RILEY PERMIAN

Company Overview

April 2024

Forward-Looking Statements

Forward-Looking Statements

This presentation contains projections and other forward-looking statements within the meaning of federal securities laws. These projections and statements reflect Riley Exploration Permian, Inc.'s ("Riley Permian") current views with respect to future events and financial performance. No assurances can be given, however, that these events will occur or that these projections will be achieved, and actual results could differ materially from those projected as a result of certain factors. A discussion of these factors is included in Riley Permian's periodic reports filed with the U.S. Securities and Exchange Commission ("SEC").

All statements, other than historical facts, that address activities that Riley Permian assumes, plans, expects, believes, intends or anticipates (and other similar expressions) will, should or may occur in the future are forward-looking statements. The forward-looking statements are based on management's current beliefs, based on currently available information, as to the outcome and timing of future events, including the volatility of oil, natural gas and NGL prices; regional supply and demand factors, any delays, curtailment delays or interruptions of production, and any governmental order, rule or regulation that may impose production limits; cost and availability of gathering, pipeline, refining, transportation and other midstream and downstream activities; severe weather and other risks that lead to a lack of any available markets; our ability to successfully complete mergers, acquisitions and divestitures; the inability or failure of Riley Permian to successfully integrate the acquired assets into its operations and development activities; the potential delays in the development, construction or start-up of planned projects; the risk that Riley Permian's EOR project may not perform as expected or produce the anticipated benefits; risks relating to our operations, including development drilling and testing results and performance of acquired properties and newly drilled wells; any reduction in our borrowing base on our revolving credit facility from time to time and our ability to repay any excess borrowings as a result of such reduction; the impact of our derivative strategy and the results of future settlement; our ability to comply with the financial covenants contained in our credit agreement; conditions in the capital, financial and credit markets and our ability to obtain capital needed for development and exploration operations on favorable terms or at all; the loss of certain tax deductions; risks associated with executing our business strategy, including any changes in our strategy; inability to prove up undeveloped acreage and maintain production on leases; risks associated with concentration of operations in one major geographic area; legislative or regulatory changes, including initiatives related to hydraulic fracturing, emissions, and disposal of produced water, which may be negatively impacted by regulation or legislation; the ability to receive drilling and other permits or approvals and rights-of-way in a timely manner (or at all), which may be restricted by governmental regulation and legislation; restrictions on the use of water, including limits on the use of produced water and a moratorium on new produced water well permits recently imposed by the RRC in an effort to control induced seismicity in the Permian Basin; changes in government environmental policies and other environmental risks; the availability of drilling equipment and the timing of production; tax consequences of business transactions; public health crisis, such as pandemics and epidemics, and any related government policies and actions and the effects of such public health crises on the oil and natural gas industry, pricing and demand for oil and natural gas and supply chain logistics; general domestic and international economic, market and political conditions, including the military conflict between Russia and Ukraine, the Israel-Hamas conflict and the global response to such conflicts; risks related to litigation; and cybersecurity threats, technology system failures and data security issues. These forward-looking statements involve certain risks and uncertainties that could cause the results to differ materially from those expected by the management of Riley Permian.

These forward-looking statements involve significant risks and uncertainties that could cause actual results to differ materially from those anticipated, including, but not limited to, the risk that Riley Permian may reduce, suspend or totally eliminate dividend payments in the future, whether variable or fixed, due to insufficient liquidity or other factors, potential adverse reactions or changes to the business or operations of Riley Permian resulting from the recently completed merger, including Riley Permian's future financial condition, results of operations, strategy and plans; changes in capital markets and the ability of Riley Permian to finance operations in the manner expected; the risk that Riley Permian's EOR and CCUS projects may not perform as expected or produce the anticipated benefits; the risks of oil and gas activities; and the fact that operating costs and business disruption may be greater than expected following the consummation of the merger.

Riley Permian encourages readers to consider the risks and uncertainties associated with projections and other forward-looking statements. In addition, Riley Permian assumes no obligation to publicly revise or update any forward-looking statements based on future events or circumstances.

For additional discussion of the factors that may cause us not to achieve our financial projections and/or production estimates, see Riley Permian's filings with the SEC, including its forms 10-K, 10-Q and 8-K and any amendments thereto. We do not undertake any obligation to release publicly the results of any future revisions we may make to this prospective data or to update this prospective data to reflect events or circumstances after the date of this presentation. Therefore, you are cautioned not to place undue reliance on this information.

None of the information contained in this presentation has been audited by any independent auditor. This presentation is prepared as a convenience for securities analysts and investors and may be useful as a reference tool. Riley Permian may elect to modify the format or discontinue publication at any time, without notice to securities analysts or investors.

Use of non-GAAP Financial Information

This presentation includes certain financial measures that are not calculated in accordance with U.S. generally accepted accounting principles ("GAAP"). These measures include (i) Adjusted Net Income, (ii) Adjusted EBITDAX, (iii) Cash Margins, (iv) Free Cash Flow, (v) PV10 and (vi) Cash G&A. These non-GAAP financial measures are not measures of financial performance prepared or presented in accordance with GAAP and may exclude items that are significant in understanding and assessing our financial results. Therefore, these measures should not be considered in isolation, and users of any such information should not place undue reliance thereon. See Riley Permian's website, www.rileypermian.com, for the descriptions and reconciliations of non-GAAP measures presented in this presentation to the most directly comparable financial measures calculated in accordance with GAAP.

Oil & Gas Reserves

The SEC generally permits oil and natural gas companies, in filings made with the SEC, to disclose proved reserves, which are reserve estimates that geological and engineering data demonstrate with reasonable certainty to be recoverable in future years from known reservoirs under existing economic and operating conditions, and certain probable and possible reserves that meet the SEC's definitions for such terms. In this presentation, Riley Permian may use the terms "resource potential," "resource play," "estimated ultimate recovery," or "EURs," "type curve" and "standardized measure," each of which the SEC guidelines restrict from being included in filings with the SEC without strict compliance with SEC definitions. These terms refer to Riley Permian's internal estimates of unbooked hydrocarbon quantities that may be potentially discovered through exploratory drilling or recovered with additional drilling or recovery techniques. "Resource potential" is used by Riley Permian to refer to the estimated quantities of hydrocarbons that may be added to proved reserves, largely from a specified resource play potentially supporting numerous drilling locations. A "resource play" is a term used by Riley Permian to describe an accumulation of hydrocarbons known to exist over a large areal expanse and/or thick vertical section potentially supporting numerous drilling locations, which, when compared to a conventional play, typically has a lower geological and/or commercial development risk. "EURs" are based on Riley Permian's previous operating experience in a given area and publicly available information relating to the operations of producers who are conducting operations in these areas. Unbooked resource potential or "EURs" do not constitute reserves within the meaning of the Society of Petroleum Engineer's Petroleum Resource Management System or SEC rules and do not include any proved reserves. Actual quantities of reserves that may be ultimately recovered from Riley Permian's interests may differ substantially from those presented herein. Factors affecting ultimate recovery include the scope of Riley Permian's ongoing drilling program, which will be directly affected by the availability of capital, decreases in oil, natural gas liquids and natural gas prices, well spacing, drilling and production costs, availability and cost of drilling services and equipment, lease expirations, transportation constraints, regulatory approvals, negative revisions to reserve estimates and other factors, as well as actual drilling results, including geological and mechanical factors affecting recovery rates. "EURs" from reserves may change significantly as development of Riley Permian's core assets provides additional data. In addition, Riley Permian's production forecasts and expectations for future periods are dependent upon many assumptions, including estimates of production decline rates from existing wells and the undertaking and outcome of future drilling activity, which may be affected by significant commodity price declines or drilling cost increases. "Type curve" refers to a production profile of a well, or a particular category of wells, for a specific play and/or area.

Corporate Overview and Strategy

Riley Permian is a growth-oriented, oil and natural gas company with operations focused in Texas and New Mexico

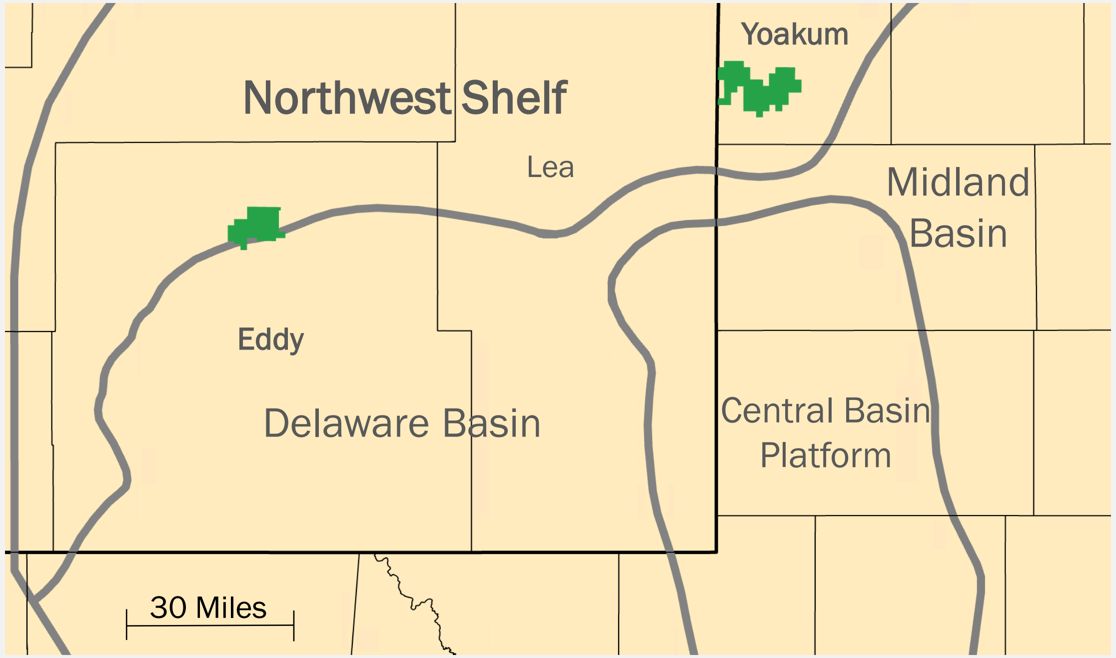
- We focus on **modern horizontal drilling and completions** applied to **conventional formations** in the Permian Basin
- We believe our assets' **economics compare favorably** to those of typical shale assets
- We have a **track record of growth** through organic development and acquisitions
- We invest in **infrastructure assets and related ventures** that we believe can optimize our business and offer attractive rates of return
- We allocate **excess cash flow to debt reduction and direct return of capital to shareholders**

Select Company Metrics	
Net Acres	*44K*
4Q23 Production	*19.9 Mboe/d*
FY23 Oil Production as a % of Total	*71%*
Equity Market Cap(1)	*~$700MM*
Enterprise Value(2)	*~$1BN*
Dividend Yield(1)	*4.3%*
Insider Ownership(3)	*26%*

(1) Equity Market Cap and Dividend Yield based on share price as of 4/3/24 and shares outstanding as of 4/1/24 adjusted for primary offering of 700,000 shares (excluding over-allotment option). Future dividends subject to approval by the Board of Directors.
(2) Enterprise Value based on share price as of 4/3/24 and shares outstanding as of 4/1/24 adjusted for primary offering of 700,000 shares (excluding over-allotment option) and debt and cash balance as of 12/31/23 adjusted for gross proceeds from primary offering (excluding over-allotment and before fees and expenses).
(3) Source: SEC Filings. Pro forma for primary offering and excluding the exercise of the over-allotment option. Insiders include Yorktown, management and the Board of Directors.

Conventional Asset Base Compares Favorably to Shale(1)

- Riley Permian's focus is on horizontal well development of conventional hydrocarbon formations on the Northwest Shelf of the Permian Basin
- Large degree of operatorship and generally high net working interests across assets

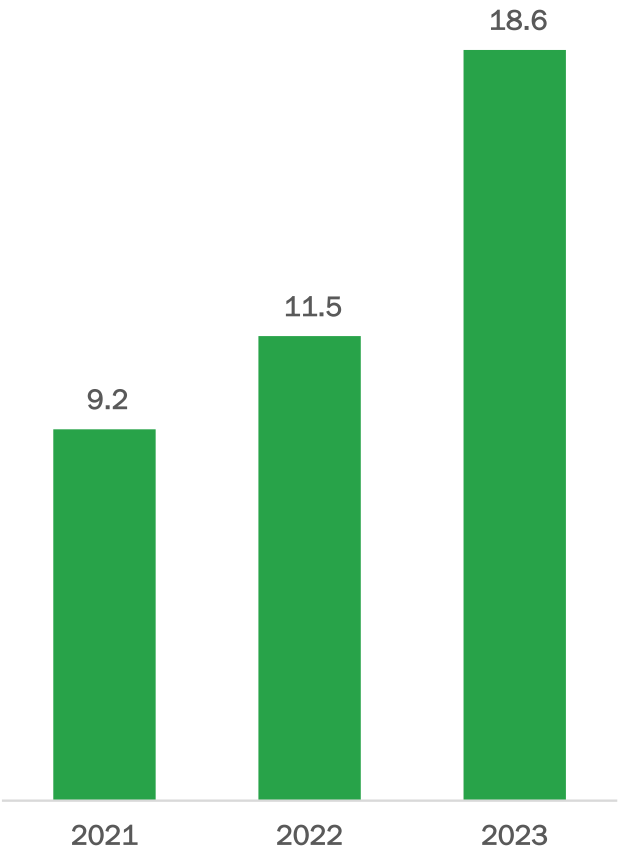


Rock Properties	Higher porosity and permeability
Well Depth	~50-60% shallower
Well Cost per Completed Lateral Length	~20-40% less expensive
5-Yr Cumulative Oil Production per 1K ft Lateral	Comparable

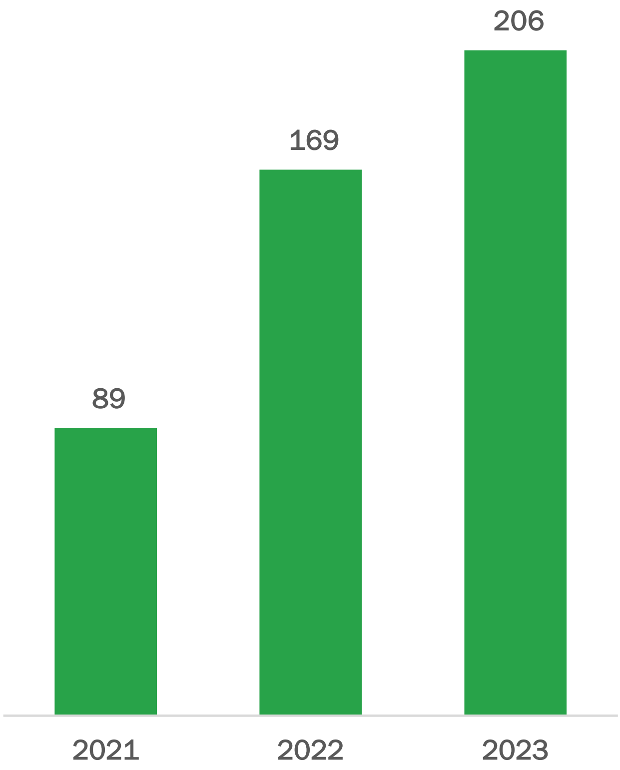
(1) Riley Permian well characteristics are a composite of Texas and New Mexico assets. Permian shale well characteristics based on public data provided by Enverus on wells drilled from 2017 to March 2023 in both the Delaware and Midland Basins. Permian shale well costs based on 2023 activity provided by IHS.

Track Record of Growth

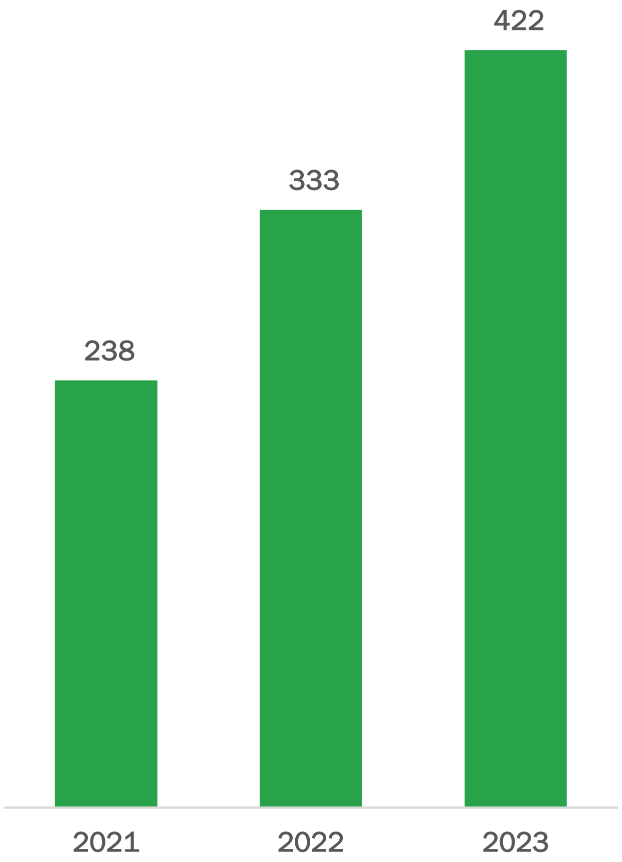
Total Net Production
Mboe/d



Cash Flow from Operations[1]
$MM



Shareholders' Equity (GAAP)
$MM



(1) Cash Flows from Operations before the impact of changes in working capital.

Expanding Inventory Options with Bolt-On Acquisition

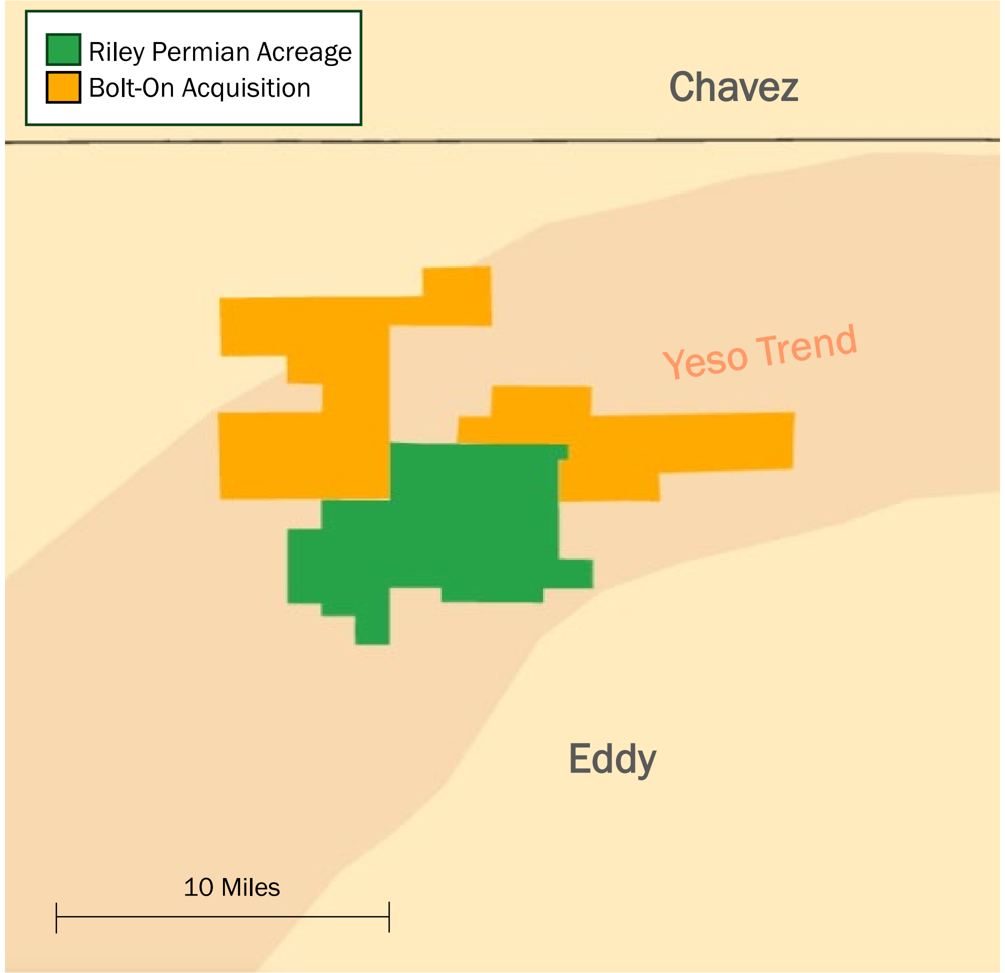
Transaction Overview

- Asset acquisition from an undisclosed seller with a transaction effective date of December 1, 2023 and an estimated closing during May 2024
- 100% cash consideration which the Company may be funded with proceeds from the April 2024 equity offering or through borrowings under the Company's revolving credit facility
- Assets are directly contiguous with our April 2023 acquisition in Eddy County, NM; doubles operating footprint in the area
- Adds high-quality horizontal drilling inventory locations primarily in the Yeso Trend, including the Blinebry, Glorieta and Paddock formations

Asset Highlights

Net Acres (Total / Yeso Trend Rights)	~12,500 / ~8,600
Land Status / Drilling Obligations	99%+ HBP / 0 Obligations
Current Production	1.1Mboe/d, 0.4 Mbo/d
Undeveloped Horizontal Locations	20-25 Net
PDP PV10 + SWD Wells[(1)]	$12 MM

Asset Map



(1) Riley Permian's estimate of proved developed producing reserve volumes and values as of December 1, 2023, net of forecasted plugging and abandonment costs. Cash flows utilize NYMEX strip pricing as of March 28, 2024, discounted at a rate of 10%. PV10 is a non-GAAP financial measure as defined in the supplemental financial tables available on the company's website at www.rileypermian.com.

Leveraging Low-Cost Gas to Generate Baseload Power

Background

- Low quality power supply: remote operating area in Yoakum County, TX led to low quality power for operations, with frequent power outages leading to delayed production and costly workovers
- Influx of renewable generation leads to increasingly intermittent power grid, further impacting our power consistency and quality
- Low natural gas realizations due to high gathering and processing fees and basin differentials

Formation of JV

- Formed RPC Power LLC, joint venture with Conduit Power, LLC
- Riley Permian operating perspective: sells processed gas to RPC Power at market price to fuel thermal generation; receives power; pays capacity and generation charge
- Riley Permian investing perspective: invests capital in RPC Power relative to ownership level
- Conduit provides management of the power operations and capital investment into RPC Power

Current

- Initial operations for Phase 1 program began in late 2023 with mobilized, behind-the-meter generation
- Currently powering over one-third of our Yoakum County, TX operations
- Fully powered drilling rig for most recent development well

Future

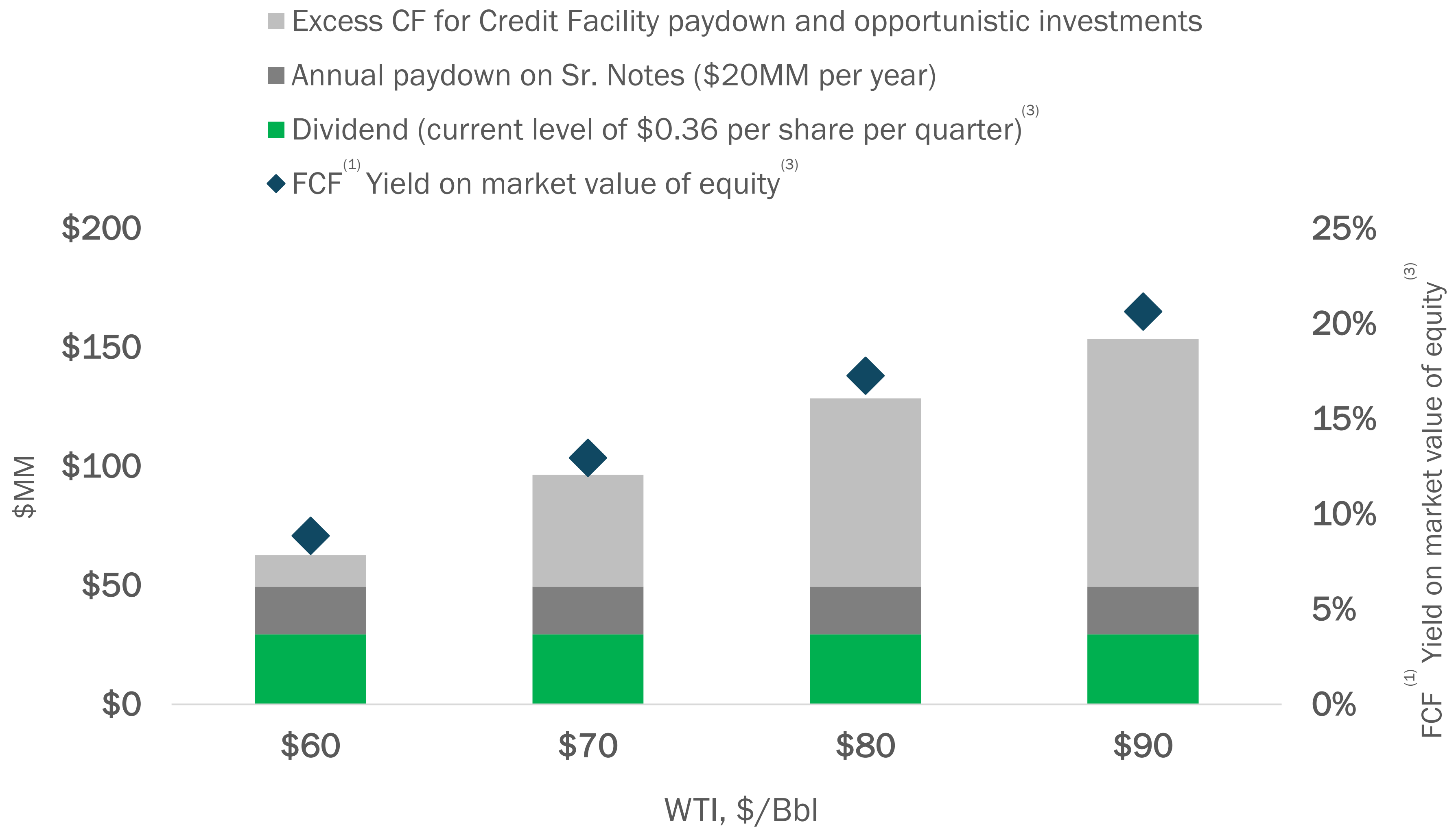
- Phase 2 expansion
- Reduce reliance on grid and avoid peak demand charges
- Reduce diesel fuel consumption for rigs and other heavy service equipment; reduce traffic and fuel deliveries
- Exploring additional outlets for gas to capture optionality and achieve value uplift

Capital Allocation Priorities

	MAINTAIN & GROW	DELEVER	RETURN CAPITAL TO SHAREHOLDERS
Objectives	Reinvest to maintain and grow cash flow from operations and Free Cash Flow(1)	Strengthen balance sheet to optimize capital structure, maintain flexibility and increase liquidity	Provide sustainable and growing return of capital
Performance Metrics	**66%** reinvestment rate of 2023 CFFO in capital expenditures(2) led to 22% Y/Y organic growth in net operated oil volumes	**61%** of 2023 Free Cash Flow(1) allocated to debt reduction or the balance sheet such as cash and working capital	**39%** of 2023 Free Cash Flow(1) allocated to fixed base dividend
Additional Considerations	Periodic investments in other ventures (e.g., infrastructure) that offer attractive rates of return	Debt reductions increase shareholder equity	Total 2023 dividends per share increased 9% Y/Y

(1) A non-GAAP financial measure as defined in the supplemental financial tables available on the company's website at www.rileypermian.com.
(2) Reinvestment rate calculated as cash-based capital expenditures (includes Additions to Oil & Gas Properties and Other Additions to Property & Equipment) divided by Cash Flow From Operations before the impact of changes in working capital.

2024 Forecasted FCF[1] Sensitivity Based on Oil Price[2]

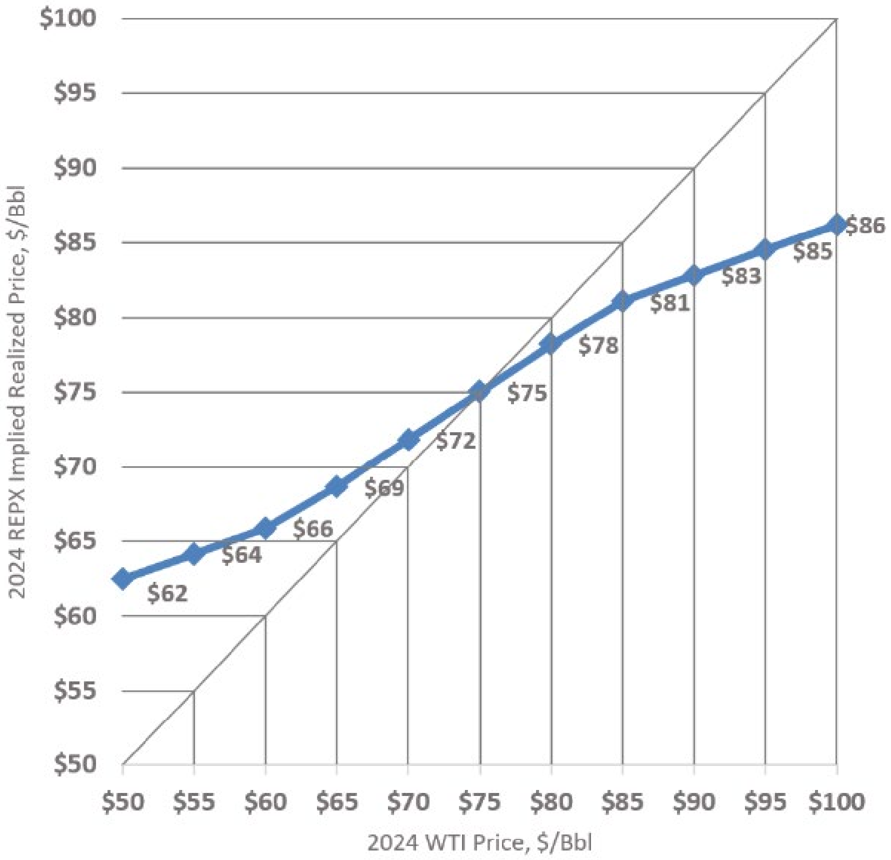


(1) A non-GAAP financial measure as defined in the supplemental financial tables available on the company's website at www.rileypermian.com.
(2) Analysis based on management estimates and midpoint 2024 guidance. Price sensitivity for WTI and Henry Hub uses actual prices through 3/1/2024 and flat price case thereafter.
(3) Equity Market Cap, Dividend Yield and shares outstanding as of 4/3/24 Future dividends subject to approval by the Board of Directors.

Summary Hedging Program and Potential Impact[1]

- 59% of 2024 forecasted oil production hedged
- 2024's hedged mix includes 54% collars / 46% fixed price swaps by volume, allowing for downside protection while maintaining optionality for higher prices
- 2024 weighted average, hedged floor price of $67/Bbl and ceiling price of $80/Bbl
- While less impactful, gas hedges currently forecasted to yield positive settlements during most of 2024

2024 Implied Oil Price Realizations at Various WTI Prices[2]



WTI, $/Bbl	$50	$55-65	$70-80	$85-95	$100
Realized Delta Over/(Under) WTI	+25%	+17% to +6%	+3% to -2%	-5% to -8%	-14%

(1) 2024 derivative positions shown include all contracts that have settled as of 4/1/24. Production volume based on midpoint guidance.
(2) Realized price represents the forecasted impact of derivatives only, but does not account for basin differentials and midstream counterparty fees.

RILEY PERMIAN

Appendix

2024 Plan Guidance

2024 Plan Target: 10% Y/Y Oil Growth and 10% Y/Y Reduction in Capex

Activity, Production, and Investing Guidance

		1Q24	Full-Year 2024
Gross Operated Well Activity			
Drilled	#	7	21 - 23
Completed	#	4	22 - 24
Turned to Sales	#	6	24 - 26
Net Production			
Total	MBoe/d	19.5 - 20.5	21.0 - 22.5
Oil	MBbls/d	13.8 - 14.2	14.0 - 15.0
Investing Expenditures by Category (Accrual)[1]			
Drilling, Completion & Capitalized Workovers	$MM	23.0 - 24.2	90 - 99
Infrastructure and Other	$MM	5.0 - 6.8	19 - 24
Total E&P Capex	$MM	28.0 - 31.0	109 - 123
Power JV Investment	$MM	5.6	6 - 7
Total Investments	$MM	33.6 - 36.6	115 - 130

Quarterly Detail for Estimated Realizations and Cost Guidance

		1Q24
Basis Differentials and Fees		
Oil	$/Bbl	(2.75) - (2.25)
Natural Gas	$/Mcf	(2.75) - (2.00)
NGL as a % of WTI	% of WTI	4% - 8%
Operating and Corporate Costs		
LOE & Workover Expense	$/Boe	8.50 - 9.50
Severance & Ad Valorem Tax	% of revenue	6% - 8%
Cash G&A[2]	$/Boe	3.00 - 3.50
Interest Expense[3]	$MM	9.5 - 10.5

(1) Activity-based investing expenditures before acquisitions.
(2) A non-GAAP financial measure as defined and reconciled in the supplemental financial tables available on the Company's website at www.rileypermian.com.
(3) Interest expense is net of interest rate derivative settlements.

Equity Ownership and Research Analyst Coverage

Pro Forma Equity Ownership

Shareholding as of 4/3/24[1]	Shares (MM)	Ownership %
Yorktown Energy Partners[2]	4.7	22%
Bluescape Energy Partners[2]	4.5	21%
Balmon Investments[2]	2.2	10%
Management & Directors Excl. Yorktown	0.8	4%
Estimated Public Float	8.9	42%
Total	**21.1**	**100%**
Total Insider Ownership	**5.5**	**26%**

Total shares inclusive of restricted stock awards

Research Analyst Coverage

	Firm	Analyst
1	Roth	John White
2	Truist	Neal Dingmann
3	Water Tower	Jeff Robertson
4	Energy Prospectus Group	Daniel Steffens
5	Tuohy Brothers	Noel Parks

(1) Source: SEC Filings. Insiders include Yorktown, management and the board of directors. Holdings pro forma for equity offering (excluding exercise of over-allotment option).
(2) Includes affiliated entity holdings aggregated from Form 4 filings, reflective of announced offering

Debt Summary

- *50% of principal value of debt at 12/31/23 was fixed rate debt*
- *SOFR swaps in place for $80MM per quarter of notional value for 2Q24 - 4Q25 at 3.1%, corresponding to 43% of principal value of floating-rate debt at 12/31/23*
- *Approximately 72% of the principal value of debt would be fixed rate or hedged by 2Q24, absent any paydown on the credit facility*

Facility	Principal Amount Outstanding at 12/31/23	Borrowing Base at 12/31/23	Annual Interest Rate	Amortization	Final Maturity
Sr. Secured Credit Facility	$185MM	$375MM	Term SOFR + 2.85% – 3.85%; most recent quarter was 3.10% margin(1)	None; Company intends to periodically pay down balance with excess cash flow	April 2026
Sr. Unsecured Notes	$185MM	NA	10.5%	$5MM/quarter	April 2028

(1) Includes Term SOFR Adjustment of 0.10%.

Hedging Positions as of 4/1/24

	2024				2025				2026
Calendar Quarters	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q
CRUDE OIL									
Fixed Swap - Volume, Bbls/Qtr	210,000	465,000	405,000	360,000	180,000	285,000	45,000	-	-
Weighted Average Price, $/Bbl	$73.54	$74.76	$74.35	$73.94	$73.33	$71.96	$72.65	$0.00	$0.00
Collars - Volume, Bbls/Qtr	520,000	390,000	366,000	390,000	468,000	240,000	447,000	310,000	-
Weighted Average Floor Price, $/Bbl	$61.41	$61.08	$61.00	$61.92	$60.48	$66.88	$64.27	$63.63	$0.00
Weighted Average Ceiling Price, $/Bbl	$84.00	$85.76	$83.61	$83.39	$77.04	$77.68	$74.10	$75.59	$0.00
Total Oil Price Hedges, Bbls/Qtr	730,000	855,000	771,000	750,000	648,000	525,000	492,000	310,000	-
Downside Weighted Average Price, $/Bbl	$64.90	$68.52	$68.01	$67.69	$64.05	$69.63	$65.04	$63.63	$0.00
CRUDE OIL BASIS									
Mid/Cush Basis Swaps - Volume, Bbls/Qtr	330,000	330,000	330,000	330,000	-	-	-	-	-
Weighted Average Price, $/Bbl	$0.97	$0.97	$0.97	$0.97	$0.00	$0.00	$0.00	$0.00	$0.00
NATURAL GAS									
Swaps - Volume, MMBtu/Qtr	750,000	600,000	600,000	450,000	375,000	300,000	75,000	485,000	450,000
Weighted Average Price, $/MMBtu	$3.48	$3.21	$3.21	$3.67	$4.05	$3.46	$3.21	$3.78	$4.01
Collars - Volume, MMBtu/Qtr	300,000	405,000	405,000	405,000	405,000	300,000	510,000	-	-
Weighted Average Floor Price, $/MMBtu	$3.40	$3.01	$3.01	$3.50	$3.74	$3.00	$3.09	$0.00	$0.00
Weighted Average Ceiling Price, $/MMBtu	$4.50	$3.68	$3.68	$4.45	$4.84	$4.10	$3.99	$0.00	$0.00
Total NG Price Hedges, MMBtu/Qtr	1,050,000	1,005,000	1,005,000	855,000	780,000	600,000	585,000	485,000	450,000
Downside Weighted Average Price, $/MMBtu	$3.46	$3.12	$3.12	$3.59	$3.89	$3.23	$3.10	$3.78	$4.01
INTEREST RATE									
Swaps - Notional Volume (000's)	$ -	$ 80,000	$ 80,000	$ 80,000	$ 80,000	$ 80,000	$ 80,000	$ 80,000	$ 80,000
1-Month Term SOFR (Long)	0%	3.09%	3.09%	3.09%	3.09%	3.09%	3.09%	3.09%	3.09%
1-Month Term SOFR (Short)		4.91%	4.91%	4.91%					
Locked in Premium[1]		1.82%	1.82%	1.82%					

Note: Q1 2024 derivative positions shown include all contracts that have settled as of 4/1/24.
(1) Entered into offsetting position to lock in ~$1MM gain on interest rate swaps.

Additional Information

Company

29 E. Reno Ave., Ste 500
Oklahoma City, OK 73104
405-415-8699
www.rileypermian.com

Investor Relations

Rick D'Angelo
405-438-0126
ir@rileypermian.com