

Corporate Updates

February 2017



CAUTIONARY STATEMENTS RELEVANT TO FORWARD-LOOKING INFORMATION FOR THE PURPOSE OF “SAFE HARBOR” PROVISIONS OF THE PRIVATE SECURITIES LITIGATION REFORM ACT OF 1995

This presentation of Gastar Exploration Inc. contains forward-looking statements relating to Gastar’s operations that are based on management’s current expectations, estimates and projections about the petroleum, chemicals and other energy-related industries. Words such as “anticipates,” “expects,” “intends,” “plans,” “targets,” “projects,” “believes,” “seeks,” “schedules,” “estimates,” “budgets” and similar expressions are intended to identify such forward-looking statements. These statements are not guarantees of future performance and are subject to certain risks, uncertainties and other factors, some of which are beyond the company’s control and are difficult to predict. Therefore, actual outcomes and results may differ materially from what is expressed or forecasted in such forward-looking statements. The reader should not place undue reliance on these forward-looking statements, whether as a result of new information, future events or otherwise.

Among the important factors that could cause actual results to differ materially from those in the forward-looking statements are: changing crude oil and natural gas prices; changing refining, marketing and chemical margins; actions of competitors or regulators; timing of exploration expenses; timing of crude oil liftings; the competitiveness of alternative-energy sources or product substitutes; technological developments; the results of operations and development activities; the potential failure to achieve expected net production from existing and future crude oil and natural gas development projects; potential delays in the development, construction or start-up of planned projects; the potential disruption or interruption of the company’s net production or manufacturing facilities or delivery/transportation networks due to war, accidents, political events, civil unrest, severe weather or crude oil production quotas that might be imposed; the potential liability for remedial actions or assessments under existing or future environmental regulations and litigation; significant investment or product changes under existing or future environmental statutes, regulations and litigation; the potential liability resulting from other pending or future litigation; the company’s future acquisition or disposition of assets and gains and losses from asset dispositions or impairments; government-mandated sales, divestitures, recapitalizations, industry-specific taxes, changes in fiscal terms or restrictions on scope of company operations; foreign currency movements compared with the U.S. dollar; the effects of changed accounting rules under generally accepted accounting principals promulgated by rule-setting bodies; and the factors set forth under the heading “Risk Factors” in the company’s 2015 Annual Report on Form 10-K. In addition, such statements could be affected by general domestic and international economic and political conditions. Unpredictable or unknown factors not discussed in this presentation could also have material adverse effects on forward-looking statements. The company undertakes no obligation to publicly update or revise any forward-looking statements except as required by law.

Statement on Hydrocarbon Quantities



The SEC requires oil and gas companies, in their filings with the SEC, to disclose proved reserves, which are those quantities of oil and gas, which, by analysis of geoscience and engineering data, can be estimated with reasonable certainty to be economically producible—from a given date forward, from known reservoirs, and under existing economic conditions (using unweighted average 12-month first day of the month prices), operating methods, and government regulations—prior to the time at which contracts providing the right to operate expire, unless evidence indicates that renewal is reasonably certain, regardless of whether deterministic or probabilistic methods are used for the estimation. The SEC also permits the disclosure of separate estimates of probable or possible reserves that meet SEC definitions for such reserves, however, we currently do not disclose probable or possible reserves in our SEC filings.

We may use the terms “resource potential” and “EUR” in this presentation to describe estimates of potentially recoverable hydrocarbons that the SEC rules prohibit from being included in filings with the SEC. These are based on the Company’s internal estimates of hydrocarbon quantities that may be potentially discovered through exploratory drilling or recovered with additional drilling or recovery techniques. These quantities do not constitute “reserves” within the meaning of the Society of Petroleum Engineer’s Petroleum Resource Management System or SEC rules. “EUR,” or Estimated Ultimate Recovery, refers to our management’s internal estimates based on per well hydrocarbon quantities that may be potentially recovered from a hypothetical future well completed as a producer in the area. For areas where the Company has no or very limited operating history, EURs are based on publicly available information relating to operations of producers operating in such areas. For areas where the company has sufficient operating data to make its own estimates, EURs are based on internal estimates by the Company’s management and reserve engineers.

“Well costs” are based on internally generated company estimates and actual results may vary. “Drilling locations” represent the number of locations that we currently estimate could potentially be drilled in a particular area estimated by well spacing and geological characteristic assumptions applicable to that area. The actual number of locations drilled and quantities that may be ultimately recovered from the Company’s interests will differ substantially. There is no commitment by the Company to drill all of the drilling locations which have been attributed these quantities.

“Net acreage” is calculated using net well locations, anticipated drilling unit sizes and the spacing assumptions for a given formation.

Factors affecting ultimate recovery include: (1) the scope of our on-going drilling program, which will be directly affected by factors that include the availability of capital, drilling and production costs, availability of drilling services and equipment, drilling results, lease expirations, transportation constraints, regulatory approvals and other factors; and (2) actual drilling results, including geological and mechanical factors affecting recovery rates. In addition, our 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.

The following is a description of the referenced terms we have used to refer to hydrocarbon quantities:

1P reserves: *estimates of proved reserves which in this presentation are estimated by Wright & Company as of December 31, 2016 using SEC pricing and definitions.*

EURs: *estimated ultimate recoveries per well based on estimated future production type curves using NYMEX futures curve pricing as of February 1, 2017, as follows:*

- *for Meramec, based on December 31, 2016 Wright & Company proved reserve type curve assuming 4,950’ lateral;*
- *for Osage, based on December 31, 2016 Wright & Company proved reserve type curve assuming 4,950’ lateral;*
- *for Oswego, based on December 31, 2016 Wright & Company proved reserve type curve assuming 4,950’ lateral;*
- *for Upper Hunton and Lower Hunton in the West Edmond Hunton Lime Unit (WEHLU), based on December 31, 2016 Wright & Company proved reserve type curve and assuming 6,000’ lateral*

Transaction Overview



Re-Financing Structure

- Established financing partnership with Ares Management
- Transaction scheduled close in February 2017
- Issue new \$250MM 8.50% Term Loan (Mar-2022)
- Issue new \$125MM 6.00% Convertible notes (Mar-2022)
 - Convert price of ~\$2.21/share represents 30% premium to 30-day VWAP (~56.6MM shares)
- \$50MM private placement common equity
 - 2/15/2017 30-day VWAP of ~\$1.70 a share (~29.4MM shares)
- Call all \$325MM 8.625% Senior notes at 102.156
- Paydown all outstanding borrowing on RBL
- Share count of 156.7MM as of 1/31/2017
 - Pro-forma Ares issuance 186.1MM

Sources Uses and Capitalization

(\$ in millions)

Sources of Funds

New 8.5% First-Lien Term Loan	\$	250.0
New 6.0% Second-Lien Convertible Notes		125.0
Private Placement Common Stock		50.0

Total Sources of Funds	\$	425.0
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Uses of Funds

Repay Revolving Credit Facility	\$	70.4
Redeem Second Lien Notes at Par		325.0
Call Premium ⁽¹⁾		7.0
Accrued Interest ⁽²⁾		8.4
Fees and Expenses		11.0
Development capital		3.1

Total Uses of Funds	\$	425.0
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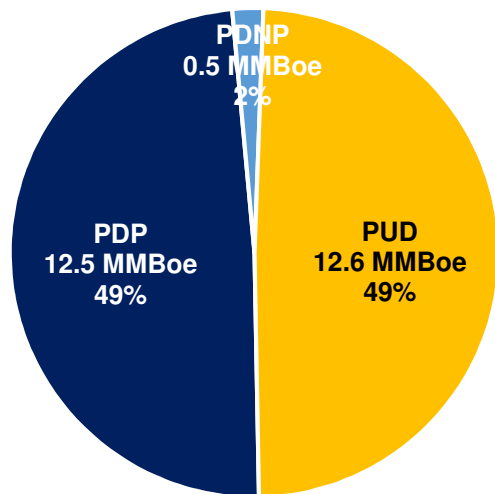
Capitalization	Pro-forma December 31, 2016 ⁽³⁾			Transaction Adjustments	
	12/31/2016	Adjustment	Pro Forma	Adjustment	Pro Forma
Cash	\$71.5	(\$16.4)	\$55.1	\$3.1	\$58.2
Debt:					
Revolving Credit Facility	\$84.6	(\$14.2)	\$70.4	(\$70.4)	\$0.0
Second Lien Notes due 2018	325.0	0.0	325.0	(325.0)	0.0
New 8.5% First-Lien Term Loan due 2022	0.0	0.0	0.0	250.0	250.0
New 6.0% Second-Lien Convertible Notes due 2022	0.0	0.0	0.0	125.0	125.0
Total Debt	\$409.6	(\$14.2)	\$395.4	(\$20.4)	\$375.0
Equity:					
Series A Preferred Equity (face value)	\$101.1	\$0.0	\$101.1	\$0.0	\$101.1
Series B Preferred Equity (face value)	53.5	0.0	53.5	0.0	53.5
Common Equity (Includes Accumulated Deficit)	(295.1)	8.3	(286.7)	40.5	(246.2)
Total Shareholder's Equity	(\$140.4)	\$8.3	(\$132.1)	\$40.5	(\$91.6)
Total Capitalization	\$269.2	(\$5.8)	\$263.3	\$20.1	\$283.4

1. Call premium of 102.156%
 2. Accrued interest on Second Lien Notes and RBL through February 28, 2017
 3. Adjusted for South STACK sales proceeds, revolver paydown and interest payment, dividend payment and ATM proceeds.

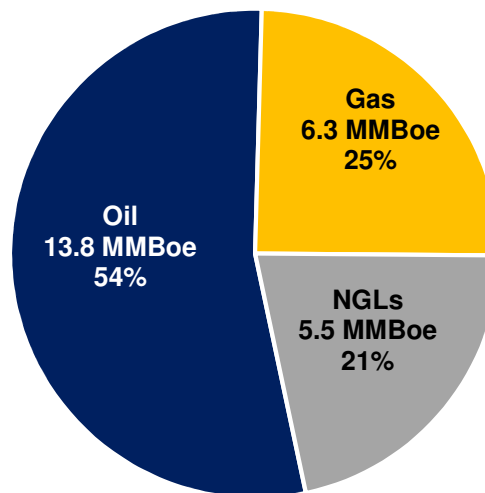
2016 Mid-Continent Reserve Summary



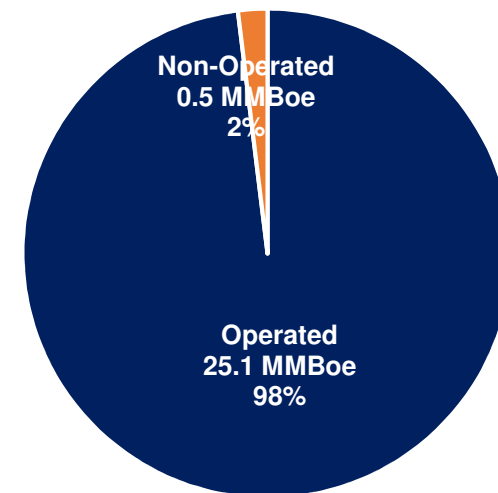
Proved Reserve Summary⁽¹⁾



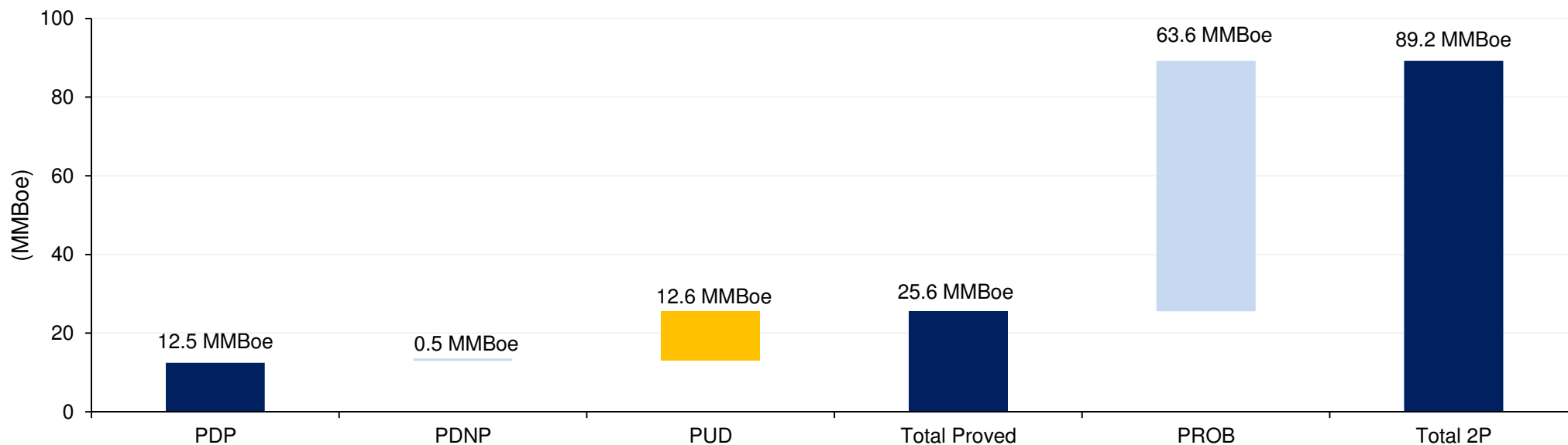
Proved Product Breakout⁽¹⁾



Proved Operated / Non-Operated⁽¹⁾



2P-Reserve Summary⁽¹⁾



1. Gas converted to oil equivalent on basis of 6 Mcf:1 Boe

2017 Capital Budget



2017 Budget Detail

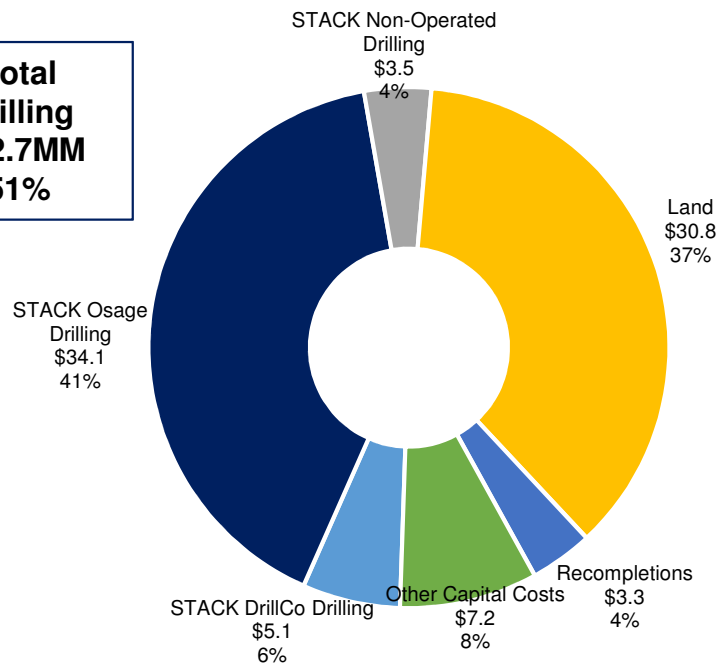
Area	Capital (\$MM)	% of Total
STACK DrillCo Drilling	\$5.1	6%
STACK Osage Drilling	34.1	41%
STACK Non-Operated Drilling	3.5	4%
Land	30.8	37%
Recompletions	3.3	3%
Other Capital Costs	7.2	9%
Total	\$83.9	100%

No. of Wells Spud	Gross	Net
STACK DrillCo Operated	23.0	2.3
STACK Osage Operated	14.0	9.1
STACK Non-Operated	9.0	0.9

No. of Wells Completed	Gross	Net
STACK DrillCo Operated	24.0	2.3
STACK Osage Operated	13.0	8.5
STACK Non-Operated	8.0	0.8

2017 Budget

Total Drilling
\$42.7MM
51%



Budget Focus

- Delineate multiple STACK formations across a large geographic area
 - Plan will spud 37 operated Meramec and Osage wells in non-HBP sections
 - Multiple STACK wells in each township
- Preserve large acreage position through the drillbit and lease extensions

STACK Drilling Overview



Well Results

Well Results

Post IP Production Averages⁽¹⁾

Well	Peak Rate	30 Day Post Peak	60 Day Post Peak	90 Day Post Peak	180 Day Post Peak	270 Day Post Peak	360 Day Post Peak	Current 5 Day Average ⁽²⁾	% Oil ⁽³⁾	Producing Days
(Boe/d)										
Meramec										
Deep River 1-30H	1,094	956	822	731	574	476	NA	NA ⁽⁴⁾	54%	381
Holiday Road 2-1H	654	498	443	399	NA	NA	NA	258	75%	276
Ingle 29-1H	1,037	NA	NA	NA	NA	NA	NA	683	76%	95
Geis 31-1H	877	NA	NA	NA	NA	NA	NA	670	79%	88
Katy 21-1H	NA	NA	NA	NA	NA	NA	NA	398	72%	53
Lilly 28-1H	NA	NA	NA	NA	NA	NA	NA	264	90%	36
Mott 19-1H	NA	NA	NA	NA	NA	NA	NA	189	81%	23
Mott 20-2H	NA	NA	NA	NA	NA	NA	NA	418	85%	21
Gastar Average	915	727	633	565	574	476	NA	412	77%	122
Type Curve Well ⁽⁵⁾	1,056	845	732	655	519	442	390		44%	
Osage										
McGee 29-1H	414	353	320	NA	NA	NA	NA	241	73%	120
Type Curve Well ⁽⁵⁾	850	708	620	559	445	378	332		52%	
Oswego										
Tomahawk 7-1H	418	262	224	190	NA	NA	NA	76	96%	130
Type Curve Well ⁽⁵⁾	357	313	282	258	211	175	162		86%	

1. Represents the actual 2-Stream post peak average daily Boe production
2. Through production date of 2/9/2017.
3. Inception to date percentage oil production. Reflects unprocessed gas stream.
4. Well on flowback after offset frac, shut in.
5. Based on EURs and related type curves developed by the Company using assumptions and methodologies described on page 3 of this presentation. Reflects unprocessed gas stream.