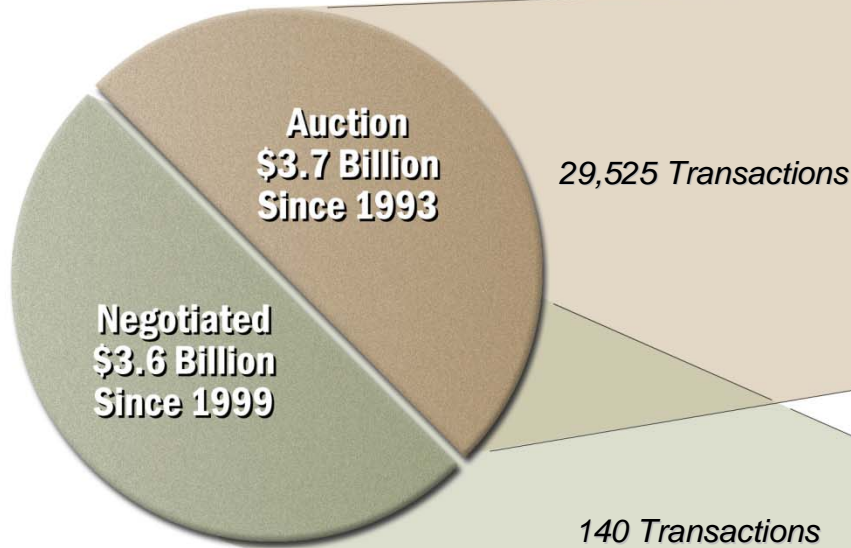
## Mid-Value Negotiated Transactions (MVN)


- Alternative to Auction for assets with:
  - Higher PDP/UpSide Ratio
  - <\$25 MM with substantial reserves
- Operated & non-operated working interests

## Custom Negotiated Transactions


- Significant upside
- Geographically consolidated or diverse
- Technically complex
- Customized process required (“story to tell”)

# THE PERFECT VENUE




Houston (281) 873-4600    Dallas (214) 696-6400        Denver (303) 744-8220    Oklahoma City (405) 341-9658

[www.ogclearinghouse.com](http://www.ogclearinghouse.com)



**\$3.6 Billion in Auction Sales Since 1993**

**THE ONLY COMPANY IN THE WORLD...**  
Only one company in the world offers every available option for managing the divestment of upstream oil & gas assets. Whether it's auction, internet, mid-value negotiated, or fully-engineered custom negotiated process, Only **THE CLEARINGHOUSE** does it all.



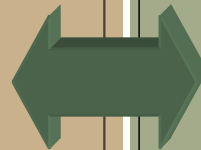
**Exclusive Advisors on Over \$1 Billion in Negotiated Transactions in 2008**

# Broad Range Of Services

*The Clearinghouse provides a complete array of services to our clients in the auction, MVN and negotiated sales processes*

## TECHNICAL EVALUATION SERVICES

- ✓ Portfolio analysis
- ✓ Packaging recommendations
- ✓ Lotting recommendations
- ✓ Engineering evaluations
- ✓ Geologic evaluations
- ✓ Commercial evaluations
- ✓ Economic evaluations
- ✓ Data organization
- ✓ Data retrieval
- ✓ Electronic data capabilities
- ✓ Knowledgeable answers to questions
- ✓ Market value estimates



## MARKETING SERVICES

- ✓ Process design & implementation
- ✓ Information memorandum
- ✓ Sales brochure preparation
- ✓ Develop prospective buyers list
- ✓ Buyer screening
- ✓ Confidentiality agreement negotiations and execution
- ✓ Data room administration
- ✓ Technical presentations
- ✓ Information updates
- ✓ Bids analysis
- ✓ Bidder responses / negotiations
- ✓ Closing assistance
- ✓ Hands on personal contact

# The Clearinghouse – Unique In The Industry

- **Unmatched Engineering/Geological/Land Support Staff**
  - Commitment to technical excellence and the credible, ethical presentation of reserve potential
  - 14 engineers, seven geologists, 10 techs – all employees or full-time contract
  - Eight full-time land professionals and techs
  
- **Largest Regional Marketing Team in the Industry**
  - Business development representatives in Houston, Dallas, Denver & Oklahoma City
  - Eight full-time employees devoted exclusively to relationship building and marketing
  
- **Unparalleled Extensive Personal Contacts**
  - The company's senior executives and business development personnel have contacts at more levels than any other A&D service provider in the industry
  - Most significant property purchasers have bought and/or sold through The Clearinghouse
  
- **Best-in-Class Marketing Database**
  - Over 16,500 on our mailing list
  - Over 6,000 Acquisition/Buyer Profiles
  - Continuously updated through mailings, emails and internet data exchanges
  
- **Industry-Standard Electronic Data Room (EDR)**
  - Carries all data necessary to evaluate any negotiated package
  - Provides continuous data and sales status updates to all buyers
  - Completely secure and password-protected
  - Gives The Clearinghouse daily feedback on who's looking at what



# Overview

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## **2010 A&D Marketplace** ***Upstream Oil & Gas Transactions***

# A&D Industry Overview

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## ■ **Asset Type is Driving Factor**

- ❑ Strong preference for repeatable plays
- ❑ Oil assets are highly sought after
- ❑ Gas, short reserve life assets are out of favor

## ■ **MLPs Have Made a Resurgence**

- ❑ The strong are viewed favorably as investment options and are prospering
- ❑ Aggressive buyers of long-life, well-developed reserves
- ❑ Pass through tax treatment provides a lower cost of capital and a competitive advantage

## ■ **New Capital is Available**

- ❑ Commercial energy banks are sustaining a level of comfort with reserve based loans
- ❑ High Yield debt is readily available – Expect numerous announcements in the near future
- ❑ Debt availability exceeds demand by several multiples
- ❑ Private equity firms are restructuring many of their portfolios

# A&D Industry Overview

(continued)

## ■ Product Prices

- ❑ Oil prices had settled into the \$80's and gas around \$4
- ❑ Oil and gas prices no longer track each other – completely decoupled
- ❑ Gas is viewed as fundamentally more vulnerable due to excess supply
- ❑ Gas rig count has grown by 175 rigs since the start of 2010
- ❑ Low gas prices are holding some properties off of the market

## ■ Outside Factors

- ❑ Capital Markets and economy as a whole are slowly recovering
- ❑ Geopolitical factors will continue to influence market – Iran, Korea, China
- ❑ New Federal inter-agency initiatives by are costly and bureaucratic
- ❑ Inflation and tax concerns continue to grow

## ■ Prognosis

- ❑ “Strategic” acquisitions are resulting in some impressive transaction metrics
- ❑ Oil prices will continue to stay strong and maintain balance sheets
- ❑ Public companies continue to focus capital & attention on resource plays

# Acquisition Valuations

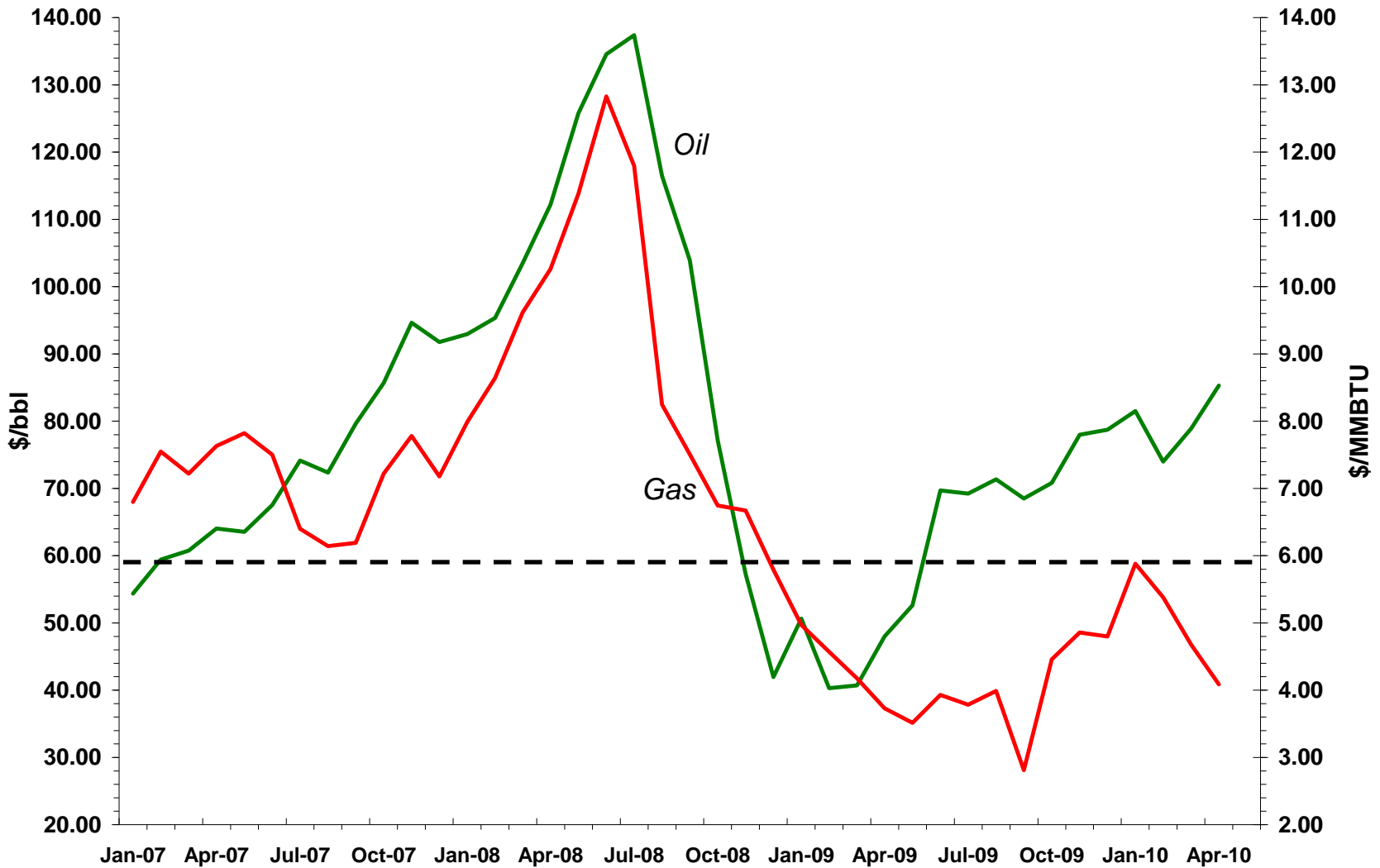
- **PDP reserves are highly sought after**
- **PDNP and PUD reserves are receiving value if economic**
  - Currently capped at about 20% of PDP value but gaining slowly
  - Exceptions exist: Resource plays, infill, re-drills, etc.
- **NYMEX strip (“hedgeable”) prices are routinely used in forecasts**
  - Many companies have accepted that it’s the standard
  - Strip price deck is necessary to be competitive in acquisitions
- **Metrics determined by production profile of asset**
  - Disconnect between oil and gas prices has diminished accuracy of metrics
  - Vary materially by basin
  - Oil properties are significantly more desirable than gas properties
  - Cash flow metrics are mostly unchanged
  - Long life reserves will garner higher \$/BOEPD & cash flow multiples
  - Shorter life reserves enjoy better PV and \$/BOE
- **Ample interest and capital is generally available**

# An Interesting Phenomenon

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- **Interest in Clearinghouse's mid-value acquisitions is significantly higher now than it was before prices and the economy crashed**
- **Prior to the crash, The Clearinghouse received:**
  - 20-30 requests for data on each sale package
  - 5-8 bids on each sale package
- **Since the crash, The Clearinghouse has received:**
  - At least 40 data requests per package
  - Majority of sale packages have had over 60 data requests (many >100)
  - Have had packages receive 17, 20 and 24 bids
- **Possible reasons for this non-intuitive increase:**
  - Less properties on the market means that those being sold will garner more attention
  - Acquisitions are safer than drilling, many companies still a little shell-shocked from the crash
  - 2009 sales included some very high-quality assets

# Price Collapse and Rebound



# Overview

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## **A&D Valuation Methodologies** *Metric Discussion*

# Valuation Methods

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- **Discounted Cash Flow - Risked**
  - Risked present value of future reserves to be produced
  - The most utilized and most accurate method of valuation
- **\$/BOE or \$/MCFE** – Reserves in the Ground
- **Cash Flow** – Multiple of current cash flow
- **\$/BOEPD or \$/MCFED** – Price per *Net* Daily Barrel or MCF
- **P/I** – Profit to Investment Ratio

# Present Value

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## Discounted Cash Flow (%)

- ❑ Value today (present value) of future cash flow assuming a specified return on investment
- ❑ Subjective calculation – Based on estimate of:
  - future recoverable reserves, flow rates and future prices
  - Proved undeveloped (PUD), probables and possible future reserves are risk adjusted
  - Return hurdles are often different for different reserve categories
- ❑ Generally before Federal Income Taxes (BFIT)

# Reserves in the Ground

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## \$ Per Net BOE or MCFE (6:1)

- ❑ Price paid per net barrel of oil equivalent for reserves in the ground
- ❑ Subjective calculation – Based on estimate of future recoverable reserves
- ❑ “Net” after royalty deduction
- ❑ Gas converted to oil equivalent on 6:1 ratio for reserve purposes
- ❑ Important to distinguish between PDP v. Total Proved calculations

# Cash Flow

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## *Multiples of Cash Flow (months)*

- ❑ Price paid divided by “current” cash flow
- ❑ Pure calculation – Sale price divided by monthly cash flow amount
  - Define “cash flow”
    - ❑ Trailing average of last 6 months?
    - ❑ Most recent month?
    - ❑ Forecasted cash flow?
- ❑ Not the same as “Payout” - Does not account for production decline
- ❑ CF metrics have not changed much, but vary widely by region

# Net Producing Unit

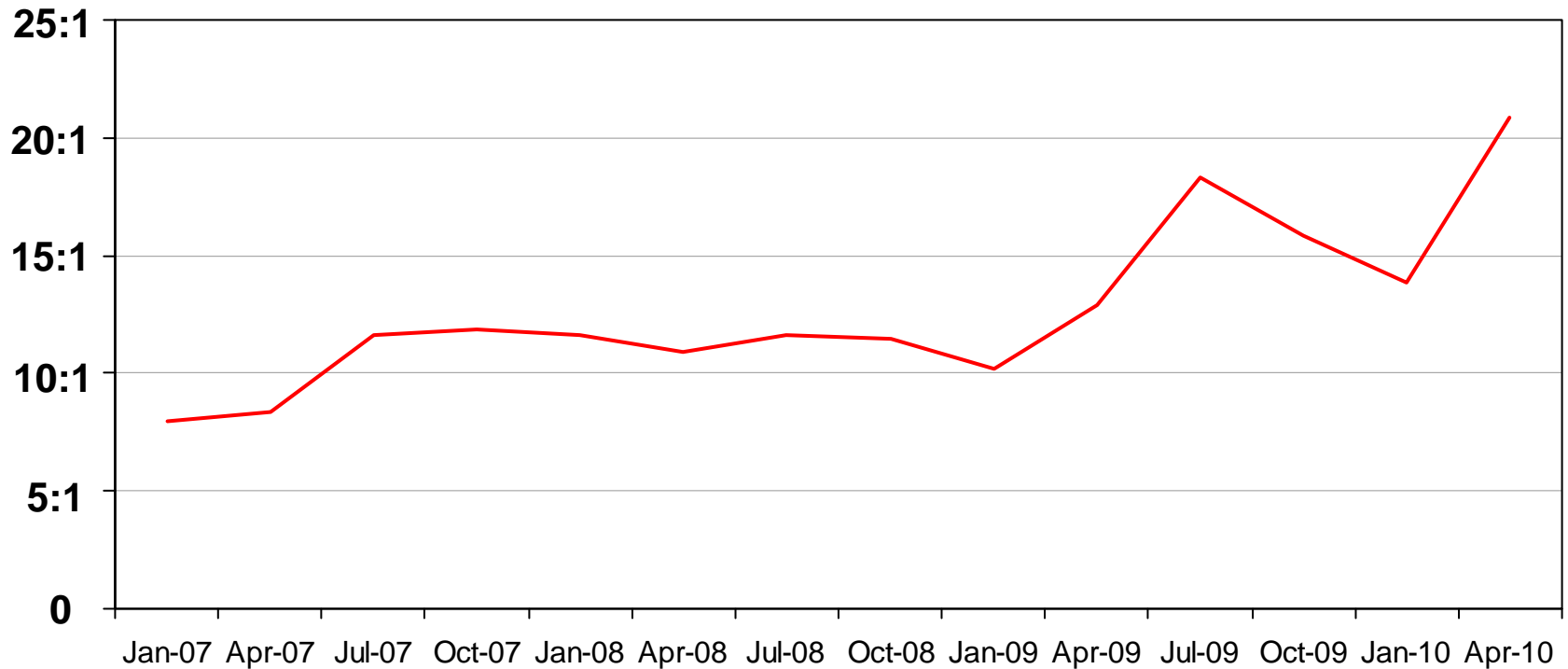
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## \$ Per Net Boepd or Mcfed

- ❑ Price paid per net daily producing barrel
- ❑ Pure calculation
  - Gross daily production x NRI divided by price paid
- ❑ Historically - gas/oil ration has been converted on either 10:1 or 6:1 ratio
  - Today, a 20:1 conversion ratio is more appropriate for price comparison
- ❑ Price per Boepd – Depends on conversion and basin

# Historical Gas To Oil Ratios

Oil and gas prices have completely decoupled – Gas to oil ratios have increased from 6:1 to over 20:1 in today's market



# Example Boepd Calculation (gas well @ 6:1)

## ***Assume a property in the Permian Basin is sold for \$4 Million***

- Current Prices: Oil = \$80/Bbl & Gas - \$4.00 / Mcf (20:1 price ratio)
- 10 barrels of oil per day
- 1 Million cubic feet of gas per day (a.k.a. 1 MMcf/d)  
(1 M = 000)

**Step 1:** Convert gas to equivalent # barrels of oil at 6:1 ratio

- Divide 1,000 by 6 = 166 Boepd

**Step 2:** Add converted gas to oil production

166 Boepd + 10 Bopd = 176 Boepd - gross daily production

**Step 3:** Multiply gross daily Boe by NRI to calculate Net Boepd

176 Boepd x 75% NRI = 132 net Boepd

**Step 4:** Divide sales price by net Boepd

\$4,000,000 Sale Price / 132 net Boepd = \$30,300 per net Boepd

# Example Boepd Calculation (gas well @ 20:1)

**Assume a property in the Permian Basin is sold for \$4 Million**

- Current Prices: Oil = \$80/Bbl & Gas - \$4.00 / Mcf (20:1 price ratio)
- 10 barrels of oil per day
- 1 Million cubic feet of gas per day (a.k.a. 1 MMcf/d)  
(000 = 1 M)

**Step 1:** Convert gas to equivalent # barrels of oil at 20:1 ratio

- Divide 1,000 by 20 = 50 Boepd

**Step 2:** Add converted gas to oil production

50 Boepd + 10 Bopd = 60 Boepd - gross daily production

**Step 3:** Multiply gross daily Boe by NRI to calculate Net Boepd

60 Boepd x 75% NRI = 45 net Boepd

**Step 4:** Divide sales price by net Boepd

\$4,000,000 Sale Price / 45 net Boepd = \$88,888 per net Boepd

# Industry Benchmarks

(For example purposes only: Varies widely depending upon production characteristics & geographic basin)

|                              | Range      |            |             | <u>Comments</u> |
|------------------------------|------------|------------|-------------|-----------------|
|                              | <u>Low</u> | <u>Mid</u> | <u>High</u> |                 |
| Net Present Value (%)        | 20%        | 12%        | 8%          | Before Tax      |
| Cash Flow Multiples<br>(Yrs) | 2          | 4          | 7           | No Decline      |
| Payout (Yrs)                 | 3          | 5          | 8           | With Decline    |
| Reserves (\$/BOE)            | 15.00      | 20.00      | 25.00       | 6:1 Conversion  |
| Production (\$/BOEPD)        | 25,000     | 60,000     | 90,000      | 6:1 Conversion  |
| Profit/Investment (\$/\$)    | 1.5        | 3          | 5           | Undiscounted    |

# Industry Benchmarks - Property Types

|                           | Price Range |            |             | <u>Comments</u> |
|---------------------------|-------------|------------|-------------|-----------------|
|                           | <u>Low</u>  | <u>Mid</u> | <u>High</u> |                 |
| Net Present Value (%)     | 20          | 12         | 8           | Before Tax      |
| Cash Flow Multiples (Yrs) | 2           | 4          | 7           | No Decline      |
| Payout (Yrs)              | 3           | 5          | 8           | With Decline    |
| Reserves (\$/BOE)         | 15.00       | 20.00      | 25.00       | 6:1 Conversion  |
| Production (\$/BOEPD)     | 25,000      | 60,000     | 90,000      | 6:1 Conversion  |
| Profit/Investment (\$/\$) | 1.5         | 3          | 5           | Undiscounted    |

**Royalty**
 **Long Life**  
 **WI**
 **Significant Upside**

# Valuing Upside - Types & Associated Risking

| <b>Reserve Categories</b> | <b>Certainty (Risk)</b> | <b>Examples</b>  |
|---------------------------|-------------------------|--|
| Proved Developed (PDP)    | > 80%                   | Current Production   |
| Proved Developed (PDNP)   | 40-75%                  | Behind Pipe Zone Rework (frac, etc.)                             |
| Proved Undeveloped (PUD)  | 20-70%                  | Offset Drill Location<br>Waterflood                              |
| Probable                  | 0-30%                   | Non-Offset Drill Location<br>Behind Pipe Zone<br>(no production) |
| Possible                  | 0-10%                   | Exploratory Projects   |
| Speculative               | ???                     | Future Technology  |
| Operational               | 60-90%                  | Cost Reduction Projects<br>Compressors                           |

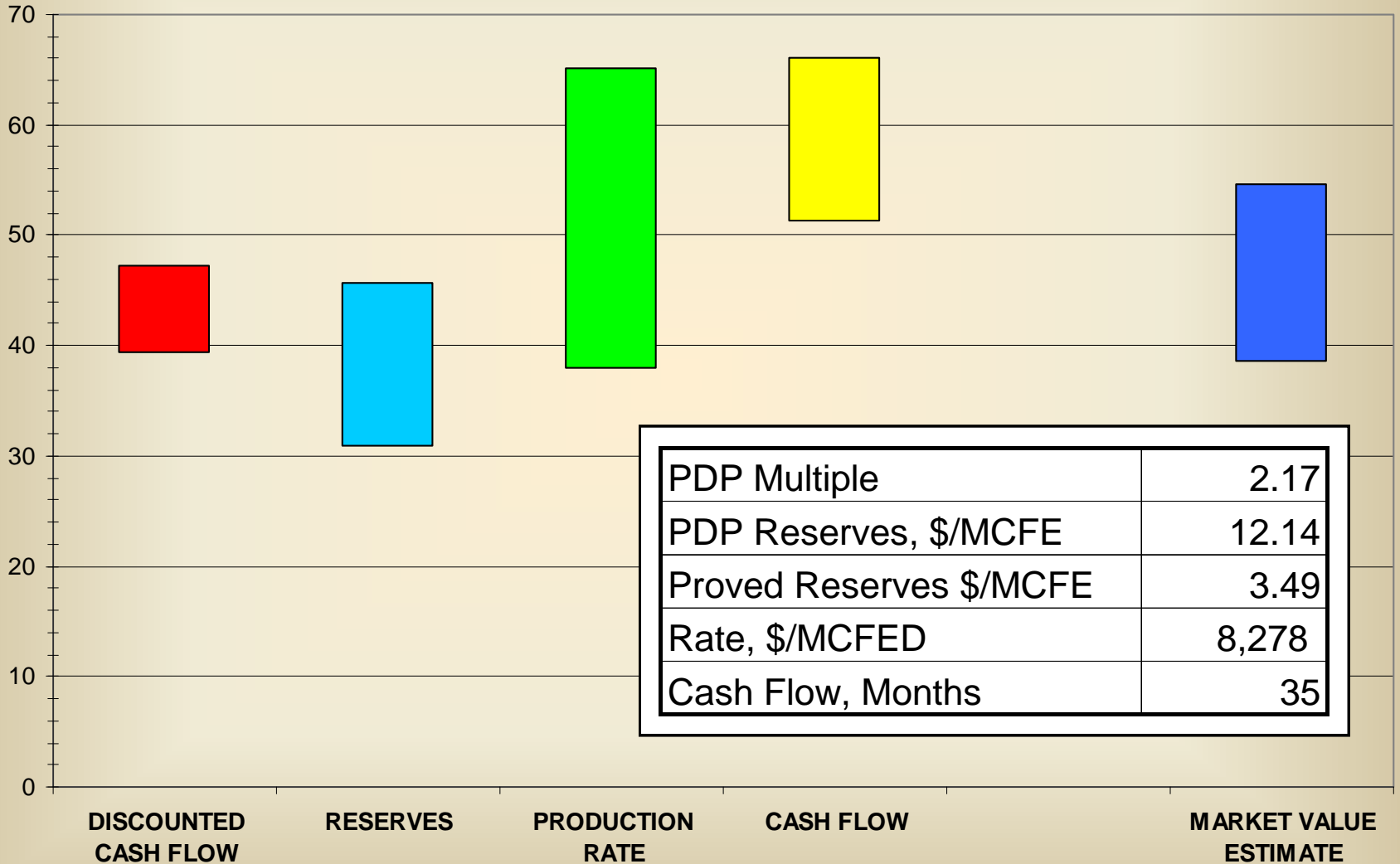
# Other Risk Factors for Consideration

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- Operations & Control
- PDP/UpSide Ratio (Glass Ceiling – 2:1)
- Validity and Accessibility of Upside
- Estimated Reserve Life
- Location
- Technical/Mechanical Risks
- Liability – Land, Environmental, Corporate

**ABC ENERGY COMPANY - BIG GAS FIELD, SOUTH TEXAS  
WEIGHTED MARKET VALUE ESTIMATE**

**\$MM**



|                         |       |
|-------------------------|-------|
| PDP Multiple            | 2.17  |
| PDP Reserves, \$/MCFE   | 12.14 |
| Proved Reserves \$/MCFE | 3.49  |
| Rate, \$/MCFED          | 8,278 |
| Cash Flow, Months       | 35    |

# Final Remarks

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- **A&D market is beginning to develop some legs again**
  - Expect second half of 2010 to be most active in last 2 years
- **Oil is in favor, but much of public E&P capital continues to be directed toward resource gas plays**
- **Should be exceptional opportunity for independents to capitalize on conventional opportunities**
- **Things to watch for in 2010:**
  - National/worldwide economic recovery
  - Gas and oil prices
    - Can we really trust the strip?
    - Geopolitical events could cause oil to sky rocket
  - Federal intervention
    - New regulations, permitting fees, cap & tax?

# Contact Information

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