Annual A&D Asset Supply

Annual U.S. E&P Onshore Transaction History ($B) (1)

Source: RBC Richardson Barr internal database, public filings, company press releases.
(1) Includes onshore U.S. asset transactions greater than $20 million.
Monthly A&D Asset Supply

Source: RBC Richardson Barr internal database, public filings, company press releases.
(1) Includes onshore U.S. asset transactions greater than $20 million. Excludes BP / BHP Transaction
Who Is Selling?

### Annual U.S. E&P Onshore Transaction History ($B) (1)

<table>
<thead>
<tr>
<th>Year</th>
<th>Public</th>
<th>Other</th>
<th>Total ($B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>$28</td>
<td>$28</td>
<td>$56</td>
</tr>
<tr>
<td>2011</td>
<td>$24</td>
<td>$31</td>
<td>$56</td>
</tr>
<tr>
<td>2012</td>
<td>$36</td>
<td>$24</td>
<td>$60</td>
</tr>
<tr>
<td>2013</td>
<td>$18</td>
<td>$43</td>
<td>$61</td>
</tr>
<tr>
<td>2014</td>
<td>$26</td>
<td>$29</td>
<td>$55</td>
</tr>
<tr>
<td>2015</td>
<td>$11</td>
<td>$23</td>
<td>$34</td>
</tr>
<tr>
<td>2016</td>
<td>$20</td>
<td>$38</td>
<td>$58</td>
</tr>
<tr>
<td>2017</td>
<td>$24</td>
<td>$24</td>
<td>$48</td>
</tr>
<tr>
<td>2018</td>
<td>$30</td>
<td>$44</td>
<td>$74</td>
</tr>
</tbody>
</table>

- **Public**: $28, $24, $36, $18, $26, $11, $20, $24, $30, $14, $30
- **Other**: $28, $31, $24, $43, $29, $12, $38, $24, $14, $30

% Public: 50%, 43%, 60%, 41%, 53%, 46%, 34%, 50%, 67%

Source: RBC Richardson Barr internal database, public filings, company press releases.
(1) Includes onshore U.S. asset transactions greater than $20 million.
### Why Are Publics Selling?

($ in billions, unless otherwise specified)

<table>
<thead>
<tr>
<th>Year</th>
<th>Operating Cash Flow</th>
<th>Capex</th>
<th>Free Cash Flow</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>$47</td>
<td>($38)</td>
<td>+</td>
</tr>
<tr>
<td>2005</td>
<td>$64</td>
<td>($56)</td>
<td>+</td>
</tr>
<tr>
<td>2006</td>
<td>$78</td>
<td>($70)</td>
<td>+</td>
</tr>
<tr>
<td>2007</td>
<td>$86</td>
<td>($76)</td>
<td>+</td>
</tr>
<tr>
<td>2008</td>
<td>$104</td>
<td>($109)</td>
<td>-</td>
</tr>
<tr>
<td>2009</td>
<td>$68</td>
<td>($67)</td>
<td>-</td>
</tr>
<tr>
<td>2010</td>
<td>$84</td>
<td>($87)</td>
<td>-</td>
</tr>
<tr>
<td>2011</td>
<td>$100</td>
<td>($113)</td>
<td>-</td>
</tr>
<tr>
<td>2012</td>
<td>$94</td>
<td>($133)</td>
<td>-</td>
</tr>
<tr>
<td>2013</td>
<td>$109</td>
<td>($128)</td>
<td>-</td>
</tr>
<tr>
<td>2014</td>
<td>$118</td>
<td>($156)</td>
<td>-</td>
</tr>
<tr>
<td>2015</td>
<td>$52</td>
<td>($97)</td>
<td>-</td>
</tr>
<tr>
<td>2016</td>
<td>$37</td>
<td>($82)</td>
<td>-</td>
</tr>
<tr>
<td>2017</td>
<td>$59</td>
<td>($86)</td>
<td>-</td>
</tr>
<tr>
<td>2018</td>
<td>$93</td>
<td>~$200 Billion of outspend</td>
<td></td>
</tr>
</tbody>
</table>

Source: FactSet market data.

RBC Capital Markets Richardson Barr
Equity Markets Shut As Investors Demand Execution

Equity Offerings by Quarter Since 2016 ($B)

Publics Aggressively Buying

Publics Focused on Execution

Source: RBC Richardson Barr database and public filings.
M&A Picked Up Dramatically In 2018

Source: RBC Richardson Barr database, public filings

(1) Select onshore corporate M&A transactions greater than $1.0 billion
Public E&P Universe – January 2017

Public Market Value
$562 Billion

15

26

36

>$10 Billion

$3B - $10B

<=$3 Billion

Source: Factset
Public E&P Universe – Today

- **Jan 2017**
  - >$10 Billion: 26
  - $3B - $10B: 15
  - <$3 Billion: 11

- **Now**
  - >$10 Billion: 11
  - $3B - $10B: 12
  - <$3 Billion: 60

**Jan 2017 Public Market Value**: $562 Billion

**Now Public Market Value**: $434 Billion

Source: Factset
M&A Has Been An Important Driver For Asset Supply...

Portfolio Management After M&A has Led to Significant Divestitures in Recent Years ($ in Billions)

Deal Count

<table>
<thead>
<tr>
<th>Year</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>3</td>
</tr>
<tr>
<td>2015</td>
<td>1</td>
</tr>
<tr>
<td>2016</td>
<td>1</td>
</tr>
<tr>
<td>2017</td>
<td>2</td>
</tr>
<tr>
<td>2018</td>
<td>6</td>
</tr>
</tbody>
</table>

Source: RBC Richardson Barr internal database, public filings, company press releases.

(1) Select corporate M&A transactions greater than $1.0 billion.
...And Should Continue To Provide Lots Of Opportunities

**Non-Core**
- **WAMSUTTER**
  - ~500,000 Net Acres
  - ~38 Mboe/d
  - Sweetwater County, WY

- **SAN JUAN**
  - ~567,000 net acres
  - ~102 Mboe/d
  - San Juan County, NM

- **ARKOMA**
  - ~440,000 net acres
  - ~204 MMcfe/d
  - Pittsburg County, OK

- **BAKKEN**
  - ~80,000 net acres
  - 21 Mboe/d
  - McKenzie County, ND

- **EAGLE FORD**
  - ~42,000 net acres
  - ~50 Mboe/d
  - Karnes County, TX

- **UINTA**
  - ~220,000 net acres
  - ~19 Mboe/d
  - Duchesne County, UT

- **CBP**
  - ~82,000 net acres
  - ~7 Mboe/d
  - Andrews County, TX

**M&A**
- **NEWFIELD**
  - **ARKOMA**
    - ~125,000 net acres
    - ~84 MMcfe/d
    - Hughes County, OK

  - **BAKKEN**
    - ~80,000 net acres
    - 21 Mboe/d
    - McKenzie County, ND

  - **EAGLE FORD**
    - ~42,000 net acres
    - ~50 Mboe/d
    - Karnes County, TX

  - **WAMSUTTER**
    - ~500,000 Net Acres
    - ~38 Mboe/d
    - Sweetwater County, WY

  - **SAN JUAN**
    - ~567,000 net acres
    - ~102 Mboe/d
    - San Juan County, NM

Source: RBC internal database, public filings, and company presentations

RBC Capital Markets Richardson Barr
Private Equity Has An Abundance Of Dry Powder…

~$95 Billion of dry powder available to Private Equity for acquisitions

Source: Richardson Barr Internal Database
...And Has Become The Dominant Buyer In Today’s Market

% Private Equity Buyers By Year

<table>
<thead>
<tr>
<th>Year</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
<td>24%</td>
<td>41%</td>
<td>41%</td>
<td>40%</td>
<td>48%</td>
<td>66%</td>
</tr>
</tbody>
</table>

Source: RBC Richardson Barr internal database and public filings. Includes onshore U.S. asset transactions > $20 MM. Includes acquisitions made by S.P.A.C.s. (1) Excludes BP / BHP deal.
Where And What Has Private Equity Been Buying?

PE Asset Demand since 2016 ($B)

<table>
<thead>
<tr>
<th>Resource Play</th>
<th>% of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oil Resource Play</td>
<td>23%</td>
</tr>
<tr>
<td>Gas Resource Play</td>
<td>24%</td>
</tr>
<tr>
<td>Conventional</td>
<td>53%</td>
</tr>
</tbody>
</table>

- **Oil**: $4
  - Eagle Ford: $11
  - Appalachia: $9
  - S.P.A.C.s: ~$4
- **Gas**: $12
  - SCOOP/STACK: $6
  - Bakken: $5
  - Delaware: $5
  - Midland: $5
  - Haynesville: $4

- **S.P.A.C.s**: ~$4

Source: RBC Richardson Barr internal database.
Private Equity Buying Behind Publics – Conundrum or Opportunity?

**Pros**

1. **Big Land Positions:** 10k – 100k+ Net Acres
2. **No Clock Ticking:** Generally all HBP
3. **Serendipity:** Generally all depths / all rights so multiple zones to exploit now or down the road
4. **Cost savings:** Reduce big company LOE and G&A from day one
5. **Efficiencies:** Low-hanging fruit, e.g. better “plumbing”
6. **Unloved:** Neglected and undercapitalized assets
7. **Cash Flow:** Most likely spitting out free cash flow from day one
8. **Valuation:** PDP to PDP+
   - Lock in hedges on PSA
   - Get upside for free
Private Equity Buying Behind Publics – Conundrum or Opportunity?

Cons

EXIT??
Private Equity – We’ve Seen This Movie Before!

% Of Value Allocated To PDP (1)

Select deals from RBC Richardson Barr internal transaction database.

(1) Select deals from RBC Richardson Barr internal transaction database.
Then – Portfolio Co. Org Chart (Lease and Flip)

CEO

CFO

Sr. BD

Jr. BD

Jr. BD

Land

Land

Land

Land

Land

Land
Now – Portfolio Co. Org Chart (Hold, Develop and Exploit)

- **CEO**
  - CFO
    - Accounting
      - Jr. Drilling Engineer
      - Sr. Drilling Engineer
  - COO
    - VP, Operations
      - Reservoir Engineer
      - Completions Engineer
      - Facilities / Midstream
  - BD / Land
  - Marketing
    - Geologist
      - Geo. Tech
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