Plains All American: Crude Oil & NGL Transportation Network

Note: Map contains only most significant PAA assets, including current projects and equity-investments assets.
(1) Average daily tariff transportation volumes (including trucking) as of 12/31/18;

Relative Size

~18,000 Miles of Pipelines
~6 mmb/d Transportation Volumes
~$30 bln Enterprise Value

Plains' Assets
Crude Oil (blue)
NGL (red)

Built over ~30 years through multiple cycles.
Technology Breakthrough – Horizontal Drilling & Hydraulic Fracturing – Combination of Two Technological Advancements

Advancement #1
- Development and refinement of ability to “turn the corner”
- Perforate horizontal pipe
- Pump water and sand @ high volume & high pressures to create fractures
- Flow back oil, gas and water through expanded communication fractures

Source: Tudor Pickering Holt; PAA
Very Positive Disruption For U.S. Economy & National Security

- Against a 30 to 40 year backdrop of stable to increasing petroleum demand…
- Hz drilling & hydraulic fracturing:
  - Facilitated reversal of multi-decade decline in U.S. oil production
  - Resulting reduction in net imports improved U.S. trade balance by +/- $250 Billion/year

Source: EIA, PAA estimates
Significantly Changed the Domestic Pipeline Transportation Landscape & Elevated the U.S. Among World Petroleum Powers

- Rapidly filled slack in existing pipelines
- Caused removal of multi-decade restriction on U.S. crude oil exports
- Triggered reversal / conversion of certain pipelines
- Stimulated significant investment in new midstream infrastructure
- Raised U.S. from #3 to #1 petroleum producer worldwide

Also created challenges: new sector entrants, increased competition, margin compression, skilled labor shortage, amplified environmental opposition, etc.

Source: EIA, PAA estimates