

Making the Permian Great Again
Zane Arrott, Chief Operating Officer
January 18, 2017

Forward-Looking Statements

Certain statements and information in this presentation may constitute “forward-looking statements” within the meaning of the Private Securities Litigation Reform Act of 1995, Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. The words “believe,” “expect,” “anticipate,” “plan,” “intend,” “foresee,” “should,” “would,” “could” or other similar expressions are intended to identify forward-looking statements, which are generally not historical in nature. These forward-looking statements are based on our current expectations and beliefs concerning future developments and their potential effect on us. While management believes that these forward-looking statements are reasonable as and when made, there can be no assurance that future developments affecting us will be those that we anticipate. Our forward-looking statements involve significant risks and uncertainties (some of which are beyond our control) and assumptions that could cause actual results to differ materially from our historical experience and our present expectations or projections. Important factors that could cause actual results to differ materially from those in the forward-looking statements include, but are not limited to, the volatility of commodity prices, product supply and demand, competition, access to and cost of capital, uncertainties about estimates of reserves and resource potential and the ability to add proved reserves in the future, the ability to assimilate acquisitions into our operations, the assumptions underlying production forecasts, our hedging strategy and results, the quality of technical data, environmental and weather risks, the ability to obtain environmental and other permits and the timing thereof, other government regulation or action, the costs and results of drilling and operations, the availability of equipment, services, resources and personnel required to complete RSP’s operating activities, access to and availability of transportation, processing and refining facilities, the financial strength of counterparties to the RSP’s credit facility and derivative contracts and the purchasers of RSP’s production and third parties providing services to RSP and acts of war or terrorism. Furthermore, we may not be able to close the Silver Hill E&P II, LLC (SHEP II) transaction in a timely manner or at all, the ultimate funding sources for the SHEP II transaction may differ from our current expectations, we may not be able to recognize the expected benefits from the Silver Hill Energy Partners, LLC and SHEP II transactions (including our expectations for production growth) and our capital program may exceed budgeted amounts.

For additional information regarding known material factors that could cause our actual results to differ from our projected results, please see our filings with the United States Securities and Exchange Commission (SEC), including our Annual Reports on Form 10-K and Quarterly Reports on Form 10-Q.

Existing and prospective investors are cautioned not to place undue reliance on forward-looking statements, which speak only as of the date hereof. We undertake no obligation to publicly update or revise any forward-looking statements after the date they are made, whether as a result of new information, future events or otherwise.

Important Information for Investors and Stockholders

This communication does not constitute an offer to buy or sell or the solicitation of an offer to buy or sell any securities or a solicitation of any vote or approval.

In connection with the SHEP II transaction, RSP has filed with the SEC a preliminary proxy statement. RSP also plans to file other relevant documents with the SEC regarding the SHEP II transaction. Any definitive proxy statement for RSP (if and when available) will be mailed to RSP's stockholders.

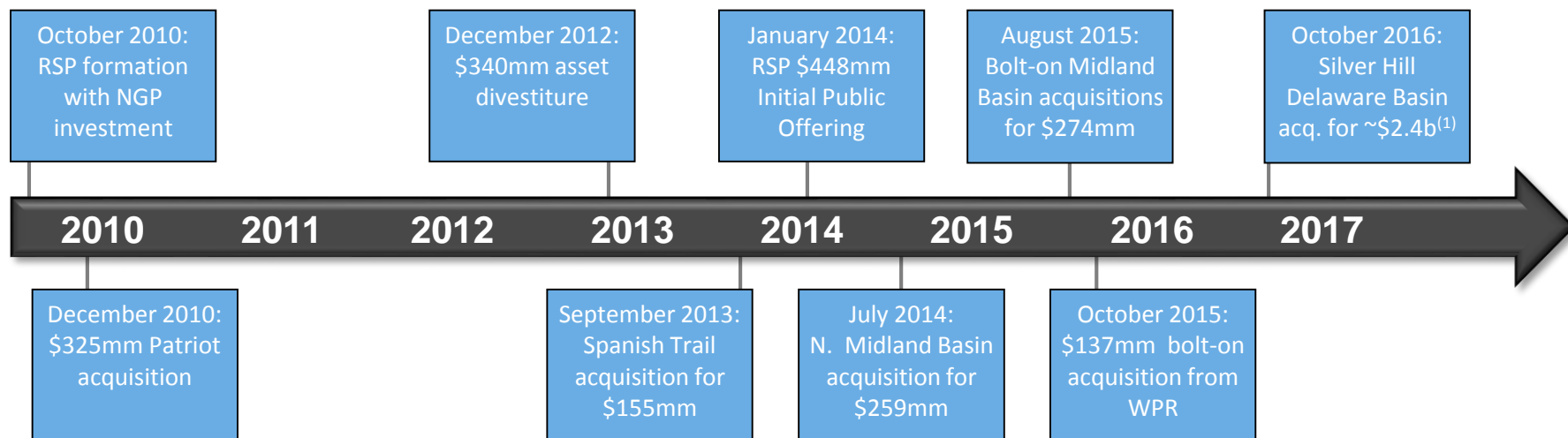
INVESTORS AND SECURITY HOLDERS OF RSP ARE URGED TO READ THE PROXY STATEMENT(S) AND OTHER DOCUMENTS THAT MAY BE FILED WITH THE SEC CAREFULLY AND IN THEIR ENTIRETY IF AND WHEN THEY BECOME AVAILABLE BECAUSE THEY WILL CONTAIN IMPORTANT INFORMATION ABOUT THE SHEP II TRANSACTION AND ITS FINANCING.

Investors and security holders will be able to obtain free copies of these documents (if and when available) and other documents containing important information about RSP, once such documents are filed with the SEC through the website maintained by the SEC at <http://www.sec.gov>. Copies of the documents filed with the SEC by RSP will be available free of charge on RSP's internet website at <http://www.rsppermian.com> or by contacting RSP's Investor Relations Department by email at IR@rspermian.com or by phone at 214-252-2790.

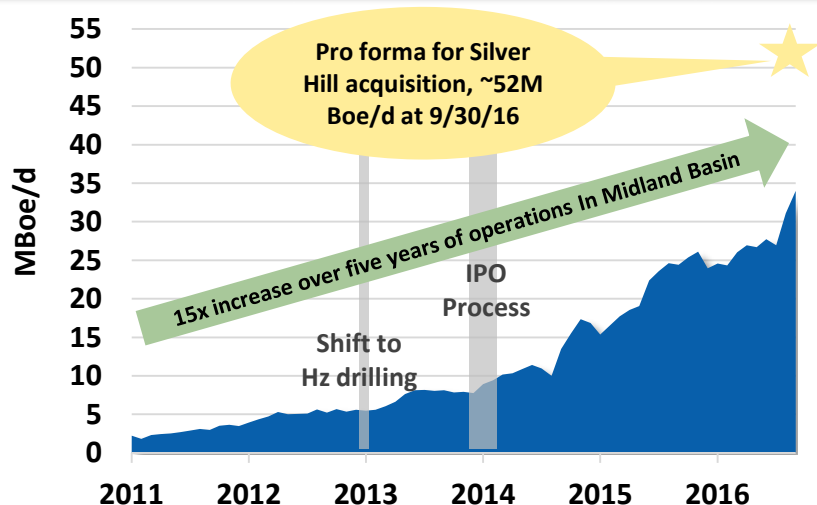
RSP and certain of its directors and executive officers may be deemed to be participants in the solicitation of proxies in respect of the SHEP II transaction. Information about the directors and executive officers of RSP is set forth in RSP's proxy statement for its 2016 annual meeting of stockholders, which was filed with the SEC on April 29, 2016. This document can be obtained free of charge from the sources indicated above.

Other information regarding the participants in the proxy solicitations and a description of their direct and indirect interests, by security holdings or otherwise, will be contained in the proxy statement and other relevant materials to be filed with the SEC when such materials become available. Investors should read the proxy statement carefully when it becomes available before making any voting or investment decisions. You may obtain free copies of this document from RSP using the sources indicated above.

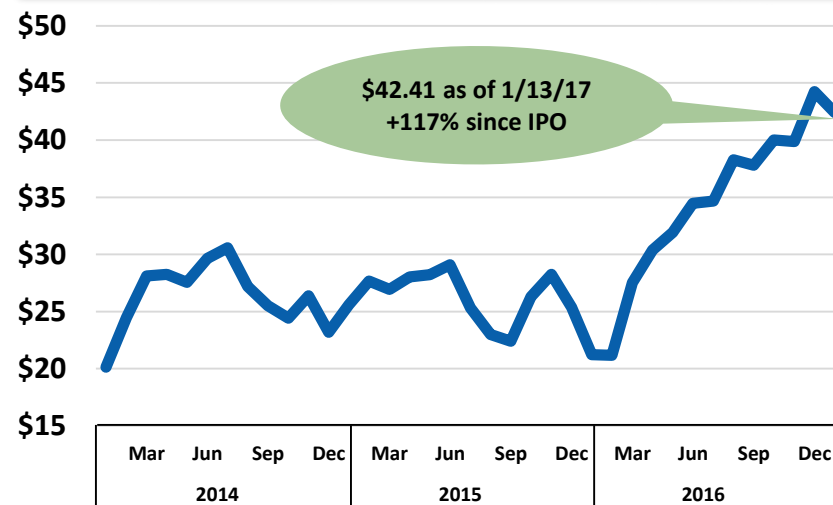
RSP Permian Has Been a Strong Growth Story in the E&P Sector



Historical Monthly Net Production



RSP Stock Price Since IPO (Monthly Avg.)



⁽¹⁾ First part of Silver Hill acquisition (SHEP I) closed 11/28/16, second part (SHEP II) expected to close in Q1 2017.

RSP Permian Overview (NYSE: RSPP)

- **Large, contiguous acreage blocks in the core of the Midland and Delaware Basins⁽¹⁾**
 - **Midland: ~60,700 net surface acres and ~270,000 net “effective horizontal acres”⁽²⁾**
 - ~96% operated
 - **Delaware: ~41,000 net surface acres and ~250,000 net effective horizontal acres**
 - ~80% operated
 - ~5,800 horizontal locations in inventory with significant upside
- **2017 Development Plans**
 - **Rigs: Midland Basin - 4; Delaware Basin - 2, 4 by YE '17**
 - **2017 Production: 52 – 56 MBoe/d (72% - 74% oil)**
 - **2017 Development Capital: \$570 - \$630 million**
 - **D&C: \$520 - \$560MM**
 - **% Non-Operated: 10% - 15%**

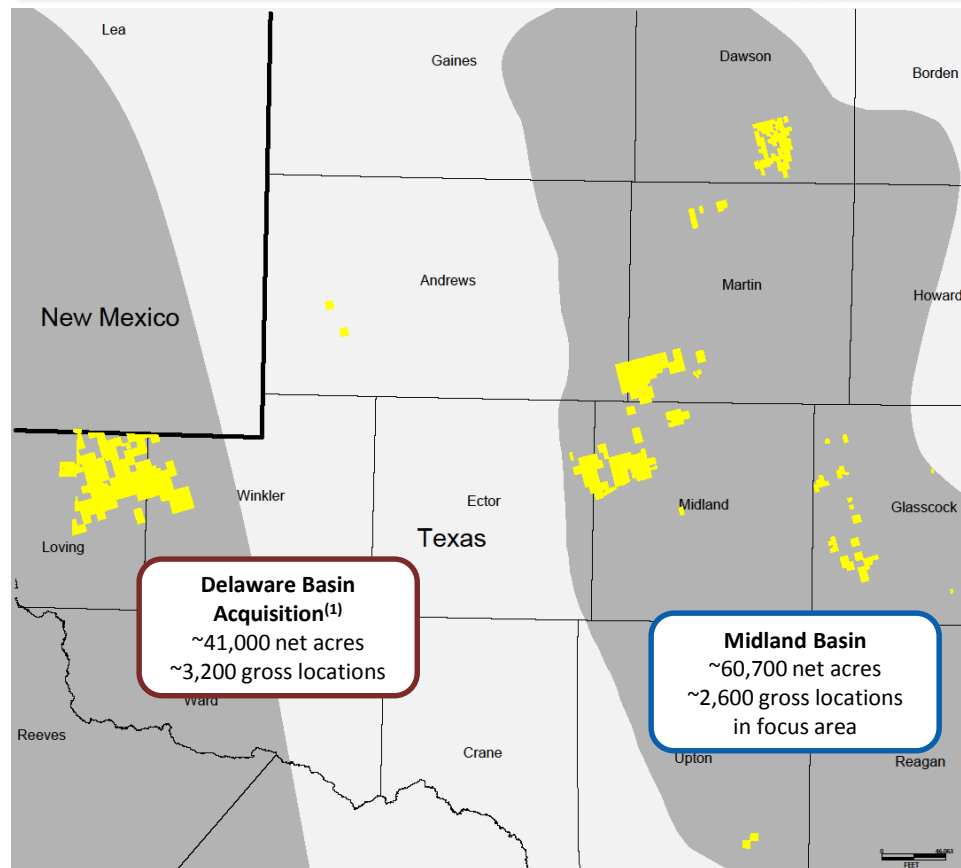
Key Statistics

- | | |
|---|----------------------|
| ■ Market Capitalization (1/13/17): | \$6.0 billion |
| ■ 3Q16 Average Production: | 30 MBoe/d |
| ■ 3Q16 Avg Production pro forma Silver Hill: | 50 Mboe/d |
| ■ Elected Credit Facility Borrowing Base: | \$900 million |

⁽¹⁾ First part of Silver Hill acquisition (SHEP I) closed 11/28/16, second part (SHEP II) expected to close in Q1 2017.

⁽²⁾ Combined horizontal acreage position that Management believes is prospective for hydrocarbon production across each target horizontal zone.

Contiguous Acreage Position in Core of Permian Basin



**>100,000 largely contiguous net surface acres and
>500,000 net effective horizontal acres in the core of each basin**

RSP Has Used Many Forms of Capital to Fuel Its Growth

- \$9.8 billion of financings, acquisitions, and divestitures since formation
- Private Equity, Net Profits Interest, Term-B Bank, Credit Facility, Asset Sales, Public Equity, High Yield Market
- Considered several other financing options, eg. Bridge Loans, Convertibles, Joint Ventures, etc.

\$5.8 Billion in Financings

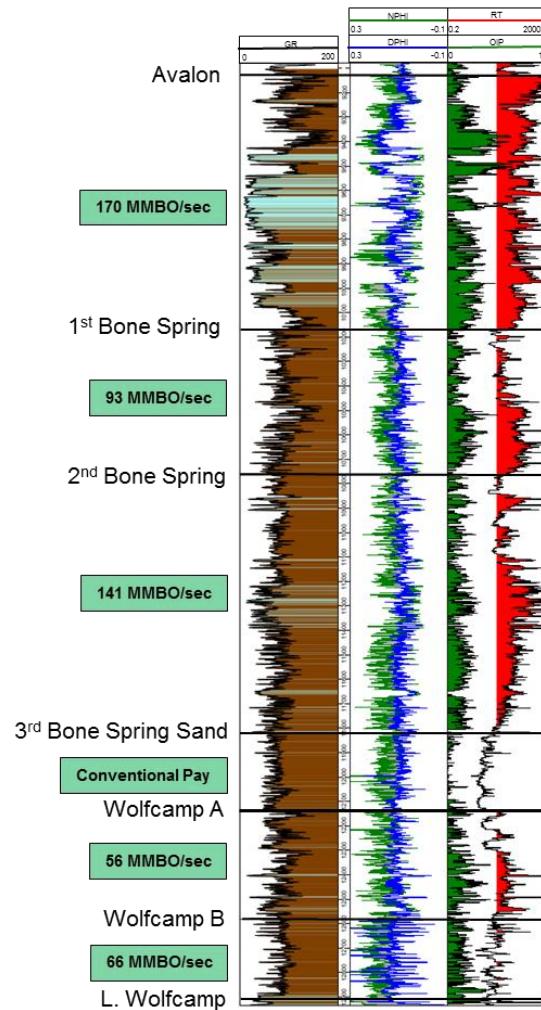
<u>Date</u>	<u>Transactions:</u>
4Q10	▪ \$185MM Private Equity / Management Equity
4Q10	▪ \$90MM Term-B Facility
3Q11	▪ \$175MM Net Profits Interest
3Q13	▪ \$600MM Credit Facility (2012 – Today)
3Q13	▪ \$125MM Term-B Facility (Spanish Trail Pre-IPO)
1Q14	▪ \$448MM IPO (Primary / Secondary)
3Q14	▪ \$300MM Follow-on (Primary / Secondary)
3Q14	▪ \$500MM High Yield
1Q15	▪ \$256MM Follow-on
2Q15	▪ \$126MM Secondary (NGP Block)
3Q15	▪ \$181MM Follow-on (Primary)
3Q15	▪ \$200MM High-Yield add-on
4Q15	▪ \$223MM Follow-on (Primary)
3Q16	▪ \$1,006MM Follow-on (Primary)
4Q16	▪ \$450MM High Yield
4Q16	▪ \$950MM Credit Facility (elected \$900MM)

\$4.0 Billion in Acquisitions/Divestitures

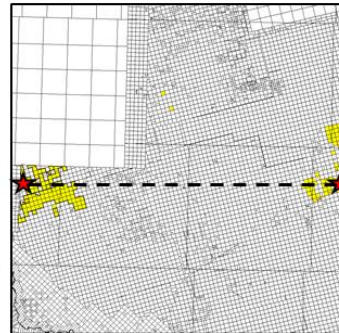
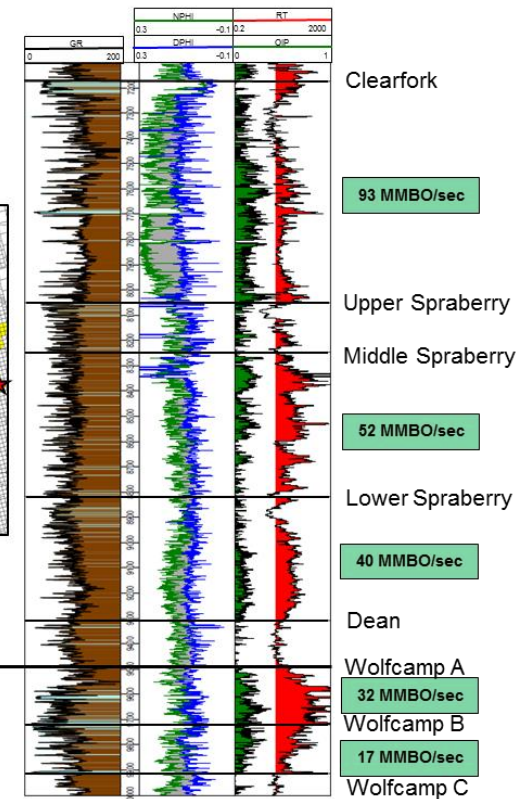
<u>Date</u>	<u>Transactions:</u>
4Q10	▪ \$325MM Patriot Acquisition
4Q12	▪ \$340MM Divestiture
3Q13	▪ \$155MM Spanish Trail Acquisition
1Q14	▪ \$84MM Glasscock, Martin, Dawson County Acq.
2Q14	▪ \$259MM Adventure Acquisition
2Q15	▪ \$274MM Glass Ranch Acquisition
3Q15	▪ \$137MM Wolfberry Partners Acquisition
4Q16	▪ \$2,400MM Silver Hill Acquisitions

Delaware Core vs. Midland Core

Core Delaware Basin Type Log



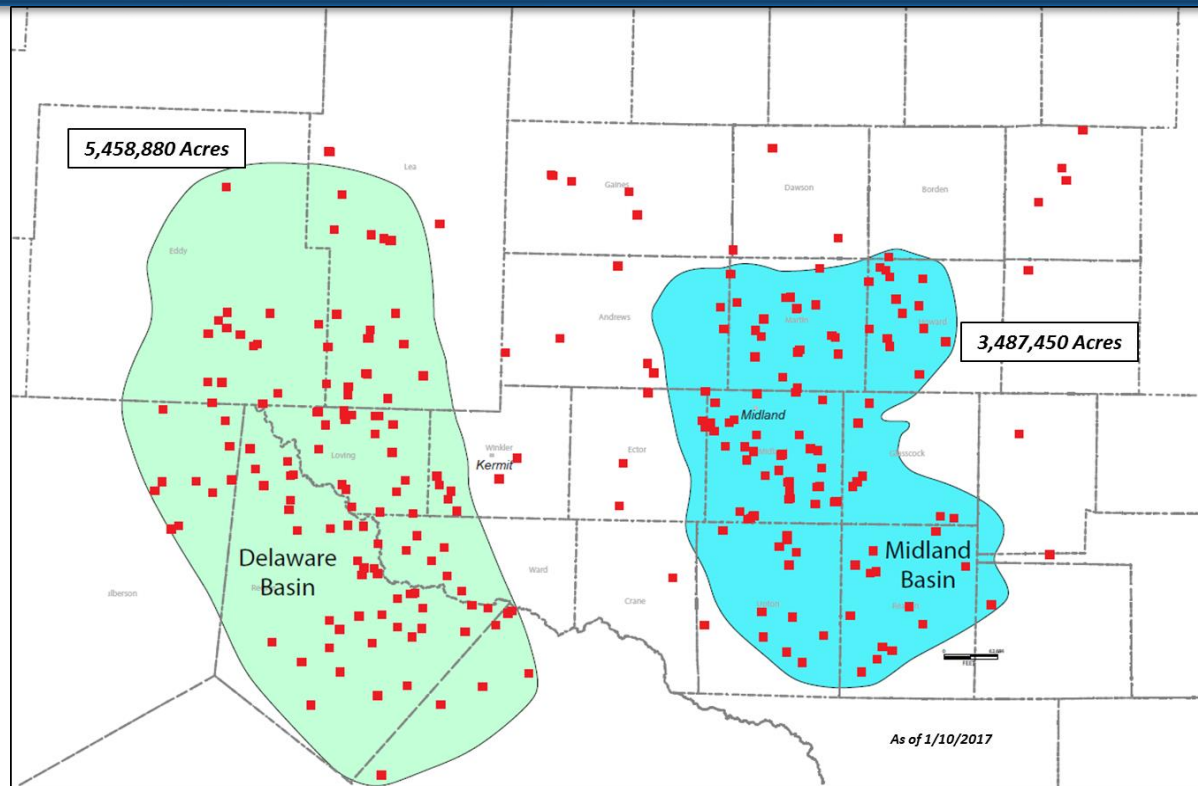
Core Midland Basin Type Log



Delaware and Midland Basin Core: Potential Recoverable Resource

- ~9MM core acres (~14,000 sections) in the Delaware and Midland Basins combined, based on concentration of rigs
 - Due to logistical, leasehold, or geologic issues, ~25% of the acreage cannot be developed
 - Leaving ~75%, or 10,500 sections, able to be developed
- Assuming average OIP/section of 150MMBbls, we estimate over 1.5 trillion Bbls total OIP
- Assuming a 10% recovery factor, results in 150 Billion BBLs recoverable resource potential
- Estimate an additional ~220,000 horizontal wells needed to recover all available resource

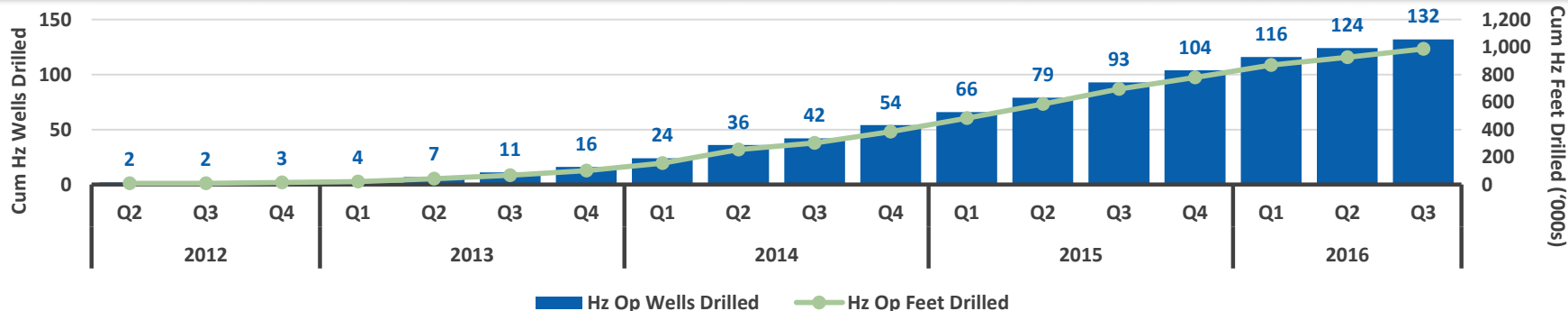
Delaware and Midland Core Acreage Based on Current Rig Activity



Optimizing Execution: Evolution of RSP's Horizontal Development

Phase 1	Phase 2	Phase 3	Phase 4
Late 2012 - Mid 2013	Mid 2013 - 2014	2015	2016
<ul style="list-style-type: none"> Exploring the potential of horizontal drilling in the Spraberry and Wolfcamp Shales One-well pads Develop understanding of Midland Basin potential No development of individual leases or areas 	<ul style="list-style-type: none"> Delineating and defining productivity of individual zones and their extent Multi-well pads Use micro seismic and drill multi-zone pads to determine best development methods Construct full lease facility requirements 	<ul style="list-style-type: none"> Implement lessons learned in the first two phases Move to simultaneous primary development of WB/WA/LS Begin full lease drilling Start spacing pilots Focus on service cost savings and capital efficiencies 	<ul style="list-style-type: none"> Continue spacing pilots Develop high density frac design Use fiber optics and tracer science to refine and confirm frac designs Prepare for manufacturing phase of development Continue to focus on cost reductions and efficiency
<ul style="list-style-type: none"> Drilling Cost \$/Ft: ~\$700 Completion Cost \$/Ft: ~\$675 Proppant Lbs/Ft: ~1,000 Average Lateral: ~5,500' 	<ul style="list-style-type: none"> Drilling Cost \$/Ft: ~\$540 Completion Cost \$/Ft: ~\$630 Proppant Lbs/Ft: ~1,350 Average Lateral: ~7,100' 	<ul style="list-style-type: none"> Drilling Cost \$/Ft: ~\$395 Completion Cost \$/Ft: ~\$535 Proppant Lbs/Ft: ~1,500 Average Lateral: ~7,800' 	<ul style="list-style-type: none"> Drilling Cost \$/Ft: ~\$345 Completion Cost \$/Ft: ~\$400 Proppant Lbs/Ft: ~1,700 Average Lateral: ~7,300'

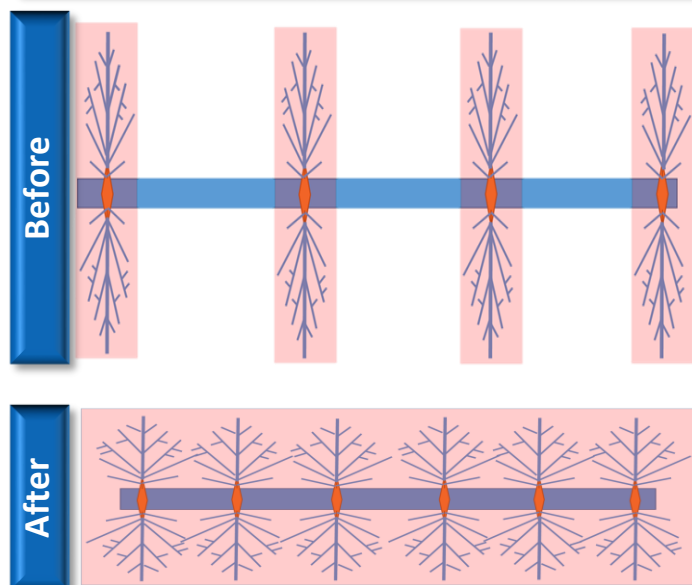
Cumulative Horizontal Wells & Feet Drilled Since 2012



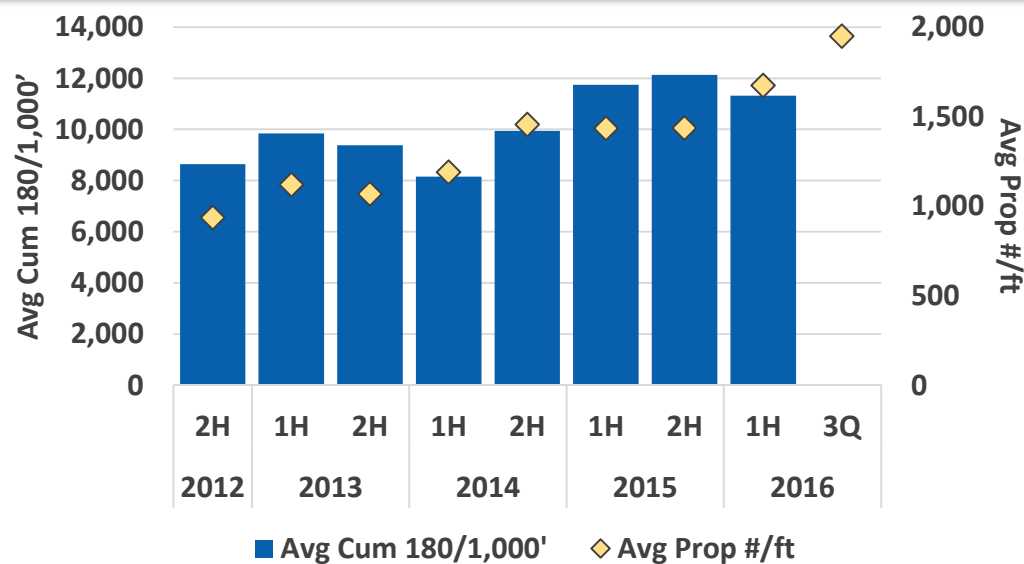
Stimulation Evolution Accelerating

2013-14	Mid 2014 to YE15	Q1 2016	Q2 2016	2H 2016 to Present
3-4 clusters 1000#/ft Hybrid Fluid 20% 100 Mesh	4 clusters 1250#/ft SW with light gel 20% 100 Mesh	6-8 clusters 1600#/ft SW & diverter 50% 100 Mesh	14 clusters 1900#/ft Slickwater only No RCS	Additional testing planned to increase diversion efficiency, optimize prop placement, & test other high density frac concepts

Illustrative Design Evolution



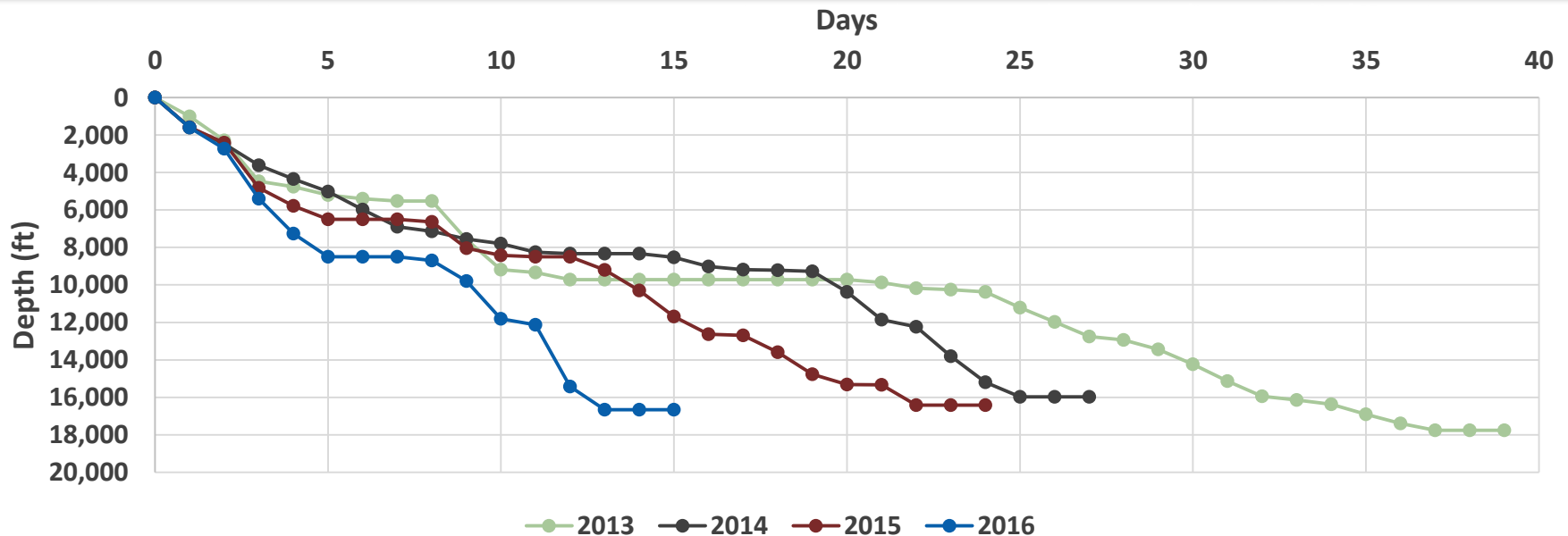
Well Performance Improvement with Proppant Load Increases



Drilling Efficiency Improvements

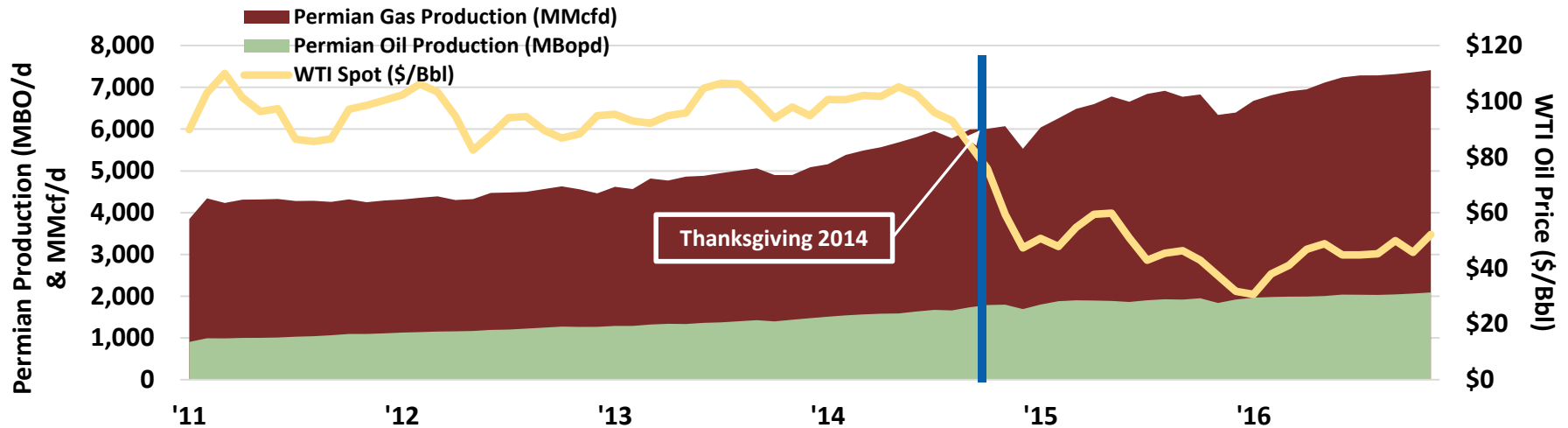
- On an ongoing basis, RSP evaluates each section of the well (intermediate, curve & lateral) independently, looking for ways to optimize drilling and completion efficiency
 - Historical focus has been on casing design, mud system, mud weight, bit selection, BHA design & rig performance
- 2014: Transitioned from 4-string to 3-string design
- 2015: BHA & bit selection improvements in intermediate; standardized BHA & mud systems to increase ROP pad drilling
- 2016: Further improved BHA design to increase curve efficiency; better ROP; 1 bit curves; upgraded rig mud system to 7,500 PSI, allowing for high flow rates in longer laterals; reduction in rig downtime; BHA stabilization in lateral sections resulting in less slide to rotate ratio, increasing ROP and less bit run

Annual Rate of Penetration Evolution

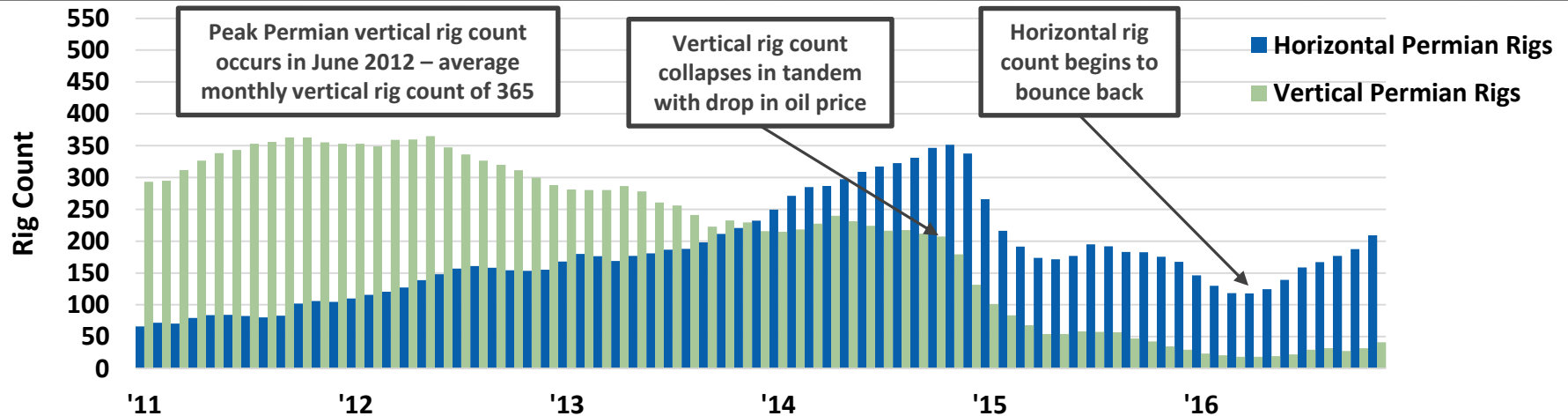


Permian Innovation & Resilience Through Commodity Price Downturn

WTI Oil Price⁽¹⁾ vs. Permian Production⁽²⁾



Permian Rig Count⁽¹⁾



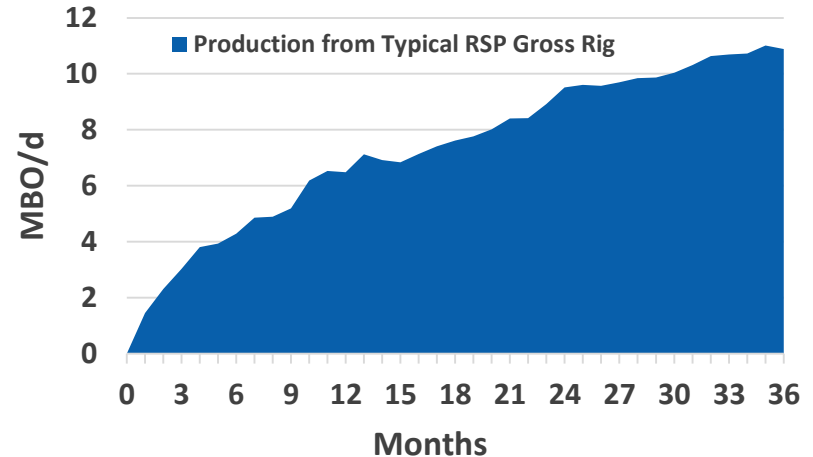
(1) Per Bloomberg Financial.

(2) Per EIA December 2016 Permian Region Drilling Productivity Report.

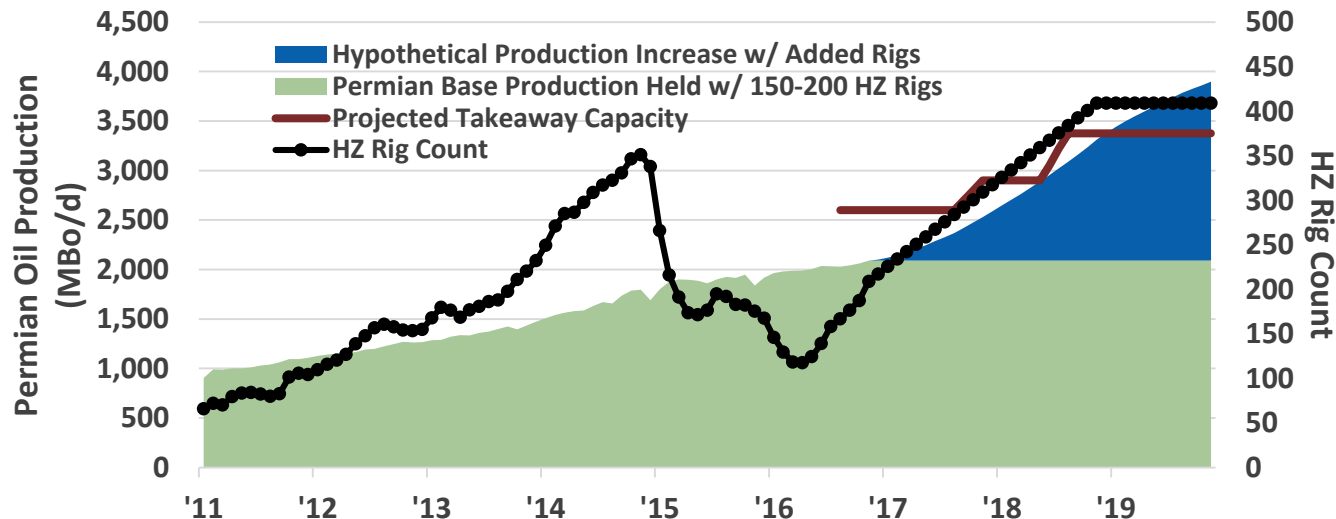
Potential Permian Rig Additions and Possible Oil Production Growth

- Existing ~200 HZ Permian rigs are currently holding flat/slightly increasing oil production
- An average RSP rig continuously drilling in the Permian over a 36 month period will increase oil production by ~11 MBO/d by the 36th month (chart to right)
 - Utilizing in-house Permian type curves and assuming 1 rig increases the well count by ± 15 /year
- If Permian rig count doubles in 24 months (200 rigs added evenly over 24 month period) and holds flat at ~400 total horizontal rigs thereafter, Permian oil production would be 3,900 MBO/d by 12/31/19

Production Add from Continuously Drilling Permian Rig



Permian Oil Production Growth w/ 200 Rig Additions in 2017



Potential Constraints When Moving to 400 Rigs

1. Goods & Services
2. CAPEX Requirement
3. Water
4. Sand
5. Pipeline Takeaway

Additional Disclosures

Supplemental Non-GAAP Financial Measures

We define Adjusted EBITDAX as oil and gas revenues including net cash receipts (payments) on settled derivative instruments and premiums paid on put options that settled during the period, less lease operating expenses, production and ad valorem taxes, and general and administrative expenses excluding stock based compensation. Adjusted net income deducts from Adjusted EBITDAX depreciation, depletion, and amortization, accretion on asset retirement obligations, exploration expenses, interest expense, stock-based compensation and adjusted income tax expense.

Management believes Adjusted EBITDAX and adjusted net income are useful because they allow us to more effectively evaluate our operating performance and compare the results of our operations from period to period without regard to our financing methods or capital structure. We exclude the items listed above in arriving at Adjusted EBITDAX and adjusted net income because these amounts can vary substantially from company to company within our industry depending upon accounting methods and book values of assets, capital structures and the method by which the assets were acquired. Adjusted EBITDAX and adjusted net income should not be considered as an alternative to, or more meaningful than, net income as determined in accordance with GAAP or as an indicator of our operating performance or liquidity. Certain items excluded from Adjusted EBITDAX and adjusted net income are significant components in understanding and assessing a company's financial performance, such as a company's cost of capital and tax structure, as well as the historic costs of depreciable assets, none of which are components of Adjusted EBITDAX. Our computations of Adjusted EBITDAX and adjusted net income may not be comparable to other similarly titled measures of other companies.

Certain Reserve Information

Cautionary Note to U.S. Investors: The SEC prohibits oil and gas companies, in their filings with the SEC, from disclosing estimates of oil or gas resources other than "reserves," as that term is defined by the SEC. This presentation discloses estimates of quantities of oil and gas using certain terms, such as "resource potential," "net recoverable resource potential," "resource base," "estimated ultimate recovery," "EUR" or other descriptions of volumes of reserves, which terms include quantities of oil and gas that may not meet the SEC's definitions of proved, probable and possible reserves, and which the SEC's guidelines strictly prohibit the Company from including in filings with the SEC. These estimates are by their nature more speculative than estimates of proved reserves and accordingly are subject to substantially greater risk of being recovered by the Company. U.S. investors are urged to consider closely the disclosures in the Company's periodic filings with the SEC. Such filings are available from the Company at 3141 Hood Street, Suite 500, Dallas, Texas 75219, Attention: Investor Relations, and the Company's website at www.rsppermian.com. These filings also can be obtained from the SEC by calling 1-800-SEC-0330.