Oil Industry Segment Update

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Rail Energy Transportation Advisory Committee
Surface Transportation Board

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Oil Industry Segment Market Environment

• Global crude oil inventories trending downward [Source: EIA April ST Outlook]
  – Average April days of supply – 2016 = 67 days; 2017 = 65 days; 2018 = 60 days
  – Global production 1Q MMBPD – 2016 = 97.20; 2017 = 97.95; 2018 = 98.78
  – Global consumption 1Q MMBPD – 2016 = 96.87; 2017 = 98.52; 2018 = 99.62

• WTI Spot Price trended higher since RETAC’s October meeting
  – low - $51.63 (10/20/17) high - $67.35 (4/13/18) [Source: EIA Daily Reports]

• US crude oil production trending upward [Source: EIA]
  – US production 1Q MMBPD – 2016 = 9.16; 2017 = 8.29; 2018 = 10.09
  – US imports 1Q MMBPD – 2016 = 7.85; 2017 = 7.91; 2018 = 8.01 (January)
  – US exports 1Q MMBPD – 2016 = 0.59; 2017 = 1.12; 2018 = 1.34 (January)

• US land rig count is trending upward [Source: Baker Hughes]
  – April first week - 2016 = 362 (Texas 50%); 2017 = 672 (Texas 59%); 2018 = 808 (Texas 63%)

• CBR volumes have declined on an annual basis from 2014 to 2017 [Source: EIA]
  – Annual carloads in 000’s – 2016 = 212; 2017 = 134; 1Q 2018 = 39 [Source: EIA]
  – 1Q 2017 = 40; 1Q 2018 = 39 / indicates some market share recovery [Source: EIA]

• Early indications of growth in rail shipments of refined products
Williston Basin Crude Oil Modal Share

Average Production/BOPD

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<thead>
<tr>
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<th>Average Production/BOPD</th>
<th>Rail/BOPD est.</th>
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<tbody>
<tr>
<td>6/2014</td>
<td>1,092,519</td>
<td>644,586</td>
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<tr>
<td>6/2015</td>
<td>1,211,328</td>
<td>569,324</td>
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<tr>
<td>6/2016</td>
<td>1,027,131</td>
<td>297,868</td>
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<tr>
<td>6/2017</td>
<td>1,032,873</td>
<td>72,301</td>
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<tr>
<td>2/2018</td>
<td>1,174,769</td>
<td>187,963</td>
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Source: ND Pipeline Authority

February, 2018

- West Coast: 68%
- East Coast: 26%
- Gulf Coast: 6%

CBR Destinations, February 2018
Frac Sand Demand is Growing

- Drivers of growth in frac sand production [Source: WSJ]
  - Increased rig count
  - Completions of previously drilled wells
  - Productivity gains based on higher usage of sand
- 72% of industrial sand produced is used as frac sand [Source: USGS]
- The production of frac sand is growing rapidly to meet demand
  - 2014 53 million tons  2015 43 million tons
  - 2016 39 million tons  2017 77 million tons
  - 2018 102 million tons (consensus forecast) [Source: Wall Street Forecast and Spears & Associates]
- Northern White produced in Wisconsin is 50% of installed US capacity [Source: IHS]
- Estimated U.S. Class 1 carloads
  - 2014 450,000 - 85% share  2015 370,000 - 86% share
  - 2016 310,000 - 79% share  2017 616,000 – Assumes 80% rail share
  - 2018 816,000 - Assumes 80% of consensus forecast
- Focus on Permian
  - Accounts for 37% of frac sand demand – more than next two combined [Source: IHS]
  - “Region Sand” capacity developing rapidly – Permian Brown
  - No consensus on the impacts of regional sand
Summary

• Global crude oil demand is outpacing production
• US crude oil production and exports trending upward; imports flat
• Crude oil prices are trending upward
• US land based rig count is trending upward
• Much US onshore E&P growth remains in pipe centric Texas
  – Permian capacity (pipeline and refining)/production gap is narrowing [Source: Goldman Sachs]
• Growing demand for frac sand may be straining the supply chains
• Bakken production trending upward nearing 1.2 million BPD
• CBR volume depressed but showing some growth; primarily to West Coast
• Increasing refined product and NGL shipments are potential short term opportunities for rail growth