CARRIZO OIL & GAS INC

FORM 10-Q
(Quarterly Report)

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Telephone	7133281000
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Industry	Oil & Gas Exploration and Production
Sector	Energy
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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-Q

☒ **QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the quarterly period ended March 31, 2017

☐ **TRANSITION REPORT UNDER SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from to

Commission File Number: 000-29187-87

CARRIZO OIL & GAS, INC.
(Exact name of registrant as specified in its charter)

Texas	**76-0415919**
(State or other jurisdiction of incorporation or organization)	**(IRS Employer Identification No.)**
500 Dallas Street, Suite 2300, Houston, Texas	**77002**
(Address of principal executive offices)	**(Zip Code)**

(713) 328-1000
(Registrant's telephone number)

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports) and (2) has been subject to such filing requirements for the past 90 days. YES ☒ NO ☐

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). YES ☒ NO ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act (Check one):

Large accelerated filer	☒		Accelerated filer	☐
Non-accelerated filer	☐	(Do not check if a smaller reporting company)	Smaller reporting company	☐
			Emerging growth company	☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). YES ☐ NO ☒

The number of shares outstanding of the registrant's common stock, par value $0.01 per share, as of April 28, 2017 was 65,807,064 .

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Item 1. Consolidated Financial Statements (Unaudited)

CARRIZO OIL & GAS, INC.
CONSOLIDATED BALANCE SHEETS
(In thousands, except share and per share amounts)
(Unaudited)

	March 31, 2017	December 31, 2016
Assets		
Current assets		
Cash and cash equivalents	$2,391	$4,194
Accounts receivable, net	67,257	64,208
Derivative assets	1,036	1,237
Other current assets	2,542	3,349
Total current assets	73,226	72,988
Property and equipment		
Oil and gas properties, full cost method		
Proved properties, net	1,371,335	1,294,667
Unproved properties, not being amortized	253,270	240,961
Other property and equipment, net	9,599	10,132
Total property and equipment, net	1,634,204	1,545,760
Other assets	7,010	7,579
Total Assets	$1,714,440	$1,626,327
Liabilities and Shareholders' Equity		
Current liabilities		
Accounts payable	$51,968	$55,631
Revenues and royalties payable	44,038	38,107
Accrued capital expenditures	69,040	36,594
Accrued interest	20,957	22,016
Accrued lease operating expense	11,919	12,377
Derivative liabilities	7,456	22,601
Other current liabilities	22,650	24,633
Total current liabilities	228,028	211,959
Long-term debt	1,362,046	1,325,418
Asset retirement obligations	21,737	20,848
Derivative liabilities	18,675	27,528
Other liabilities	14,027	17,116
Total liabilities	1,644,513	1,602,869
Commitments and contingencies		
Shareholders' equity		
Common stock, $0.01 par value, 90,000,000 shares authorized; 65,796,342 issued and outstanding as of March 31, 2017 and 65,132,499 issued and outstanding as of December 31, 2016	658	651
Additional paid-in capital	1,672,332	1,665,891
Accumulated deficit	(1,603,063)	(1,643,084)
Total shareholders' equity	69,927	23,458
Total Liabilities and Shareholders' Equity	$1,714,440	$1,626,327

The accompanying notes are an integral part of these consolidated financial statements.

CARRIZO OIL & GAS, INC.
CONSOLIDATED STATEMENTS OF OPERATIONS
(In thousands, except per share amounts)
(Unaudited)

	Three Months Ended March 31,	
	2017	**2016**
Revenues		
Crude oil	$128,092	$67,996
Natural gas liquids	7,425	3,440
Natural gas	15,838	9,826
Total revenues	151,355	81,262
Costs and Expenses		
Lease operating	29,845	23,675
Production taxes	6,208	3,431
Ad valorem taxes	2,967	2,070
Depreciation, depletion and amortization	54,382	59,577
General and administrative, net	21,703	21,303
(Gain) loss on derivatives, net	(25,316)	(10,553)
Interest expense, net	20,571	18,713
Impairment of proved oil and gas properties	—	274,413
Other (income) expense, net	974	(93)
Total costs and expenses	111,334	392,536
Income (Loss) Before Income Taxes	40,021	(311,274)
Income tax expense	—	(121)
Net Income (Loss)	$40,021	($311,395)
Net Income (Loss) Per Common Share		
Basic	$0.61	($5.34)
Diluted	$0.61	($5.34)
Weighted Average Common Shares Outstanding		
Basic	65,188	58,360
Diluted	65,778	58,360

The accompanying notes are an integral part of these consolidated financial statements.

CARRIZO OIL & GAS, INC.
CONSOLIDATED STATEMENT OF SHAREHOLDERS' EQUITY
(In thousands, except share amounts)
(Unaudited)

	Common Stock		Additional Paid-in Capital	Accumulated Deficit	Total Shareholders' Equity
	Shares	Amount			
Balance as of December 31, 2016	65,132,499	$651	$1,665,891	($1,643,084)	$23,458
Stock-based compensation expense	—	—	6,448	—	6,448
Issuance of common stock upon grants of restricted stock awards, net of forfeitures, and vestings of restricted stock units and performance shares	663,843	7	(7)	—	—
Net income	—	—	—	40,021	40,021
Balance as of March 31, 2017	65,796,342	$658	$1,672,332	($1,603,063)	$69,927

The accompanying notes are an integral part of these consolidated financial statements.

CARRIZO OIL & GAS, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS
(In thousands)
(Unaudited)

	Three Months Ended March 31,	
	2017	**2016**
Cash Flows From Operating Activities		
Net income (loss)	$40,021	($311,395)
Adjustments to reconcile net income (loss) to net cash provided by operating activities		
Depreciation, depletion and amortization	54,382	59,577
Impairment of proved oil and gas properties	—	274,413
(Gain) loss on derivatives, net	(25,316)	(10,553)
Cash received for derivative settlements, net	1,519	51,163
Stock-based compensation expense, net	2,014	11,522
Non-cash interest expense, net	1,091	1,160
Other, net	1,620	1,116
Changes in components of working capital and other assets and liabilities-		
Accounts receivable	(2,749)	(2,065)
Accounts payable	6,661	(18,711)
Accrued liabilities	(2,154)	(1,667)
Other assets and liabilities, net	(681)	(692)
Net cash provided by operating activities	76,408	53,868
Cash Flows From Investing Activities		
Capital expenditures - oil and gas properties	(123,749)	(125,989)
Acquisitions of oil and gas properties	(7,032)	—
Proceeds from sales of oil and gas properties, net	17,372	1,785
Other, net	(417)	(617)
Net cash used in investing activities	(113,826)	(124,821)
Cash Flows From Financing Activities		
Borrowings under credit agreement	280,504	73,647
Repayments of borrowings under credit agreement	(244,504)	(43,097)
Payments of debt issuance costs	(50)	(50)
Other, net	(335)	(307)
Net cash provided by financing activities	35,615	30,193
Net Decrease in Cash and Cash Equivalents	(1,803)	(40,760)
Cash and Cash Equivalents, Beginning of Period	4,194	42,918
Cash and Cash Equivalents, End of Period	$2,391	$2,158

The accompanying notes are an integral part of these consolidated financial statements.

CARRIZO OIL & GAS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Unaudited)

1. Basis of Presentation

Nature of Operations

Carrizo Oil & Gas, Inc. is a Houston-based energy company which, together with its subsidiaries (collectively, the "Company"), is actively engaged in the exploration, development, and production of oil, NGLs, and gas primarily from resource plays located in the United States. The Company's current operations are principally focused in proven, producing oil and gas plays primarily in the Eagle Ford Shale in South Texas, the Delaware Basin in West Texas, the Niobrara Formation in Colorado, the Utica Shale in Ohio, and the Marcellus Shale in Pennsylvania.

Consolidated Financial Statements

The accompanying unaudited interim consolidated financial statements include the accounts of the Company after elimination of intercompany transactions and balances and have been prepared pursuant to the rules and regulations of the U.S. Securities and Exchange Commission (the "SEC") and therefore do not include all disclosures required for financial statements prepared in conformity with accounting principles generally accepted in the U.S. ("GAAP"). In the opinion of management, these financial statements include all adjustments (consisting of normal recurring accruals and adjustments) necessary to present fairly, in all material respects, the Company's interim financial position, results of operations and cash flows. However, the results of operations for the periods presented are not necessarily indicative of the results of operations that may be expected for the full year. These financial statements and related notes included in this Quarterly Report on Form 10-Q should be read in conjunction with the Company's audited Consolidated Financial Statements and related notes included in the Company's Annual Report on Form 10-K for the year ended December 31, 2016 (" 2016 Annual Report"). Certain reclassifications have been made to prior period amounts to conform to the current period presentation. Such reclassifications had no material impact on prior period amounts.

2. Summary of Significant Accounting Policies

The Company has provided a discussion of significant accounting policies, estimates, and judgments in "Note 2. Summary of Significant Accounting Policies" of the Notes to Consolidated Financial Statements in its 2016 Annual Report. There have been no changes to the Company's significant accounting policies since December 31, 2016 , other than the adoption of Accounting Standards Update No. 2016-09 described further below.

Recently Adopted Accounting Pronouncement

In March 2016, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") No. 2016-09, Compensation - Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting ("ASU 2016-09"), which amends certain aspects of accounting for share-based payment arrangements. ASU 2016-09 revises or provides alternative accounting for the tax impacts of share-based payment arrangements, forfeitures, minimum statutory tax withholdings, and prescribes certain disclosures to be made in the period of adoption.

Effective January, 1, 2017, the Company adopted ASU 2016-09. Using the modified retrospective approach as prescribed by ASU 2016-09, the Company recognized previously unrecognized windfall tax benefits which resulted in a cumulative-effect adjustment to retained earnings of approximately $15.7 million . This adjustment increased deferred tax assets, which in turn increased the valuation allowance by the same amount as of the beginning of 2017, resulting in a net cumulative-effect adjustment to retained earnings of zero. As a result of adoption, on a prospective basis as prescribed by ASU 2016-09, all windfall tax benefits and tax shortfalls will be recorded as income tax expense or benefit in the consolidated statements of operations. As long as the Company continues to conclude that the valuation allowance against its net deferred tax assets is necessary, this portion of ASU 2016-09 will have no significant effect on the Company's consolidated balance sheets or consolidated statements of operations. In addition, windfall tax benefits are now required to be presented in cash flows from operating activities in the consolidated statements of cash flows as compared to cash flows from financing activities, which the Company has elected to adopt prospectively. There are no periods presented that would require reclassification of cash flows had the Company elected to adopt this guidance retrospectively. Further, the Company has elected to account for forfeitures as they occur, which resulted in an immaterial cumulative-effect adjustment to retained earnings.

Recently Issued Accounting Pronouncements

In August 2016, the FASB issued ASU No. 2016-15, Statement of Cash Flows (Topic 230): Classification of Certain Cash Receipts and Cash Payments ("ASU 2016-15"), which is intended to reduce diversity in practice in how certain transactions are classified in the statement of cash flows. The guidance addresses eight specific cash flow issues for which current GAAP is either unclear or does not include specific guidance. ASU 2016-15 is effective for interim and annual periods beginning after December 15, 2017, with early adoption permitted, provided that it is adopted in its entirety in the same period. Currently, the Company does not expect the impact of adopting ASU 2016-15 to have a material effect on its consolidated statements of cash flows.

In February 2016, the FASB issued ASU No. 2016-02, Leases (Topic 842) ("ASU 2016-02"), which significantly changes accounting for leases by requiring that lessees recognize a right-of-use asset and a related lease liability representing the obligation to make lease payments, for virtually all lease transactions. Additional disclosures about an entity's lease transactions will also be required. ASU 2016-02 defines a lease as "a contract, or part of a contract, that conveys the right to control the use of identified property, plant or equipment (an identified asset) for a period of time in exchange for consideration." ASU 2016-02 is effective for interim and annual periods beginning after December 15, 2018 with early adoption permitted. ASU 2016-02 requires companies to recognize and measure leases at the beginning of the earliest period presented in the financial statements using a modified retrospective approach. Although the Company is in the process of evaluating ASU 2016-02 and the impact the adoption of the new standard will have on its consolidated financial statements and related disclosures, it is currently anticipated to result in an increase in the assets and liabilities recorded on its consolidated balance sheets. The Company will evaluate its existing contracts including, but not limited to, drilling rig contracts and gathering, processing, and transportation contracts to determine if they qualify for lease accounting under ASU 2016-02.

In May 2014, the FASB issued ASU No. 2014-09, Revenue From Contracts With Customers (Topic 606) ("ASU 2014-09"), which will require entities to recognize revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. ASU 2014-09 will supersede most current guidance related to revenue recognition when it becomes effective. The new standard also will require expanded disclosures regarding the nature, timing, amount and certainty of revenue and cash flows from contracts with customers. ASU 2014-09 is effective for interim and annual periods beginning after December 15, 2017 with early adoption permitted for interim and annual periods beginning after December 31, 2016. Companies are permitted to adopt ASU 2014-09 through the use of either the full retrospective approach, meaning the standard is applied to all of the periods presented, or a modified retrospective approach, meaning the cumulative effect of initially applying the standard is recognized in the most current period presented in the financial statements.

The Company is in the process of assessing the impact of ASU 2014-09 with the assistance of an outside consultant. The assessment consists of analyzing the Company's existing contracts and current accounting policies and practices to identify potential differences that would result from applying the requirements of ASU 2014-09. Once the assessment is complete, the Company will implement appropriate changes to its business processes, systems or controls to support recognition and disclosure pursuant to ASU 2014-09. Based on assessments performed to date, the Company currently does not expect the impact of adopting ASU 2014-09 to have a material effect on the timing or method of revenue recognition as the performance obligations are not materially changed under ASU 2014-09. The Company currently plans to apply the modified retrospective method upon adoption and plans to adopt the guidance on the effective date of January 1, 2018, however, the Company continues to review the impact of ASU 2014-09 on its consolidated financial statements and related disclosures.

Net Income (Loss) Per Common Share

Supplemental net income (loss) per common share information is provided below:

	Three Months Ended March 31,	
	2017	**2016**
	(In thousands, except per share amounts)	
Net Income (Loss)	$40,021	($311,395)
Basic weighted average common shares outstanding	65,188	58,360
Effect of dilutive instruments	590	—
Diluted weighted average common shares outstanding	65,778	58,360
Net Income (Loss) Per Common Share		
Basic	$0.61	($5.34)
Diluted	$0.61	($5.34)

The table below presents the dilutive and anti-dilutive weighted average common shares outstanding for the three months ended March 31, 2017 and 2016 :

	Three Months Ended March 31,	
	2017	2016
	(In thousands)	
Dilutive	590	—
Anti-dilutive [(1)]	5	665

(1) For the three months ended March 31, 2016 , the Company reported a net loss. As a result, all potentially dilutive common shares outstanding were anti-dilutive.

3. Acquisition

Sanchez Acquisition

On December 14, 2016, the Company completed its initial closing of the acquisition of oil and gas properties in the Eagle Ford Shale from Sanchez Energy Corporation and SN Cotulla Assets, LLC, a subsidiary of Sanchez Energy Corporation (the “Sanchez Acquisition”). The Sanchez Acquisition was accounted for under the acquisition method of accounting whereby the purchase price was allocated to the assets acquired and liabilities assumed based on their estimated acquisition date fair values based on then available information.

At the time of the initial close, an adjustment to the purchase price of $16.8 million was made for leases that were not conveyed to the Company. On January 9, 2017, the Company paid $7.0 million of the $16.8 million for certain of the outstanding leases which were conveyed to the Company. See the updated purchase price allocation presented below.

The purchase price allocation for the Sanchez Acquisition is preliminary and subject to change based on closings subsequent to March 31, 2017, related to the remaining leases that were not conveyed to the Company at the initial closing on December 14, 2016 or the subsequent closing on January 9, 2017 and final updates to purchase price adjustments primarily relate to net cash flows from the acquired wells from the effective date to the closing date. The following presents the purchase price and the preliminary allocation of the purchase price to the assets acquired and liabilities assumed as of the acquisition date. The Company currently expects these amounts will be finalized during the fourth quarter of 2017.

	Preliminary Purchase Price Allocation
	(In thousands)
Assets	
Other current assets	$477
Oil and gas properties	
Proved properties	94,664
Unproved properties	70,309
Total oil and gas properties	164,973
Total assets acquired	$165,450
Liabilities	
Revenues and royalties payable	$1,442
Other current liabilities	323
Asset retirement obligations	2,054
Other liabilities	1,078
Total liabilities assumed	$4,897
Net Assets Acquired	$160,553

On April 13, 2017, the final payment of $9.8 million was made for the leases that were not conveyed to the Company at the initial closing or the subsequent closing on January 9, 2017. This amount has not been reflected in the preliminary purchase price allocation presented above.

4. Property and Equipment, Net

As of March 31, 2017 and December 31, 2016 , total property and equipment, net consisted of the following:

	March 31, 2017	December 31, 2016
	(In thousands)	
Oil and gas properties, full cost method		
Proved properties	$4,817,044	$4,687,416
Accumulated depreciation, depletion and amortization and impairments	(3,445,709)	(3,392,749)
Proved properties, net	1,371,335	1,294,667
Unproved properties, not being amortized		
Unevaluated leasehold and seismic costs	221,039	211,067
Capitalized interest	32,231	29,894
Total unproved properties, not being amortized	253,270	240,961
Other property and equipment	23,240	23,127
Accumulated depreciation	(13,641)	(12,995)
Other property and equipment, net	9,599	10,132
Total property and equipment, net	$1,634,204	$1,545,760

Average depreciation, depletion and amortization (“DD&A”) per Boe of proved properties was $12.69 and $15.22 for the three months ended March 31, 2017 and 2016 , respectively.

The Company capitalized internal costs of employee compensation and benefits, including stock-based compensation, directly associated with acquisition, exploration and development activities totaling $5.4 million and $4.4 million for the three months ended March 31, 2017 and 2016 , respectively.

Unproved properties, not being amortized, include unevaluated leasehold and seismic costs associated with specific unevaluated properties and related capitalized interest. The Company capitalized interest costs associated with its unproved properties totaling $3.8 million and $5.6 million for the three months ended March 31, 2017 and 2016 , respectively.

Divestiture

During the first quarter of 2017, the Company sold a small acreage position in the Delaware Basin for net proceeds of $15.3 million . The proceeds from this sale were recognized as a reduction of proved oil and gas properties.

Impairment of Proved Oil and Gas Properties

At the end of each quarter, the net book value of oil and gas properties, less related deferred income taxes, are limited to the “cost center ceiling” equal to (i) the sum of (a) the present value of estimated future net revenues from proved oil and gas reserves, less estimated future expenditures to be incurred in developing and producing the proved reserves computed using a discount factor of 10% , (b) the costs of unproved properties not being amortized, and (c) the lower of cost or estimated fair value of unproved properties included in the costs being amortized; less (ii) related income tax effects. Any excess of the net book value of oil and gas properties, less related deferred income taxes, over the cost center ceiling is recognized as an impairment of proved oil and gas properties. An impairment recognized in one period may not be reversed in a subsequent period even if higher commodity prices in the future result in a cost center ceiling in excess of the net book value of oil and gas properties, less related deferred income taxes.

The estimated future net revenues used in the cost center ceiling are calculated using the average realized prices for sales of crude oil, NGLs, and natural gas on the first calendar day of each month during the 12-month period prior to the end of the current period (“12-Month Average Realized Price”), held flat for the life of the production, except where different prices are fixed and determinable from applicable contracts for the remaining term of those contracts. Prices do not include the impact of derivative instruments as the Company elected not to meet the criteria to qualify derivative instruments for hedge accounting treatment.

The Company did not recognize an impairment of proved oil and gas properties for the three months ended March 31, 2017. Primarily due to declines in the 12-Month Average Realized Price of crude oil from December 31, 2015 to March 31, 2016, the Company recognized an impairment of proved oil and gas properties for the three months ended March 31, 2016 . Details of the 12-Month Average Realized Price of crude oil for the three months ended March 31, 2017 and 2016 and the impairment of proved oil and gas properties for the three months ended March 31, 2016 are summarized in the table below:

	Three Months Ended March 31,	
	2017	2016
Impairment of proved oil and gas properties (in thousands)	$—	$274,413
Crude Oil 12-Month Average Realized Price ($/Bbl) - Beginning of period	$39.60	$47.24
Crude Oil 12-Month Average Realized Price ($/Bbl) - End of period	$44.98	$43.13
Percentage increase (decrease)	14%	(9%)

5. Income Taxes

The Company's estimated annual effective income tax rates are used to allocate expected annual income tax expense or benefit to interim periods. The rates are the ratio of estimated annual income tax expense or benefit to estimated annual income or loss before income taxes by taxing jurisdiction, except for discrete items, which are significant, unusual or infrequent items for which income taxes are computed and recorded in the interim period in which the discrete item occurs. The estimated annual effective income tax rates are applied to the year-to-date income or loss before income taxes by taxing jurisdiction to determine the income tax expense or benefit allocated to the interim period. The Company updates its estimated annual effective income tax rates on a quarterly basis considering the geographic mix of income or loss attributable to the tax jurisdictions in which the Company operates.

The Company's income tax (expense) benefit differs from the income tax (expense) benefit computed by applying the U.S. federal statutory corporate income tax rate of 35% to income (loss) before income taxes as follows:

	Three Months Ended March 31,	
	2017	2016
	(In thousands)	
Income (loss) before income taxes	$40,021	($311,274)
Income tax (expense) benefit at the statutory rate	(14,007)	108,946
State income tax (expense) benefit, net of U.S. federal income taxes	(710)	1,619
Tax shortfalls from stock-based compensation expense	(2,592)	—
Deferred tax assets valuation allowance	17,369	(110,679)
Other	(60)	(7)
Income tax expense	$—	($121)

Deferred Tax Assets Valuation Allowance

Deferred tax assets are recorded for net operating losses and temporary differences between the book and tax basis of assets and liabilities expected to produce tax deductions in future periods. The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income during the periods in which those deferred tax assets would be deductible. The Company assesses the realizability of its deferred tax assets on a quarterly basis by considering whether it is more likely than not that all or a portion of the deferred tax assets will not be realized. The Company considers all available evidence (both positive and negative) when determining whether a valuation allowance is required. In making this assessment, the Company evaluated possible sources of taxable income that may be available to realize the deferred tax assets, including projected future taxable income, the reversal of existing temporary differences, taxable income in carryback years and available tax planning strategies.

A significant item of objective negative evidence considered was the cumulative historical three year pre-tax loss and a net deferred tax asset position at March 31, 2017 , driven primarily by the impairments of proved oil and gas properties recognized beginning in the third quarter of 2015 and continuing through the third quarter of 2016, which limits the ability to consider other subjective evidence such as the Company's potential for future growth. Beginning in the third quarter of 2015, and continuing through the first quarter of 2017, the Company concluded that it was more likely than not the deferred tax assets will not be realized. As a result, the net deferred tax assets at the end of each quarter, including March 31, 2017 , were reduced to zero . As a result of adopting ASU 2016-09, the Company recognized previously unrecognized windfall tax benefits which resulted in a cumulative-effect adjustment to retained earnings of approximately $15.7 million . This adjustment increased deferred tax assets, which in turn increased the valuation allowance by the same amount as of the beginning of 2017, resulting in a net cumulative-effect adjustment to retained earnings of zero and brought the valuation allowance to $580.1 million as of January 1, 2017. For the three months ended March 31, 2017, as a result of current quarter activity and the recognition of tax shortfalls from stock-based compensation expense that are now recognized in income tax expense due to the adoption of ASU 2016-09, a partial release of $17.4 million from the valuation allowance was needed to bring the net deferred tax assets to zero. After the impact of the adoption of ASU 2016-09 and the current quarter activity, the valuation allowance as of March 31, 2017 was $562.7 million .

The Company will continue to evaluate whether the valuation allowance is needed in future reporting periods. The valuation allowance will remain until the Company can conclude that the net deferred tax assets are more likely than not to be realized. Future events or new evidence which may lead the Company to conclude that it is more likely than not its net deferred tax assets will be realized include, but are not limited to, cumulative historical pre-tax earnings, improvements in crude oil prices, and taxable events that could result from one or more transactions. The valuation allowance does not preclude the Company from utilizing the tax attributes if the Company recognizes taxable income. As long as the Company continues to conclude that the valuation allowance against its net deferred tax assets is necessary, the Company will have no significant deferred income tax expense or benefit.

6. Long-Term Debt

Long-term debt consisted of the following as of March 31, 2017 and December 31, 2016 :

	March 31, 2017	December 31, 2016
	(In thousands)	
Senior Secured Revolving Credit Facility due 2018	$123,000	$87,000
7.50% Senior Notes due 2020	600,000	600,000
Unamortized premium for 7.50% Senior Notes	960	1,020
Unamortized debt issuance costs for 7.50% Senior Notes	(7,189)	(7,573)
6.25% Senior Notes due 2023	650,000	650,000
Unamortized debt issuance costs for 6.25% Senior Notes	(9,150)	(9,454)
Other long-term debt due 2028	4,425	4,425
Long-term debt	$1,362,046	$1,325,418

Senior Secured Revolving Credit Facility

The Company has a senior secured revolving credit facility with a syndicate of banks that, as of March 31, 2017 , had a borrowing base of $600.0 million , with $123.0 million of borrowings outstanding at a weighted average interest rate of 2.95% . As of March 31, 2017 , the Company also had $0.4 million in letters of credit outstanding, which reduce the amounts available under the revolving credit facility. As of March 31, 2017, the credit agreement governing the revolving credit facility provided for interest-only payments until July 2, 2018, when the credit agreement was scheduled to mature and any outstanding borrowings would become due. The borrowing base under the credit agreement is subject to regular redeterminations in the spring and fall of each year, as well as special redeterminations described in the credit agreement, which in each case may reduce the amount of the borrowing base. The amount the Company is able to borrow with respect to the borrowing base is subject to compliance with the financial covenants and other provisions of the credit agreement. The capitalized terms which are not defined in this description of the revolving credit facility, shall have the meaning given to such terms in the credit agreement.

The obligations of the Company under the credit agreement are guaranteed by the Company's material domestic subsidiaries and are secured by liens on substantially all of the Company's assets, including a mortgage lien on oil and gas properties having at least 90% of the total value of the oil and gas properties included in the Company's reserve report used in its most recent redetermination.

Borrowings outstanding under the credit agreement bear interest at the Company's option at either (i) a base rate for a base rate loan plus the margin set forth in the table below, where the base rate is defined as the greatest of the prime rate, the federal funds rate plus 0.50% and the adjusted LIBO rate plus 1.00% , or (ii) an adjusted LIBO rate for a Eurodollar loan plus the margin set forth in the table below. The Company also incurs commitment fees at rates, as of March 31, 2017, as set forth in the table below on the unused portion of lender commitments, which are included in interest expense, net in the consolidated statements of operations.

Ratio of Outstanding Borrowings and Letters of Credit to Lender Commitments	Applicable Margin for Base Rate Loans	Applicable Margin for Eurodollar Loans	Commitment Fee
Less than 25%	1.00%	2.00%	0.500%
Greater than or equal to 25% but less than 50%	1.25%	2.25%	0.500%
Greater than or equal to 50% but less than 75%	1.50%	2.50%	0.500%
Greater than or equal to 75% but less than 90%	1.75%	2.75%	0.500%
Greater than or equal to 90%	2.00%	3.00%	0.500%

As of March 31, 2017, the Company was subject to certain covenants under the terms of the credit agreement, which include the maintenance of the following financial covenants determined as of the last day of each quarter: (1) a ratio of Total Secured Debt to EBITDA of not more than 2.00 to 1.00, (2) a Current Ratio of not less than 1.00 to 1.00, and (3) a ratio of EBITDA to Interest Expense of not less than 2.50 to 1.00. As defined in the credit agreement, EBITDA includes the last four quarters after giving pro forma effect to EBITDA for material acquisitions and dispositions of oil and gas properties, Interest Expense is comprised of the aggregate interest expense paid in cash for the last four quarters, and the Current Ratio includes an add back of the unused portion of lender commitments. As of March 31, 2017 , the ratio of Total Secured Debt to EBITDA was 0.30 to 1.00, the Current Ratio was 2.56 to 1.00 and the ratio of EBITDA to Interest Expense was 4.53 to 1.00. Because the financial covenants are determined as of the last day of each quarter, the ratios can fluctuate significantly period to period as the level of borrowings outstanding under the credit agreement are impacted by the timing of cash flows from operations, capital expenditures, acquisitions and dispositions of oil and gas properties and securities offerings.

The credit agreement also places restrictions on the Company and certain of its subsidiaries with respect to additional indebtedness, liens, dividends and other payments to shareholders, repurchases or redemptions of the Company’s common stock, redemptions of senior notes, investments, acquisitions, mergers, asset dispositions, transactions with affiliates, hedging transactions and other matters.

The credit agreement is subject to customary events of default, including in connection with a change in control. If an event of default occurs and is continuing, the lenders may elect to accelerate amounts due under the credit agreement (except in the case of a bankruptcy event of default, in which case such amounts will automatically become due and payable).

On May 4, 2017, the Company entered into a ninth amendment to its credit agreement governing the revolving credit facility. See “Note 13. Subsequent Events” for further details.

7. Commitments and Contingencies

From time to time, the Company is party to certain legal actions and claims arising in the ordinary course of business. While the outcome of these events cannot be predicted with certainty, management does not currently expect these matters to have a materially adverse effect on the financial position or results of operations of the Company.

The results of operations and financial position of the Company continue to be affected from time to time in varying degrees by domestic and foreign political developments as well as legislation and regulations pertaining to restrictions on oil and gas production, imports and exports, natural gas regulation, tax increases, environmental regulations and cancellation of contract rights. Both the likelihood and overall effect of such occurrences on the Company vary greatly and are not predictable.

8. Shareholders’ Equity and Stock-Based Compensation Plans

As of March 31, 2017 , there were 26,275 common shares remaining available for grant under the Incentive Plan of Carrizo Oil & Gas, Inc., as amended (the “Incentive Plan”). The issuance of a restricted stock award, restricted stock unit, or performance share counts as 1.35 shares against the number of common shares available for grant under the Incentive Plan.

Stock-based compensation expense associated with restricted stock awards and units, stock appreciation rights to be settled in cash (“SARs”) and performance shares is reflected as general and administrative expense in the consolidated statements of operations, net of amounts capitalized to oil and gas properties.

Restricted Stock Awards and Units. Under the Incentive Plan, restricted stock awards can be granted to employees and independent contractors and restricted stock units can be granted to employees, independent contractors, and non-employee directors. As of March 31, 2017 , unrecognized compensation costs related to unvested restricted stock awards and units was $31.4 million and will be recognized over a weighted average period of 2.4 years.

The table below summarizes restricted stock award and unit activity for the first quarter of 2017:

	Restricted Stock Awards and Units	Weighted Average Grant Date Fair Value
For the Three Months Ended March 31, 2017		
Unvested restricted stock awards and units, beginning of period	1,111,710	$36.93
Granted	749,396	$27.07
Vested	(569,145)	$39.48
Forfeited	(3,933)	$29.42
Unvested restricted stock awards and units, end of period	1,288,028	$30.09

During the first quarter of 2017, the Company granted 695,658 restricted stock units to employees and independent contractors with a grant date fair value of $18.8 million as part of its annual grant of long-term equity incentive awards. These restricted stock units will vest ratably over a three -year period. All of these restricted stock units contain a service condition, and certain of these restricted stock units also contain a performance condition. The performance condition has not yet been met. In addition, the Company granted 44,465 restricted stock units to certain employees and independent contractors with a grant date fair value of $1.2 million in lieu of a portion of their annual incentive bonus otherwise payable to them in cash under the Company's performance-based annual incentive bonus program. These restricted stock units vested substantially concurrent with the time of grant.

Stock Appreciation Rights. SARs can be granted to employees and independent contractors under the Incentive Plan or the Carrizo Oil & Gas, Inc. Cash-Settled Stock Appreciation Rights Plan ("Cash SAR Plan"). SARs granted under the Incentive Plan can be settled in shares of common stock or cash, at the option of the Company, while SARs granted under the Cash SAR Plan may only be settled in cash. As of March 31, 2017 , all outstanding SARs will be settled solely in cash. The liability for SARs as of March 31, 2017 was $6.4 million , of which $6.3 million was classified as "Other current liabilities," with the remaining $0.1 million classified as "Other liabilities" in the consolidated balance sheets. As of December 31, 2016 , the liability for SARs was $11.5 million , of which $10.0 million was classified as "Other current liabilities," with the remaining $1.5 million classified as "Other liabilities" in the consolidated balance sheets. Unrecognized compensation costs related to unvested SARs was $5.9 million as of March 31, 2017 , and will be recognized over a weighted average period of 1.8 years.

The table below summarizes the activity for SARs for the first quarter of 2017:

	Stock Appreciation Rights	Weighted Average Exercise Prices	Weighted Average Remaining Life (In years)	Aggregate Intrinsic Value (In millions)	Aggregate Intrinsic Value of Exercises (In millions)
For the Three Months Ended March 31, 2017					
Outstanding, beginning of period	722,638	$23.69			
Granted	342,440	$26.94			
Exercised	(100,000)	$17.28			$1.3
Forfeited	—	—			
Outstanding, end of period	965,078	$25.51	3.4	$2.5	
Exercisable, end of period	436,739	$23.62	1.8	$2.0	

During the first quarter of 2017, the Company granted 342,440 SARs under the Cash SAR Plan with a grant date fair value of $4.1 million to certain employees and independent contractors as part of its annual grant of long-term equity incentive awards. The grant date fair value of the SARs was calculated using the Black-Scholes-Merton option pricing model. These SARs will vest ratably over a two -year period and expire five years from the grant date. All of these SARs contain a service condition and performance condition. The performance condition has not yet been met.

The following table summarizes the assumptions used to calculate the grant date fair value of SARs granted during the first quarter of 2017 :

	Grant Date Fair Value Assumptions
Expected term (in years)	4.24
Expected volatility	54.3%
Risk-free interest rate	1.8%
Dividend yield	—%
Grant date fair value	$12.00

Performance Shares. Under the Incentive Plan, the Company can grant performance shares to employees and independent contractors, where each performance share represents the right to receive one share of common stock. The number of performance shares that will vest is based on the ranges from zero to 200% of the target performance shares granted based on the total shareholder return ("TSR") of the Company's common stock relative to the TSR achieved by a specified industry peer group over an approximate three year performance period, the last day of which is also the vesting date. As of March 31, 2017 , unrecognized compensation costs related to unvested performance shares was $3.8 million and will be recognized over a weighted average period of 2.1 years.

The table below summarizes performance share activity for the first quarter of 2017 :

	Performance Shares	Weighted Average Grant Date Fair Value
For the Three Months Ended March 31, 2017		
Unvested performance shares, beginning of period	154,510	$58.44
Granted	46,787	$35.14
Vested [(1)]	(56,342)	$68.15
Forfeited	—	—
Unvested performance shares, end of period	144,955	$47.14

(1) The vested performance shares presented in the table above are the target performance shares that were granted in 2014. The Company ' s final TSR ranking relative to the specified industry peer group resulted in the vesting of 164% of the target performance shares granted, or an additional 35,858 shares.

During the first quarter of 2017, the Company granted 46,787 target performance shares to certain employees and independent contractors with a grant date fair value of $1.6 million as part of its annual grant of long-term equity incentive awards. The grant date fair value of the performance awards was calculated using a Monte Carlo simulation. In addition to the market condition described above, the performance shares also contain a service condition and performance condition. The performance condition has not yet been met.

The following table summarizes the assumptions used to calculate the grant date fair value of the performance shares granted during the first quarter of 2017 :

	Grant Date Fair Value Assumptions
Number of simulations	500,000
Expected term (in years)	2.98
Expected volatility	59.2%
Risk-free interest rate	1.5%
Dividend yield	—%
Grant date fair value	$35.14

Stock-Based Compensation Expense, Net

The Company recognized the following stock-based compensation expense, net for the periods indicated:

	Three Months Ended March 31,	
	2017	2016
	(In thousands)	
Restricted stock awards and units	$5,849	$11,594
Stock appreciation rights	(3,686)	1,232
Performance shares	706	616
	2,869	13,442
Less: amounts capitalized to oil and gas properties	(855)	(1,920)
Total stock-based compensation expense, net	$2,014	$11,522

9. Derivative Instruments

The Company uses commodity derivative instruments to reduce its exposure to commodity price volatility for a portion of its forecasted crude oil and natural gas production and thereby achieve a more predictable level of cash flows to support the Company's drilling and completion capital expenditure program. The Company does not enter into derivative instruments for speculative or trading purposes. The Company's commodity derivative instruments consist of fixed price swaps, three-way collars and purchased and sold call options, which are described below.

Fixed Price Swaps: The Company receives a fixed price and pays a variable market price to the counterparties over specified periods for contracted volumes.

Three-Way Collars: A three-way collar is a combination of options including a purchased put option (fixed floor price), a sold call option (fixed ceiling price) and a sold put option (fixed sub-floor price). These contracts offer a higher fixed ceiling price relative to a costless collar but limit the Company's protection from decreases in commodity prices below the fixed floor price. At settlement, if the market price is between the fixed floor price and the fixed sub-floor price or is above the fixed ceiling price, the Company receives the fixed floor price or pays the market price, respectively. If the market price is below the fixed sub-floor price, the Company receives the market price plus the difference between the fixed floor price and the fixed sub-floor price. If the market price is between the fixed floor price and fixed ceiling price, no payments are due from either party.

Sold Call Options : These contracts give the counterparties the right, but not the obligation, to buy contracted volumes from the Company over specified periods and prices in the future. At settlement, if the market price exceeds the fixed price of the call option, the Company pays the counterparty the excess. If the market price settles below the fixed price of the call option, no payment is due from either party. These contracts require the counterparties to pay premiums to the Company that represent the fair value of the call option as of the date of purchase.

Purchased Call Options : These contracts give the Company the right, but not the obligation, to buy contracted volumes from the counterparties over specified periods and prices in the future. At settlement, if the market price exceeds the fixed price of the call option, the counterparties pay the Company the excess. If the market price settles below the fixed price of the call option, no payment is due from either party. These contracts require the Company to pay premiums to the counterparties that represent the fair value of the call option as of the date of purchase.

All of the Company's purchased call options were executed contemporaneously with sales of call options to increase the fixed price of existing sold call options and therefore are presented on a net basis in the summary of open crude oil derivative positions below.

Premiums : In lieu of receiving payments for premiums from its counterparties of sold call options, the Company has used the associated premium value to obtain higher fixed prices on fixed price swaps which were executed contemporaneously with those sold call options. The Company elected to defer payment of premiums associated with its purchased call options until the applicable contracts settle on a monthly basis. As of March 31, 2017, the Company had premium obligations of approximately $4.2 million , of which $2.0 million is classified as current derivative liabilities and $2.2 million is classified as noncurrent derivative liabilities on the Company's consolidated balance sheets. As of December 31, 2016, the Company had premium obligations of approximately $4.6 million , of which $2.0 million was classified as current derivative liabilities and $2.6 million was classified as noncurrent derivative liabilities on the Company's consolidated balance sheets.

The following sets forth a summary of the Company's crude oil derivative positions at average NYMEX prices as of March 31, 2017 :

Period	**Type of Contract**	**Crude Oil Volumes (in Bbls/d)**	**Weighted Average Floor Price ($/Bbl)**	**Weighted Average Ceiling Price ($/Bbl)**
Q2 2017	Fixed Price Swaps	12,000	$50.13	
Q3 2017	Fixed Price Swaps	6,000	$54.15	
Q4 2017	Fixed Price Swaps	3,000	$55.01	
FY 2018	Sold Call Options	2,488		$60.00
FY 2018	Net Sold Call Options	900		$75.00
FY 2019	Sold Call Options	2,975		$62.50
FY 2019	Net Sold Call Options	900		$77.50
FY 2020	Sold Call Options	3,675		$65.00
FY 2020	Net Sold Call Options	900		$80.00

The following sets forth a summary of the Company’s natural gas derivative positions at average NYMEX prices as of March 31, 2017 :

Period	Type of Contract	Natural Gas Volumes (in MMBtu/d)	Weighted Average Floor Price ($/MMBtu)	Weighted Average Ceiling Price ($/MMBtu)
Q2 - Q4 2017	Fixed Price Swaps	20,000	$3.30	
Q2 - Q4 2017	Sold Call Options	33,000		$3.00
FY 2018	Sold Call Options	33,000		$3.25
FY 2019	Sold Call Options	33,000		$3.25
FY 2020	Sold Call Options	33,000		$3.50

See “Note 13. Subsequent Events” for details of derivative positions entered into subsequent to March 31, 2017 .

The Company typically has numerous hedge positions that span several time periods and often result in both fair value asset and liability positions held with that counterparty, which positions are all offset to a single fair value asset or liability at the end of each reporting period, including the deferred premiums associated with its hedge positions. The Company nets its derivative instrument fair values executed with the same counterparty along with deferred premiums pursuant to ISDA master agreements, which provide for net settlement over the term of the contract and in the event of default or termination of the contract.

Counterparties to the Company’s derivative instruments who are also lenders under the Company’s credit agreement allow the Company to satisfy any need for margin obligations associated with derivative instruments where the Company is in a net liability position with its counterparties with the collateral securing the credit agreement, thus eliminating the need for independent collateral posting. Counterparties who are not lenders under the Company’s credit agreement can require derivative contracts to be novated to a lender if the net liability position exceeds our unsecured credit limit with that counterparty and therefore do not require the posting of cash collateral.

Because the counterparties have investment grade credit ratings, or the Company has obtained guarantees from the applicable counterparty’s investment grade parent company, the Company believes it does not have significant credit risk and accordingly does not currently require its counterparties to post collateral to support the net asset positions of its derivative instruments. Although the Company does not currently anticipate nonperformance from its counterparties, it continually monitors the credit ratings of its counterparties or its counterparty’s parent company.

Derivative Assets and Liabilities

All derivative instruments are recorded on the Company's consolidated balance sheets as either an asset or liability measured at fair value. The combined derivative instrument fair value assets and liabilities recorded in the Company's consolidated balance sheets as of March 31, 2017 and December 31, 2016 are summarized below:

	March 31, 2017		
	Gross Amounts Recognized	Gross Amounts Offset in the Consolidated Balance Sheets	Net Amounts Presented in the Consolidated Balance Sheets
		(In thousands)	
Derivative assets			
Derivative assets-current	$2,417	($1,381)	$1,036
Derivative assets-non current	106	(106)	—
Derivative liabilities			
Derivative liabilities-current	(8,837)	1,381	(7,456)
Derivative liabilities-non current	(18,781)	106	(18,675)
Total	($25,095)	$—	($25,095)

	December 31, 2016		
	Gross Amounts Recognized	Gross Amounts Offset in the Consolidated Balance Sheets	Net Amounts Presented in the Consolidated Balance Sheets
		(In thousands)	
Derivative assets			
Derivative assets-current	$6,507	($5,270)	$1,237
Derivative assets-non current	1,313	(1,313)	—
Derivative liabilities			
Derivative liabilities-current	(27,871)	5,270	(22,601)
Derivative liabilities-non current	(28,841)	1,313	(27,528)
Total	($48,892)	$—	($48,892)

See "Note 10. Fair Value Measurements" for additional details regarding the fair value of the Company's derivative positions.

(Gain) Loss on Derivatives, Net

The Company has elected not to meet the criteria to qualify its derivative instruments for hedge accounting treatment. Therefore, all gains and losses as a result of changes in the fair value of derivative instruments are recognized as (gain) loss on derivatives, net in the Company's consolidated statements of operations in the period in which the changes occur. The effect of derivative instruments on the Company's consolidated statements of operations for the three months ended March 31, 2017 and 2016 by commodity is summarized below:

	Three Months Ended March 31,	
	2017	2016
	(In thousands)	
(Gain) Loss on Derivatives, Net		
Crude oil	($18,480)	($21,891)
Natural gas	(6,836)	11,338
Total (Gain) Loss on Derivatives, Net	($25,316)	($10,553)

The cash flow impacts of the Company's derivative instruments are presented as separate line items within the net cash provided by operating activities in the Company's consolidated statements of cash flows.

10. Fair Value Measurements

Accounting guidelines for measuring fair value establish a three-level valuation hierarchy for disclosure of fair value measurements. The valuation hierarchy categorizes assets and liabilities measured at fair value into one of three different levels depending on the observability of the inputs employed in the measurement. The three levels are defined as follows:

Level 1 – Observable inputs such as quoted prices in active markets at the measurement date for identical, unrestricted assets or liabilities.

Level 2 – Other inputs that are observable directly or indirectly such as quoted prices in markets that are not active, or inputs which are observable, either directly or indirectly, for substantially the full term of the asset or liability.

Level 3 – Unobservable inputs for which there is little or no market data and which the Company makes its own assumptions about how market participants would price the assets and liabilities.

Assets and Liabilities Measured at Fair Value on a Recurring Basis

The following tables summarize the Company's assets and liabilities measured at fair value on a recurring basis as of March 31, 2017 and December 31, 2016 :

	March 31, 2017		
	Level 1	**Level 2**	**Level 3**
		(In thousands)	
Derivative assets	$—	$1,036	$—
Derivative liabilities	$—	($21,970)	$—

	December 31, 2016		
	Level 1	**Level 2**	**Level 3**
		(In thousands)	
Derivative assets	$—	$1,237	$—
Derivative liabilities	$—	($45,552)	$—

The Company uses Level 2 inputs to measure the fair value of the Company's commodity derivative instruments based on a third-party industry-standard pricing model using contract terms and prices and assumptions and inputs that are substantially observable in active markets throughout the full term of the instruments including forward oil and gas price curves, discount rates and volatility factors. The fair values are also compared to the values provided by the counterparties for reasonableness and are adjusted for the counterparties' credit quality for derivative assets and the Company's credit quality for derivative liabilities.

The derivative asset and liability fair values reported in the consolidated balance sheets are as of the balance sheet date and subsequently change as a result of changes in commodity prices, market conditions and other factors. The Company typically has numerous hedge positions that span several time periods and often result in both derivative assets and liabilities with the same counterparty, which positions are all offset to a single derivative asset or liability in the consolidated balance sheets, including the deferred premiums associated with its hedge positions. The Company nets the fair values of its derivative assets and liabilities associated with derivative instruments executed with the same counterparty, along with deferred premiums, pursuant to ISDA master agreements, which provide for net settlement over the term of the contract and in the event of default or termination of the contract. The Company had no transfers into Level 1 and no transfers into or out of Level 2 for the three months ended March 31, 2017 and 2016 .

Assets and Liabilities Measured at Fair Value on a Non-Recurring Basis

The fair value measurements of assets acquired and liabilities assumed are measured on a nonrecurring basis on the acquisition date using a discounted cash flow model based on inputs that are not observable in the market and therefore represent Level 3 inputs. Significant inputs to the valuation of acquired oil and gas properties include estimates of estimated volumes of oil and gas reserves, production rates, future commodity prices, timing of development, future operating and development costs and a risk adjusted discount rate.

The fair value measurements of asset retirement obligations are measured on a nonrecurring basis when a well is drilled or acquired or when production equipment and facilities are installed or acquired using a discounted cash flow model based on inputs that are not observable in the market and therefore represent Level 3 inputs. Significant inputs to the fair value measurement of asset retirement obligations include estimates of the costs of plugging and abandoning oil and gas wells, removing production equipment and facilities and restoring the surface of the land as well as estimates of the economic lives of the oil and gas wells and future inflation rates.

Fair Value of Other Financial Instruments

The Company's other financial instruments consist of cash and cash equivalents, receivables, payables, and long-term debt, which are classified as Level 1 under the fair value hierarchy. The carrying amounts of cash and cash equivalents, receivables, and payables approximate fair value due to the highly liquid or short-term nature of these instruments. The carrying amount of long-term debt associated with borrowings outstanding under the Company's revolving credit facility approximates fair value as borrowings bear interest at variable rates. The following table presents the carrying amounts of the Company's senior notes and other long-term debt, net of debt premiums and debt issuance costs, with the fair values measured using Level 1 inputs based on quoted secondary market trading prices.

	March 31, 2017		December 31, 2016	
	Carrying Amount	Fair Value	Carrying Amount	Fair Value
	(In thousands)			
7.50% Senior Notes due 2020	$593,771	$616,500	$593,447	$624,750
6.25% Senior Notes due 2023	640,850	650,000	640,546	672,750
Other long-term debt due 2028	4,425	4,425	4,425	4,419

11. Condensed Consolidating Financial Information

The rules of the SEC require that condensed consolidating financial information be provided for a subsidiary that has guaranteed the debt of a registrant issued in a public offering, where the guarantee is full, unconditional and joint and several and where the voting interest of the subsidiary is 100% owned by the registrant. The Company is, therefore, presenting condensed consolidating financial information on a parent company, combined guarantor subsidiaries, combined non-guarantor subsidiaries and consolidated basis and should be read in conjunction with the consolidated financial statements. The financial information may not necessarily be indicative of results of operations, cash flows, or financial position had such guarantor subsidiaries operated as independent entities.

CARRIZO OIL & GAS, INC.
CONDENSED CONSOLIDATING BALANCE SHEETS
(In thousands)
(Unaudited)

	March 31, 2017				
	Parent Company	**Combined Guarantor Subsidiaries**	**Combined Non-Guarantor Subsidiaries**	**Eliminations**	**Consolidated**
Assets					
Total current assets	$2,724,856	$66,199	$—	($2,717,829)	$73,226
Total property and equipment, net	41,196	1,593,134	3,800	(3,926)	1,634,204
Investment in subsidiaries	(1,223,475)	—	—	1,223,475	—
Other assets	6,855	155	—	—	7,010
Total Assets	$1,549,432	$1,659,488	$3,800	($1,498,280)	$1,714,440
Liabilities and Shareholders' Equity					
Current liabilities	$90,083	$2,854,994	$3,800	($2,720,849)	$228,028
Long-term liabilities	1,372,638	27,969	—	15,878	1,416,485
Total shareholders' equity	86,711	(1,223,475)	—	1,206,691	69,927
Total Liabilities and Shareholders' Equity	$1,549,432	$1,659,488	$3,800	($1,498,280)	$1,714,440

	December 31, 2016				
	Parent Company	**Combined Guarantor Subsidiaries**	**Combined Non-Guarantor Subsidiaries**	**Eliminations**	**Consolidated**
Assets					
Total current assets	$2,735,830	$63,513	$—	($2,726,355)	$72,988
Total property and equipment, net	42,181	1,503,695	3,800	(3,916)	1,545,760
Investment in subsidiaries	(1,282,292)	—	—	1,282,292	—
Other assets	7,423	156	—	—	7,579
Total Assets	$1,503,142	$1,567,364	$3,800	($1,447,979)	$1,626,327
Liabilities and Shareholders' Equity					
Current liabilities	$114,805	$2,822,729	$3,800	($2,729,375)	$211,959
Long-term liabilities	1,348,105	26,927	—	15,878	1,390,910
Total shareholders' equity	40,232	(1,282,292)	—	1,265,518	23,458
Total Liabilities and Shareholders' Equity	$1,503,142	$1,567,364	$3,800	($1,447,979)	$1,626,327

CARRIZO OIL & GAS, INC.
CONDENSED CONSOLIDATING STATEMENTS OF OPERATIONS
(In thousands)
(Unaudited)

	Three Months Ended March 31, 2017				
	Parent Company	**Combined Guarantor Subsidiaries**	**Combined Non-Guarantor Subsidiaries**	**Eliminations**	**Consolidated**
Total revenues	$82	$151,273	$—	$—	$151,355
Total costs and expenses	18,868	92,456	—	10	111,334
Income (loss) before income taxes	(18,786)	58,817	—	(10)	40,021
Income tax expense	—	—	—	—	—
Equity in income of subsidiaries	58,817	—	—	(58,817)	—
Net income	$40,031	$58,817	$—	($58,827)	$40,021

	Three Months Ended March 31, 2016				
	Parent Company	**Combined Guarantor Subsidiaries**	**Combined Non-Guarantor Subsidiaries**	**Eliminations**	**Consolidated**
Total revenues	$115	$81,147	$—	$—	$81,262
Total costs and expenses	29,912	362,248	—	376	392,536
Loss before income taxes	(29,797)	(281,101)	—	(376)	(311,274)
Income tax expense	—	—	—	(121)	(121)
Equity in loss of subsidiaries	(281,101)	—	—	281,101	—
Net loss	($310,898)	($281,101)	$—	$280,604	($311,395)

CARRIZO OIL & GAS, INC.
CONDENSED CONSOLIDATING STATEMENTS OF CASH FLOWS
(In thousands)
(Unaudited)

	Three Months Ended March 31, 2017				
	Parent Company	Combined Guarantor Subsidiaries	Combined Non-Guarantor Subsidiaries	Eliminations	Consolidated
Net cash provided by (used in) operating activities	($47,297)	$123,705	$—	$—	$76,408
Net cash provided by (used in) investing activities	9,879	(114,212)	—	(9,493)	(113,826)
Net cash provided by (used in) financing activities	35,615	(9,493)	—	9,493	35,615
Net decrease in cash and cash equivalents	(1,803)	—	—	—	(1,803)
Cash and cash equivalents, beginning of period	4,194	—	—	—	4,194
Cash and cash equivalents, end of period	$2,391	$—	$—	$—	$2,391

	Three Months Ended March 31, 2016				
	Parent Company	Combined Guarantor Subsidiaries	Combined Non-Guarantor Subsidiaries	Eliminations	Consolidated
Net cash provided by (used in) operating activities	($2,156)	$56,024	$—	$—	$53,868
Net cash used in investing activities	(68,797)	(122,849)	(740)	67,565	(124,821)
Net cash provided by financing activities	30,193	66,825	740	(67,565)	30,193
Net decrease in cash and cash equivalents	(40,760)	—	—	—	(40,760)
Cash and cash equivalents, beginning of period	42,918	—	—	—	42,918
Cash and cash equivalents, end of period	$2,158	$—	$—	$—	$2,158

12. Supplemental Cash Flow Information

Supplemental cash flow disclosures and non-cash investing activities are presented below:

	Three Months Ended March 31,	
	2017	2016
	(In thousands)	
Supplemental cash flow disclosures:		
Cash paid for interest, net of amounts capitalized	$19,480	$17,553
Cash paid for income taxes	—	—
Non-cash investing activities:		
Increase (decrease) in capital expenditure payables and accruals	$28,139	($27,989)
Stock-based compensation expense capitalized to oil and gas properties	855	1,920
Asset retirement obligations capitalized to oil and gas properties	447	518
Other non-cash investing activities	343	1,485

13. Subsequent Events

Hedging

In April 2017, the Company entered into the following crude oil derivative positions:

Period	Type of Contract	Crude Oil Volumes (in Bbls/d)	Weighted Average Sub-Floor Price ($/Bbl)	Weighted Average Floor Price ($/Bbl)	Weighted Average Ceiling Price ($/Bbl)
Q3 2017	Fixed Price Swaps	6,000		$53.28	
Q4 2017	Fixed Price Swaps	6,000		$53.28	
FY 2018	Three-Way Collars	6,000	$40.00	$50.00	$65.00

In order to obtain a higher weighted average ceiling price on the three-way collars, the Company incurred premiums of approximately $2.8 million , the payments for which are deferred until the applicable contracts settle on a monthly basis.

Sanchez Acquisition

In April 2017, the Company paid $9.8 million for the remaining outstanding leases that were not conveyed to the Company at the initial closing on December 14, 2016 or at the subsequent closing on January 9, 2017. The Company currently expects its allocation of the purchase price to the assets acquired and liabilities assumed as of the acquisition date will be finalized during the fourth quarter of 2017.

Ninth Amendment to Credit Agreement

On May 4, 2017, the Company entered into a ninth amendment to its credit agreement governing the revolving credit facility to, among other things (i) extend the maturity date of the revolving credit facility to May 4, 2022, subject to a springing maturity date of June 15, 2020 if the 7.50% Senior Notes have not been refinanced on or prior to such time, (ii) increase the maximum credit amount under the revolving credit facility from $1.0 billion to $2.0 billion , (iii) increase the borrowing base from $600.0 million to $900.0 million , of which $800.0 million has been committed by lenders, until the next redetermination thereof, (iv) replace the Total Secured Debt to EBITDA ratio covenant with a Total Debt to EBITDA ratio covenant that requires such ratio not to exceed 4.00 to 1.00, (v) remove the covenant requiring a minimum EBITDA to Interest Expense ratio, (vi) reduce the commitment fee from 0.50% to 0.375% when utilization of lender commitments is less than 50% of the borrowing base amount, (vii) remove the restriction from borrowing under the credit facility if the Company has or, after giving effect to the borrowing, will have a Consolidated Cash Balance in excess of $50.0 million , (viii) remove the mandatory repayment of borrowings to the extent the Consolidated Cash Balance exceeds $50.0 million if either (a) the Company's ratio of Total Debt to EBITDA exceeds 3.50 to 1.00 or (b) the availability under the credit facility is equal to or less than 20% of the then effective borrowing base, (ix) permit the issuance of unlimited Senior Unsecured Debt, subject to certain conditions, including pro forma compliance with the Company's financial covenants, and (x) increase certain covenant baskets and thresholds. The capitalized terms which are not defined in this note to the consolidated financial statements have the meaning given to such terms in the credit agreement.

Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations

The following discussion and analysis of the financial condition and results of operations of the Company should be read in conjunction with the unaudited interim consolidated financial statements and related notes included in "Item 1. Consolidated Financial Statements (Unaudited)" in this Quarterly Report on Form 10-Q and the discussion under "Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations" and audited Consolidated Financial Statements included in our 2016 Annual Report. The following discussion and analysis contains statements, including, but not limited to, statements related to our plans, strategies, objectives, and expectations. Please see "Forward-Looking Statements" for further details about these statements.

General Overview

Operational Results . Total production for the three months ended March 31, 2017 increased 10% from the three months ended March 31, 2016 to 46,367 Boe/d primarily due to increased production from new wells in the Eagle Ford and Delaware Basin, production from the Sanchez Acquisition, and increased production in the Marcellus due to a lower level of voluntary curtailments compared to the first quarter of 2016, partially offset by normal production declines. Crude oil production for the three months ended March 31, 2017 was 28,844 Bbls/d, an increase of 12% from the three months ended March 31, 2016 , primarily driven by increased production from new wells in the Eagle Ford and Delaware Basin and the Sanchez Acquisition, partially offset by normal production declines. For further discussion of production, see "—Results of Operations" below.

See the table below for details of our operated drilling and completion activity:

	Three Months Ended March 31, 2017				March 31, 2017				
	Drilled		Completed		Drilled But Uncompleted		Producing		
Region	Gross	Net	Gross	Net	Gross	Net	Gross	Net	Rig count
Eagle Ford	24	20.1	29	28.7	29	23.9	463	399.4	3
Delaware Basin	—	—	—	—	2	2.0	6	5.6	—
Niobrara	—	—	—	—	—	—	130	57.9	—
Marcellus	—	—	—	—	11	4.3	81	26.0	—
Utica and Other	—	—	—	—	—	—	4	3.1	—
Total	24	20.1	29	28.7	42	30.2	684	492.0	3

Drilling and completion expenditures for the first quarter of 2017 were $128.2 million, of which 87% were in the Eagle Ford where, as of March 31, 2017, we were operating three rigs and two frac crews. Our current 2017 capital expenditure plan includes $530.0 million to $550.0 million for drilling and completion and $45.0 million for leasehold and seismic, which was recently increased from $20.0 million. The focus for our remaining 2017 drilling and completion capital expenditures is currently on the continued exploration and development of oil-focused plays, such as the Eagle Ford and Delaware Basin, where approximately 90% of our currently remaining 2017 drilling and completion capital expenditure plan is allocated. See "—Liquidity and Capital Resources—2017 Capital Expenditure Plan and Funding Strategy" for additional details.

Senior Secured Revolving Credit Facility. On May 4, 2017, we entered into entered into a ninth amendment to our credit agreement governing the revolving credit facility which, among other things, (i) extended the maturity date of the revolving credit facility to May 4, 2022, subject to a springing maturity date of June 15, 2020 if the 7.50% Senior Notes have not been refinanced on or prior to such time, (ii) increased the maximum credit amount under the revolving credit facility from $1.0 billion to $2.0 billion, and (iii) increased the borrowing base from $600.0 million to $900.0 million, of which $800.0 million has been committed by lenders, until the next redetermination thereof. See "Note 13. Subsequent Events" for further details.

Financial Results. We recorded net income for the three months ended March 31, 2017 of $40.0 million, or $0.61 per diluted share, as compared to a net loss for the three months ended March 31, 2016 of $311.4 million, or $5.34 per diluted share. The net income for the first quarter of 2017 as compared to the net loss for the first quarter of 2016 was driven primarily by an increase in revenues as a result of higher realized crude oil pricing and production as well as no impairment of proved oil and gas properties during the first quarter of 2017 compared to an impairment of proved oil and gas properties of $274.4 million recognized during the first quarter of 2016. See "—Results of Operations" below for further details.

Results of Operations

Three Months Ended March 31, 2017 , Compared to the Three Months Ended March 31, 2016

The following table summarizes total production volumes, daily production volumes, average realized prices and revenues for the three months ended March 31, 2017 and 2016 :

	Three Months Ended March 31,		2017 Period Compared to 2016 Period	
	2017	2016	Increase (Decrease)	% Increase (Decrease)
Total production volumes -				
Crude oil (MBbls)	2,596	2,348	248	11%
NGLs (MBbls)	406	414	(8)	(2%)
Natural gas (MMcf)	7,028	6,373	655	10%
Total barrels of oil equivalent (MBoe)	4,173	3,824	349	9%
Daily production volumes by product -				
Crude oil (Bbls/d)	28,844	25,806	3,038	12%
NGLs (Bbls/d)	4,508	4,547	(39)	(1%)
Natural gas (Mcf/d)	78,088	70,033	8,055	12%
Total barrels of oil equivalent (Boe/d)	46,367	42,025	4,342	10%
Daily production volumes by region (Boe/d) -				
Eagle Ford	32,578	30,971	1,607	5%
Delaware Basin	2,418	140	2,278	1,627%
Niobrara	2,765	3,186	(421)	(13%)
Marcellus	7,928	6,026	1,902	32%
Utica and other	678	1,702	(1,024)	(60%)
Total barrels of oil equivalent (Boe/d)	46,367	42,025	4,342	10%
Average realized prices -				
Crude oil ($ per Bbl)	$49.34	$28.96	$20.38	70%
NGLs ($ per Bbl)	18.29	8.31	9.98	120%
Natural gas ($ per Mcf)	2.25	1.54	0.71	46%
Total average realized price ($ per Boe)	$36.27	$21.25	$15.02	71%
Revenues (In thousands) -				
Crude oil	$128,092	$67,996	$60,096	88%
NGLs	7,425	3,440	3,985	116%
Natural gas	15,838	9,826	6,012	61%
Total revenues	$151,355	$81,262	$70,093	86%

Production volumes for the three months ended March 31, 2017 were 46,367 Boe/d, an increase of 10% from 42,025 Boe/d for the same period in 2016 . The increase is primarily due to increased production from new wells in the Eagle Ford and Delaware Basin, production from the Sanchez Acquisition, and increased production in the Marcellus due to a lower level of voluntary curtailments compared to the first quarter of 2016, partially offset by normal production declines. Revenues for the three months ended March 31, 2017 increased 86% to $151.4 million compared to $81.3 million for the same period in 2016 primarily due to higher average realized crude oil prices as well as the increased production described above.

Lease operating expenses for the three months ended March 31, 2017 increased to $29.8 million ($7.15 per Boe) from $23.7 million ($6.19 per Boe) for the same period in 2016 . The increase in lease operating expenses is primarily due to increased production from new wells in the Eagle Ford and Delaware Basin and increased workover costs on wells recently acquired in the Sanchez Acquisition. The increase in lease operating expense per Boe is primarily due to the workover costs described above partially offset by an increased proportion of production attributable to Marcellus production which carries lower per Boe operating costs.

Production taxes increased to $6.2 million (or 4.1% of revenues) for the three months ended March 31, 2017 from $3.4 million (or 4.2% of revenues) for the same period in 2016 primarily as a result of the increase in crude oil, NGL, and natural gas revenues. The decrease in production taxes as a percentage of revenues for the three months ended March 31, 2017 as compared to the same period in 2016 is due primarily to an increased proportion of total revenues attributable to Marcellus production, which is not subject to production taxes.

Ad valorem taxes increased to $3.0 million for the three months ended March 31, 2017 from $2.1 million for the same period in 2016 . The increase in ad valorem taxes is due to an increase in our annual estimate of ad valorem taxes for 2017 due to higher expected property tax valuations as a result of the increase in crude oil prices, as well as new wells drilled in the Eagle Ford in 2016.

Depreciation, depletion and amortization ("DD&A") expense for the first quarter of 2017 decreased $5.2 million to $54.4 million ($13.03 per Boe) from the DD&A expense for the first quarter of 2016 of $59.6 million ($15.58 per Boe). The decrease in DD&A expense is attributable to the decrease in the DD&A rate per Boe, partially offset by increased production. The DD&A rate per Boe decreased primarily due to impairments of our proved oil and gas properties recorded during the second and third quarter of 2016, reductions in estimated future development costs primarily as a result of reduced service costs that occurred in the second and fourth quarters of 2016, and the addition of crude oil reserves in the fourth quarter of 2016. The components of our DD&A expense were as follows:

	Three Months Ended March 31,	
	2017	**2016**
	(In thousands)	
DD&A of proved oil and gas properties	$52,960	$58,203
Depreciation of other property and equipment	646	673
Amortization of other assets	351	373
Accretion of asset retirement obligations	425	328
Total DD&A	$54,382	$59,577

We did not recognize an impairment of proved oil and gas properties for the three months ended March 31, 2017. Primarily due to declines in the 12-Month Average Realized Price of crude oil from December 31, 2015 to March 31, 2016, we recognized an impairment of proved oil and gas properties for the three months ended March 31, 2016 . Details of the 12-Month Average Realized Price of crude oil for the three months ended March 31, 2017 and 2016 and the impairment of proved oil and gas properties for the three months ended March 31, 2016 are summarized in the table below:

	Three Months Ended March 31,	
	2017	**2016**
Impairment of proved oil and gas properties (in thousands)	$—	$274,413
Crude Oil 12-Month Average Realized Price ($/Bbl) - Beginning of period	$39.60	$47.24
Crude Oil 12-Month Average Realized Price ($/Bbl) - End of period	$44.98	$43.14
Percentage increase (decrease)	14%	(9%)

General and administrative expense, net increased to $21.7 million for the three months ended March 31, 2017 from $21.3 million for the corresponding period in 2016 . The increase was primarily due to higher annual bonuses awarded in the first quarter of 2017 compared to the first quarter of 2016 partially offset by a decrease in stock-based compensation expense, net as a result of a decrease in the fair value of stock appreciation rights for the three months ended March 31, 2017 compared to an increase in fair value for the three months ended March 31, 2016 .

We recorded a gain on derivatives, net of $25.3 million and $10.6 million for the three months ended March 31, 2017 and 2016 , respectively. The components of our gain on derivatives, net were as follows:

	Three Months Ended March 31,	
	2017	2016
	(In thousands)	
Crude oil derivative positions:		
Gain due to downward shift in the futures curve of forecasted crude oil prices during the period on derivative positions outstanding at the beginning of the period	$18,480	$14,836
Gain due to new derivative positions executed during the period (net of deferred premiums)	—	6,957
Natural gas derivative positions:		
Gain due to downward shift in the futures curve of forecasted natural gas prices during the period on derivative positions outstanding at the beginning of the period	6,836	—
Loss due to new derivative positions executed during the period	—	(11,240)
Gain on derivatives, net	$25,316	$10,553

Interest expense, net for the three months ended March 31, 2017 was $20.6 million as compared to $18.7 million for the same period in 2016 . The increase was due primarily to the decrease in capitalized interest as a result of lower average balances of unproved properties in the first quarter of 2017 as compared to the first quarter of 2016 . The components of our interest expense, net were as follows:

	Three Months Ended March 31,	
	2017	2016
	(In thousands)	
Interest expense on Senior Notes	$21,455	$21,455
Interest expense on revolving credit facility	1,426	677
Amortization of debt issuance costs, premiums, and discounts	1,186	1,976
Other interest expense	285	254
Capitalized interest	(3,781)	(5,649)
Interest expense, net	$20,571	$18,713

The effective income tax rate for the first quarter of 2017 and 2016 was 0.0% . This is as a result of a full valuation allowance against our net deferred tax assets driven primarily by the impairments of proved oil and gas properties we recognized beginning in the third quarter of 2015 and continuing through the third quarter of 2016.

Liquidity and Capital Resources

2017 Capital Expenditure Plan and Funding Strategy. Our 2017 drilling and completion capital expenditure plan remains unchanged at $530.0 million to $550.0 million , while our 2017 leasehold and seismic capital expenditure plan is increased from $20.0 million to $45.0 million. We currently intend to finance our 2017 capital expenditure plan primarily from the sources described below under "—Sources and Uses of Cash." Our capital program could vary depending upon various factors, including the availability of drilling rigs, the cost of completion services, land and industry partner issues, our available cash flow and financing, success of drilling programs, weather delays, commodity prices, market conditions, the acquisition of leases with drilling commitments and other factors. Below is a summary of our capital expenditures through March 31, 2017 :

	Three Months Ended March 31, 2017
	(In thousands)
Drilling and completion	
Eagle Ford	$111,472
Delaware Basin	10,360
All other regions	6,412
Total drilling and completion	128,244
Leasehold and seismic (1)	14,516
Total (2)	$142,760

(1) Leasehold and seismic capital expenditures exclude amounts paid for the remaining outstanding leases that were not conveyed to the Company at the initial closing of the Sanchez Acquisition on December 14, 2016. See "Note 3. Acquisition" for additional details of the Sanchez Acquisition.

(2) Our capital expenditure plan and the capital expenditures included above exclude capitalized general and administrative expense, capitalized interest and capitalized asset retirement obligations.

Sources and Uses of Cash . Our primary use of cash is related to our drilling and completion capital expenditure plan and, to a lesser extent, our leasehold and seismic capital expenditure plan. For the three months ended March 31, 2017 , we funded our capital expenditures with cash provided by operations and borrowings under our revolving credit facility. Potential sources of future liquidity include the following:

- *Cash provided by operations.* Cash flows from operations are highly dependent on crude oil prices. As such, we hedge a portion of our forecasted production to reduce our exposure to commodity price volatility in order to achieve a more predictable level of cash flows.
- *Borrowings under our revolving credit facility.* As of April 28, 2017 , our revolving credit facility had a borrowing base of $600.0 million , with $171.0 million of borrowings outstanding and $0.4 million in letters of credit issued, which reduce the amounts available under our revolving credit facility. The amount we are able to borrow is subject to compliance with the financial covenants and other provisions of the credit agreement governing our revolving credit facility. See "—Financing Arrangements—Senior Secured Revolving Credit Facility" for details of the recent ninth amendment to the credit agreement governing our revolving credit facility.
- *Securities offerings* . As situations or conditions arise, we may choose to issue debt, equity or other securities to supplement our cash flows. However, we may not be able to obtain such financing on terms that are acceptable to us, or at all.
- *Asset sales.* In order to fund our capital expenditure plan, we may consider the sale of certain properties or assets that are not part of our core business or are no longer deemed essential to our future growth, provided we are able to sell such assets on terms that are acceptable to us. We continue to explore sales of non-core properties. We may also consider the sale of properties in areas we have viewed as core, such as the Delaware Basin, particularly if we believe that sales prices for such assets would allow us to deploy capital more effectively in other basins or other parts of the same basin. There can be no assurance, however, that any sales will occur on terms we find to be acceptable, or at all.
- *Joint ventures.* Joint ventures with third parties through which such third parties fund a portion of our exploration activities to earn an interest in our exploration acreage or purchase a portion of interests, or both.

Overview of Cash Flow Activities. Net cash provided by operating activities was $76.4 million and $53.9 million for the three months ended March 31, 2017 and 2016 , respectively. The change was driven primarily by an increase in revenues as a result of higher realized crude oil pricing and production and a decrease in working capital requirements, partially offset by a decrease in the net cash received from derivative settlements and an increase in cash general and administrative expense.

Net cash used in investing activities was $113.8 million and $124.8 million for the three months ended March 31, 2017 and 2016 , respectively. The change was due primarily to increased proceeds from sales of oil and gas properties, partially offset by cash paid for the Sanchez Acquisition in the first quarter of 2017 as compared to the same period in 2016. The sales of oil and gas properties in the first quarter of 2017 were primarily related to the sale of 368 net acres in the Delaware Basin for net proceeds of $15.3 million.

Net cash provided by financing activities was $35.6 million and $30.2 million for the three months ended March 31, 2017 and 2016 , respectively. The change was due to increased borrowings net of repayments under our revolving credit facility in the first quarter of 2017 as compared to the same period in 2016.

Liquidity/Cash Flow Outlook. Economic downturns may adversely affect our ability to access capital markets in the future. Cash flows from operations are primarily driven by crude oil production, commodity prices and settlements of our commodity derivatives. We currently believe that cash flows from operations and borrowings under our revolving credit facility provide adequate financial flexibility and will be sufficient to fund our immediate cash flow requirements.

- *Revolving credit facility.* The borrowing base under our revolving credit facility is affected by assumptions of the administrative agent with respect to, among other things, crude oil and natural gas prices. Our borrowing base may decrease if our administrative agent reduces the crude oil and natural gas prices from those used to determine our existing borrowing base. See "—Sources and Uses of Cash—Borrowings under our revolving credit facility" and "—Financing Arrangements—Senior Secured Revolving Credit Facility" for further details of our revolving credit facility.
- *Hedging.* To manage our exposure to commodity price risk and to provide a level of certainty in the cash flows to support our drilling and completion capital expenditure plan, we hedge a portion of our forecasted production.

As of April 28, 2017 , we had the following crude oil derivative positions:

Period	Type of Contract	Crude Oil Volumes (in Bbls/d	Weighted Average Sub-Floor Price ($/Bbl)	Weighted Average Floor Price ($/Bbl)	Weighted Average Ceiling Price ($/Bbl)
Q2 2017	Fixed Price Swaps	12,000		$50.13	
Q3 2017	Fixed Price Swaps	12,000		$53.71	
Q4 2017	Fixed Price Swaps	9,000		$53.86	
FY 2018	Three-Way Collars	6,000	$40.00	$50.00	$65.00
FY 2018	Sold Call Options	2,488			$60.00
FY 2018	Net Sold Call Options	900			$75.00
FY 2019	Sold Call Options	2,975			$62.50
FY 2019	Net Sold Call Options	900			$77.50
FY 2020	Sold Call Options	3,675			$65.00
FY 2020	Net Sold Call Options	900			$80.00

As of April 28, 2017 , we had the following natural gas derivative positions:

Period	Type of Contract	Natural Gas Volumes (in MMBtu/d	Weighted Average Floor Price ($/MMBtu)	Weighted Average Ceiling Price ($/MMBtu)
Q2 - Q4 2017	Fixed Price Swaps	20,000	$3.30	
Q2 - Q4 2017	Sold Call Options	33,000		$3.00
FY 2018	Sold Call Options	33,000		$3.25
FY 2019	Sold Call Options	33,000		$3.25
FY 2020	Sold Call Options	33,000		$3.50

If cash flows from operations and borrowings under our revolving credit facility and the other sources of cash described under "—Sources and Uses of Cash" are insufficient to fund the remainder of our 2017 capital expenditure plan, we may need to reduce our capital expenditure plan or seek other financing alternatives. We may not be able to obtain financing needed in the future on terms that would be acceptable to us, or at all. If we cannot obtain adequate financing, we may be required to limit or defer a portion of our remaining 2017 capital expenditure plan, thereby potentially adversely affecting the recoverability and ultimate value of our oil and gas properties. Based on existing market conditions and our expected liquidity needs, among other factors, we may use a portion of our cash flows from operations, proceeds from asset sales, securities offerings or borrowings to reduce debt prior to scheduled maturities through debt repurchases, either in the open market or in privately negotiated transactions, through debt redemptions or tender offers, or through repayments of bank borrowings.

Contractual Obligations

The following table sets forth estimates of our contractual obligations as of March 31, 2017 (in thousands):

	2017	2018	2019	2020	2021	2022 and Thereafter	Total
Long-term debt (1)	$—	$123,000	$—	$600,000	$—	$654,425	$1,377,425
Cash interest on senior notes and other long-term debt (2)	63,319	85,819	85,819	85,819	40,819	62,180	423,775
Cash interest and commitment fees on revolving credit facility (3)	4,561	3,035	—	—	—	—	7,596
Capital leases	1,392	1,823	1,800	1,050	—	—	6,065
Operating leases	3,450	4,549	4,497	4,476	4,450	1,854	23,276
Drilling rig contracts (4)	17,633	3,957	—	—	—	—	21,590
Delivery commitments (5)	6,591	8,611	7,298	4,826	3,680	291	31,297
Asset retirement obligations and other (6)	1,933	1,662	235	105	276	20,842	25,053
Total Contractual Obligations	$98,879	$232,456	$99,649	$696,276	$49,225	$739,592	$1,916,077

(1) Long-term debt consists of the principal amounts of the 7.50% Senior Notes due 2020, the 6.25% Senior Notes due 2023, other long-term debt due 2028, and borrowings outstanding under our revolving credit facility which matures in 2018.
(2) Cash interest on senior notes and other long-term debt includes cash payments for interest on the 7.50% Senior Notes due 2020, the 6.25% Senior Notes due 2023 and other long-term debt due 2028.
(3) Cash interest on our revolving credit facility was calculated using the weighted average interest rate of the outstanding borrowings under the revolving credit facility as of March 31, 2017 of 2.95% . Commitment fees on our revolving credit facility were calculated based on the unused portion of lender commitments as of March 31, 2017 , at the commitment fee rate of 0.50% . See “Note 13. Subsequent Events” for details of the changes to our revolving credit facility subsequent to March 31, 2017.
(4) Drilling rig contracts represent gross contractual obligations and accordingly, other joint owners in the properties operated by us will generally be billed for their working interest share of such costs.
(5) Delivery commitments represent contractual obligations we have entered into for certain gathering, processing and transportation throughput commitments. We may incur volume deficiency fees from time to time if we elect to voluntarily curtail production due to market or operational considerations.
(6) Asset retirement obligations and other are based on estimates and assumptions that affect the reported amounts as of March 31, 2017 . Certain of such estimates and assumptions are inherently unpredictable and will differ from actual results.

Financing Arrangements

Senior Secured Revolving Credit Facility

As of March 31, 2017 , we had a senior secured revolving credit facility with a syndicate of banks that had a borrowing base of $600.0 million , with $123.0 million of borrowings outstanding at a weighted average interest rate of 2.95% and $0.4 million in letters of credit outstanding. As of March 31, 2017, the credit agreement governing our senior secured revolving credit facility provided for interest-only payments until July 2, 2018, when the credit agreement was scheduled to mature and any outstanding borrowings would become due. The borrowing base under our credit agreement is subject to regular redeterminations in the spring and fall of each year, as well as special redeterminations described in the credit agreement, which in each case may reduce the amount of the borrowing base.

On May 4, 2017, we entered into a ninth amendment to our credit agreement governing the revolving credit facility to, among other things (i) extend the maturity date of the revolving credit facility to May 4, 2022, subject to a springing maturity date of June 15, 2020 if the 7.50% Senior Notes have not been refinanced on or prior to such time, (ii) increase the maximum credit amount under the revolving credit facility from $1.0 billion to $2.0 billion, (iii) increase the borrowing base from $600.0 million to $900.0 million, of which $800.0 million has been committed by lenders, until the next redetermination thereof, (iv) replace the Total Secured Debt to EBITDA ratio covenant with a Total Debt to EBITDA ratio covenant that requires such ratio not to exceed 4.00 to 1.00, (v) remove the covenant requiring a minimum EBITDA to Interest Expense ratio, (vi) reduce the commitment fee from 0.50% to 0.375% when utilization of lender commitments is less than 50% of the borrowing base amount, (vii) remove the restriction from borrowing under the credit facility if we have or, after giving effect to the borrowing, will have a Consolidated Cash Balance in excess of $50.0 million, (viii) remove the mandatory repayment of borrowings to the extent the Consolidated Cash Balance exceeds $50.0 million if either (a) our ratio of Total Debt to EBITDA exceeds 3.50 to 1.00 or (b) the availability under the credit facility is equal to or less than 20% of the then effective borrowing base, (ix) permit the issuance of unlimited Senior Unsecured Debt, subject to certain conditions, including pro forma compliance with our financial covenants, and (x) increase certain covenant baskets and thresholds. The capitalized terms which are not defined in this section of our quarterly report have the meaning given to such terms in the credit agreement.

See “Note 6. Long-Term Debt” for additional details of the senior secured revolving credit facility including rates of interest on outstanding borrowings, commitment fees on the unused portion of lender commitments, and the financial covenants we are subject to under the terms of the credit agreement.

7.50% Senior Notes due 2020

We have the right to redeem all or a portion of the principal amount of the 7.50% Senior Notes at redemption prices of 103.75% until September 14, 2017, 101.875% beginning September 15, 2017 until September 14, 2018 and 100% beginning September 15, 2018 and thereafter, in each case plus accrued and unpaid interest. In connection with any redemption or repurchase of notes, we could enter into other transactions, which include refinancing of the 7.50% Senior Notes.

Critical Accounting Policies

The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosures of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the periods reported. Certain of such estimates and assumptions are inherently unpredictable and will differ from actual results. We have identified the following critical accounting policies and estimates used in the preparation of our financial statements: use of estimates, oil and gas properties, oil and gas reserve estimates, derivative instruments, income taxes and commitments and contingencies. These policies and estimates are described in “Note 2. Summary of Significant Accounting Policies” of the Notes to Consolidated Financial Statements in our 2016 Annual Report. We evaluate subsequent events through the date the financial statements are issued.

The table below presents various pricing scenarios to demonstrate the sensitivity of our March 31, 2017 cost center ceiling to changes in 12-month average benchmark crude oil and natural gas prices underlying the 12-Month Average Realized Prices. The sensitivity analysis is as of March 31, 2017 and, accordingly, does not consider drilling and completion activity, production, changes in crude oil and natural gas prices, and changes in development and operating costs occurring subsequent to March 31, 2017 that may require revisions to estimates of proved reserves.

	12-Month Average Realized Prices		Excess of cost center ceiling over net book value, less related deferred income taxes	Increase (decrease) of cost center ceiling over net book value, less related deferred income taxes
Full Cost Pool Scenarios	**Crude Oil ($/Bbl)**	**Natural Gas ($/Mcf)**	**(In millions)**	**(In millions)**
March 31, 2017 Actual	$44.98	$2.05	$423	
Crude Oil and Natural Gas Price Sensitivity				
Crude Oil and Natural Gas +10%	$49.73	$2.34	$816	$393
Crude Oil and Natural Gas -10%	$40.25	$1.76	$45	($378)
Crude Oil Price Sensitivity				
Crude Oil +10%	$49.73	$2.05	$774	$351
Crude Oil -10%	$40.25	$2.05	$78	($345)
Natural Gas Price Sensitivity				
Natural Gas +10%	$44.98	$2.34	$464	$41
Natural Gas -10%	$44.98	$1.76	$385	($38)

Income Taxes

Income taxes are recognized based on earnings reported for tax return purposes in addition to a provision for deferred income taxes. Deferred income taxes are recognized at the end of each reporting period for the future tax consequences of cumulative temporary differences between the tax bases of assets and liabilities and their reported amounts in our financial statements based on existing tax laws and enacted statutory tax rates applicable to the periods in which the temporary differences are expected to affect taxable income. We assess the realizability of our deferred tax assets on a quarterly basis by considering whether it is more likely than not that all or a portion of the deferred tax assets will not be realized. We consider all available evidence (both positive and negative) when determining whether a valuation allowance is required. In making this assessment, we evaluated possible sources of taxable income that may be available to realize the benefit of deferred tax assets, including projected future taxable income, the reversal of existing temporary differences, taxable income in carryback years and available tax planning strategies.

A significant item of objective negative evidence considered was the cumulative historical three year pre-tax loss and a net deferred tax asset position at March 31, 2017 , driven primarily by the impairments of proved oil and gas properties beginning in the third quarter of 2015 and continuing through the third quarter of 2016, which limits the ability to consider other subjective evidence such as our potential for future growth. We also have estimated U.S. federal net operating loss carryforwards of $759.1 million as of March 31, 2017 . Beginning in the third quarter of 2015, we concluded in each subsequent quarterly evaluation that it is more likely than not the deferred tax assets will not be realized and based on evaluation of evidence available as of March 31, 2017 , our previous conclusion remains unchanged. As a result, the net deferred tax assets at the end of each quarter, including March 31, 2017 were reduced to zero . As a result of adopting ASU 2016-09, we recognized previously unrecognized windfall tax benefits which resulted in a cumulative-effect adjustment to retained earnings of approximately $15.7 million. This adjustment increased deferred tax assets, which in turn increased the valuation allowance by the same amount as of the beginning of 2017, resulting in a net cumulative- effect adjustment to retained earnings of zero and brought the valuation allowance to $580.1 million as of January 1, 2017. For the three months ended March 31, 2017, as a result of current quarter activity and the recognition of tax shortfalls from stock-based compensation expense that are now recognized in income tax expense due to the adoption of ASU 2016-09, a partial release of $17.4 million from the valuation allowance was needed to bring the net deferred tax assets to zero. After the impact of the adoption of ASU 2016-09 and the current quarter activity, the valuation allowance as of March 31, 2017 was $562.7 million .

We will continue to evaluate whether the valuation allowance is needed in future reporting periods. The valuation allowance will remain until we can conclude that the net deferred tax assets are more likely than not to be realized. Future events or new evidence which may lead us to conclude that it is more likely than not our net deferred tax assets will be realized include, but are not limited to, cumulative historical pre-tax earnings, improvements in crude oil prices, and taxable events that could result from one or more transactions. The valuation allowance does not preclude us from utilizing the tax attributes if we recognize taxable income. As long as we continue to conclude that the valuation allowance against our net deferred tax assets is necessary, we may have additional valuation allowance increases with no significant deferred income tax expense or benefit.

We classify interest and penalties associated with income taxes as interest expense. We follow the tax law ordering approach to determine the sequence in which deferred tax assets and other tax attributes are utilized.

Recently Adopted and Recently Issued Accounting Pronouncements

See “Note 2. Summary of Significant Accounting Policies” for discussion of our recent adoption of ASU 2016-09 as well as the recently issued accounting pronouncements from the Financial Accounting Standards Board.

Volatility of Crude Oil and Natural Gas Prices

Our revenues, future rate of growth, results of operations, financial position and ability to borrow funds or obtain additional capital are substantially dependent upon prevailing prices of crude oil, which are affected by changes in market supply and demand, overall economic activity, global political environment, weather, inventory storage levels and other factors, as well as the level and prices at which we have hedged our future production.

We review the carrying value of our oil and gas properties on a quarterly basis under the full cost method of accounting. See “Note 4. Property and Equipment, Net” for additional details.

We use commodity derivative instruments to reduce our exposure to commodity price volatility for a portion of our forecasted crude oil and natural gas production and thereby achieve a more predictable level of cash flows to support our drilling and completion capital expenditure program. We do not enter into derivative instruments for speculative or trading purposes. As of March 31, 2017 , our commodity derivative instruments consisted of fixed price swaps and purchased and sold call options. See “Note 9. Derivative Instruments” for further details of our crude oil and natural gas derivative positions as of March 31, 2017 and “Note 13. Subsequent Events—Hedging” for further details of the crude oil derivative positions entered into subsequent to March 31, 2017 .

Forward-Looking Statements

This quarterly report contains statements concerning our intentions, expectations, projections, assessments of risks, estimations, beliefs, plans or predictions for the future, objectives, goals, strategies, future events or performance and underlying assumptions and other statements that are not historical facts. These statements are “forward-looking statements” within the meaning of the Private Securities Litigation Reform Act of 1995. These forward-looking statements include, among others, statements regarding:

- our growth strategies;

- our ability to explore for and develop oil and gas resources successfully and economically;
- our estimates and forecasts of the timing, number, profitability and other results of wells we expect to drill and other exploration activities;
- our estimates regarding timing and levels of production;
- changes in working capital requirements, reserves, and acreage;
- commodity price risk management activities and the impact on our average realized prices;
- anticipated trends in our business;
- availability of pipeline connections and water disposal on economic terms;
- effects of competition on us;
- our future results of operations;
- profitability of drilling locations;
- our liquidity and our ability to finance our exploration and development activities, including accessibility of borrowings under our revolving credit facility, our borrowing base, modification to financial covenants, and the result of any borrowing base redetermination;
- our planned expenditures, prospects and capital expenditure plan;
- future market conditions in the oil and gas industry;
- our ability to make, integrate and develop acquisitions and realize any expected benefits or effects of completed acquisitions;
- possible future sales or other transactions;
- the benefits, effects, availability of and results of new and existing joint ventures and sales transactions;
- our ability to maintain a sound financial position;
- receipt of receivables and proceeds from sales;
- our ability to complete planned transactions on desirable terms;
- the impact of governmental regulation, taxes, market changes and world events; and

You generally can identify our forward-looking statements by the words “anticipate,” “believe,” budgeted,” “continue,” “could,” “estimate,” “expect,” “forecast,” “goal,” “intend,” “may,” “objective,” “plan,” “potential,” “predict,” “projection,” “scheduled,” “should,” or other similar words. Such statements rely on assumptions and involve risks and uncertainties, many of which are beyond our control, including, but not limited to, those relating to a worldwide economic downturn, availability of financing, our dependence on our exploratory drilling activities, the volatility of and changes in oil and gas prices, the need to replace reserves depleted by production, impairments of proved oil and gas properties, operating risks of oil and gas operations, our dependence on our key personnel, factors that affect our ability to manage our growth and achieve our business strategy, results, delays and uncertainties that may be encountered in drilling, development or production, interpretations and impact of oil and gas reserve estimation and disclosure requirements, activities and approvals of our partners and parties with whom we have alliances, technological changes, capital requirements, the timing and amount of borrowing base determinations (including determinations by lenders) and availability under our revolving credit facility, evaluations of us by lenders under our revolving credit facility, other actions by lenders, the potential impact of government regulations, including current and proposed legislation and regulations related to hydraulic fracturing, oil and natural gas drilling, air emissions and climate change, regulatory determinations, litigation, competition, the uncertainty of reserve information and future net revenue estimates, acquisition risks, availability of equipment and crews, actions by midstream and other industry participants, weather, our ability to obtain permits and licenses, the results of audits and assessments, the failure to obtain certain bank and lease consents, the existence and resolution of title defects, new taxes and impact fees, delays, costs and difficulties relating to our joint ventures, actions by joint venture parties, results of exploration activities, the availability, market conditions and completion of land acquisitions and dispositions, costs of oilfield services, completion and connection of wells, and other factors detailed in this quarterly report.

We have based our forward-looking statements on our management’s beliefs and assumptions based on information available to our management at the time the statements are made. We caution you that assumptions, beliefs, expectations, intentions and projections about future events may and often do vary materially from actual results. Therefore, we cannot assure you that actual results will not differ materially from those expressed or implied by our forward-looking statements.

Some of the factors that could cause actual results to differ from those expressed or implied in forward-looking statements are described under Part I, “Item 1A. Risk Factors” and other sections of our 2016 Annual Report and in our other filings with the SEC, including this quarterly report. Should one or more of these risks or uncertainties materialize, or should underlying assumptions prove incorrect, actual outcomes may vary materially from those indicated. All subsequent written and oral forward-looking statements attributable to us or persons acting on our behalf are expressly qualified in their entirety by reference to these risks and uncertainties. You should not place undue reliance on our forward-looking statements. Each forward-looking statement speaks only as of the date of the particular statement, and, except as required by law, we undertake no duty to update or revise any forward-looking statement.

Item 3. Quantitative and Qualitative Disclosures About Market Risk

For information regarding our exposure to certain market risks, see “Item 7A. Quantitative and Qualitative Disclosures about Market Risk” of our 2016 Annual Report. Except as disclosed in this report, there have been no material changes from the disclosure made in our 2016 Annual Report regarding our exposure to certain market risks.

Item 4. Controls and Procedures

Evaluation of Disclosure Controls and Procedures . Our Chief Executive Officer and Chief Financial Officer performed an evaluation of our disclosure controls and procedures, which have been designed to provide reasonable assurance that the information required to be disclosed by the Company in the reports it files or submits under the Exchange Act is accumulated and communicated to the Company’s management, including our Chief Executive Officer and Chief Financial Officer, to allow timely decisions regarding required disclosure. They concluded that the controls and procedures were effective as of March 31, 2017 to provide reasonable assurance that the information required to be disclosed by the Company in reports it files under the Exchange Act is recorded, processed, summarized and reported within the time periods specified by the SEC’s rules and forms and that such information is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate to allow timely decisions regarding required disclosure. While our disclosure controls and procedures provide reasonable assurance that the appropriate information will be available on a timely basis, this assurance is subject to limitations inherent in any control system, no matter how well it may be designed or administered.

Changes in Internal Controls . There was no change in our internal control over financial reporting during the quarter ended March 31, 2017 that materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

Part II. Other Information

Item 1. Legal Proceedings

From time to time, the Company is party to certain legal actions and claims arising in the ordinary course of business. While the outcome of these events cannot be predicted with certainty, management does not currently expect these matters to have a materially adverse effect on the financial position or results of operations of the Company.

Item 1A. Risk Factors

There were no material changes to the factors discussed in “Part I. Item 1A. Risk Factors” in our Annual Report on Form 10-K for the year ended December 31, 2016 .

Item 2. Unregistered Sales of Equity Securities and Use of Proceeds

None.

Item 3. Defaults Upon Senior Securities

None.

Item 4. Mine Safety Disclosures

Not applicable.

Item 5. Other Information

None.

Item 6. Exhibits

The following exhibits are required by Item 601 of Regulation S-K and are filed as part of this report:

Exhibit Number		Exhibit Description
*10.1		Ninth Amendment to Credit Agreement, dated as of May 4, 2017, among Carrizo Oil & Gas, Inc., as borrower, Wells Fargo Bank, National Association, as administrative agent, and the lender parties thereto.
*31.1	–	CEO Certification Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
*31.2	–	CFO Certification Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
*32.1	–	CEO Certification Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
*32.2	–	CFO Certification Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
*101	–	Interactive Data Files

* Filed herewith.

Signatures

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the Registrant has duly caused this Report to be signed on its behalf by the undersigned, thereunto duly authorized.

Carrizo Oil & Gas, Inc.
(Registrant)

Date:	May 9, 2017	By:	/s/ David L. Pitts
			Vice President and Chief Financial Officer (Principal Financial Officer)
Date:	May 9, 2017	By:	/s/ Gregory F. Conaway
			Vice President and Chief Accounting Officer (Principal Accounting Officer)

Exhibit 10.1

NINTH AMENDMENT

TO

CREDIT AGREEMENT

DATED AS OF MAY 4, 2017

AMONG

CARRIZO OIL & GAS, INC.,
AS BORROWER,

THE GUARANTORS PARTY HERETO,

WELLS FARGO BANK, NATIONAL ASSOCIATION,
AS ADMINISTRATIVE AGENT,

CREDIT AGRICOLE CORPORATE AND INVESTMENT BANK
AND ROYAL BANK OF CANADA,
AS CO-SYNDICATION AGENTS,

COMPASS BANK AND SG AMERICAS SECURITIES, LLC,
AS CO-DOCUMENTATION AGENTS

AND

THE LENDERS PARTY HERETO

WELLS FARGO SECURITIES, LLC, CITIGROUP GLOBAL MARKETS INC.
AND CAPITAL ONE, NATIONAL ASSOCIATION,
AS JOINT LEAD ARRANGERS AND BOOKRUNNERS

NINTH AMENDMENT TO CREDIT AGREEMENT

THIS NINTH AMENDMENT TO CREDIT AGREEMENT (this " Ninth Amendment ") dated as of May 4, 2017, among CARRIZO OIL & GAS, INC., a Texas corporation (the " Borrower "); each of the undersigned guarantors (the " Guarantors "); the Lenders listed on the signature pages hereto; and WELLS FARGO BANK, NATIONAL ASSOCIATION, as administrative agent for the Lenders (in such capacity, together with its successors in such capacity, the " Administrative Agent ").

R E C I T A L S

WHEREAS, the Borrower, the Administrative Agent, the Lenders and the other Agents party thereto are parties to that certain Credit Agreement dated as of January 27, 2011 (as amended by that certain First Amendment dated as of March 26, 2012, that certain Resignation, Consent and Appointment Agreement dated as of April 20, 2012, that certain Second Amendment dated as of September 4, 2012, that certain Third Amendment dated as of September 27, 2012, that certain Fourth Amendment dated as of October 9, 2013, that certain Fifth Amendment dated as of October 7, 2014, that certain Sixth Amendment dated as of May 5, 2015, that certain Seventh Amendment dated as of October 30, 2015, that certain Eighth Amendment dated as of May 3, 2016, and as otherwise amended, supplemented or modified, the " Credit Agreement "), pursuant to which the Lenders have made certain credit and other financial accommodations available to and on behalf of the Borrower.

WHEREAS, the Borrower has requested that the Lenders amend certain provisions of the Credit Agreement, and the Lenders are willing to do so on the terms and subject to the conditions set forth herein.

NOW, THEREFORE, to induce the Administrative Agent and the Lenders to enter into this Ninth Amendment, and in consideration of the premises and the mutual covenants herein contained, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto agree as follows:

Section 1. Defined Terms . Each capitalized term used herein but not otherwise defined herein has the meaning given such term in the Credit Agreement, as amended by this Ninth Amendment. Unless otherwise indicated, all section and article references in this Ninth Amendment refer to sections and articles of the Credit Agreement.

Section 2. Amendments to Credit Agreement .

2.1 Amendment to Preamble . The final clause of the preamble to the Credit Agreement is hereby deleting such clause in its entirety and replacing it with the following:

> ; and Compass Bank and SG Americas Securities, LLC, as co-documentation agents for the Lenders (each in such capacity, together with its successors in such capacity, a " Co-Documentation Agent " and, collectively, the " Co-Documentation Agents ").

2.2 Amendments to Section 1.02 : Section 1.02 is hereby amended by:

(a) adding, amending or restating, as the case may be, the following defined terms as follows:

" Agreement " means this Credit Agreement, as amended by that certain First Amendment to Credit Agreement dated as of March 26, 2012, that certain Resignation, Consent and Appointment Agreement dated as of April 20, 2012, that certain Second Amendment to Credit Agreement dated as of September 4, 2012, that certain Third Amendment to Credit Agreement dated as of September 27, 2012, that certain Fourth Amendment to Credit Agreement dated as of October 9, 2013, that certain Fifth Amendment to Credit Agreement dated as of October 7, 2014, that certain Sixth Amendment to Credit Agreement dated as of May 5, 2015, that certain Seventh Amendment to Credit Agreement dated as of October 30, 2015, that certain Eighth Amendment dated as of May 3, 2016, that certain Ninth Amendment dated as of May 4, 2017, and as the same may from time to time be further amended, modified, supplemented or restated.

" Arranger " means each of Wells Fargo Securities, LLC, Citigroup Global Markets Inc. and Capital One, National Association, in their respective capacities as a joint lead arranger and joint bookrunner hereunder. " Arrangers " has the correlative meaning with reference to each Arranger collectively.

" Debt " means, for any Person, the sum of the following (without duplication): (a) all obligations of such Person for borrowed money or evidenced by bonds, bankers' acceptances, debentures, notes or other similar instruments; (b) all obligations of such Person (whether contingent or otherwise) in respect of letters of credit, surety or other bonds and similar instruments; (c) all obligations of such Person to pay the deferred purchase price of Property or services (other than (i) accrued pension costs and other employee benefit and compensation obligations arising in the ordinary course of business and (ii) accounts payable incurred in the ordinary course of business which are either (x) not more than 90 days past due or (y) being contested in good faith by appropriate action and for which adequate reserves have been maintained in accordance with GAAP); (d) all obligations under Capital Leases; (e) all obligations under Synthetic Leases; (f) all Debt (as defined in the other clauses of this definition) of others secured by (or for which the holder of such Debt has an existing right, contingent or otherwise to be secured by) a Lien on any Property of such Person, whether or not such Debt has been assumed by such Person, provided that the amount of Debt for purposes of clause (f) shall be an amount equal to the lesser of the unpaid amount of such Debt and the fair market value of the encumbered Property; (g) all Debt (as defined in the other clauses of this definition) of others guaranteed by such Person or in respect of which such Person otherwise assures a creditor against loss of the Debt (howsoever such assurance shall be made) to the extent of the lesser of the amount of such Debt and the maximum stated amount of such guarantee or assurance against loss; (h) obligations to deliver commodities, goods or services, including, without limitation, Hydrocarbons, in consideration of one or more advance payments (but only to the extent of such advance payments and only to the extent such commodities, goods or services have not been delivered), other than gas balancing arrangements in the ordinary course of business; (i) any Debt of a partnership for which such Person is liable either by agreement, by operation of law or by a Governmental Requirement but only to the extent of such liability; (j) Disqualified Capital Stock of such Person; and (k) the undischarged balance of any production payment created by such Person or for the creation of which such Person directly or indirectly received payment. Notwithstanding anything to the contrary herein or in the other Loan Documents, "Debt" shall not include obligations to pay for drilling expenses, capital expenditure costs, overhead charges and other drilling carry costs, up to an aggregate amount not to exceed $40,000,000, or any guarantee thereof. The Debt of any Person shall include all obligations of such Person of the character described above to the extent such Person remains legally liable in respect thereof notwithstanding that any such obligation is not included as a liability of such Person under GAAP.

" Defaulting Lender " means any Lender that has (a) failed to fund any portion of its Loans or participations in Letters of Credit or Swing Line Loans within three (3) Business Days of the date required to be funded by it hereunder unless such Lender notifies Administrative Agent and Borrower in writing that such failure is the result of such Lender's good faith determination that one or more conditions precedent to funding (which conditions precedent, together with the applicable default, if any, shall be specifically identified in such writing) has not been satisfied, (b) notified the Borrower, the Administrative Agent, the Issuing Bank, the Swing Line Lender or any Lender in writing that it does not intend to comply with any of its funding obligations under this Agreement or has made a public statement to the effect that it does not intend to comply with its funding obligations under this Agreement unless such writing or public statement relates to such Lenders' obligation to fund a Loan hereunder and states that such position is based on such Lender's good faith determination that a condition precedent to funding (which condition precedent, together with the applicable default, if any, shall be specifically identified in such writing or public statement) cannot be satisfied), (c) failed, within three (3) Business Days after request by the Administrative Agent or the Borrower, to confirm that it will comply with the terms of this Agreement relating to its obligations to fund prospective Loans and participations in then outstanding Letters of Credit and Swing Line Loans (provided that such Lender shall cease to be a

Defaulting Lender pursuant to this clause (c) upon receipt of written confirmation by the Administrative Agent and the Borrower), (d) otherwise failed to pay over to the Administrative Agent or any other Lender any other amount required to be paid by it hereunder within three Business Days of the date when due, unless the subject of a good faith dispute, or (e) become the subject of a Bail-In Action, bankruptcy or insolvency proceeding, or has had a receiver, conservator, trustee or custodian appointed for it, or has a parent company that has become the subject of a Bail-In Action, bankruptcy or insolvency proceeding, or has had a receiver, conservator, trustee or custodian appointed for it or, in the good faith determination of the Administrative Agent or the Borrower, has taken any action in furtherance of, or indicating its consent to, approval of, or acquiescence in, any such proceeding or appointment; provided that a Lender shall not become a Defaulting Lender solely as the result of the acquisition or maintenance of an ownership interest in such Lender or any Person controlling such Lender or the exercise of control over such Lender or any Person controlling such Lender by a Governmental Authority or an instrumentality thereof.

" Federal Funds Effective Rate " means, for any day, the weighted average (rounded upwards, if necessary, to the next 1/100 of 1%) of the rates on overnight Federal funds transactions with members of the Federal Reserve System arranged by Federal funds brokers, as published on the next succeeding Business Day by the Federal Reserve Bank of New York, or, if such rate is not so published for any day that is a Business Day, the average (rounded upwards, if necessary, to the next 1/100 of 1%) of the quotations for such day for such transactions received by the Administrative Agent from three Federal funds brokers of recognized standing selected by it; provided that if the Federal Funds Effective Rate shall be less than zero, such rate shall be deemed to be zero for purposes of this Agreement.

" LIBO Rate " means, with respect to any Eurodollar Borrowing for any Interest Period, the rate (rounded upwards, if necessary, to the next 1/100 of 1%) appearing on Reuters Screen LIBOR01 Page (or on any successor or substitute page of such service, or any successor to or substitute for such service, providing rate quotations comparable to those currently provided on such page of such service, as determined by the Administrative Agent from time to time for purposes of providing quotations of interest rates applicable to dollar deposits in the London interbank market) at approximately 11:00 a.m., London time, two Business Days prior to the commencement of such Interest Period, as the rate for dollar deposits with a maturity comparable to such Interest Period. In the event that such rate is not available at such time for any reason, then the "LIBO Rate" with respect to such Eurodollar Borrowing for such Interest Period shall be the rate (rounded upwards, if necessary, to the next 1/100 of 1%) at which dollar deposits of an amount comparable to such Eurodollar Borrowing and for a maturity comparable to such Interest Period are offered by the principal London office of the Administrative Agent in immediately available funds in the London interbank market at approximately 11:00 a.m., London time, two Business Days prior to the commencement of such Interest Period; provided that if the LIBO Rate shall be less than zero, such rate shall be deemed to be zero for purposes of this Agreement.

" Material Indebtedness " means Debt (other than the Loans and Letters of Credit), or obligations in respect of one or more Hedge Agreements, of any one or more Credit Parties in an aggregate principal amount exceeding $25,000,000. For purposes of determining Material Indebtedness, the "principal amount" of the obligations of the Borrower or any other Credit Party in respect of any Hedge Agreement at any time shall be the Hedge Termination Value thereof.

"Maturity Date " means May 4, 2022; provided that, in the event that the Borrower's 7.5% Senior Notes due 2020 are not refinanced with other Debt having a maturity date that is later than November 4, 2022 or otherwise repaid, prepaid or redeemed pursuant to a transaction permitted hereunder, in each case before June 15, 2020, the Maturity Date shall, automatically without further action or notice, be June 15, 2020.

" Ninth Amendment Effective Date " means May 4, 2017.

(b) deleting the following defined terms: "Cash Collateral", "Cash Equivalents", "Consolidated Cash Balance", "Consolidated Cash Balance Threshold", "Excess Cash", "Excluded Asset Disposition Proceeds", "Excluded Equity Proceeds", "Excluded Proceeds Account", "Interest Expense" and "Total Secured Debt".

(c) deleting the Borrowing Base Utilization Grid in the defined term "Applicable Margin" and replacing it with the following:

Borrowing Base Utilization Grid					
Utilization Percentage	*<25%*	*≥ 25% but <50%*	*≥ 50% but <75%*	*≥ 75% but <90%*	*≥ 90%*
Eurodollar Loans	2.00%	2.25%	2.50%	2.75%	3.00%
ABR Loans	1.00%	1.25%	1.50%	1.75%	2.00%
Commitment Fee Rate	0.375%	0.375%	0.50%	0.50%	0.50%

2.3 Amendment to Section 2.02(c) . Section 2.02(c) is hereby amended by (i) deleting the text reading "an integral multiple of $1,000,000 and not less than $1,000,000" contained in the first sentence thereof and replacing it in its entirety with text reading "an integral multiple of $100,000 and not less than $500,000" and (ii) deleting the text reading "an integral multiple of

$500,000 and not less than $1,000,000" contained in the second sentence thereof and replacing it in its entirety with text reading "an integral multiple of $100,000 and not less than $500,000".

2.4 Amendment to Section 2.03. Section 2.03 is hereby amended by adding the term "and" at the end of Section 2.03(v), deleting existing Section 2.03(vi) and renumbering existing Section 2.03(vii) as Section 2.03(vi).

2.5 Amendment to Section 2.07(e). Section 2.07(e) is hereby amended by deleting such Section in its entirety and replacing it with the following:

> "(e) Reduction of Borrowing Base Upon Issuance of Senior Notes. Upon the issuance of any Senior Notes in accordance with Section 9.02(f) (other than Senior Notes issued pursuant to an Exchange Offer or constituting Permitted Refinancing Debt), the Borrowing Base then in effect shall be reduced by an amount equal to the product of 0.25 multiplied by the stated principal amount of such Senior Notes (without regard to any initial issue discount), and the Borrowing Base as so reduced shall become the new Borrowing Base immediately upon the date of such issuance, effective and applicable to the Borrower, the Administrative Agent, the Issuing Bank and the Lenders on such date until the next redetermination or modification thereof hereunder."

2.6 Amendment to Section 3.04(a). Section 3.04(a) is hereby amended by (i) deleting the text reading "in a minimum aggregate amount of $1,000,000 or any integral multiple of $500,000 in excess thereof or, if less than $500,000, the remaining balance of the ABR Loans" contained therein and replacing it in its entirety with text reading "in a minimum aggregate amount of $500,000 or any integral multiple of $100,000 in excess thereof or, if less than $500,000, the remaining balance of the ABR Loans" and (ii) deleting the text reading "in a minimum aggregate amount of $1,000,000 or any integral multiple of $1,000,000 in excess thereof or, if less than $1,000,000, the remaining balance of such Eurodollar Borrowing" contained in the second sentence thereof and replacing it in its entirety with text reading "in a minimum aggregate amount of $500,000 or any integral multiple of $100,000 in excess thereof or, if less than $500,000, the remaining balance of such Eurodollar Borrowing".

2.7 Amendment to Section 3.04(c). Section 3.04(c) is hereby amended by deleting existing Section 3.04(c)(iv) and renumbering existing Sections 3.04(c)(v) and (vi) as Sections 3.04(c)(iv) and (v), respectively.

2.8 Amendment to Section 6.02. Section 6.02 is hereby amended by:

(a) Deleting existing Section 6.02(c) and renumbering existing Section 6.02(d) as Section 6.02(c).

(b) deleting the paragraph at the end thereof and replacing it with the following:

> "Each request for a Borrowing and each request for the issuance, amendment (to increase the amount or extend the term), renewal or extension of any Letter of

Credit shall be deemed to constitute a representation and warranty by the Borrower on the date thereof as to the matters specified in Sections 6.02(a) and (b).”

2.9 Amendment to Section 7.22 . Section 7.22 is hereby amended by deleting such Section in its entirety and replacing it with the following:

“Section 7.22 Solvency . Immediately after giving effect to the transactions contemplated hereby, including any Borrowing or the issuance, amendment (to increase the amount or extend the term), renewal or extension of any Letter of Credit (a) the aggregate assets (after giving effect to amounts that could reasonably be received by reason of indemnity, offset, insurance or any similar arrangement), at a fair valuation, of the Credit Parties, taken as a whole, will exceed the aggregate Debt of the Credit Parties on a consolidated basis, as such Debt becomes absolute and matures, (b) the Credit Parties, taken as a whole, have not incurred, do not intend to incur, and do not believe that they will incur, Debt beyond their ability to pay such Debt (after taking into account the timing and amounts of cash that they reasonably expect could be received and the amounts that they reasonably expect could be payable on or in respect of their liabilities, and giving effect to amounts that could reasonably be expected to be received by reason of indemnity, offset, insurance or any similar arrangement) as such Debt becomes absolute and matures and (c) the Credit Parties, taken as a whole, have not (and will have no reason to believe that they will have thereafter) unreasonably small capital for the conduct of their business.”

2.10 Amendment to Section 7.23 . Section 7.23 is hereby amended by deleting such Section in its entirety and replacing it with the following:

“Section 7.23 Sanctions Laws and Regulations; Anti-Corruption Laws . None of the Borrower, any Subsidiary of the Borrower or any directors or officers of the Borrower or any such Subsidiary or any brokers or other agents acting at the direction of the foregoing in connection with this Agreement or any other Loan Document, is a Designated Person. Each of Borrower and its Subsidiaries and their respective directors, officers and, to the knowledge of Borrower, employees, agents, advisors and Affiliates is in compliance, in all material respects, with (a) all Sanctions Laws and Regulations, (b) the United States Foreign Corrupt Practices Act of 1977, as amended, and any other applicable anti-bribery or anti-corruption laws, rules, regulations and orders (collectively, “Anti-Corruption Laws”) and (c) the PATRIOT Act and any other applicable terrorism and money laundering laws, rules, regulations and orders. No part of the proceeds of the Loans or Letters of Credit will be used, directly or indirectly, by the Borrower or any Subsidiary (i) for the purpose of financing any activities or business of or with any Person or in any country, region or territory that at such time is the subject of any Sanctions or (ii) for any payments to any governmental official or employee, political party, official of a political party, candidate for political office, or anyone else acting in an official capacity, in order to obtain, retain or direct business or obtain any improper advantage, in violation of any Anti-Corruption Law."

2.11 Amendment to Section 8.01. Section 8.01 is hereby amended by deleting existing Section 8.01(o) and renumbering existing Section 8.01(p) as Section 8.01(o).

2.12 Amendment to Section 8.18. Section 8.18 is hereby amended by deleting Section 8.18(c).

2.13 Amendment to Section 9.01(a). Section 9.01(a) is hereby amended by deleting such Section in its entirety and replacing it with the following:

> "(a) Maximum Ratio of Total Debt to EBITDA. The Borrower will not, as of the last day of any fiscal quarter, permit its ratio of Total Debt as of such date to EBITDA for the period of four consecutive fiscal quarters ending on such date to be greater than 4.00 to 1.00."

2.14 Amendment to Section 9.01(c). Section 9.01(c) is hereby amended by deleting such Section in its entirety.

2.15 Amendment to Section 9.02(b). Section 9.02(b) is hereby amended by (i) deleting the text reading "October 7, 2014" and replacing it with text reading "the Ninth Amendment Effective Date" and (ii) by deleting the text reading "June 30, 2014" and replacing it with "December 31, 2016".

2.16 Amendment to Section 9.02(f). Section 9.02(f) is hereby amended by deleting such Section in its entirety and replacing it with the following:

> "(f) Senior Notes issued by the Borrower and any guarantees of such Debt by the Borrower or any other Guarantor, provided that (i) at the time of incurring such Debt (A) no Default has occurred and is then continuing and (B) no Default would result from the incurrence of such Debt after giving effect to the incurrence of such Debt (and any concurrent repayment of Debt with the proceeds of such incurrence), (ii) such Debt does not have any scheduled amortization prior to 91 days after the Maturity Date, (iii) such Debt does not mature sooner than 91 days after the Maturity Date, (iv) the covenants applicable to such Debt are not materially more onerous, taken as a whole, than the covenants applicable to the Loans, (v) the Borrowing Base is reduced pursuant to Section 2.07(e), and prepayment is made to the extent required by Section 3.04(c)(iii), and (vi) after giving pro forma effect to the issuance of such Debt the Borrower is in compliance with Section 9.01."

2.17 Amendment to Section 9.02(g). Section 9.02(g) is hereby amended by deleting the amount "$20,000,000" and replacing it with the amount "$40,000,000".

2.18 Amendment to Section 9.02(j). Section 9.02(j) is hereby amended by deleting the amount "$25,000,000" and replacing it with the amount "$40,000,000".

2.19 Amendment to Section 9.03(h). Section 9.03(h) is hereby amended by deleting the amount "$25,000,000" and replacing it with the amount "$40,000,000".

2.20 Amendment to Section 9.04(a)(viii). Section 9.04(a)(viii) is hereby amended by deleting the amount "$5,000,000" in each instance of its use and replacing it with the amount "$10,000,000", and deleting the amount "$25,000,000" and replacing it with the amount "$50,000,000".

2.21 Amendment to Section 9.04(b)(i). Section 9.04(b)(i) is hereby amended by deleting such Section in its entirety and replacing it with the following:

> "(i) Redeem the Senior Notes (other than (A) as the result of the conversion of Senior Notes into Equity Interests of the Borrower (other than Disqualified Capital Stock), (B) with the net cash proceeds of a substantially concurrent (for this purpose meaning 150 days) offering of common Equity Interests or Permitted Refinancing Debt, (C) cash payments made in settlement of the Borrower's obligations under (1) the Existing Convertible Notes Indenture upon the conversion or required repurchase of any Existing Convertible Notes thereunder or (2) any other indenture pursuant to which any convertible notes of the Borrower are issued upon the conversion or required repurchase of any such convertible notes thereunder, (D) voluntary Redemptions of the Existing Convertible Notes or Senior Notes so long as (I) immediately after giving effect to any such Redemption, Availability is greater than or equal to 25% of the Borrowing Base and (2) the aggregate amount paid by the Borrower and the Restricted Subsidiaries to effect all such Redemptions since the Ninth Amendment Effective Date does not exceed $100,000,000 and (E) Redemptions of Senior Notes in an amount equal to the net cash proceeds of any Sale of Property which is not prohibited by Section 9.11; provided that, with respect to any Sale of Property pursuant to clause (d) of Section 9.11, the Borrower shall have first made any prepayment and/or deposit of cash collateral required by Section 3.04(c)(iii); or"

2.22 Amendment to Section 9.05(h). Section 9.05(h) is hereby amended by deleting the amount "$15,000,000" and replacing it with the amount "$35,000,000".

2.23 Amendment to Section 9.05(q). Section 9.05(q) is hereby amended by deleting such Section in its entirety and replacing it with the following:

> (q) other Investments made after the Effective Date (including Investments in Unrestricted Subsidiaries and Foreign Restricted Subsidiaries made after the Effective Date) not to exceed $100,000,000 or, if Availability after giving pro forma effect to such Investment is equal to or greater than 25% of the then effective Borrowing Base, such amount may not exceed $150,000,000 (each measured on a cost basis) in the aggregate at any time; provided that no Event of Default exists or would result from such Investment.

2.24 Amendment to Section 9.11(e). Section 9.11(e) is hereby amended by deleting the amount “$2,500,000” and replacing it with the amount “$5,000,000”.

2.25 Amendment to Section 9.16(d). Section 9.16(d) is hereby amended by deleting the amount “$120,000,000” and replacing it with the amount “$300,000,000”.

2.26 Amendment to Section 10.01(k). Section 10.01(k) is hereby amended by deleting the amount “$20,000,000” and replacing it with the amount “$25,000,000”.

2.27 Amendment to Section 12.04(b)(i). Section 12.04(b)(i) is hereby amended by deleting the text therein reading “(such consent not to be unreasonably withheld)” and replacing it with text reading “(such consent not to be unreasonably withheld or delayed)”.

2.28 Amendment to Section 12.11. Section 12.11 is hereby amended by deleting such Section in its entirety and replacing it with the following:

> “Section 12.11 Confidentiality. Each of the Administrative Agent, the Issuing Bank and the Lenders agrees to maintain the confidentiality of the Information (as defined below), except that Information may be disclosed (a) to its and its Affiliates’ directors, officers, employees and agents, including accountants, legal counsel and other advisors (it being understood that the Persons to whom such disclosure is made will be informed of the confidential nature of such Information and instructed to keep such Information confidential), (b) to the extent requested by any regulatory authority (and in connection therewith, to the extent permitted by applicable law or such regulatory authority, the disclosing Person agrees to inform the Borrower of such disclosure or pending disclosure), (c) to the extent required by applicable laws or regulations or by any subpoena or similar legal process (and in connection therewith, to the extent permitted by applicable law or such legal process, the disclosing Person agrees to inform the Borrower of such disclosure or pending disclosure), (d) to any other party to this Agreement or any other Loan Document, (e) in connection with the exercise of any remedies hereunder or under any other Loan Document or any suit, action or proceeding relating to this Agreement or any other Loan Document or the enforcement of rights hereunder or thereunder, (f) subject to an agreement containing provisions substantially the same as those of this Section 12.11, to (i) any assignee of or Participant in, or any prospective assignee of or Participant in, any of its rights or obligations under this Agreement, (ii) any actual or prospective counterparty (or its advisors) to any Hedge Agreement relating to any Credit Party and its obligations or (iii) any credit insurance provider relating to the Borrower and its obligations under the Loan Documents, (g) with the consent of the Borrower or (h) to the extent such Information (i) becomes publicly available other than as a result of a breach of this Section 12.11 or (ii) becomes available to the Administrative Agent, the Issuing Bank or any Lender on a nonconfidential basis from a source other than the Borrower or any Credit Party. For the purposes of this Section 12.11, “Information” means all information received from the Borrower or any Subsidiary relating to the Borrower or any Subsidiary or the business of the Borrower or any Subsidiary, other than any such information that is available to the

Administrative Agent, the Issuing Bank or any Lender on a nonconfidential basis prior to disclosure by the Borrower or any Subsidiary and other information pertaining to the terms of this Agreement routinely provided by arrangers to data service providers, including league table providers, that serve the lending industry. Any Person required to maintain the confidentiality of Information as provided in this Section 12.11 shall be considered to have complied with its obligation to do so if such Person has exercised the same degree of care to maintain the confidentiality of such Information as such Person would accord to its own confidential information."

2.29 Amendment to Article XII. Article XII is hereby amended by adding the following new Sections 12.18 and 12.19 where numerically appropriate.

"Section 12.18 Flood Insurance. Notwithstanding any provision in this Agreement, any Security Instrument or any other Loan Document to the contrary, in no event is any Building (as defined in the applicable Flood Insurance Regulation) or Manufactured (Mobile) Home (as defined in the applicable Flood Insurance Regulation) included in the definition of "Mortgaged Property" and no Building or Manufactured (Mobile) Home is hereby or shall be encumbered by any Security Instrument. As used herein, "Flood Insurance Regulations" shall mean (i) the National Flood Insurance Act of 1968 as now or hereafter in effect or any successor statute thereto, (ii) the Flood Disaster Protection Act of 1973 as now or hereafter in effect or any successor statute thereto, (iii) the National Flood Insurance Reform Act of 1994 (amending 42 USC 4001, et. seq.), as the same may be amended or recodified from time to time, and (iv) the Flood Insurance Reform Act of 2004 and any regulations promulgated thereunder.

Section 12.19 No Advisor or Fiduciary Responsibility. In connection with all aspects of each transaction contemplated hereby (including in connection with any amendment, waiver or other modification hereof or of any other Loan Document), the Borrower acknowledges and agrees, and acknowledges the Guarantors' understanding, that: (a) the arranging and other services provided by the Administrative Agent, the Joint Lead Arrangers and the Lenders in connection with this Agreement are arm's-length commercial transactions between the Borrower and its Affiliates, on the one hand, and the Administrative Agent, the Joint Lead Arrangers and the Lenders, on the other hand, (b) the Borrower has consulted its own legal, accounting, regulatory and tax advisors to the extent it has deemed appropriate, (c) the Borrower is capable of evaluating, and understands and accepts, the terms, risks and conditions of the transactions contemplated hereby and by the other Loan Documents; (d) each of the Administrative Agent, the Joint Lead Arrangers and the Lenders is, and has been, acting solely as a principal and, except as expressly agreed in writing by the relevant parties, has not been, is not, and will not be acting as an advisor, agent or fiduciary for the Borrower or any of its Affiliates, or any other Person, (e) neither the Administrative Agent, the Joint Lead Arrangers nor the Lenders has any obligation to the Borrower or any of its Affiliates with respect to the transactions contemplated hereby except those obligations expressly set forth herein and in the other Loan Documents; and (f) the Administrative Agent, the Joint Lead Arrangers, the Lenders and their respective Affiliates may be engaged in a broad range of transactions that involve interests that differ from those of the Borrower and its Affiliates, and neither the Administrative Agent, the Joint Lead Arrangers nor the Lenders has any obligation to disclose any of such interests to the Borrower or any of its Affiliates. To the fullest extent permitted by law, the Borrower hereby waives and releases any claims that it may have against the Administrative Agent, the Joint Lead Arrangers and the Lenders with respect to any breach or alleged breach of agency or fiduciary duty in connection with any aspect of any transaction contemplated hereby."

2.30 Amendment to Annex I . Annex I is hereby amended and replaced in its entirety by Annex I attached to this Ninth Amendment.

2.31 Amendment to Exhibit B . Exhibit B is hereby amended and replaced in its entirety with Exhibit B attached to this Ninth Amendment.

Section 3. Borrowing Base and Aggregate Elected Commitment Amount . From and after the Ninth Amendment Effective Date, the Borrowing Base is affirmed to be, and hereby is, equal to the amount of $900,000,000 and the Aggregate Elected Commitment Amount is affirmed to be $800,000,000, which Borrowing Base and Aggregate Elected Commitment Amount shall remain in effect until with respect to the Borrowing Base, the next Scheduled Redetermination or the Borrowing Base is otherwise redetermined or adjusted in accordance with the Credit Agreement and with respect to the Aggregate Elected Commitment Amount any adjustment pursuant to Section 2.07A. Notwithstanding the foregoing, the Borrowing Base may be subject to further adjustments from time to time pursuant to Section 2.07(e), Section 8.12(c) or Section 9.11. Each of the Borrower, on the one hand, and the Administrative Agent and the Lenders, on the other hand, agree that the redetermination of the Borrowing Base pursuant to this Section 3 shall constitute the Scheduled Redetermination for May 1, 2017. This Section 3 constitutes notice of the redetermined Borrowing Base in accordance with Section 2.07(d) of the Credit Agreement.

Section 4. Assignments and Reallocations . The Lenders have agreed among themselves, in consultation with the Borrower, to reallocate their respective Maximum Credit Amounts and Elected Commitment Amounts. The Administrative Agent and the Borrower hereby consent to such reallocation and the Lenders' assignments of their Maximum Credit Amounts and Elected Commitment Amounts. On the Ninth Amendment Effective Date and after giving effect to such reallocations, the Maximum Credit Amount and Elected Commitment Amount of each Lender shall be as set forth on Annex I of this Ninth Amendment which Annex I supersedes and replaces the Annex I to the Credit Agreement. With respect to such reallocation, each Lender shall be deemed to have acquired the Maximum Credit Amount and Elected Commitment Amount allocated to it from each of the other Lenders and pursuant to the terms of the Assignment and Assumption Agreement attached as Exhibit G to the Credit Agreement as if each such Lender had executed an Assignment and Assumption Agreement with respect to such allocation. In connection with the assignments in this Ninth Amendment and for purposes of such assignments only, the

Lenders, the Administrative Agent and the Borrower waive the processing and recordation fee under Section 12.04(b)(ii)(C).

Section 5. Conditions Precedent. This Ninth Amendment shall become effective on the date when each of the following conditions is satisfied (or waived in accordance with Section 12.02) (such date, the "Ninth Amendment Effective Date"):

5.1 The Administrative Agent shall have received all fees and other amounts due and payable on or prior to the Ninth Amendment Effective Date and all other fees the Borrower has agreed to pay in connection with this Ninth Amendment, including, to the extent invoiced, reimbursement or payment of all out-of-pocket expenses required to be reimbursed or paid by the Borrower under the Credit Agreement.

5.2 The Administrative Agent shall have received from all of the Lenders, the Borrower and the Guarantors, counterparts (in such number as may be requested by the Administrative Agent) of this Ninth Amendment signed on behalf of such Person.

5.3 If requested in writing by a Lender not later than the Business Day prior to the Ninth Amendment Effective Date, the Loans made by such Lender shall be evidenced by a single promissory note of the Borrower, payable to such Lender in a principal amount equal to its Maximum Credit Amount as in effect on the Ninth Amendment Effective Date and otherwise duly completed.

5.4 No Default shall have occurred and be continuing as of the date hereof, after giving effect to the terms of this Ninth Amendment.

5.5 The Administrative Agent shall have received such other documents as the Administrative Agent or its counsel may reasonably require in connection with the transactions contemplated hereby.

The Administrative Agent is hereby authorized and directed to declare this Ninth Amendment to be effective when it has received documents confirming or certifying, to the satisfaction of the Administrative Agent, compliance with the conditions set forth in this Section 5 or the waiver of such conditions as permitted in Section 12.02. Such declaration shall be final, conclusive and binding upon all parties to the Credit Agreement for all purposes.

Section 6. Post Closing. Within 30 days after the Ninth Amendment Effective Date the Borrower and the applicable Guarantors shall have delivered mortgages to the Administrative Agent covering Oil and Gas Properties of sufficient value to be in compliance with Section 8.13(a).

Section 7. Miscellaneous.

7.1 Confirmation. The provisions of the Credit Agreement, as amended by this Ninth Amendment, shall remain in full force and effect following the effectiveness of this Ninth Amendment.

7.2 Ratification and Affirmation; Representations and Warranties. Each Credit Party hereby (a) acknowledges the terms of this Ninth Amendment; (b) ratifies and affirms (i) its obligations under, and acknowledges its continued liability under, each Loan Document to which it is a party and agrees that each Loan Document to which it is a party remains in full force and effect as expressly amended hereby, and (ii) that the Liens created by the Loan Documents to which it is a party are valid and continuing and secure the Obligations in accordance with the terms thereof, after giving effect to this Ninth Amendment; and (c) represents and warrants to the Lenders that on and as of the date hereof, and immediately after giving effect to the terms of this Ninth Amendment (i) all of the representations and warranties of the Borrower and the Guarantors contained in the Loan Documents are true and correct in all material respects, except to the extent any such representations and warranties are expressly limited to an earlier date, in which case, such representations and warranties shall continue to be true and correct in all material respects as of such specified earlier date, and (ii) no Default or Event of Default has occurred and is continuing.

7.3 Loan Document . This Ninth Amendment is a Loan Document.

7.4 Counterparts . This Ninth Amendment may be executed by one or more of the parties hereto in any number of separate counterparts, and all of such counterparts taken together shall be deemed to constitute one and the same instrument. Delivery of this Ninth Amendment by electronic transmission shall be effective as delivery of a manually executed counterpart hereof.

7.5 NO ORAL AGREEMENT . THIS NINTH AMENDMENT, THE CREDIT AGREEMENT AND THE OTHER LOAN DOCUMENTS EXECUTED IN CONNECTION HEREWITH AND THEREWITH REPRESENT THE FINAL AGREEMENT BETWEEN THE PARTIES AND MAY NOT BE CONTRADICTED BY EVIDENCE OF PRIOR, CONTEMPORANEOUS, OR UNWRITTEN ORAL AGREEMENTS OF THE PARTIES. THERE ARE NO SUBSEQUENT ORAL AGREEMENTS BETWEEN THE PARTIES.

7.6 GOVERNING LAW . THIS NINTH AMENDMENT SHALL BE GOVERNED BY, AND CONSTRUED IN ACCORDANCE WITH, THE LAWS OF THE STATE OF TEXAS.

7.7 Payment of Expenses . In accordance with Section 12.03, the Borrower agrees to pay or reimburse the Administrative Agent for all of its reasonable out-of-pocket costs and reasonable expenses incurred in connection with this Ninth Amendment, any other documents prepared in connection herewith and the transactions contemplated hereby, including, without limitation, the reasonable fees and disbursements of counsel to the Administrative Agent.

7.8 Severability . Any provision of this Ninth Amendment which is prohibited or unenforceable in any jurisdiction shall, as to such jurisdiction, be ineffective to the extent of such prohibition or unenforceability without invalidating the remaining provisions hereof, and any such prohibition or unenforceability in any jurisdiction shall not invalidate or render unenforceable such provision in any other jurisdiction.

7.9 Successors and Assigns . This Ninth Amendment shall be binding upon and inure to the benefit of the parties hereto and their respective successors and assigns.

[SIGNATURES BEGIN NEXT PAGE]

IN WITNESS WHEREOF, the parties hereto have caused this Ninth Amendment to be duly executed as of the date first written above.

BORROWER: CARRIZO OIL & GAS, INC.

By: /s/ David L. Pitts
David L. Pitts
Vice President and Chief Financial Officer

GUARANTORS:

BANDELIER PIPELINE HOLDING, LLC,
CARRIZO (EAGLE FORD) LLC,
CARRIZO (MARCELLUS) LLC,
CARRIZO (MARCELLUS) WV LLC,
CARRIZO MARCELLUS HOLDING INC.,
CARRIZO (NIOBRARA) LLC,
CARRIZO (PERMIAN) LLC,
CARRIZO (UTICA) LLC,
CLLR, INC.,
HONDO PIPELINE, INC.,
And
MESCALERO PIPELINE, LLC,

By: /s/ David L. Pitts

David L. Pitts
Vice President

LENDERS: **WELLS FARGO BANK,**

NATIONAL ASSOCIATION ,
as Administrative Agent and a Lender

By: /s/ Greg Smothers
Name: Greg Smothers
Title: Authorized Officer

CITIBANK, N.A. , as a Lender

By: /s/ Peter Kardos
Name: Peter Kardos
Title: Vice President

Signature Page to Ninth Amendment to Credit Agreement
Carrizo Oil & Gas, Inc.

CAPITAL ONE, NATIONAL ASSOCIATION ,
as a Lender

By: /s/ Robert James
Name: Robert James
Title: Director

ROYAL BANK OF CANADA , as a Lender

By: /s/ Mark Lumpkin, Jr.
Name: Mark Lumpkin, Jr.
Title: Authorized Signatory

CREDIT AGRICOLE CORPORATE AND INVESTMENT BANK ,
as a Lender

By: /s/ Michael Willis
Name: Michael Willis
Title: Managing Director

By: /s/ Sharada Manne
Name: Sharada Manne
Title: Managing Director

SOCIETE GENERALE , as a Lender

By: /s/ Max Sonnonstine
Name: Max Sonnonstine
Title: Director

COMPASS BANK , as a Lender

By: /s/ Kathleen J. Bowen
Name: Kathleen J. Bowen
Title: Managing Director

BMO HARRIS BANK, N.A. , as a Lender

By: /s/ James V. Ducote

Name: James V. Ducote

Title: Managing Director

PNC BANK, NATIONAL ASSOCIATION ,
as a Lender

By: /s/ Jonathan Luchansky
Name: Jonathan Luchansky
Title: Director

THE BANK OF NOVA SCOTIA ,
as a Lender

By: /s/ Alan Dawson
Name: Alan Dawson
Title: Director

GOLDMAN SACHS BANK USA ,
as a Lender

By: /s/ Josh Rosenthal
Name: Josh Rosenthal
Title: Authorized Signatory

BANK OF AMERICA, N.A. ,
as a Lender

By: /s/ Ronald E. McKaig
Name: Ronald E. McKaig
Title: Managing Director

ABN AMRO CAPITAL USA LLC ,
as a Lender

By: /s/ Darrell Holley
Name: Darrell Holley
Title: Managing Director

By: /s/ Michaela Braun
Name: Michaela Braun
Title: Director

KEYBANK NATIONAL ASSOCIATION ,
as a Lender

By: /s/ George E. McKean
Name: George E. McKean
Title: Senior Vice President

CREDIT SUISSE AG,
CAYMAN ISLANDS BRANCH ,
as a Lender

By: /s/ Nupur Kumar
Name: Nupur Kumar
Title: Authorized Signatory

By: /s/ Lea Baerlocher
Name: Lea Baerlocher
Title: Authorized Signatory

IBERIABANK , as a Lender

By: /s/ Stacy Goldstein
Name: Stacy Goldstein
Title: Senior Vice President

ASSOCIATED BANK, N.A. , as a Lender

By: /s/ Brian Caddell
Name: Brian Caddell
Title: Senior Vice President

COMERICA BANK ,
as a Lender

By: /s/ William Robinson
Name: William Robinson
Title: Senior Vice President

REGIONS BANK ,
as a Lender

By: /s/ Kelly L. Elmore III
Name: Kelly L. Elmore III
Title: Senior Vice President

ANNEX I

LIST OF APPLICABLE PERCENTAGES, MAXIMUM CREDIT AMOUNTS AND ELECTED COMMITMENT AMOUNTS

Name of Lender	Applicable Percentage	Maximum Credit Amount	Elected Commitment Amount
Wells Fargo Bank, N.A.	7.50%	$150,000,000.00	$60,000,000.00
Capital One, N.A.	7.50%	$150,000,000.00	$60,000,000.00
Citibank, N.A.	7.50%	$150,000,000.00	$60,000,000.00
Royal Bank of Canada	5.80%	$116,000,000.00	$46,400,000.00
BMO Harris Bank, N.A.	5.80%	$116,000,000.00	$46,400,000.00
Compass Bank	5.80%	$116,000,000.00	$46,400,000.00
Credit Agricole Corporate and Investment Bank	5.80%	$116,000,000.00	$46,400,000.00
Goldman Sachs Bank USA	5.80%	$116,000,000.00	$46,400,000.00
PNC Bank National Association	5.80%	$116,000,000.00	$46,400,000.00
Societe Generale	5.80%	$116,000,000.00	$46,400,000.00
The Bank of Nova Scotia	5.80%	$116,000,000.00	$46,400,000.00
ABN AMRO Capital USA LLC	4.30%	$86,000,000.00	$34,400,000.00
Bank of America, N.A.	4.30%	$86,000,000.00	$34,400,000.00
Credit Suisse AG, Cayman Islands Branch	4.30%	$86,000,000.00	$34,400,000.00
Iberiabank	4.30%	$86,000,000.00	$34,400,000.00
KeyBank National Association	4.30%	$86,000,000.00	$34,400,000.00
Associated Bank, N.A.	3.20%	$64,000,000.00	$25,600,000.00
Comerica Bank	3.20%	$64,000,000.00	$25,600,000.00
Regions Bank	3.20%	$64,000,000.00	$25,600,000.00
TOTAL	100.00%	$2,000,000,000.00	$800,000,000.00

EXHIBIT B
[FORM OF] BORROWING REQUEST

[ ], 201[ ]

Carrizo Oil & Gas, Inc., a corporation duly formed and existing under the laws of the State of Texas (the " Borrower "), pursuant to Section 2.03 of the Credit Agreement dated as of January 27, 2011 (as amended, restated, supplemented or otherwise modified from time to time, the " Credit Agreement ") among the Borrower, Wells Fargo Bank, National Association, as Administrative Agent, and the other agents and lenders from time to time party thereto (unless otherwise defined herein, each capitalized term used herein shall have the same meaning given to it in the Credit Agreement), hereby requests a Borrowing as follows:

(i) the aggregate amount of the requested Borrowing is $[ ];

(ii) the date of such Borrowing is [ ], 201[ ];

(iii) the requested Borrowing is to be [an ABR Borrowing] [a Eurodollar Borrowing];

(iv) [the initial Interest Period applicable thereto is [ ]] [1] ;

(v) the amount of the Borrowing Base in effect on the date hereof is $[ ];

(vi) the total Revolving Credit Exposures on the date hereof (without regard to this requested Borrowing) is $[ ];

(vii) the pro forma total Revolving Credit Exposures (giving effect to this requested Borrowing) is $[ ];

(viii) the location and number of the Borrower's account to which funds are to be disbursed are as follows:

[_________]
[_________]
[_________]
[_________]
[_________]

[1] Include in the case of a Eurodollar Borrowing.

The undersigned certifies that he/she is the [ ] of the Borrower and that as such he/she is authorized to execute this Borrowing Request on behalf of the Borrower. The undersigned further certifies, represents and warrants on behalf of the Borrower that the Borrower is entitled to receive the requested Borrowing under the terms and conditions of the Credit Agreement.

CARRIZO OIL & GAS, INC.

By: __
Name: __
Title: __

Exhibit 31.1

CERTIFICATION

PRINCIPAL EXECUTIVE OFFICER

I, S.P. Johnson, IV, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Carrizo Oil & Gas, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
    a. designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
    b. designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
    c. evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
    d. disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect the registrant's internal control over financial reporting; and
5. The registrant’s other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant’s auditors and the audit committee of the registrant’s board of directors (or persons performing the equivalent functions):
    a. all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
    b. any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: May 9, 2017

/s/ S.P. Johnson, IV

S.P. Johnson, IV
President and Chief Executive Officer

Exhibit 31.2

CERTIFICATION

PRINCIPAL FINANCIAL OFFICER

I, David L. Pitts, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Carrizo Oil & Gas, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
   a. designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
   b. designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
   c. evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
   d. disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect the registrant's internal control over financial reporting; and
5. The registrant’s other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant’s auditors and the audit committee of the registrant’s board of directors (or persons performing the equivalent functions):
   a. all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
   b. any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: May 9, 2017

/s/ David L. Pitts

David L. Pitts
Vice President and Chief Financial Officer

Exhibit 32.1

Certification Pursuant to
Section 906 of the Sarbanes-Oxley Act of 2002
(Subsections (a) and (b) of Section 1350, Chapter 63 of Title 18, United States Code)

Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (Subsections (a) and (b) of Section 1350, Chapter 63 of Title 18, United States Code), I, S.P. Johnson, IV, President and Chief Executive Officer of Carrizo Oil & Gas, Inc., a Texas corporation (the "Company"), hereby certify, to my knowledge, that:

1. the Company's Quarterly Report on Form 10-Q for the quarterly period ended March 31, 2017 (the "Report") fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

2. information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date:	May 9, 2017	/s/ S.P. Johnson, IV
		S.P. Johnson, IV President and Chief Executive Officer

The foregoing certification is being furnished solely pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (Subsections (a) and (b) of Section 1350, Chapter 63 of Title 18, United States Code) and is not being filed as part of the Report or as a separate disclosure document.

A signed original of this written statement required by Section 906 has been provided to Carrizo Oil & Gas, Inc. and will be retained by Carrizo Oil & Gas, Inc. and furnished to the Securities and Exchange Commission or its staff upon request.

Exhibit 32.2

Certification Pursuant to
Section 906 of the Sarbanes-Oxley Act of 2002
(Subsections (a) and (b) of Section 1350, Chapter 63 of Title 18, United States Code)

Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (Subsections (a) and (b) of Section 1350, Chapter 63 of Title 18, United States Code), I, David L. Pitts, Vice President and Chief Financial Officer of Carrizo Oil & Gas, Inc., a Texas corporation (the "Company"), hereby certify, to my knowledge, that:

1. the Company's Quarterly Report on Form 10-Q for the quarterly period ended March 31, 2017 (the "Report") fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
2. information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date:	May 9, 2017	/s/ David L. Pitts
		David L. Pitts Vice President and Chief Financial Officer

The foregoing certification is being furnished solely pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (Subsections (a) and (b) of Section 1350, Chapter 63 of Title 18, United States Code) and is not being filed as part of the Report or as a separate disclosure document.

A signed original of this written statement required by Section 906 has been provided to Carrizo Oil & Gas, Inc. and will be retained by Carrizo Oil & Gas, Inc. and furnished to the Securities and Exchange Commission or its staff upon request.