UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-Q

(Mark One)

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

For the quarterly period ended September 30, 2020

OR

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

For the transition period from to

Commission file number: 001-36120

ANTERO RESOURCES CORPORATION
(Exact name of registrant as specified in its charter)

Delaware (State or other jurisdiction of incorporation or organization)	**80-0162034** (IRS Employer Identification No.)
1615 Wynkoop Street, Denver, Colorado (Address of principal executive offices)	**80202** (Zip Code)

(303) 357-7310
(Registrant's telephone number, including area code)
Securities registered pursuant to section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, par value $0.01	AR	New York Stock Exchange

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 every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit 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.

Large Accelerated Filer ☒	Accelerated Filer ☐
Non-accelerated Filer ☐	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 registrant had 268,671,945 shares of common stock outstanding as of October 23, 2020.

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CAUTIONARY STATEMENT REGARDING FORWARD-LOOKING STATEMENTS

Some of the information in this Quarterly Report on Form 10-Q may contain "forward-looking statements" within the meaning of Section 27A of the Securities Act of 1933, as amended (the "Securities Act"), and Section 21E of the Securities Exchange Act of 1934, as amended (the "Exchange Act"). All statements, other than statements of historical fact included in this Quarterly Report on Form 10-Q, regarding our strategy, future operations, financial position, estimated revenues and losses, projected costs, prospects, plans and objectives of management are forward-looking statements. Words such as "may," "assume," "forecast," "position," "predict," "strategy," "expect," "intend," "plan," "estimate," "anticipate," "believe," "project," "budget," "potential," or "continue," and similar expressions are used to identify forward-looking statements, although not all forward-looking statements contain such identifying words. When considering these forward-looking statements, investors should keep in mind the risk factors and other cautionary statements in this Quarterly Report on Form 10-Q. These forward-looking statements are based on management's current beliefs, based on currently available information, as to the outcome and timing of future events. Factors that could cause our actual results to differ materially from the results contemplated by such forward-looking statements include:

- our ability to execute our business strategy;
- our production and oil and gas reserves;
- our financial strategy, liquidity, and capital required for our development program;
- our ability to obtain debt or equity financing on satisfactory terms to fund additional acquisitions, expansion projects, working capital requirements and the repayment or refinancing of indebtedness;
- natural gas, natural gas liquids ("NGLs"), and oil prices;
- impacts of world health events, including the coronavirus ("COVID-19") pandemic;
- timing and amount of future production of natural gas, NGLs, and oil;
- our hedging strategy and results;
- our ability to execute our debt repurchase program and/or our asset sale program;
- our ability to meet minimum volume commitments and to utilize or monetize our firm transportation commitments;
- our future drilling plans;
- our projected well costs and cost savings initiatives, including with respect to water handling services provided by Antero Midstream Corporation;
- competition and government regulations;
- pending legal or environmental matters;
- marketing of natural gas, NGLs, and oil;
- leasehold or business acquisitions;
- costs of developing our properties;
- operations of Antero Midstream Corporation;
- general economic conditions;
- credit markets;
- expectations regarding the amount and timing of jury awards;
- uncertainty regarding our future operating results; and

- our other plans, objectives, expectations and intentions contained in this Quarterly Report on Form 10-Q.

We caution investors that these forward-looking statements are subject to all of the risks and uncertainties incidental to our business, most of which are difficult to predict and many of which are beyond our control. These risks include, but are not limited to, commodity price volatility, inflation, availability of drilling, completion, and production equipment and services, environmental risks, drilling and completion and other operating risks, marketing and transportation risks, regulatory changes, the uncertainty inherent in estimating natural gas, NGLs, and oil reserves and in projecting future rates of production, cash flows and access to capital, the timing of development expenditures, conflicts of interest among our stockholders, impacts of world health events, including the COVID-19 pandemic, potential shut-ins of production due to lack of downstream demand or storage capacity, and the other risks described or referenced under the heading "Risk Factors" herein, including the risk factors set forth in our Annual Report on Form 10-K for the year ended December 31, 2019 (the "2019 Form 10-K") and in our Quarterly Report on Form 10-Q for the quarter ended March 31, 2020, each of which is on file with the Securities and Exchange Commission ("SEC").

Reserve engineering is a process of estimating underground accumulations of natural gas, NGLs, and oil that cannot be measured in an exact manner. The accuracy of any reserve estimate depends on the quality of available data, the interpretation of such data, and the price and cost assumptions made by reservoir engineers. In addition, the results of drilling, testing, and production activities, or changes in commodity prices, may justify revisions of estimates that were made previously. If significant, such revisions would change the schedule of any further production and development drilling. Accordingly, reserve estimates may differ significantly from the quantities of natural gas, NGLs, and oil that are ultimately recovered.

Should one or more of the risks or uncertainties described or referenced in this Quarterly Report on Form 10-Q occur, or should underlying assumptions prove incorrect, our actual results and plans could differ materially from those expressed in any forward-looking statements.

All forward-looking statements, expressed or implied, included in this Quarterly Report on Form 10-Q are expressly qualified in their entirety by this cautionary statement. This cautionary statement should also be considered in connection with any subsequent written or oral forward-looking statements that we or persons acting on our behalf may issue.

Except as otherwise required by applicable law, we disclaim any duty to update any forward-looking statements to reflect events or circumstances after the date of this Quarterly Report on Form 10-Q.

PART I—FINANCIAL INFORMATION
ANTERO RESOURCES CORPORATION
Condensed Consolidated Balance Sheets
December 31, 2019 and September 30, 2020
(In thousands)

	December 31, 2019	(Unaudited) September 30, 2020
Assets		
Current assets:		
Accounts receivable	$ 46,419	88,062
Accounts receivable, related parties	125,000	—
Accrued revenue	317,886	338,729
Derivative instruments	422,849	83,057
Other current assets	10,731	11,934
Total current assets	922,885	521,782
Property and equipment:		
Oil and gas properties, at cost (successful efforts method):		
Unproved properties	1,368,854	1,265,255
Proved properties	11,859,817	12,149,941
Gathering systems and facilities	5,802	5,802
Other property and equipment	71,895	72,936
	13,306,368	13,493,934
Less accumulated depletion, depreciation, and amortization	(3,327,629)	(3,659,376)
Property and equipment, net	9,978,739	9,834,558
Operating leases right-of-use assets	2,886,500	2,660,188
Derivative instruments	333,174	44,070
Investment in unconsolidated affiliate	1,055,177	272,926
Other assets	21,094	16,215
Total assets	$ 15,197,569	13,349,739
Liabilities and Equity		
Current liabilities:		
Accounts payable	$ 14,498	55,173
Accounts payable, related parties	97,883	81,519
Accrued liabilities	400,850	344,606
Revenue distributions payable	207,988	148,917
Derivative instruments	6,721	107,933
Short-term lease liabilities	305,320	251,568
Deferred revenue, VPP	—	43,192
Other current liabilities	6,879	2,467
Total current liabilities	1,040,139	1,035,375
Long-term liabilities:		
Long-term debt	3,758,868	3,158,225
Deferred income tax liability	781,987	381,233
Derivative instruments	3,519	149,222
Long-term lease liabilities	2,583,678	2,410,114
Deferred revenue, VPP	—	167,466
Other liabilities	58,635	64,223
Total liabilities	8,226,826	7,365,858
Commitments and contingencies (Notes 14 and 15)		
Equity:		
Stockholders' equity:		
Preferred stock, $0.01 par value; authorized - 50,000 shares; none issued	—	—
Common stock, $0.01 par value; authorized - 1,000,000 shares; 295,941 shares and 268,549 shares issued and outstanding at December 31, 2019 and September 30, 2020, respectively	2,959	2,685
Additional paid-in capital	6,130,365	6,165,750
Accumulated earnings (deficit)	837,419	(500,308)
Total stockholders' equity	6,970,743	5,668,127
Noncontrolling interests	—	315,754
Total equity	6,970,743	5,983,881
Total liabilities and equity	$ 15,197,569	13,349,739

See accompanying notes to unaudited condensed consolidated financial statements.

ANTERO RESOURCES CORPORATION
Condensed Consolidated Statements of Operations and Comprehensive Loss
Three Months Ended September 30, 2019 and 2020
(Unaudited)
(In thousands, except per share amounts)

	Three Months Ended September 30, 2019	Three Months Ended September 30, 2020
Revenue and other:		
Natural gas sales	$ 524,448	436,304
Natural gas liquids sales	284,958	327,426
Oil sales	40,561	34,265
Commodity derivative fair value gains (losses)	220,788	(514,751)
Marketing	46,645	91,497
Amortization of deferred revenue, VPP	—	5,175
Other income	1,481	675
Total revenue	1,118,881	380,591
Operating expenses:		
Lease operating	35,928	21,450
Gathering, compression, processing, and transportation	603,860	656,615
Production and ad valorem taxes	28,863	25,790
Marketing	108,216	128,580
Exploration	208	454
Impairment of oil and gas properties	1,041,469	29,392
Impairment of midstream assets	7,800	—
Depletion, depreciation, and amortization	241,503	238,418
Accretion of asset retirement obligations	927	1,115
General and administrative (including equity-based compensation expense of $3,875 and $5,699 in 2019 and 2020, respectively)	35,923	31,640
Contract termination and rig stacking	62	1,246
Total operating expenses	2,104,759	1,134,700
Operating loss	(985,878)	(754,109)
Other income (expense):		
Equity in earnings (loss) of unconsolidated affiliates	(117,859)	24,419
Transaction expense	—	(524)
Interest expense, net	(47,754)	(48,043)
Gain on early extinguishment of debt	—	55,633
Total other income (expense)	(165,613)	31,485
Loss before income taxes	(1,151,491)	(722,624)
Provision for income tax benefit	272,627	168,778
Net loss and comprehensive income loss including noncontrolling interests	(878,864)	(553,846)
Less: net loss and comprehensive loss attributable to noncontrolling interests	—	(18,233)
Net loss and comprehensive loss attributable to Antero Resources Corporation	$ (878,864)	(535,613)
Loss per share—basic	$ (2.86)	(1.99)
Loss per share—diluted	$ (2.86)	(1.99)
Weighted average number of shares outstanding:		
Basic	307,781	268,511
Diluted	307,781	268,511

See accompanying notes to unaudited condensed consolidated financial statements

ANTERO RESOURCES CORPORATION

Condensed Consolidated Statements of Operations and Comprehensive Income (Loss)
Nine Months Ended September 30, 2019 and 2020
(Unaudited)
(In thousands, except per share amounts)

	Nine Months Ended September 30, 2019	Nine Months Ended September 30, 2020
Revenue and other:		
Natural gas sales	$ 1,735,086	1,214,801
Natural gas liquids sales	902,606	797,296
Oil sales	137,675	78,233
Commodity derivative fair value gains (losses)	471,847	(116,933)
Gathering, compression, water handling and treatment	4,479	—
Marketing	200,911	201,855
Amortization of deferred revenue, VPP	—	5,175
Other income	3,348	2,180
Total revenue	3,455,952	2,182,607
Operating expenses:		
Lease operating	118,517	71,836
Gathering, compression, processing, and transportation	1,595,223	1,877,084
Production and ad valorem taxes	95,509	71,481
Marketing	408,839	334,906
Exploration	648	895
Impairment of oil and gas properties	1,253,712	155,962
Impairment of midstream assets	14,782	—
Depletion, depreciation, and amortization	724,006	652,130
Loss on sale of assets	951	—
Accretion of asset retirement obligations	2,821	3,330
General and administrative (including equity-based compensation expense of $19,327 and $17,001 in 2019 and 2020, respectively)	146,507	101,264
Contract termination and rig stacking	14,026	12,317
Total operating expenses	4,375,541	3,281,205
Operating loss	(919,589)	(1,098,598)
Other income (expense):		
Equity in loss of unconsolidated affiliates	(90,193)	(83,408)
Impairment of equity investment	—	(610,632)
Gain on deconsolidation of Antero Midstream Partners LP	1,406,042	—
Transaction expense	—	(6,662)
Interest expense, net	(173,868)	(152,956)
Gain on early extinguishment of debt	—	175,365
Total other income (expenses)	1,141,981	(678,293)
Income (loss) before income taxes	222,392	(1,776,891)
Provision for income tax (expense) benefit	(33,332)	421,167
Net income (loss) and comprehensive income (loss) including noncontrolling interests	189,060	(1,355,724)
Less: net income (loss) and comprehensive income (loss) attributable to noncontrolling interests	46,993	(17,997)
Net income (loss) and comprehensive income (loss) attributable to Antero Resources Corporation	$ 142,067	(1,337,727)
Income (loss) per share—basic	$ 0.46	(4.89)
Income (loss) per share—diluted	$ 0.46	(4.89)
Weighted average number of shares outstanding:		
Basic	308,509	273,689
Diluted	308,646	273,689

See accompanying notes to unaudited condensed consolidated financial statements.

ANTERO RESOURCES CORPORATION
Condensed Consolidated Statement of Stockholders' Equity
Nine Months Ended September 30, 2019
(Unaudited)
(In thousands)

	Common Stock		Additional paid-in capital	Accumulated earnings (deficit)	Noncontrolling interests	Total equity
	Shares	Amount				
Balances, December 31, 2018	308,594	$ 3,086	6,485,174	1,177,548	821,669	8,487,477
Issuance of common stock upon vesting of equity-based compensation awards, net of shares withheld for income taxes	147	1	(451)	—	—	(450)
Issuance of common units in Antero Midstream Partners LP upon vesting of equity-based compensation awards, net of units withheld for income taxes	—	—	(85)	—	56	(29)
Equity-based compensation	—	—	7,801	—	1,102	8,903
Net income and comprehensive income	—	—	—	978,763	46,993	1,025,756
Distributions to noncontrolling interests	—	—	—	—	(85,076)	(85,076)
Effect of deconsolidation of Antero Midstream Partners LP	—	—	(359,039)	—	(784,744)	(1,143,783)
Balances, March 31, 2019	308,741	$ 3,087	6,133,400	2,156,311	—	8,292,798
Issuance of common stock upon vesting of equity-based compensation awards, net of shares withheld for income taxes	382	4	(1,819)	—	—	(1,815)
Equity-based compensation	—	—	6,549	—	—	6,549
Net income and comprehensive income	—	—	—	42,168	—	42,168
Balances, June 30, 2019	309,123	$ 3,091	6,138,130	2,198,479	—	8,339,700
Issuance of common stock upon vesting of equity-based compensation awards, net of shares withheld for income taxes	99	1	(86)	—	—	(85)
Repurchases and retirements of common stock	(5,061)	(51)	(17,877)	—	—	(17,928)
Equity-based compensation	—	—	3,875	—	—	3,875
Net loss and comprehensive loss	—	—	—	(878,864)	—	(878,864)
Balances, September 30, 2019	304,161	$ 3,041	6,124,042	1,319,615	—	7,446,698

See accompanying notes to unaudited condensed consolidated financial statements.

ANTERO RESOURCES CORPORATION
Condensed Consolidated Statement of Stockholders' Equity
Nine Months Ended September 30, 2020
(Unaudited)
(In thousands)

	Common Stock		Additional paid-in capital	Accumulated earnings (deficit)	Noncontrolling interests	Total equity
	Shares	Amount				
Balances, December 31, 2019	295,941	$ 2,959	6,130,365	837,419	—	6,970,743
Issuance of common stock upon vesting of equity-based compensation awards, net of shares withheld for income taxes	178	2	(34)	—	—	(32)
Repurchases and retirements of common stock	(27,193)	(272)	(42,418)	—	—	(42,690)
Equity-based compensation	—	—	3,329	—	—	3,329
Net loss and comprehensive loss	—	—	—	(338,810)	—	(338,810)
Balances, March 31, 2020	268,926	2,689	6,091,242	498,609	—	6,592,540
Issuance of common units in Martica Holdings, LLC	—	—	—	—	300,000	300,000
Issuance of common stock upon vesting of equity-based compensation awards, net of shares withheld for income taxes	464	5	(305)	—	—	(300)
Distributions to noncontrolling interest	—	—	—	—	(3,413)	(3,413)
Repurchases and retirements of common stock	(1,000)	(10)	(743)	—	—	(753)
Equity-based compensation	—	—	7,973	—	—	7,973
Net loss and comprehensive loss	—	—	—	(463,304)	236	(463,068)
Balances, June 30, 2020	268,390	$ 2,684	6,098,167	35,305	296,823	6,432,979
Issuance of common units in Martica Holdings, LLC	—	—	—	—	51,000	51,000
Equity component of 2026 Convertible Notes, net	—	—	61,926	—	—	61,926
Issuance of common stock upon vesting of equity-based compensation awards, net of shares withheld for income taxes	159	1	(42)	—	—	(41)
Distributions to noncontrolling interest	—	—	—	—	(13,836)	(13,836)
Equity-based compensation	—	—	5,699	—	—	5,699
Net loss and comprehensive loss	—	—	—	(535,613)	(18,233)	(553,846)
Balances, September 30, 2020	268,549	$ 2,685	6,165,750	(500,308)	315,754	5,983,881

See accompanying notes to unaudited condensed consolidated financial statements.

ANTERO RESOURCES CORPORATION
Condensed Consolidated Statements of Cash Flows
Nine Months Ended September 30, 2019 and 2020
(Unaudited)
(In thousands)

	Nine Months Ended September 30, 2019	Nine Months Ended September 30, 2020
Cash flows provided by (used in) operating activities:		
Net income (loss) including noncontrolling interests	$ 189,060	(1,355,724)
Adjustments to reconcile net income (loss) to net cash provided by operating activities:		
Depletion, depreciation, amortization, and accretion	726,827	655,460
Impairment of oil and gas properties	1,253,712	155,962
Impairment of midstream assets	14,782	—
Commodity derivative fair value (gains) losses	(471,847)	116,933
Gains on settled commodity derivatives	261,794	740,805
Proceeds from derivative monetizations	—	18,073
Loss on sale of assets	951	—
Equity-based compensation expense	19,327	17,001
Deferred income tax expense (benefit)	32,019	(426,267)
Gain on early extinguishment of debt	—	(175,365)
Equity in loss of unconsolidated affiliates	90,193	83,408
Impairment of equity investment	—	610,632
Gain on deconsolidation of Antero Midstream Partners LP	(1,406,042)	—
Distributions/dividends of earnings from unconsolidated affiliates	109,241	128,267
Amortization of deferred revenue	—	(5,175)
Amortization of debt issuance costs, debt discount debt premium and other	8,179	7,391
Changes in current assets and liabilities:		
Accounts receivable	14,236	(15,454)
Accrued revenue	193,650	(20,843)
Other current assets	2,365	(1,455)
Accounts payable including related parties	(971)	(2,198)
Accrued liabilities	(11,169)	15,522
Revenue distributions payable	(72,176)	(54,403)
Other current liabilities	1,387	(60)
Net cash provided by operating activities	955,518	492,510
Cash flows provided by (used in) investing activities:		
Additions to unproved properties	(69,796)	(31,136)
Drilling and completion costs	(957,931)	(693,920)
Additions to water handling and treatment systems	(24,416)	—
Additions to gathering systems and facilities	(48,239)	—
Additions to other property and equipment	(5,980)	(1,346)
Settlement of water earnout	—	125,000
Investments in unconsolidated affiliates	(25,020)	—
Proceeds from the Antero Midstream Partners LP Transactions	296,611	—
Proceeds from asset sales	7,461	—
Proceeds from VPP sale, net	—	215,833
Change in other assets	1,983	1,506
Net cash used in investing activities	(825,327)	(384,063)
Cash flows provided by (used in) financing activities:		
Repurchases of common stock	(17,924)	(43,443)
Issuance of senior notes	650,000	—
Issuance of convertible notes	—	287,500
Repayment of senior notes	—	(899,971)
Borrowings (repayments) on bank credit facilities, net	(45,000)	275,000
Payments of deferred financing costs	(8,259)	(8,907)
Sale of noncontrolling interest	—	300,000
Distributions to noncontrolling interests in Antero Midstream Partners LP	(85,076)	—
Distributions to noncontrolling interests in Martica Holdings LLC	—	(17,249)
Employee tax withholding for settlement of equity compensation awards	(2,379)	(373)
Other	(2,021)	(1,004)
Net cash provided by (used in) financing activities	489,341	(108,447)
Effect of deconsolidation of Antero Midstream Partners LP	(619,532)	—
Net decrease in cash and cash equivalents	—	—
Cash and cash equivalents, beginning of period	—	—
Cash and cash equivalents, end of period	$ —	—
Supplemental disclosure of cash flow information:		
Cash paid during the period for interest	$ 142,288	135,494
Decrease in accounts payable and accrued liabilities for additions to property and equipment	$ 22,103	44,302

See accompanying notes to unaudited condensed consolidated financial statements.

ANTERO RESOURCES CORPORATION
Notes to Unaudited Condensed Consolidated Financial Statements
December 31, 2019 and September 30, 2020

(1) Organization

Antero Resources Corporation (individually referred to as "Antero") and its consolidated subsidiaries (collectively referred to as "Antero Resources," the "Company," "we," "us" or "our") are engaged in the exploration, development, and acquisition of natural gas, NGLs, and oil properties in the Appalachian Basin in West Virginia and Ohio. The Company targets large, repeatable resource plays where horizontal drilling and advanced fracture stimulation technologies provide the means to economically develop and produce natural gas, NGLs, and oil from unconventional formations. The Company's corporate headquarters are located in Denver, Colorado.

(2) Summary of Significant Accounting Policies

(a) Basis of Presentation

These unaudited condensed consolidated financial statements have been prepared pursuant to the rules and regulations of the Securities and Exchange Commission (the "SEC") applicable to interim financial information and should be read in the context of the Company's December 31, 2019 consolidated financial statements and notes thereto for a more complete understanding of the Company's operations, financial position, and accounting policies. The Company's December 31, 2019 consolidated financial statements were included in Antero Resources' 2019 Annual Report on Form 10-K, which was filed with the SEC.

These unaudited condensed consolidated financial statements of the Company have been prepared in accordance with accounting principles generally accepted in the United States ("GAAP") for interim financial information, and, accordingly, do not include all of the information and footnotes required by GAAP for complete consolidated financial statements. In the opinion of management, these unaudited condensed consolidated financial statements include all adjustments (consisting of normal and recurring accruals) considered necessary to present fairly the Company's financial position as of December 31, 2019 and September 30, 2020, its results of operations for the three and nine months ended September 30, 2019 and 2020 and its cash flows for the nine months ended September 30, 2019 and 2020. The Company has no items of other comprehensive income or loss; therefore, its net income or loss is equal to its comprehensive income or loss. Operating results for the period ended September 30, 2020 are not necessarily indicative of the results that may be expected for the full year because of the impact of fluctuations in prices received for natural gas, NGLs, and oil, natural production declines, the uncertainty of exploration and development drilling results, fluctuations in the fair value of derivative instruments, the impacts of COVID-19 and other factors.

(b) Principles of Consolidation

The accompanying unaudited condensed consolidated financial statements include the accounts of Antero Resources Corporation, its wholly owned subsidiaries, any entities in which the Company owns a controlling interest, and variable interest entities ("VIEs") for which the Company is the primary beneficiary.

Through March 12, 2019, Antero Midstream Partners LP ("Antero Midstream Partners"), a publicly traded limited partnership, was included in the consolidated financial statements of Antero. Prior to the Closing (defined in Note 3—Deconsolidation of Antero Midstream Partners LP to the unaudited condensed consolidated financial statements), the Company's ownership of Antero Midstream Partners common units represented approximately a 53% limited partner interest in Antero Midstream Partners, and Antero Resources consolidated Antero Midstream Partners' financial position and results of operations into its consolidated financial statements. The Transactions (defined in Note 3—Deconsolidation of Antero Midstream Partners LP to the unaudited condensed consolidated financial statements) resulted in the exchange of the limited partner interest Antero Resources owned in Antero Midstream Partners for common stock of Antero Midstream Corporation, par value $0.01 per share (the "Antero Midstream Corporation common stock"), representing an approximate 31% interest in Antero Midstream Corporation. As a result, Antero Resources' controlling interest in Antero Midstream Partners was converted to an interest in Antero Midstream Corporation that provides significant influence, but not control, over Antero Midstream Corporation. Thus, effective March 13, 2019, Antero no longer consolidates Antero Midstream Partners in its consolidated financial statements and accounts for its interest in Antero Midstream Corporation using the equity method of accounting. See Note 3—Deconsolidation of Antero Midstream Partners LP to the unaudited condensed consolidated financial statements for further discussion on the Transactions.

For the three months and nine months ended September 30, 2020, the Company determined that Martica Holdings LLC ("Martica") is a VIE for which Antero is the primary beneficiary. Therefore, Martica's accounts are consolidated in the Company's consolidated financial statements. Antero is the primary beneficiary of Martica based on its power to direct the activities that most significantly impact Martica's economic performance, and its obligation to absorb losses of, or right to receive benefits from, Martica that could be significant to Martica. In reaching such determination that Antero is the primary beneficiary of Martica, the Company considered the following:

- Martica was formed to hold certain overriding royalty interests across the Company's existing asset base;
- substantially all of Martica's revenues are derived from production from the Company's natural gas, NGLs, and oil properties in the Appalachian Basin in West Virginia and Ohio;
- Antero owns the Class B Units in Martica, which entitle Antero to receive distributions in respect of the Incremental Override (as defined in Note 4—Transactions); and
- Antero provides accounting, administrative and other services to Martica under a Management Services Agreement.

All significant intercompany accounts and transactions have been eliminated in the Company's unaudited condensed consolidated financial statements. The noncontrolling interest in the Company's unaudited condensed consolidated financial statements for the nine months ended September 30, 2019 represents the interests in Antero Midstream Partners that were owned by the public prior to the Transactions, and the incentive distribution rights in Antero Midstream Partners. The noncontrolling interest in the Company's unaudited condensed consolidated financial statements for the three and nine months ended September 30, 2020 represents the interest in Martica owned by third parties. See Note 4—Transactions for more information on the sale of this noncontrolling interest. Martica is a discrete entity and the assets and credits of Martica are not available to satisfy the debts and obligations of the Company or its other subsidiaries.

Investments in entities for which the Company exercises significant influence, but not control, are accounted for under the equity method. The Company's judgment regarding the level of influence over its equity investments includes considering key factors such as Antero's ownership interest, representation on the board of directors and participation in the policy-making decisions of equity method investees. Such investments are included in Investment in unconsolidated affiliate on the Company's unaudited condensed consolidated balance sheets. Income (loss) from investees that are accounted for under the equity method is included in Equity in earnings (loss) of unconsolidated affiliates on the Company's unaudited condensed consolidated statements of operations and cash flows. When Antero records its proportionate share of net income or net loss, it is recorded in equity in earnings (loss) of unconsolidated affiliates in the statements of operations and the carrying value of that investment on the Company's balance sheet. When a distribution is received, it is recorded as a reduction to the carrying value of that investment on the Company's balance sheet. The Company's equity in earnings of unconsolidated affiliates is adjusted for intercompany transactions and the basis differences recognized due to the difference between the cost of the equity investment in Antero Midstream Corporation and the amount of underlying equity in the net assets of Antero Midstream Partners as of the date of deconsolidation.

The Company accounts for distributions received from equity method investees under the "nature of the distribution" approach. Under this approach, distributions received from equity method investees are classified on the basis of the nature of the activity or activities of the investee that generated the distribution as either a return on investment, which is classified as cash inflows from operating activities, or a return of investment, which is classified as cash inflows from investing activities.

(c) Use of Estimates

The preparation of the unaudited condensed consolidated financial statements in conformity with GAAP requires management to make estimates and assumptions that affect revenues, expenses, assets, liabilities and the disclosure of contingent assets and liabilities. Changes in facts and circumstances or discovery of new information may result in revised estimates, and actual results could differ from those estimates.

The Company's unaudited condensed consolidated financial statements are based on a number of significant estimates, including estimates of natural gas, NGLs, and oil reserve quantities, which are the basis for the calculation of depletion and impairment of oil and gas properties. Reserve estimates, by their nature, are inherently imprecise. Other items in the Company's unaudited condensed consolidated financial statements that involve the use of significant estimates include derivative assets and liabilities, accrued revenue, deferred and current income taxes, equity-based compensation, asset retirement obligations, depreciation, amortization, and commitments and contingencies.

(d) Risks and Uncertainties

The markets for natural gas, NGLs, and oil have, and continue to, experience significant price fluctuations. Price fluctuations can result from variations in weather, levels of production, availability of storage capacity and transportation to other regions of the country, the level of imports to and exports from the United States and various other factors. Increases or decreases in the prices the Company receives for its production could have a significant impact on the Company's future results of operations and reserve quantities.

(e) Cash and Cash Equivalents

The Company considers all liquid investments purchased with an initial maturity of three months or less to be cash equivalents. The carrying value of cash and cash equivalents approximates fair value due to the short-term nature of these instruments. From time to time, the Company may be in the position of a "book overdraft" in which outstanding checks exceed cash and cash equivalents. The Company classifies book overdrafts in accounts payable and revenue distributions payable within its unaudited condensed consolidated balance sheets, and classifies the change in accounts payable and revenue distributions payable associated with book overdrafts as an operating activity within its unaudited condensed consolidated statements of cash flows. As of December 31, 2019, the book overdraft included within accounts payable and revenue distributions payable was $7 million and $18 million, respectively. As of September 30, 2020, the book overdraft included within accounts payable and revenue distributions payable was $8 million and $13 million, respectively.

(f) Oil and Gas Properties

The Company accounts for its natural gas, NGLs, and oil exploration and development activities under the successful efforts method of accounting. Under the successful efforts method, the costs incurred to acquire, drill, and complete productive wells, development wells, and undeveloped leases are capitalized. Oil and gas lease acquisition costs are also capitalized. Exploration costs, including personnel and other internal costs, geological and geophysical expenses, delay rentals for gas and oil leases, and costs associated with unsuccessful lease acquisitions are charged to expense as incurred. Exploratory drilling costs are initially capitalized, but charged to expense if the Company determines that the well does not contain reserves in commercially viable quantities. The Company reviews exploration costs related to wells-in-progress at the end of each quarter and makes a determination, based on known results of drilling at that time, whether the costs should continue to be capitalized pending further well testing and results, or charged to expense. The Company incurred no such charges to expense during the three and nine months ended September 30, 2020. During the nine months ended September 30, 2019, the Company recorded an impairment charge of $26 million for design and initial costs related to pads that are no longer planned to be placed into service. The sale of a partial interest in a proved property is accounted for as a cost recovery, and no gain or loss is recognized as long as this treatment does not significantly affect the units-of-production amortization rate. A gain or loss is recognized for all other sales of producing properties.

Unproved properties are assessed for impairment on a property-by-property basis, and any impairment in value is charged to expense. Impairment is assessed based on remaining lease terms, commodity price outlooks, future plans to develop acreage, drilling results and reservoir performance of wells in the area. Unproved properties and the related costs are transferred to proved properties when reserves are discovered on, or otherwise attributed to, the property. Proceeds from sales of partial interests in unproved properties are accounted for as a recovery of cost without recognition of any gain or loss until the cost has been recovered. For the three months ended September 30, 2019 and 2020, impairment of unproved properties was $160 million and $29 million, respectively. For the nine months ended September 30, 2019 and 2020, impairment of unproved properties was $347 million and $156 million, respectively.

The Company evaluates the carrying amount of its proved natural gas, NGLs, and oil properties for impairment on a geological reservoir basis whenever events or changes in circumstances indicate that a property's carrying amount may not be recoverable. If the carrying amount exceeds the estimated undiscounted future cash flows, the Company would estimate the fair value of its properties and record an impairment expense for any excess of the carrying amount of the properties over the estimated fair value of the properties. Factors used to estimate fair value may include estimates of proved reserves, estimated future commodity prices, future production estimates, and anticipated capital expenditures, using a commensurate discount rate.

Because estimated undiscounted future net cash flows based on future commodity prices as of September 30, 2019 exceeded the carrying amount of our proved properties in the Marcellus Shale as of September 30, 2019, management did not further evaluate our Marcellus proved properties for impairment. However, the carrying amount of the Company's proved properties in the Utica

Shale exceeded the estimated undiscounted future cash flows based on future commodity prices as of September 30, 2019. The Company estimated the fair value of the Utica Shale assets based on sales of other properties, estimates of proved reserves, estimated future commodity prices and future production estimates. As a result, the Company recorded an impairment expense of $881 million related to proved properties in the Utica Shale during the three months ended September 30, 2019. The Company did not incur any impairment expenses related to proved properties in the Utica Shale for the nine months ended September 30, 2020. The Company did not record any impairment expenses associated with its proved properties in the Marcellus Shale during the nine months ended September 30, 2019 and 2020.

(g) Derivative Financial Instruments

In order to manage its exposure to natural gas, NGLs, and oil price volatility, the Company enters into derivative transactions from time to time, which may include commodity swap agreements, basis swap agreements, collar agreements, and other similar agreements related to the price risk associated with the Company's production. To the extent legal right of offset exists with a counterparty, the Company reports derivative assets and liabilities on a net basis. The Company has exposure to credit risk to the extent that the counterparty is unable to satisfy its settlement obligations. The Company actively monitors the creditworthiness of counterparties and assesses the impact, if any, on its derivative positions.

The Company records derivative instruments on the unaudited condensed consolidated balance sheets as either assets or liabilities measured at fair value and records changes in the fair value of derivatives in current earnings as they occur. Changes in the fair value of commodity derivatives, including gains or losses on settled derivatives, are classified as revenues on the Company's unaudited condensed consolidated statements of operations. The Company's derivatives have not been designated as hedges for accounting purposes.

(h) Asset Retirement Obligations

The Company is obligated to dispose of certain long-lived assets upon their abandonment. The Company's asset retirement obligations ("AROs") relate primarily to its obligation to plug and abandon oil and gas wells at the end of their lives. AROs are recorded at estimated fair value, measured by reference to the expected future cash outflows required to satisfy the retirement obligations, which is then discounted at the Company's credit-adjusted, risk-free interest rate. Revisions to estimated AROs often result from changes in retirement cost estimates or changes in the estimated timing of abandonment. The fair value of the liability is added to the carrying amount of the associated asset, and this additional carrying amount is depreciated over the life of the asset. The liability is accreted at the end of each period through charges to operating expense.

(i) Deferred Revenue

Under the terms of the VPP (as defined below in Note 4—Transactions), the Company is obligated to deliver certain natural gas volumes from specified wells to an overriding royalty interest owner over the term of the arrangement. The Company has accounted for the VPP as a conveyance under Accounting Standard Codifications ("ASC") Topic 932, *Extractive Industries—Oil and Gas* ("ASC 932"), which requires the net proceeds to be recognized as deferred revenue due to the Company's future performance obligations. Deferred revenue is recognized as volumes are delivered using the units-of-production method over the term of the VPP in Amortization of deferred revenue on the Company's unaudited condensed consolidated statements of operations. See Note 4—Transactions for further discussion of the VPP transaction.

(j) Natural Gas, NGLs, and Oil Revenues

The Company's revenues are primarily derived from the sale of natural gas and oil production, as well as the sale of NGLs that are extracted from our natural gas. Sales of natural gas, NGLs, and oil are recognized when we satisfy a performance obligation by transferring control of a product to a customer. Payment is generally received in the month following the sale.

Under the Company's natural gas sales contracts, it delivers natural gas to the purchaser at an agreed upon delivery point. Natural gas is transported from the wellheads to delivery points specified under sales contracts. To deliver natural gas to these points, Antero Midstream Corporation or other third parties gather, compress, process and transport the Company's natural gas. The Company maintains control of the natural gas during gathering, compression, processing, and transportation. The Company's sales contracts provide that it receives a specific index price adjusted for pricing differentials. The Company transfers control of the product at the delivery point and recognizes revenue based on the contract price. The costs incurred to gather, compress, process and transport natural gas are recorded as Gathering, compression, processing and transportation expense.

NGLs, which are extracted from natural gas through processing, are either sold by the Company directly or by the processor under processing contracts. For NGLs sold by the Company directly, the sales contracts primarily provide that the Company delivers the product to the purchaser at an agreed upon delivery point and that it receives a specific index price adjusted for pricing differentials. The Company transfers control of the product to the purchaser at the delivery point and recognizes revenue based on the contract price. The costs incurred to process and transport NGLs are recorded as Gathering, compression, processing, and transportation expense. For NGLs sold by the processor, the Company's processing contracts provide that the Company transfers control to the processor at the tailgate of the processing plant and it recognizes revenue based on the price received from the processor.

Under the Company's oil sales contracts, Antero Resources' generally sells oil to purchasers and collects a contractually agreed upon index price, net of pricing differentials. The Company recognizes revenue based on the contract price when it transfers control of the product to a purchaser. When applicable, the costs incurred to transport oil to a purchaser are recorded as Gathering, compression, processing and transportation expense.

(k) Marketing Revenues and Expenses

Marketing revenues are derived from activities to purchase and sell third-party natural gas and NGLs and to market excess firm transportation capacity to third parties. The Company retains control of the purchased natural gas and NGLs prior to delivery to the purchaser. The Company has concluded that it is the principal in these arrangements and therefore, the Company recognizes revenue on a gross basis, with costs to purchase and transport natural gas and NGLs presented as marketing expenses. Contracts to sell third party gas and NGLs are generally subject to similar terms as contracts to sell the Company's produced natural gas and NGLs. The Company satisfies performance obligations to the purchaser by transferring control of the product at the delivery point and recognizes revenue based on the contract price received from the purchaser. Fees generated from the sale of excess firm transportation marketed to third parties are included in Marketing revenue.

Marketing expenses include the cost of purchased third-party natural gas and NGLs. The Company classifies firm transportation costs related to capacity contracted for in advance of having sufficient production and infrastructure to fully utilize the capacity (excess capacity) as marketing expenses since it is marketing this excess capacity to third parties. Firm transportation for which the Company has sufficient production capacity (even though it may not use the transportation capacity because of alternative delivery points with more favorable pricing) is considered unutilized capacity and is charged to transportation expense.

(l) Gathering, compression, water handling and treatment revenue

Substantially all revenues from the gathering, compression, water handling and treatment operations were derived from transactions for services Antero Midstream Partners provided to our exploration and production operations through March 12, 2019 and were eliminated in consolidation. Effective March 13, 2019, Antero Midstream Partners is no longer consolidated in Antero's results. See Note 3—Deconsolidation of Antero Midstream Partners LP to the consolidated financial statements for further discussion on the Transactions and Note 18—Segment information to the consolidated financial statements for disclosures on the Company's reportable segments. The portion of such fees shown in our consolidated financial statements prior to March 13, 2019 represent amounts charged to interest owners in Antero-operated wells, as well as fees charged to other third parties for water handling and treatment services provided by Antero Midstream Partners or usage of Antero Midstream Partners' gathering and compression systems. For gathering and compression revenue, Antero Midstream Partners satisfied its performance obligations and recognized revenue when low pressure volumes were delivered to a compressor station, high pressure volumes were delivered to a processing plant or transmission pipeline, and compression volumes were delivered to a high pressure line. Revenue was recognized based on the per Mcf gathering or compression fee charged by Antero Midstream Partners in accordance with the gathering and compression agreement. For water handling and treatment revenue, Antero Midstream Partners satisfied its performance obligations and recognized revenue when the fresh water volumes were delivered to the hydration unit of a specified well pad and the wastewater volumes were delivered to its wastewater treatment facility. For services contracted through third-party providers, Antero Midstream Partners' performance obligation was satisfied when the services performed by the third-party providers were completed. Revenue was recognized based on the per barrel fresh water delivery or wastewater treatment fee charged by Antero Midstream Partners in accordance with the water services agreement.

(m) Industry Segments and Geographic Information

Management has evaluated how the Company is organized and managed and has identified the following segments: (1) the exploration, development, and production of natural gas, NGLs, and oil; (2) marketing and utilization of excess firm transportation capacity; and (3) our equity method investment in Antero Midstream Corporation. Through March 12, 2019, the results of Antero Midstream Partners were included in the unaudited consolidated financial statements of Antero. Effective March 13, 2019, the results of Antero Midstream Partners are no longer consolidated in Antero's results; however, the Company's segment disclosures include our equity method investment in Antero Midstream Corporation due to its significance to the Company's operations. See Note 3—Deconsolidation of Antero Midstream Partners LP to the unaudited condensed consolidated financial statements for further discussion on the Transactions and Note 18—Segment Information to the unaudited condensed consolidated financial statements for disclosures on the Company's reportable segments.

All of the Company's assets are located in the United States and substantially all of its production revenues are attributable to customers located in the United States; however, some of the Company's production revenues are attributable to customers who then transport the Company's production to foreign countries for resale or consumption.

(n) Earnings (Loss) Per Common Share

Earnings (loss) per common share—basic for each period is computed by dividing net income (loss) attributable to Antero by the basic weighted average number of shares outstanding during the period. Earnings (loss) per common share—assuming dilution for each period is computed after giving consideration to the potential dilution from outstanding equity awards and shares of common stock issuable upon conversion of the 2026 Convertible Notes (as defined below in Note 8—Long-Term Debt), calculated using the treasury stock method. The Company includes restricted stock unit ("RSUs") awards, performance share unit ("PSUs") awards and stock options in the calculation of diluted weighted average shares outstanding based on the number of common shares that would be issuable if the end of the period was also the end of the performance period required for the vesting of the awards. During periods in which the Company incurs a net loss, diluted weighted average shares outstanding are equal to basic weighted average shares outstanding because the effect of all equity awards is anti-dilutive.

The following is a reconciliation of the Company's basic weighted average shares outstanding to diluted weighted average shares outstanding during the periods presented (in thousands):

	Three months ended September 30,		Nine months ended September 30,	
	2019	2020	2019	2020
Basic weighted average number of shares outstanding	307,781	268,511	308,509	273,689
Add: Dilutive effect of RSUs	—	—	27	—
Add: Dilutive effect of outstanding stock options	—	—	—	—
Add: Dilutive effect of PSUs	—	—	110	—
Diluted weighted average number of shares outstanding	307,781	268,511	308,646	273,689
Weighted average number of outstanding securities excluded from calculation of diluted earnings per common share (1):				
RSUs	2,356	10,129	2,008	7,397
Outstanding stock options	514	432	541	432
PSUs	2,676	1,988	2,141	1,808
2026 Convertible Notes (2)	—	—	—	—

(1) The potential dilutive effects of these awards were excluded from the computation of earnings (loss) per common share—assuming dilution because the inclusion of these awards would have been anti-dilutive.

(2) In August 2020 and September 2020, the Company issued $287.5 million in aggregate principal amount of 4.25% convertible senior notes due September 1, 20206 (the "2026 Convertible Notes"). The Company intends to settle the principal amount of the 2026 Convertible Notes in cash upon conversion. As a result, only the amount by which the conversion value exceeds the aggregate principal amount of the 2026 Convertible Notes is considered in the diluted earnings per share computation under the treasury stock method. As of September 30, 2020, the conversion value did not exceed the principal amount of the notes, and accordingly, there was no impact to diluted earnings per share for the periods presented. See Note 8—Long-Term Debt.

(o) Treasury Share Retirement

The Company retires treasury shares acquired through share repurchases and returns those shares to the status of authorized but unissued. When treasury shares are retired, the Company's policy is to allocate the excess of the repurchase price over the par value of shares acquired first, to additional paid-in capital, and then to accumulated earnings. The portion allocable to additional paid-in capital is determined by applying a percentage, determined by dividing the number of shares to be retired by the number of shares outstanding, to the balance of additional paid-in capital as of retirement.

(p) Recently Issued Accounting Standard

On August 5, 2020, the Financial Accounting Standards Board issued Accounting Standards Update No. 2020-06, *Accounting for Convertible Instruments and Contracts in an Entity's Own Equity*, which eliminates the cash conversion model in ASC 470-20, *Debt with Conversion and Other Options*, that require separate accounting for conversion features that is currently being applied to the 2026 Convertible Notes, and instead, allows the debt instrument and conversion features to be accounted for as a single debt instrument. The new standard becomes effective for the Company on January 1, 2022, and early adoption is permitted. The Company is evaluating its plans for adoption, including the adoption date and transition method.

Upon adoption of this new standard, the Company expects to reclassify $62 million, net of deferred income taxes and equity issuance costs, to long-term debt and deferred income tax liability, as applicable, from stockholders' equity. Additionally, annual interest expense for the 2026 Convertible Notes will be based on an effective interest rate of 4.8% as compared to 11.7% for the three and nine months ended September 30, 2020 in the statement of operations and the weighted average diluted shares outstanding will increase from zero as of September 30, 2020 under the treasury-stock method to 66 million under the if-converted method. The Company does not believe that adoption of the standard will impact its operational strategies or growth prospects.

(3) Deconsolidation of Antero Midstream Partners LP

On March 12, 2019, Antero Midstream GP LP and Antero Midstream Partners completed (the "Closing") the transactions contemplated by the Simplification Agreement (the "Simplification Agreement"), dated as of October 9, 2018, by and among Antero Midstream GP LP, Antero Midstream Partners and certain of their affiliates, pursuant to which (i) Antero Midstream GP LP was converted from a limited partnership to a corporation under the laws of the State of Delaware and changed its name to Antero Midstream Corporation, and (ii) an indirect, wholly owned subsidiary of Antero Midstream Corporation was merged with and into Antero Midstream Partners, with Antero Midstream Partners surviving the merger as an indirect, wholly owned subsidiary of Antero Midstream Corporation (together, along with the other transactions contemplated by the Simplification Agreement, the "Transactions"). In connection with the Closing, Antero received $297 million in cash and 158.4 million shares of Antero Midstream Corporation common stock in consideration for 98,870,335 common units representing limited partnership interests in Antero Midstream Partners.

The Company recorded a gain on deconsolidation of $1.4 billion calculated as the sum of (i) the cash proceeds received, (ii) the fair value of the Antero Midstream Corporation common stock received at the Closing, and (iii) the elimination of the noncontrolling interest less the carrying amount of the investment in Antero Midstream Partners. The fair value of Antero's retained equity method investment on March 13, 2019 in Antero Midstream Corporation was $2.0 billion based on the market price of the shares received on March 12, 2019. See Note 6—Equity Method Investments to the unaudited condensed consolidated financial statements for further discussion on equity method investments.

Antero Midstream Partners' results of operations are no longer consolidated in the Company's unaudited consolidated statement of operations and comprehensive income (loss) beginning March 13, 2019. Because Antero Midstream Partners does not meet the requirements of a discontinued operation, Antero Midstream Partners' results of operations continue to be included in the Company's consolidated unaudited statement of operations and comprehensive income (loss) through March 12, 2019.

(4) Transactions

Conveyance of Overriding Royalty Interest

On June 15, 2020, the Company announced the consummation of a transaction with an affiliate of Sixth Street Partners, LLC ("Sixth Street") relating to certain overriding royalty interests across the Company's existing asset base (the "ORRIs"). In connection with the transaction, the Company contributed the ORRIs to Martica and Sixth Street contributed $300 million in cash (subject to customary adjustments) and agreed to contribute up to an additional $102 million in cash if certain production thresholds attributable to the ORRIs are achieved in the third quarter of 2020 and first quarter of 2021. All cash contributed by Sixth Street at the initial closing was distributed to the Company. As of September 30, 2020, the Company determined it met the production threshold related to the third quarter of 2020 whereby it became entitled to receive a $51 million cash distribution that will be paid in the fourth quarter of 2020.

The ORRIs include an overriding royalty interest of1.25% of the Company's working interest in all of its proved operated developedproperties in West Virginia and Ohio, subject to certain excluded wells (the "Initial PDP Override"), and an overriding royalty interest of 3.75% of the Company's working interest in all of its undeveloped properties in West Virginia and Ohio (the "Development Override"). Wells turned to sales after April 1, 2020 and prior to the later of (a) the date on which the Company turns to sales 2.2 million lateral feet (net to the Company's interest) of horizontal wells burdened by the Development Override and (b) the earlier of (i) April 1, 2023 and (ii) the date on which the Company turns to sales 3.82 million lateral feet (net to the Company's interest) of horizontal wells are subject to the Development Override.

The ORRIs also include an additional overriding royalty interest of2.00% of the Company's working interest in the properties underlying the Initial PDP Override (the "Incremental Override"). The Incremental Override (or a portion thereof, as applicable) may be re-conveyed to the Company (at the Company's election) if certain production targets attributable to the ORRIs are achieved through March 31, 2023. Any portion of the Incremental Override that may not be re-conveyed to the Company based on the Company failing to achieve such production volumes through March 31, 2023 will remain with Martica.

Prior to Sixth Street achieving an internal rate of return of13% and 1.5x cash-on-cash return (the "Hurdle"), Sixth Street will receive all distributions in respect of the Initial PDP Override and the Development Override, and the Company will receive all distributions in respect of the Incremental Override, unless certain production targets are not achieved, in which case Sixth Street will receive some or all of the distributions in respect of the Incremental Override. Following Sixth Street achieving the Hurdle, the Company will receive 85% of the distributions in respect of the ORRIs to which Sixth Street was entitled immediately prior to the Hurdle being achieved.

The conveyance of the ORRIs from the Company to Martica was accounted for as a transaction between entities under common control. As a result, the contributed ORRIs have been recorded by Martica at their historical cost.

Volumetric Production Payment Transaction

On August 10, 2020, the Company completed a volumetric production payment transaction and received net proceeds of approximately$215 million (the "VPP"). In connection with the VPP, the Company entered into a purchase and sale agreement, together with a conveyance agreement and production and marketing agreement, with J.P. Morgan Ventures Energy Corporation ("JPM-VEC") to convey, effective July 1, 2020, an overriding royalty interest in dry gas producing properties in West Virginia (the "VPP Properties") equal to 136,589,000 MMBtu over the expected seven-year term of the VPP.

The Company has accounted for the VPP as a conveyance under ASC 932, and the net proceeds were recognized as deferred revenue as of September 30, 2020. Deferred revenue is recognized as volumes are delivered using the units-of-production method over the term of the VPP. Under the production and marketing agreement, Antero and its affiliates provide certain marketing services as JPM-VEC's agent, and any income or expenses related to these services will be recorded as marketing revenue or marketing expenses (as the case may be).

Contemporaneously with the VPP transaction, the Company executed a call option related to the production volumes associated with its retained interest in the VPP properties, which is collateralized by a mortgage on the VPP properties. Additionally, the production and marketing agreement contains an embedded put option related to the production volumes for the Company's retained interest in the VPP properties, which has been bifurcated from the production and marketing arrangement and accounted for as a derivative instrument recorded at fair value as of September 30, 2020. See Note 12—Derivative Instruments.

(5) Revenue

(a) Disaggregation of Revenue

Revenue is disaggregated by type in the following table. The table also identifies which reportable segment that the disaggregated revenues relate. For more information on reportable segments, see Note 18—Segment Information.

	Three months ended September 30,		Nine months ended September 30,		
(in thousands)	**2019**	**2020**	**2019**	**2020**	**Reportable segment**
Revenues from contracts with customers:					
Natural gas sales	$ 524,448	436,304	$ 1,735,086	1,214,801	Exploration and production
Natural gas liquids sales (ethane)	26,488	32,444	92,378	85,884	Exploration and production
Natural gas liquids sales (C3+ NGLs)	258,470	294,982	810,228	711,412	Exploration and production
Oil sales	40,561	34,265	137,675	78,233	Exploration and production
Gathering and compression [(1)]	—	—	3,972	—	Equity method investment in Antero Midstream Corporation
Water handling and treatment [(1)]	—	—	507	—	Equity method investment in Antero Midstream Corporation
Marketing	46,645	91,497	200,911	201,855	Marketing
Total revenue from contracts with customers	896,612	889,492	2,980,757	2,292,185	
Income (loss) from derivatives and other sources	222,269	(508,901)	475,195	(109,578)	
Total revenue and other	$ 1,118,881	380,591	$ 3,455,952	2,182,607	

(1) Gathering and compression and water handling and treatment revenues were included through March 12, 2019. See Note 3—Deconsolidation of Antero Midstream Partners to the unaudited condensed consolidated financial statements for further discussion on the Transactions.

(b) Transaction Price Allocated to Remaining Performance Obligations

For the Company's product sales that have a contract term greater than one year, the Company utilized the practical expedient, which does not require the disclosure of the transaction price allocated to remaining performance obligations if the variable consideration is allocated entirely to a wholly unsatisfied performance obligation. Under the Company's product sales contracts, each unit of product delivered to the customer represents a separate performance obligation; therefore, future volumes are wholly unsatisfied and disclosure of the transaction price allocated to remaining performance obligations is not required. For the Company's product sales that have a contract term of one year or less, the Company utilized the practical expedient, which does not require the disclosure of the transaction price allocated to remaining performance obligations if the performance obligation is part of a contract that has an original expected duration of one year or less.

(c) Contract Balances

Under the Company's sales contracts, the Company invoices customers after the Company's performance obligations have been satisfied, at which point payment is unconditional. Accordingly, the Company's contracts do not give rise to contract assets or liabilities. At December 31, 2019 and September 30, 2020, the Company's receivables from contracts with customers were $318 million and $339 million, respectively.

(6) Equity Method Investments

As of September 30, 2020, the Company owned approximately 29.2% of Antero Midstream Corporation's common stock, which is reflected in Antero's consolidated financial statements using the equity method of accounting. See Note 3—Deconsolidation of Antero Midstream Partners to the unaudited condensed consolidated financial statements for further discussion on the Transactions.

The following table is a reconciliation of investments in unconsolidated affiliates for the nine months ended September 30, 2020 (in thousands):

	Antero Midstream Corporation
Balance as of December 31, 2019	$ 1,055,177
Equity in loss of unconsolidated affiliates	(83,408)
Distributions/dividends from unconsolidated affiliates	(128,267)
Impairment (1)	(610,632)
Elimination of intercompany profit	40,056
Balance as of September 30, 2020	$ 272,926

(1) Other-than-temporary impairment of investment in Antero Midstream Corporation.

Summarized Financial Information of Antero Midstream Corporation

The following tables present summarized financial information of Antero Midstream Corporation.

Balance Sheet

(in thousands)	December 31, 2019	September 30, 2020
Current assets	$ 108,558	108,008
Noncurrent assets	6,174,320	5,565,496
Total assets	$ 6,282,878	5,673,504
Current liabilities	$ 242,084	61,259
Noncurrent liabilities	2,897,380	3,126,754
Stockholders' equity	3,143,414	2,485,491
Total liabilities and stockholders' equity	$ 6,282,878	5,673,504

Statement of Operations

(in thousands)	For the period March 13, 2019 through September 30, 2019	Nine months ended September 30, 2020
Revenues	$ 553,521	696,859
Operating expenses	745,940	929,480
Loss from operations	$ (192,419)	(232,621)
Loss attributable to the equity method investment	$ (197,006)	(198,985)

(7) Accrued Liabilities

Accrued liabilities as of December 31, 2019 and September 30, 2020 consisted of the following items (in thousands):

	December 31, 2019	September 30, 2020
Capital expenditures	$ 105,706	46,122
Gathering, compression, processing, and transportation expenses	134,153	158,043
Marketing expenses	52,612	55,777
Interest expense, net	30,834	40,355
Accrued taxes	39,332	20,403
Other	38,213	23,906
Total accrued liabilities	$ 400,850	344,606

(8) Long-Term Debt

Long-term debt as of December 31, 2019 and September 30, 2020 consisted of the following items (in thousands):

	December 31, 2019	September 30, 2020
Credit Facility [a]	$ 552,000	827,000
5.375% senior notes due 2021 [b]	952,500	315,279
5.125% senior notes due 2022 [c]	923,041	660,516
5.625% senior notes due 2023 [d]	750,000	579,232
5.00% senior notes due 2025 [e]	600,000	590,000
4.25% convertible senior notes due 2026 [f]	—	287,500
Total principal	3,777,541	3,259,527
Unamortized premium (discount), net	791	(83,658)
Unamortized debt issuance costs	(19,464)	(17,644)
Long-term debt	$ 3,758,868	3,158,225

(a) Senior Secured Revolving Credit Facility

Antero Resources has a senior secured revolving credit facility (the "Credit Facility") with a consortium of bank lenders. Borrowings under the Credit Facility are subject to borrowing base limitations based on the collateral value of Antero Resources' assets and are subject to regular semi-annual redeterminations. The borrowing base was re-affirmed in October 2020 at $2.85 billion and lender commitments are $2.64 billion. The next redetermination of the borrowing base is scheduled to occur in April 2021. The maturity date of the Credit Facility is the earlier of (i) October 26, 2022 and (ii) the date that is 91 days prior to the earliest stated redemption date of any series of Antero Resources' senior notes then outstanding. The Company intends to extinguish the 2021 Notes on or prior to August 2, 2021 with proceeds from its asset sales program, cash flow from operations and available borrowings under the Credit Facility. Consequently, the Company has classified the Credit Facility as long-term debt. The classification of the Credit Facility does not impact any of the Company's financial covenants.

As of September 30, 2020, Antero Resources had an outstanding balance under the Credit Facility of $827 million, with a weighted average interest rate of 3.28%, and outstanding letters of credit of $730 million. As of December 31, 2019, Antero Resources had an outstanding balance under the Credit Facility of $552 million, with a weighted average interest rate of 3.28%, and outstanding letters of credit of $623 million. Commitment fees on the unused portion of the Credit Facility are due quarterly at rates ranging from 0.300% to 0.375% (subject to certain exceptions) of the unused portion based on utilization.

(b) 5.375% Senior Notes Due 2021

On November 5, 2013, Antero Resources issued $1.0 billion of 5.375% senior notes due November 1, 2021 (the "2021 Notes") at par. The 2021 Notes are unsecured and effectively subordinated to the Credit Facility to the extent of the value of the collateral securing the Credit Facility. The 2021 Notes rank pari passu to Antero Resources' other outstanding senior notes. The 2021 Notes are guaranteed on a full and unconditional and joint and several senior unsecured basis by Antero Resources' wholly owned subsidiaries and certain of its future restricted subsidiaries. Interest on the 2021 Notes is payable on May 1 and November 1 of each year. Antero may redeem all or part of the 2021 Notes at any time at a redemption price of 100.00%. If Antero Resources undergoes a change of control followed by a rating decline, the holders of the 2021 Notes will have the right to require Antero Resources to repurchase all or a portion of the notes at a price equal to 101% of the principal amount of the 2021 Notes, plus accrued and unpaid interest.

(c) 5.125% Senior Notes Due 2022

On May 6, 2014, Antero Resources issued $600 million of 5.125% senior notes due December 1, 2022 (the "2022 Notes") at par. On September 18, 2014, Antero Resources issued an additional $500 million of the 2022 Notes at 100.5% of par. The 2022 Notes are unsecured and effectively subordinated to the Credit Facility to the extent of the value of the collateral securing the Credit Facility. The 2022 Notes rank pari passu to Antero Resources' other outstanding senior notes. The 2022 Notes are guaranteed on a full and unconditional and joint and several senior unsecured basis by Antero Resources' wholly owned subsidiaries and certain of its future restricted subsidiaries. Interest on the 2022 Notes is payable on June 1 and December 1 of each year. Antero Resources may redeem all or part of the 2022 Notes at any time at a redemption price of 100.00%. If Antero Resources undergoes a change of control followed by a rating decline, the holders of the 2022 Notes will have the right to require Antero Resources to repurchase all or a portion of the notes at a price equal to 101% of the principal amount of the 2022 Notes, plus accrued and unpaid interest.

(d) 5.625% Senior Notes Due 2023

On March 17, 2015, Antero Resources issued $750 million of 5.625% senior notes due June 1, 2023 (the "2023 Notes") atpar. The 2023 Notes are unsecured and effectively subordinated to the Credit Facility to the extent of the value of the collateral securing the Credit Facility. The 2023 Notes rank pari passu to Antero Resources' other outstanding senior notes. The 2023 Notes are guaranteed on a full and unconditional and joint and several senior unsecured basis by Antero Resources' wholly owned subsidiaries and certain of its future restricted subsidiaries. Interest on the 2023 Notes is payable on June 1 and December 1 of each year. Antero Resources may redeem all or part of the 2023 Notes at any time at redemption prices ranging from 101.406% currently to 100.00% on or after June 1, 2021. If Antero Resources undergoes a change of control followed by a rating decline, the holders of the 2023 Notes will have the right to require Antero Resources to repurchase all or a portion of the notes at a price equal to 101% of the principal amount of the 2023 Notes, plus accrued and unpaid interest.

(e) 5.00% Senior Notes Due 2025

On December 21, 2016, Antero Resources issued $600 million of 5.00% senior notes due March 1, 2025 (the "2025 Notes") atpar. The 2025 Notes are unsecured and effectively subordinated to the Credit Facility to the extent of the value of the collateral securing the Credit Facility. The 2025 Notes rank pari passu to Antero Resources' other outstanding senior notes. The 2025 Notes are guaranteed on a full and unconditional and joint and several senior unsecured basis by Antero Resources' wholly owned subsidiaries and certain of its future restricted subsidiaries. Interest on the 2025 Notes is payable on March 1 and September 1 of each year. Antero Resources may redeem all or part of the 2025 Notes at any time at redemption prices ranging from 103.75% currently to 100.00% on or after March 1, 2023. If Antero Resources undergoes a change of control followed by a rating decline, the holders of the 2025 Notes will have the right to require Antero Resources to repurchase all or a portion of the notes at a price equal to 101% of the principal amount of the 2025 Notes, plus accrued and unpaid interest.

(f) 4.25% Convertible Senior Notes Due 2026

On August 21, 2020, Antero Resources issued $250 million in aggregate principal amount of 2026 Convertible Notes. On September 2, 2020, Antero Resources issued an additional $37.5 million of the 2026 Convertible Notes. The 2026 Convertible Notes were issued pursuant to an indenture and are senior, unsecured obligations of Antero Resources. The 2026 Convertible Notes bear interest at a fixed rate of 4.25% per annum, payable semi-annually in arrears on March 1 and September 1 of each year, commencing on March 1, 2021. Proceeds from the issuance of the 2026 Convertible Notes totaled $278.6 million, net of initial purchasers' fees and issuance cost of $8.9 million. Each capitalized term used in this subsection but not otherwise defined in this Quarterly Report on Form 10-Q has the meaning as set forth in the indenture governing the 2026 Convertible Notes.

The initial conversion rate is 230.2026 shares of Antero Resources' common stock per $1,000 principal amount of 2026 Convertible Notes, subject to adjustment upon the occurrence of specified events. The 2026 Convertible Notes will mature on September 1, 2026, unless earlier repurchased, redeemed or converted. Before May 1, 2026, note holders will have the right to convert their 2026 Convertible Notes only upon the occurrence of the following events:

- during any calendar quarter (and only during such calendar quarter) commencing after the calendar quarter ending on September 30, 2020, if the Last Reported Sale Price per share of Antero Resources' common stock exceeds 130% of the Conversion Price for each of at least 20 Trading Days (whether or not consecutive) during the 30 consecutive Trading Days ending on, and including, the last Trading Day of the immediately preceding calendar quarter;

- during the five consecutive Business Days immediately after any 10 consecutive trading day period (such 10 consecutive Trading Day period, the "Measurement Period") if the trading Price per $1,000 principal amount of 2026 Convertible Notes, as determined following a request by a noteholder in accordance with the procedures set forth below, for each trading day of the Measurement Period was less than 98% of the product of the last reported sale price per share of common stock on such trading day and the conversion rate on such trading day;

- if Antero Resources calls any or all of the 2026 Convertible Notes for redemption, at any time prior to the close of business on the scheduled trading day immediately preceding the redemption date; or

- upon the occurrence of certain specified corporate events as set forth in the indenture governing the 2026 Convertible Notes.

From and after May 1, 2026, noteholders may convert their 2026 Convertible Notes at any time at their election until the close of business on the second scheduled trading day immediately before the maturity date.

Upon conversion, Antero Resources may satisfy its conversion obligation by paying and/or delivering, as the case may be, cash, shares of Antero Resources' common stock or a combination of cash and shares of Antero Resources' common stock, at Antero Resources' election, in the manner and subject to the terms and conditions provided in the indenture governing the 2026 Convertible Notes. Antero Resources' current intent is to settle the principle amount of the 2026 Convertible Notes in cash upon conversion. Antero Resources' current intent is to settle the principle amount of the 2026 Convertible Notes in cash upon conversion. At no point since issuance of the 2026 Convertible Notes has the conditions allowing holders of the 2026 Convertible Notes to exercise their conversion right been met.

The conversion rate is subject to adjustment under certain circumstances in accordance with the terms of the indenture governing the 2026 Convertible Notes. In addition, following certain corporate events, as described in the indenture governing the 2026 Convertible Notes, that occur prior to the maturity date, Antero Resources will increase the conversion rate for a holder who elects to convert its 2026 Convertible Notes in connection with such a corporate event.

If certain corporate events that constitute a Fundamental Change occur, then noteholders may require Antero Resources to repurchase their 2026 Convertible Notes at a cash repurchase price equal to the principal amount of the 2026 Convertible Notes to be repurchased, plus accrued and unpaid interest, if any, to, but excluding, the fundamental change repurchase date. The definition of Fundamental Change includes certain business combination transactions involving Antero Resources and certain de-listing events with respect to Antero Resources' common stock.

Upon issuance, the Company separately accounted for the liability and equity components of the 2026 Convertible Notes. The liability component was recorded at the estimated fair value of a similar debt instrument without the conversion feature. The difference between the principal amount of the 2026 Convertible Notes and the estimated fair value of the liability component was recorded as a debt discount and will be amortized to interest expense over the term of the 2026 Convertible Notes using the effective interest method, with an effective interest rate of 10.8% per annum. As of the issuance date, the fair value of the 2026 Convertible Notes was estimated at $203 million, resulting in a debt discount at inception of $85 million. The equity component, representing the value of the conversion option, was computed by deducting the fair value of the liability component from the initial proceeds of the 2026 Convertible Notes issuance. This equity component was recorded, net of deferred taxes and issuance costs, in additional paid-in capital within the unaudited consolidated statement of stockholders' equity and will not be remeasured as long as it continues to meet the conditions for equity classification.

Transaction costs related to the 2026 Convertible Notes issuance were allocated to the liability and equity components based on their relative fair values. Issuance costs attributable to the liability component were recorded within debt issuance costs on the unaudited consolidated balance sheet and are amortized over the term of the 2026 Convertible Notes using the effective interest method. Issuance costs attributable to the equity component were recorded as a charge to additional paid-in capital within the unaudited consolidated statement of stockholders' equity.

The 2026 Convertible Notes consist of the following as of September 30, 2020 (in thousands):

Liability component:	
Principal	$ 287,500
Less: unamortized note discount	(84,084)
Less: unamortized debt issuance costs	(6,209)
Net carrying value	$ 197,207
Equity component (1)	$ 84,972

(1) Recorded in additional paid-in capital, net of $3 million of issuance costs and $20 million of deferred taxes.

Interest expense recognized on the 2026 Convertible Notes related to the stated interest rate and amortization of the debt discount totaled $2.3 million for the three months ended September 30, 2020.

(g) Debt Repurchase Program

During the three and nine months ended September 30, 2020, Antero Resources repurchased $461 million and $1.1 billion, respectively, principal amount of debt at a weighted average discount of 13% and 17%, respectively, which purchases included a portion of the 2021 Notes, 2022 Notes, 2023 Notes and 2025 Notes. The Company recognized a gain of $56 million and $175 million for the three and nine months ended September 30, 2020, respectively, on the early extinguishment of the debt repurchased. Repurchases of the principal amount of debt during the three and nine months ended September 30, 2020 include repurchases of $367 million on the 2021 Notes, 2022 Notes and 2023 Notes through previously disclosed tender offers at a weighted average discount of 10%.

(9) Asset Retirement Obligations

The following is a reconciliation of the Company's asset retirement obligations for the nine months ended September 30, 2020 (in thousands):

Asset retirement obligations—December 31, 2019	$ 54,845
Obligations incurred	1,529
Accretion expense	3,330
Settlement of obligations	(229)
Asset retirement obligations—September 30, 2020	$ 59,475

Asset retirement obligations are included in other liabilities on the Company's unaudited condensed consolidated balance sheets.

(10) Equity-Based Compensation

On June 17, 2020, Antero Resources' stockholders approved the Antero Resources Corporation 2020 Long-Term Incentive Plan (the "2020 Plan"), which replaced the Antero Resources Corporation Long-Term Incentive Plan (the "2013 Plan"), and the 2020 Plan became effective as of such date. The 2020 Plan provides for grants of stock options (including incentive stock options), stock appreciation rights, restricted stock awards, RSU awards, vested stock awards, dividend equivalent awards, and other stock-based and cash awards. The terms and conditions of the awards granted are established by the Compensation Committee of Antero Resources' Board of Directors. Employees, officers, non-employee directors and other service providers of the Company and its affiliates are eligible to receive awards under the 2020 Plan. No further awards will be granted under the 2013 Plan on or after June 17, 2020.

The 2020 Plan provides for the reservation of 10,050,000 shares of the Company's common stock, plus the number of certain shares that become available again for delivery from the 2013 Plan in accordance with the share recycling provisions described below. The share recycling provisions allow for all or any portion of an award (including an award granted under the 2013 Plan that was outstanding as of June 17, 2020) that expires or is cancelled, forfeited, exchanged, settled for cash, or otherwise terminated without actual delivery of the shares to be considered not delivered and thus available for new awards under the 2020 Plan. Further, any shares withheld or surrendered in payment of any taxes relating to awards that were outstanding under either the 2013 Plan as of June

17, 2020 or are granted under the 2020 Plan (other than stock options and stock appreciation rights) will again be available for new awards under the 2020 Plan.

A total of 7,149,371 shares were available for future grant under the 2020 Plan as of September 30, 2020.

Antero Midstream Partners' general partner was authorized to grant up to10,000,000 common units representing limited partner interests in Antero Midstream Partners under the Antero Midstream Partners LP Long-Term Incentive Plan (the "AMP Plan") to non-employee directors of its general partner and certain officers, employees, and consultants of Antero Midstream Partners and its affiliates (which includes Antero Resources). As part of the Transactions, each outstanding phantom unit award under the AMP Plan, was assumed by Antero Midstream Corporation and converted into 1.8926 RSUs under the Antero Midstream Corporation Long Term Incentive Plan (the "AMC Plan"). Each RSU award under the AMC Plan represents a right to receive one share of Antero Midstream Corporation common stock.

The Company's equity-based compensation expense, by type of award, was as follows for the three and nine months ended September 30, 2019 and 2020 (in thousands):

	Three months ended September 30,		Nine months ended September 30,	
	2019	2020	2019	2020
RSU awards	$ 2,229	3,063	$ 8,829	9,021
Stock options	—	—	389	—
PSU awards	399	1,827	6,027	5,380
Antero Midstream Partners phantom unit awards[1]	867	459	2,942	1,881
Equity awards issued to directors	380	350	1,140	719
Total expense	$ 3,875	5,699	$ 19,327	17,001

(1) Antero Resources recognized compensation expense for equity awards granted under both the 2013 Plan and the AMP Plan because the awards under the AMP Plan are accounted for as if they are distributed by Antero Midstream Partners to Antero Resources. Antero Resources allocates a portion of equity-based compensation expense related to grants prior to the Transactions to Antero Midstream Partners based on its proportionate share of Antero Resources' labor costs. Through March 12, 2019, the total amount of equity-based compensation is included in the consolidated financial statements of Antero Resources; and effective March 13, 2019 (date of deconsolidation), the amount allocated to Antero Midstream Partners is no longer reflected in Antero Resources consolidated financial statements. See Note 3—Deconsolidation of Antero Midstream Partners LP to the unaudited condensed consolidated financial statements for further discussion on the Transactions.

Restricted Stock Unit Awards

A summary of RSU award activity for the nine months ended September 30, 2020 is as follows:

	Number of shares	Weighted average grant date fair value	Aggregate intrinsic value (in thousands)
Total awarded and unvested—December 31, 2019	2,370,575	$ 12.81	$ 6,756
Granted	7,108,061	$ 2.39	
Vested	(1,045,771)	$ 12.50	
Forfeited	(119,679)	$ 12.46	
Total awarded and unvested—September 30, 2020	8,313,186	$ 4.08	$ 22,862

Intrinsic values are based on the closing price of Antero Resources' common stock on the referenced dates. As of September 30, 2020, there was approximately $26 million of unamortized equity-based compensation expense related to unvested RSUs. That expense is expected to be recognized over a weighted average period of approximately 2.3 years.

Stock Options

A summary of stock option activity for the nine months ended September 30, 2020 is as follows:

	Stock options	Weighted average exercise price	Weighted average remaining contractual life	Intrinsic value (in thousands)
Outstanding as of December 31, 2019	467,633	$ 50.64	5.05	$ —
Granted	—	$ —		
Exercised	—	$ —		
Forfeited	—	$ —		
Expired	(35,172)	$ 50.56		
Outstanding at September 30, 2020	432,461	$ 50.64	4.31	$ —
Vested or expected to vest as of September 30, 2020	432,461	$ 50.64	4.31	$ —
Exercisable as of September 30, 2020	432,461	$ 50.64	4.31	$ —

Intrinsic values are based on the exercise price of the options and the closing price of Antero Resources' common stock on the referenced dates.

As of September 30, 2020, all stock options were fully vested resulting inno unamortized equity-based compensation expense.

Performance Share Unit Awards

Performance Share Unit Awards Based on Total Shareholder Return ("TSR")

In July 2020, the Company granted PSU awards to certain of its executive officers that vest based on Antero Resources' absolute total shareholder return ("TSR") determined as of the last day of each of three one-year performance periods ending on April 15, 2021, April 15, 2022, and April 15, 2023, and one cumulative three-year performance period ending on April 15, 2023, in each case, subject to the executive officer's continued employment through April 15, 2023. The number of shares of common stock that may ultimately be earned following the end of the cumulative three-year performance period ranges from zero to 150% of the target number of PSUs granted. Expense related to these PSUs is recognized on a graded-vested basis over approximately three years. Forfeitures are accounted for as they occur by reversing the expense previously recognized for awards that were forfeited during the period.

Additionally, in July 2020, the Company granted PSUs to certain of its executive officers that vest based on Antero Resources' TSR relative to the TSR of certain peer companies determined as of the last day of each of three one-year performance periods ending on April 15, 2021, April 15, 2022, and April 15, 2023, and one cumulative three-year performance period ending on April 15, 2023, in each case, subject to the executive officer's continued employment through April 15, 2023. The number of shares of common stock that may ultimately be earned following the end of the cumulative three-year performance period ranges from zero to 150% of the target number of PSUs granted. Expense related to these PSUs is recognized on a graded-vested basis over approximately three years. Forfeitures are accounted for as they occur by reversing the expense previously recognized for awards that were forfeited during the period.

A summary of PSUs activity for the nine months ended September 30, 2020 is as follows:

	Number of units	Weighted average grant date fair value
Total awarded and unvested—December 31, 2019	2,537,283	$ 16.74
Granted	469,000	$ 2.97
Forfeited	(29,316)	$ 12.21
Cancelled (unearned)	(458,485)	$ 25.32
Total awarded and unvested—September 30, 2020	2,518,482	$ 11.94

The following table presents information regarding the weighted average fair values for market-based PSUs granted during the nine months ended September 30, 2019 and 2020, and the assumptions used to determine the fair values:

	Nine months ended September 30,	
	2019	2020
Dividend yield	— %	— %
Volatility	36 %	80 %
Risk-free interest rate	2.35 %	0.17 %
Weighted average fair value of awards granted—Return on Capital Employed	$ 9.26	$ —
Weighted average fair value of awards granted—Absolute TSR	$ —	$ 2.63
Weighted average fair value of awards granted—Relative TSR	$ —	$ 3.30

As of September 30, 2020, there was approximately $10 million of unamortized equity-based compensation expense related to unvested PSUs. That expense is expected to be recognized over a weighted average period of approximately 1.4 years.

Cash Awards

In January 2020, the Company granted cash awards of approximately $3.3 million to certain executives under the 2013 Plan, and compensation expense for these awards is recognized ratably over the vesting period for each of three tranches through January 20, 2023. In July 2020, the Company granted additional cash awards on the aggregate of $2.6 million to certain non-executive employees under the 2020 Plan that vest ratably over four years. As of September 30, 2020, the Company has accrued approximately $2.2 million in Other liabilities in the unaudited condensed consolidated balance sheet related to cash awards.

Antero Midstream Partners Phantom Unit Awards and Antero Midstream Corporation Restricted Stock Unit Awards

A summary of Antero Midstream Corporation RSU awards for the nine months ended September 30, 2020 is as follows:

	Number of units	Weighted average grant date fair value	Aggregate intrinsic value (in thousands)
Total awarded and unvested—December 31, 2019	657,757	$ 14.71	$ 4,992
Granted	—	$ —	
Vested	(335,051)	$ 11.67	
Forfeited	(22,577)	$ 14.09	
Total awarded and unvested—September 30, 2020	300,129	$ 5.19	$ 1,558

Intrinsic values are based on the closing price of shares of Antero Midstream Corporation common stock. As of September 30, 2020, there was approximately $3 million of unamortized equity-based compensation expense related to unvested phantom unit awards. That expense is expected to be recognized over a weighted average period of approximately 1.2 years.

(11) Financial Instruments

The carrying values of accounts receivable and accounts payable at December 31, 2019 and September 30, 2020 approximated market values because of their short-term nature. The carrying values of the amounts outstanding under the Credit Facility at December 31, 2019 and September 30, 2020 approximated fair value because the variable interest rates are reflective of current market conditions.

Based on Level 2 market data inputs, the fair value of senior notes was approximately $2.8 billion and $1.6 billion at December 31, 2019 and September 30, 2020, respectively. The fair value of the 2026 Convertible Notes was approximately $235 million as of September 30, 2020 based on Level 2 market data inputs.

See Note 12—Derivative Instruments to the unaudited condensed consolidated financial statements for information regarding the fair value of derivative financial instruments.

(12) Derivative Instruments

The Company is exposed to certain risks relating to its ongoing business operations, and it uses derivative instruments to manage its commodity price risk. In addition, the Company periodically enters into contracts that contain embedded features that are required to be bifurcated and accounted for separately as derivatives.

(a) Commodity Derivative Positions

The Company periodically enters into natural gas, NGLs, and oil derivative contracts with counterparties to hedge the price risk associated with its production. These derivatives are not entered into for trading purposes. To the extent that changes occur in the market prices of natural gas, NGLs, and oil, the Company is exposed to market risk on these open contracts. This market risk exposure is generally offset by the change in market prices of natural gas, NGLs, and oil recognized upon the ultimate sale of the Company's production.

The Company was party to various fixed price commodity swap contracts that settled during the nine months ended September30, 2019 and 2020. The Company enters into these swap contracts when management believes that favorable future sales prices for the Company's production can be secured. Under these swap agreements, when actual commodity prices upon settlement exceed the fixed price provided by the swap contracts, the Company pays the difference to the counterparty. When actual commodity prices upon settlement are less than the contractually provided fixed price, the Company receives the difference from the counterparty. In addition, the Company has entered into basis swap contracts in order to hedge the difference between the New York Mercantile Exchange ("NYMEX") index price and a local index price.

The Company also entered into NGL derivative contracts, which establish a contractual price for the settlement month as a fixed percentage of the West Texas Intermediate Crude Oil index ("WTI") price for the settlement month. When the percentage of the contractual price is above the contracted percentage, the Company pays the difference to the counterparty. When it is below the contracted percentage, the Company receives the difference from the counterparty.

In addition, the Company has also entered into a call option agreement that gives the counterparty the right, but not the obligation, to enter into a fixed price swap agreement on a specified future date for a specific amount of production for a specified future period.

The Company's derivative contracts have not been designated as hedges for accounting purposes; therefore, all gains and losses are recognized in the Company's statements of operations.

ANTERO RESOURCES CORPORATION
Notes to Unaudited Condensed Consolidated Financial Statements
December 31, 2019 and September 30, 2020

As of September 30, 2020, the Company's fixed price natural gas, oil and NGL swap positions from October 1, 2020 through December 31, 2023 were as follows (abbreviations in the table refer to the index to which the swap position is tied, as follows: NYMEX=Henry Hub; NYMEX-WTI=West Texas Intermediate; ARA Propane =European Propane CIF ARA; OPIS Ethane Mt Belv=Mont Belvieu Purity Ethane-OPIS):

	Natural gas MMBtu/day	Natural Gas Liquids Bbls/day	Oil Bbls/day	Weighted average index price
Three months ending December 31, 2020:				
NYMEX ($/MMBtu)	2,067,500	—	—	$ 2.84
ARA Propane ($/Gal)	—	10,315	—	0.65
OPIS Ethane Mt Belv ($/Gal)	—	24,500	—	0.20
NYMEX-WTI ($/Bbl)	—	—	26,000	55.63
Total	2,067,500	34,815	26,000	
Three months ending March 31, 2021				
OPIS Ethane Mt Belv ($/Gal)		19,000		$ 0.20
Year ending December 31, 2021:				
NYMEX ($/MMBtu)	2,160,000		—	$ 2.77
NYMEX-WTI ($/Bbl)	—		3,000	55.16
Total	2,160,000		3,000	
Year ending December 31, 2022:				
NYMEX ($/MMBtu)	905,897			$ 2.43
Year ending December 31, 2023:				
NYMEX ($/MMBtu)	43,000			$ 2.37

A portion of the NYMEX-WTI ($/Bbl) in 2020 combined with the Mont Belvieu Natural Gasoline to NYMEX-WTI are intended to fix the price of Natural Gasoline.

In addition, the Company has a call option agreement, which entitles the holder the right, but not the obligation, to enter into a fixed price swap agreement on December 21, 2023 to purchase 427,500 MMBtu per day at a price of $2.77 per MMBtu for the year ending December 31, 2024.

As of September 30, 2020, the Company's natural gas basis swap positions, which settle on the pricing index to basis differential of the Columbia Gas Transmission pipeline ("TCO") to the NYMEX Henry Hub natural gas price were as follows:

	Natural gas MMBtu/day	Weighted average hedged differential
Three months ending December 31, 2020:		
NYMEX to TCO ($/MMBtu)	15,123	$ 0.353
Year ending December 31, 2021:		
NYMEX to TCO ($/MMBtu)	40,000	$ 0.414
Year ending December 31, 2022:		
NYMEX to TCO ($/MMBtu)	60,000	$ 0.515
Year ending December 31, 2023:		
NYMEX to TCO ($/MMBtu)	50,000	$ 0.525
Year ending December 31, 2024:		
NYMEX to TCO ($/MMBtu)	50,000	$ 0.530

As of September 30, 2020, the Company had NGL contracts for January 1, 2021 through December 31, 2021 that fix the Mont Belvieu index price for natural gasoline to percentages of WTI as follows:

	Gas Liquids Bbls/day	Weighted average Payout Ratio
Year ending December 31, 2021:		
Mont Belvieu Natural Gasoline to NYMEX-WTI	14,150	78 %

As of September 30, 2020, the Company's fixed price natural gas, oil and NGL swap positions from October 1, 2020 through March 31, 2025 for Martica, the Company's consolidated subsidiary, were as follows (abbreviations in the table refer to the index to which the swap position is tied, as follows: NYMEX=Henry Hub; NYMEX-WTI=West Texas Intermediate; OPIS Propane Mt Belv Non-TET = Mont Belvieu Propane-OPIS; OPIS Ethane Mt Belv=Mont Belvieu Purity Ethane-OPIS; OPIS Natural Gasoline Mt Belv Non-TET = Mont Belvieu Natural Gasoline-OPIS):

	Natural gas MMBtu/day	Natural Gas Liquids Bbls/day	Oil Bbls/day	Weighted average index price
Three months ending December 31, 2020:				
NYMEX ($/MMBtu)	46,495	—	—	$ 2.06
OPIS Propane Mt Belv Non-TET	—	982	—	0.49
OPIS Natural Gasoline Mt Belv Non-TET	—	298	—	0.67
OPIS Ethane Mt Belv ($/Gal)	—	633	—	0.20
NYMEX-WTI ($/Bbl)	—	—	128	37.78
Total	46,495	1,913	128	
Year ending December 31, 2021:				
NYMEX ($/MMBtu)	46,536	—	—	$ 2.62
OPIS Propane Mt Belv Non-TET	—	932	—	0.43
OPIS Natural Gasoline Mt Belv Non-TET	—	282	—	0.71
OPIS Ethane Mt Belv ($/Gal)	—	987	—	0.17
NYMEX-WTI ($/Bbl)	—	—	117	39.94
Total	46,536	2,201	117	
Three months ending March 31, 2022				
OPIS Propane Mt Belv Non-TET	—	379	—	$ 0.43
OPIS Natural Gasoline Mt Belv Non-TET	—	115	—	0.72
OPIS Ethane Mt Belv ($/Gal)	—	521	—	0.16
NYMEX-WTI ($/Bbl)	—	—	17	43.85
Total	—	1,015	17	
Year ending December 31, 2022:				
NYMEX ($/MMBtu)	38,356	—	—	$ 2.39
OPIS Natural Gasoline Mt Belv Non-TET	—	254	—	0.83
NYMEX-WTI ($/Bbl)	—	—	66	40.92
Total	38,356	254	66	
Year ending December 31, 2023:				
NYMEX ($/MMBtu)	35,616	—	—	$ 2.35
NYMEX-WTI ($/Bbl)	—	—	52	42.45
Total	35,616	—	52	
Year ending December 31, 2024:				
NYMEX ($/MMBtu)	23,885		—	$ 2.33
NYMEX-WTI ($/Bbl)	—		43	44.02
Total	23,885		43	
Three months ending March 31, 2025:				
NYMEX ($/MMBtu)	18,021		—	$ 2.53
NYMEX-WTI ($/Bbl)	—		39	45.06
Total	18,021		39	

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(b) Embedded Derivatives

The VPP includes an embedded put option tied to NYMEX pricing for the production volumes associated with the Company's retained interest in the VPP properties of 120,667,000 MMBtu remaining through December 31, 2026 at a weighted average strike price of $2.60 per MMBtu that is not clearly and closely related to the host contract. Therefore, the Company bifurcated this embedded put option and reflected it at fair value in the unaudited condensed consolidated financial statements.

(c) Summary

The following table presents a summary of the fair values of the Company's derivative instruments and where such values are recorded in the consolidated balance sheets as of December 31, 2019 and September 30, 2020. None of the Company's derivative instruments are designated as hedges for accounting purposes and the fair value of derivative instruments was determined using Level 2 inputs.

	December 31, 2019		September 30, 2020	
	Balance sheet location	Fair value (In thousands)	Balance sheet location	Fair value (In thousands)
Asset derivatives not designated as hedges for accounting purposes:				
Commodity derivatives—current [1]	Derivative instruments	$ 422,849	Derivative instruments	$ 75,776
Embedded derivatives—current	Derivative instruments	—	Derivative instruments	7,281
Commodity derivatives—noncurrent [1]	Derivative instruments	333,174	Derivative instruments	6,998
Embedded derivatives—noncurrent	Derivative instruments	—	Derivative instruments	37,072
Total asset derivatives		756,023		127,127
Liability derivatives not designated as hedges for accounting purposes:				
Commodity derivatives—current	Derivative instruments	6,721	Derivative instruments	107,933
Commodity derivatives—noncurrent	Derivative instruments	3,519	Derivative instruments	149,222
Total liability derivatives		10,240		257,155
Net derivatives assets (liabilities)		$ 745,783		$ (130,028)

(1) Approximately $16 million of commodity derivative liabilities, including $8 million of current commodity derivatives and $8 million of noncurrent commodity derivatives, are attributable to our consolidated VIE, Martica.

The following table presents the gross values of recognized derivative assets and liabilities, the amounts offset under master netting arrangements with counterparties, and the resulting net amounts presented in the consolidated balance sheets as of the dates presented, all at fair value (in thousands):

	December 31, 2019			September 30, 2020		
	Gross amounts on balance sheet	Gross amounts offset on balance sheet	Net amounts of assets (liabilities) on balance sheet	Gross amounts on balance sheet	Gross amounts offset on balance sheet	Net amounts of assets (liabilities) on balance sheet
Commodity derivative assets	$ 882,817	(126,794)	756,023	$ 212,335	(129,561)	82,774
Embedded derivative assets	$ —	—	—	$ 44,353	—	44,353
Commodity derivative liabilities	$ (137,034)	126,794	(10,240)	$ (386,716)	129,561	(257,155)

The following is a summary of derivative fair value gains and losses and where such values are recorded in the unaudited condensed consolidated statements of operations for the three and nine months ended September 30, 2019 and 2020 (in thousands):

	Statement of operations location	Three months ended September 30,		Nine months ended September 30,	
		2019	2020	2019	2020
Commodity derivative fair value gains (losses)	Revenue	$ 220,788	(558,979)	$ 471,847	(161,161)
Embedded derivative fair value gains (losses)	Revenue	$ —	44,228	$ —	44,228

(13) Leases

The Company leases certain office space, processing plants, drilling rigs and completion services, gas gathering lines, compressor stations, and other office and field equipment. Leases with an initial term of 12 months or less are considered short-term and are not recorded on the balance sheet. Instead, the short-term leases are recognized in expense on a straight-line basis over the lease term.

Most leases include one or more options to renew, with renewal terms that canextend the lease from one to 20 years or more. The exercise of the lease renewal options are at the Company's sole discretion. The depreciable lives of the leased assets are limited by the expected lease term, unless there is a transfer of title or purchase option reasonably certain of exercise.

Certain of the Company's lease agreements include minimum payments based on a percentage of produced volumes over contractual levels and others include rental payments adjusted periodically for inflation.

The Company considers all contracts that have assets specified in the contract, either explicitly or implicitly, that the Company has substantially all of the capacity of the asset, and has the right to obtain substantially all of the economic benefits of that asset, without the lessor's ability to have a substantive right to substitute that asset, as leased assets. For any contract deemed to include a leased asset, that asset is capitalized on the balance sheet as a right-of-use asset and a corresponding lease liability is recorded at the present value of the known future minimum payments of the contract using a discount rate on the date of commencement. The leased asset classification is determined at the date of recording as either operating or financing, depending upon certain criteria of the contract.

The discount rate used for present value calculations is the discount rate implicit in the contract. If an implicit rate is not determinable, a collateralized incremental borrowing rate is used at the date of commencement. As new leases commence or previous leases are modified the discount rate used in the present value calculation is the current period applicable discount rate.

The Company has made an accounting policy election to adopt the practical expedient for combining lease and non-lease components on an asset class basis. This expedient allows the Company to combine non-lease components such as real estate taxes, insurance, maintenance, and other operating expenses associated with the leased premises with the lease component of a lease agreement on an asset class basis when the non-lease components of the agreement cannot be easily bifurcated from the lease payment. Currently, the Company is only applying this expedient to certain office space agreements.

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Supplemental Balance Sheet Information Related to Leases

The Company's lease assets as of December 31, 2019 and September 30, 2020 consisted of the following items (in thousands):

	December 31, 2019		September 30, 2020	
	Operating Leases	Finance Leases(2)	Operating Leases	Finance Leases(2)
Right-of-use Assets:				
Processing plants	$ 1,460,770	—	$ 1,324,022	—
Drilling rigs and completion services	71,662	—	19,480	—
Gas gathering lines and compressor stations (1)	1,308,428	—	1,274,755	—
Office space	40,491	—	37,784	—
Vehicles	4,983	2,328	3,367	1,494
Other office and field equipment	166	170	780	—
Total right-of-use assets	$ 2,886,500	2,498	$ 2,660,188	1,494

(1) Gas gathering lines and compressor stations leases includes $1.1 billion related to Antero Midstream Corporation as of December 31, 2019 and September 30, 2020. See "—Related party lease disclosure" for additional discussion.
(2) Financing lease assets are recorded net of accumulated amortization of $9 million and $3 million as of December 31, 2019 and September 30, 2020, respectively.

The Company's lease liabilities as of September 30, 2020 consisted of the following items (in thousands):

	December 31, 2019		September 30, 2020	
	Operating Leases	Finance Leases	Operating Leases	Finance Leases
Location on the balance sheet:				
Short-term lease liabilities	$ 304,397	923	$ 250,594	974
Long-term lease liabilities	2,582,103	1,575	2,409,594	520
Total lease liabilities	$ 2,886,500	2,498	$ 2,660,188	1,494

The processing plants, gathering lines and compressor stations that are classified as lease liabilities are classified as such under ASC Topic 842, *Leases*, because Antero is the sole customer of the assets and because Antero makes the decisions that most impact the economic performance of the assets.

Supplemental Information Related to Leases

Costs associated with operating leases were included in the statement of operations and comprehensive income (loss) for the three and nine months ended September 30, 2020 (in thousands):

	Three months ended September 30,		Nine months ended September 30,	
Statement of Operations Location	2019	2020	2019	2020
Gathering, compression, processing, and transportation	$ 237,618	409,006	$ 644,007	1,112,502
General and administrative	2,859	2,969	8,395	8,639
Contract termination and rig stacking	—	546	10,692	6,387
Total lease expense	$ 240,477	412,521	$ 663,094	1,127,528

Costs associated with finance leases of less than $1 million for each of the three months and nine months ended September 30, 2019 and 2020 were included in interest expense.

For the three months ended September 30, 2019 and 2020, the Company capitalized $53 million and $32 million, respectively, of costs related to operating leases and less than $1 million of costs related to finance leases. For the nine months ended September 30, 2019, and 2020, the Company capitalized $161 million and $91 million, respectively, of costs related to operating leases and less than $1 million of costs related to finance leases.

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Short-term lease costs that are more than one month but less than 12 months are excluded from the above amounts and total $41 million and $16 million, respectively, for the three months ended September 30, 2019 and 2020 and $115 million and $108 million, respectively, for the nine months ended September 30, 2019 and 2020.

Supplemental Cash Flow Information Related to Leases

The following is the Company's supplemental cash flow information related to leases for the three and nine months ended September 30, 2019 (in thousands):

	Three months ended September 30, 2019		Nine months ended September 30, 2019	
	Operating Leases	**Finance Leases**	**Operating Leases**	**Finance Leases**
Cash paid for amounts included in the measurement of lease liabilities:				
Operating cash out flows related to operating leases	$ 234,399	—	$ 591,963	—
Investing cash out flows related to operating leases	47,417	—	146,315	—
Financing cash out flows related to financing leases	—	303	—	1,967
	$ 281,816	303	$ 738,278	1,967
Noncash activities:				
Right of use assets obtained in exchange for operating lease liabilities	$ —	—	$ 3,345,549	—
Right of use assets obtained in exchange for financing lease liabilities	$ —	—	$ —	—

The following is the Company's supplemental cash flow information related to leases for the three and nine months ended September 30, 2020 (in thousands):

	Three months ended September 30, 2020		Nine months ended September 30, 2020	
	Operating Leases	**Finance Leases**	**Operating Leases**	**Finance Leases**
Cash paid for amounts included in the measurement of lease liabilities:				
Operating cash out flows related to operating leases	$ 485,692	—	$ 1,147,489	—
Investing cash out flows related to operating leases	24,950	—	88,229	—
Financing cash out flows related to financing leases	—	287	—	1,004
	$ 510,642	287	$ 1,235,718	1,004
Noncash activities:				
Right of use assets obtained in exchange for operating lease liabilities	$ 64,586	—	$ 178,348	—
Right of use assets obtained in exchange for financing lease liabilities	$ —	—	$ —	—

Maturities of Lease Liabilities

The table below is a schedule of future minimum payments for operating and financing lease liabilities as of September 30, 2020 (in thousands):

(in thousands)	Operating Leases	Financing Leases	Total
Remainder of 2020	$ 156,878	317	157,195
2021	590,519	844	591,363
2022	578,305	321	578,626
2023	575,228	26	575,254
2024	566,460	—	566,460
2025	493,783	—	493,783
Thereafter	1,558,470	—	1,558,470
Total lease payments	4,519,643	1,508	4,521,151
Less: imputed interest	(1,859,455)	(14)	(1,859,469)
Total	$ 2,660,188	1,494	2,661,682

Lease Term and Discount Rate

The table below is the Company's weighted-average remaining lease term and discount rate as of September 30, 2020:

	September 30, 2020	
	Operating Leases	Finance Leases
Weighted-average remaining lease term:	8.2 years	1.6 years
Weighted-average discount rate:	13.8 %	6.2 %

Related party lease disclosure

The Company has a gathering and compression agreement with Antero Midstream Corporation, whereby Antero Midstream Corporation receives a low-pressure gathering fee per Mcf, a high-pressure gathering fee per Mcf and a compression fee per Mcf, in each case subject to adjustments based on the consumer price index. If and to the extent the Company requests that Antero Midstream Corporation construct new high pressure lines and compressor stations, the gathering and compression agreement contains minimum volume commitments that require Antero Resources to utilize or pay for 75% and 70%, respectively, of the requested capacity of such new construction for 10 years. In December 2019, the Company and Antero Midstream Corporation agreed to extend the initial term of the gathering and compression agreement to 2038 and established a growth incentive fee program whereby low pressure gathering fees will be reduced from 2020 through 2023 to the extent the Company achieves certain volumetric targets at certain points during such time. Upon completion of the initial contract term, the gathering and compression agreement will continue in effect from year to year until such time as the agreement is terminated, effective upon an anniversary of the effective date of the agreement, by either the Company or Antero Midstream Corporation on or before the 180th day prior to the anniversary of such effective date. The Company achieved the volumetric targets during each quarter in the three and nine months ended September 30, 2020, and Antero Midstream Corporation provided a rebate of $12 million in each such quarter. Antero Midstream Corporation has provided rebates of $36 million for the nine months ended September 30, 2020.

For the three and nine months ended September 30, 2019, gathering and compression fees paid by Antero related to this agreement were $171 million and $486 million, respectively. For the three and nine months ended September 30, 2020, gathering and compression fees paid by Antero related to this agreement were $181 million and $503 million, respectively. As of December 31, 2019 and September 30, 2020, $57 million and $56 million was included within Accounts payable, related parties, respectively, on the condensed consolidated balance sheet as due to Antero Midstream Corporation related to this agreement.

(14) Commitments

The table below is a schedule of future minimum payments for firm transportation, drilling rig and completion services, processing, gathering and compression, and office and equipment agreements, which include leases that have remaining lease terms in excess of one year as of September 30, 2020 (in thousands).

	Firm transportation (a)	Processing, gathering and compression (b)	Land payment obligations (c)	Operating and Financing Leases (d)	Imputed Interest for Leases (d)	Total
Remainder of 2020	$ 278,430	14,089	1,527	66,340	90,855	451,241
2021	1,076,424	55,780	2,859	247,159	344,204	1,726,426
2022	1,033,787	52,712	—	267,094	311,532	1,665,125
2023	1,061,265	58,565	—	300,989	274,265	1,695,084
2024	1,021,107	58,687	—	334,693	231,767	1,646,254
2025	981,271	47,385	—	306,918	186,865	1,522,439
Thereafter	6,941,177	105,977	—	1,138,489	419,981	8,605,624
Total	$ 12,393,461	393,195	4,386	2,661,682	1,859,469	17,312,193

(a) Firm Transportation

The Company has entered into firm transportation agreements with various pipelines in order to facilitate the delivery of its production to market. These contracts commit the Company to transport minimum daily natural gas or NGLs volumes at negotiated rates or pay for any deficiencies at specified reservation fee rates. The amounts in this table are based on the Company's minimum daily volumes at the reservation fee rate. The values in the table represent the gross amounts that the Company is committed to pay; however, the Company will record in the consolidated financial statements its proportionate share of costs based on its working interest.

(b) Processing, Gathering, and Compression Service Commitments

The Company has entered into various long-term gas processing, gathering and compression service agreements. Certain of these agreements were determined to be leases. The minimum payment obligations under the agreements that are not leases are presented in this column.

The values in the table represent the gross amounts that the Company is committed to pay; however, the Company will record in the consolidated financial statements its proportionate share of costs based on its working interest.

(c) Land Payment Obligations

The Company has entered into various land acquisition agreements. Certain of these agreements contain minimum payment obligations over various terms. The values in the table represent the minimum payments due under these arrangements. None of these agreements were determined to be leases.

(d) Leases, including imputed interest

The Company has obligations under contracts for services provided by drilling rigs and completion fleets, processing, gathering, and compression services agreements, and office and equipment leases. The values in the table represent the gross amounts that Antero Resources is committed to pay; however, the Company will record in its financial statements its proportionate share of costs based on its working interests. Refer to Note 13—Leases to the unaudited condensed consolidated financial statements for more information on the Company's operating and finance leases.

(15) Contingencies

Environmental

In June 2018, following site inspections conducted in September 2017 at certain of our facilities located in Doddridge County, Tyler County, and Ritchie County, West Virginia, we received a Notice of Violation ("NOV") from the U.S. Environmental Protection Agency ("EPA") Region III for alleged violations of the federal Clean Air Act and the West Virginia State Implementation Plan relating to permitting and control requirements for emissions of regulated pollutants at several of our natural gas production facilities. The NOV alleges that combustion devices at these facilities did not meet applicable air permitting requirements. Separately, in June 2018, we received an information request from EPA Region III pursuant to Section 114(a) of the Clean Air Act relating to the facilities that were inspected in September 2017 as well as additional Antero Resources facilities for the purpose of determining if the additional facilities have the same alleged compliance issues that were identified during the September 2017 inspections. Subsequently, West Virginia Department of Environmental Protection ("WVDEP") conducted its own inspections, and we have received NOVs from WVDEP alleging violations relating to similar issues being investigated by the EPA. We continue to negotiate with EPA and WVDEP to resolve the issues alleged in the NOVs and the information request; however, we believe that there is a reasonable possibility that these actions may result in monetary sanctions exceeding $100,000. Our operations at these facilities are not suspended, and management does not expect these matters to have a material adverse effect on our financial condition, results of operations, or cash flows.

WGL

The Company and Washington Gas Light Company and WGL Midstream, Inc. (collectively, "WGL") were involved in a pricing dispute involving firm gas sales contracts executed June 20, 2014 (the "Contracts") that the Company began delivering gas under in January 2016. From January 2016 through July 2017 and from December 2017 through January 2018, the aggregate daily gas volumes contracted for under the Contracts was 500,000 MMBtu/day, with the aggregate daily contracted volumes having increased to 600,000 MMBtu/day from August through November 2017. The Company invoiced WGL based on the natural gas index price specified in the Contracts and WGL paid the Company based on that invoice price. However, WGL asserted that the index price was no longer appropriate under the Contracts and claimed that an undefined alternative index was more appropriate for the delivery point of the gas. In July 2016, the matter was referred to arbitration by the Colorado district court. In January 2017, the arbitration panel ruled in the Company's favor. As a result, the index price has remained as specified in the Contracts and there will be no adjustments to the invoices that have been paid by WGL, nor will future invoices to WGL be adjusted based on the same claim rejected by the arbitration panel. The arbitration panel's award was confirmed by the Colorado district court on April 14, 2017.

In March of 2017, WGL filed a second legal proceeding against the Company in Colorado district court alleging breach of contract and seeking damages of more than $30 million. In this lawsuit, WGL claimed that the Company breached its contractual obligations under the Contracts by failing to deliver "TCO pool" gas. In subsequent filings, WGL explained that its claims were based on an alleged obligation that the Company must deliver gas to the Columbia IPP Pool ("IPP Pool"). WGL asserted this exact same issue in the arbitration and it was rejected by the arbitration panel. The arbitration panel specifically found that the Delivery Point under the Contracts was at a specific geographic point in Braxton County, West Virginia, not the IPP Pool. On August 24, 2017, the Colorado district court dismissed with prejudice WGL's claims against the Company in its new lawsuit and found that the Company had not breached its Contracts with WGL by allegedly failing to deliver to the IPP Pool. The Court dismissed WGL's lawsuit because WGL had not adequately pled a claim against Antero Resources for the alleged failure to deliver "TCO pool" gas under the Contracts. WGL has appealed this decision to the Colorado Court of Appeals, and on October 11, 2018, the Colorado Court of Appeals reversed the Colorado district court's decision finding that WGL had adequately pled a claim for relief and remanded the case back to the district court for further proceedings.

The Company is also actively engaged in pursuing cover damages against WGL based on WGL's failure to take receipt of all of the agreed quantities of gas required under the Contracts. WGL's failure to take the gas volumes specified in the Contracts is directly related to WGL's lack of primary firm transportation rights at the Delivery Point. The failures by WGL to take the full contracted volumes of gas began in April 2017 and continued each month through December 2017 in varying quantities. In defense of its conduct, WGL asserted to the Company that their failure to receive gas is excused by (1) the Company's failure to deliver gas to the IPP Pool or (2) alleged instances of Force Majeure under the Contracts. However, as stated above, the alleged obligation that the Company must deliver gas to the IPP Pool was already rejected by the arbitration panel. Further, the Contracts expressly prohibit a Force Majeure claim in circumstances in which the gas purchaser does not have primary firm transportation agreements in place to transport the purchased gas. In each instance that WGL failed to receive the quantity of gas required under the Contracts, the

Company resold the quantities not taken and invoiced WGL for cover damages pursuant to the terms of the Contracts. WGL refused to pay for the invoiced cover damages as required by the Contracts and also short paid the Company for, among other things, certain amounts of gas received by WGL. The Company filed a lawsuit against WGL in Colorado district court on October 24, 2017 to recover its cover damages, other unpaid amounts, and interest. WGL's claims have been consolidated with Antero Resources' claims in the same district court and trial began on June 10, 2019. WGL quantified its damages claim for the alleged failure to deliver TCO Pool gas and sought approximately $40 million from Antero Resources.

On June 20, 2019, the Company was awarded a jury verdict of approximately $96 million in damages after the jury found that WGL breached the Contracts with the Company. In addition, the jury rejected WGL's claim against the Company, finding that the Company did not breach the Contracts by allegedly failing to deliver TCO Pool gas and awarding no damages in favor of WGL. On August 16, 2019, WGL appealed the judgment and the appeal is currently pending before the Colorado Court of Appeals. In the appeal, briefing has been completed and oral argument is scheduled for November 4, 2020.

Effective February 1, 2018, as a result of an amendment to its firm gas sales contract with WGL Midstream, Inc. that was executed on December 28, 2017, the total aggregate volumes to be delivered to WGL at the Braxton delivery point were reduced from 500,000 MMBtu/day to 200,000 MMBtu/day and in November 2018, the total aggregate contract volumes to be delivered to WGL at a delivery point in Loudoun County, Virginia increased by 330,000 MMBtu/day. This increase of 330,000 MMBtu/day is in effect for the remaining term of our gas sale contract with WGL Midstream, which expires in 2038, and these increased volumes are subject to NYMEX-based pricing. Following this increase, the aggregate contract volumes delivered to WGL total 530,000 MMBtu/day.

Other

The Company is party to various other legal proceedings and claims in the ordinary course of its business. The Company believes that certain of these matters will be covered by insurance and that the outcome of other matters will not have a material adverse effect on the Company's consolidated financial position, results of operations, or cash flows.

(16) Contract Termination and Rig Stacking

The Company incurs costs associated with the delay or cancellation of drilling and completion contracts with third-party contractors. These costs are recorded in Contract termination and rig stacking and included in the statement of operations and comprehensive income (loss) for the three and nine months ended September 30, 2019 and 2020 (in thousands):

	Three months ended September 30,		Nine months ended September 30,	
	2019	2020	2019	2020
Contract termination and rig stacking	$ 62	1,246	$ 14,026	12,317

(17) Related Parties

Antero Midstream Partners' operations comprised substantially all of the operations reflected in the gathering and processing, and water handling and treatment, results through March 12, 2019. Effective March 13, 2019, Antero Resources accounts for Antero Midstream Corporation as an equity method investment. See Note 3—Deconsolidation of Antero Midstream Partners LP to the unaudited condensed consolidated financial statements for more discussion on the Transactions.

Substantially all of the revenues for gathering and processing and water handling and treatment were derived from transactions with Antero Resources. See Note 18—Segment Information to the unaudited condensed consolidated financial statements for the operating results of the Company's reportable segments.

(18) Segment Information

See Note 2(l)—Summary of Significant Accounting Policies, Industry Segments and Geographic Information, to the unaudited condensed consolidated financial statements for a description of the Company's determination of its reportable segments. Revenues from gathering and processing and water handling and treatment operations were primarily derived from intersegment transactions for services provided to the Company's exploration and production operations prior to the closing of the Transactions. Through March 12, 2019, the results of Antero Midstream Partners were included in the consolidated financial statements of Antero Resources. Effective March 13, 2019, the results of Antero Midstream Partners are no longer consolidated in Antero Resources' results; however, the Company's segment disclosures include the results of the Company's unconsolidated affiliates due to their significance to the Company's operations. See Note 3—Deconsolidation of Antero Midstream Partners LP to the unaudited condensed consolidated financial statements for further discussion on the Transactions. Marketing revenues are primarily derived from activities to purchase and sell third-party natural gas and NGLs and to market excess firm transportation capacity to third parties.

Operating segments are evaluated based on their contribution to consolidated results, which is primarily determined by the respective operating income (loss) of each segment. General and administrative expenses were allocated to the midstream segment based on the nature of the expenses and on a combination of the segments' proportionate share of the Company's consolidated property and equipment, capital expenditures, and labor costs, as applicable. General and administrative expenses related to the marketing segment are not allocated because they are immaterial. Other income, income taxes, and interest expense are primarily managed and evaluated on a consolidated basis. Intersegment sales were transacted at prices which approximate market. Accounting policies for each segment are the same as the Company's accounting policies described in Note 2—Summary of Significant Accounting Policies to the unaudited condensed consolidated financial statements.

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The operating results and assets of the Company's reportable segments were as follows for the three months ended September 30, 2019 and 2020 (in thousands):

	Exploration and production	Marketing	Equity Method Investment in Antero Midstream Corporation	Elimination of intersegment transactions and unconsolidated affiliates	Consolidated total
Three months ended September 30, 2019:					
Sales and revenues:					
Third-party	$ 1,070,755	46,645	—	—	1,117,400
Intersegment	1,481	—	243,795	(243,795)	1,481
Total	$ 1,072,236	46,645	243,795	(243,795)	1,118,881
Operating expenses:					
Lease operating	$ 35,928	—	49,050	(49,050)	35,928
Gathering, compression, processing, and transportation	603,860	—	13,091	(13,091)	603,860
Impairment of oil and gas properties	1,041,469	—	—	—	1,041,469
Impairment of midstream assets	—	—	465,278	(457,478)	7,800
Depletion, depreciation, and amortization	241,503	—	24,460	(24,460)	241,503
General and administrative	35,923	—	30,595	(30,595)	35,923
Other	30,060	108,216	3,210	(3,210)	138,276
Total	1,988,743	108,216	585,684	(577,884)	2,104,759
Operating income (loss)	$ (916,507)	(61,571)	(341,889)	334,089	(985,878)
Equity in earnings (loss) of unconsolidated affiliates	$ (117,859)	—	18,478	(18,478)	(117,859)
Investments in unconsolidated affiliates	$ 1,819,323	—	672,310	(672,310)	1,819,323
Segment assets	$ 16,094,927	25,361	6,445,504	(6,445,504)	16,120,288
Capital expenditures for segment assets	$ 292,176	—	120,875	(120,875)	292,176

	Exploration and production	Marketing	Equity Method Investment in Antero Midstream Corporation	Elimination of intersegment transactions and unconsolidated affiliates	Consolidated total
Three months ended September 30, 2020:					
Sales and revenues:					
Third-party	$ 288,419	91,497	—	—	379,916
Intersegment	675	—	233,415	(233,415)	675
Total	$ 289,094	91,497	233,415	(233,415)	380,591
Operating expenses:					
Lease operating	$ 21,450	—	—	—	21,450
Gathering, compression, processing, and transportation	656,615	—	38,052	(38,052)	656,615
Impairment of oil and gas properties	29,392	—	—	—	29,392
Depletion, depreciation, and amortization	238,418	—	26,801	(26,801)	238,418
General and administrative	31,640	—	13,232	(13,232)	31,640
Other	28,605	128,580	3,513	(3,513)	157,185
Total	1,006,120	128,580	81,598	(81,598)	1,134,700
Operating income (loss)	$ (717,026)	(37,083)	151,817	(151,817)	(754,109)
Equity in earnings of unconsolidated affiliates	$ 24,419	—	23,173	(23,173)	24,419
Investments in unconsolidated affiliates	$ 272,926	—	—	—	272,926
Segment assets	$ 13,349,739	—	5,673,504	(5,673,504)	13,349,739
Capital expenditures for segment assets	$ 151,269	—	41,851	(41,851)	151,269

ANTERO RESOURCES CORPORATION
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December 31, 2019 and September 30, 2020

The operating results and assets of the Company’s reportable segments were as follows for the nine months ended September 30, 2019 and 2020 (in thousands):

	Exploration and production	Marketing	Equity Method Investment in Antero Midstream Corporation	Elimination of intersegment transactions and unconsolidated affiliates	Consolidated total
Nine months ended September 30, 2019:					
Sales and revenues:					
Third-party	$ 3,247,214	200,911	50	—	3,448,175
Intersegment	4,999	—	553,471	(550,693)	7,777
Total	$ 3,252,213	200,911	553,521	(550,693)	3,455,952
Operating expenses:					
Lease operating	$ 119,754	—	111,427	(112,664)	118,517
Gathering, compression, processing, and transportation	1,705,709	—	28,324	(138,810)	1,595,223
Impairment of oil and gas properties	1,253,712	—	—	—	1,253,712
Impairment of midstream assets	—	—	472,854	(458,072)	14,782
Depletion, depreciation, and amortization	702,299	—	68,557	(46,850)	724,006
General and administrative	128,213	—	85,026	(66,732)	146,507
Other	112,952	408,839	8,005	(7,002)	522,794
Total	4,022,639	408,839	774,193	(830,130)	4,375,541
Operating income (loss)	$ (770,426)	(207,928)	(220,672)	279,437	(919,589)
Equity in earnings (loss) of unconsolidated affiliates	$ (102,457)	—	34,981	(22,717)	(90,193)
Investments in unconsolidated affiliates	$ 1,819,323	—	672,310	(672,310)	1,819,323
Segment assets	$ 16,094,927	25,361	6,445,504	(6,445,504)	16,120,288
Capital expenditures for segment assets	$ 1,053,210	—	262,065	(208,913)	1,106,362

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December 31, 2019 and September 30, 2020

	Exploration and production	Marketing	Equity Method Investment in Antero Midstream Corporation	Elimination of intersegment transactions and unconsolidated affiliates	Consolidated total
Nine months ended September 30, 2020:					
Sales and revenues:					
Third-party	$ 1,978,572	201,855	—	—	2,180,427
Intersegment	2,180	—	696,859	(696,859)	2,180
Total	$ 1,980,752	201,855	696,859	(696,859)	2,182,607
Operating expenses:					
Lease operating	$ 71,836	—	—	—	71,836
Gathering, compression, processing, and transportation	1,877,084	—	128,847	(128,847)	1,877,084
Impairment of oil and gas properties	155,962	—	—	—	155,962
Impairment of midstream assets	—	—	665,491	(665,491)	—
Depletion, depreciation, and amortization	652,130	—	81,889	(81,889)	652,130
General and administrative	101,264	—	39,191	(39,191)	101,264
Other	88,023	334,906	14,062	(14,062)	422,929
Total	2,946,299	334,906	929,480	(929,480)	3,281,205
Operating income (loss)	$ (965,547)	(133,051)	(232,621)	232,621	(1,098,598)
Equity in earnings (loss) of unconsolidated affiliates	$ (83,408)	—	63,197	(63,197)	(83,408)
Investments in unconsolidated affiliates	$ 272,926	—	—	—	272,926
Segment assets	$ 13,349,739	—	5,673,504	(5,673,504)	13,349,739
Capital expenditures for segment assets	$ 726,402	—	165,265	(165,265)	726,402

(19) Subsidiary Guarantors

Each of the Company’s wholly owned subsidiaries has fully and unconditionally guaranteed Antero Resources’ senior notes. In the event a subsidiary guarantor is sold or disposed of (whether by merger, consolidation, the sale of a sufficient amount of its capital stock so that it no longer qualifies as a “Subsidiary” of Antero (as defined in the indentures governing the notes) or the sale of all or substantially all of its assets (other than by lease)) and whether or not the subsidiary guarantor is the surviving entity in such transaction to a person that is not Antero or a restricted subsidiary of Antero, such subsidiary guarantor will be released from its obligations under its subsidiary guarantee if the sale or other disposition does not violate the covenants set forth in the indentures governing the notes.

In addition, a subsidiary guarantor will be released from its obligations under the indentures and its guarantee, upon the release or discharge of the guarantee of other Indebtedness (as defined in the indentures governing the notes) that resulted in the creation of such guarantee, except a release or discharge by or as a result of payment under such guarantee; if Antero designates such subsidiary as an unrestricted subsidiary and such designation complies with the other applicable provisions of the indentures governing the notes or in connection with any covenant defeasance, legal defeasance or satisfaction and discharge of the notes.

The following tables present summarized financial information of Antero and its guarantor subsidiaries. The Company’s wholly owned subsidiaries are not restricted from making distributions to the Company.

ANTERO RESOURCES CORPORATION
Notes to Unaudited Condensed Consolidated Financial Statements
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Balance Sheet

(in thousands)	Parent (Antero) December 31, 2019	Parent (Antero) September 30, 2020	Guarantor Subsidiaries December 31, 2019	Guarantor Subsidiaries September 30, 2020
Accounts receivable, non-guarantor subsidiaries	$ —	51,000	$ —	—
Accounts receivable, related parties	125,000	—	299,450	398,158
Other current assets	797,885	446,889	—	35,028
Total current assets	922,885	497,889	299,450	433,186
Noncurrent assets	14,274,684	11,813,110	812,129	202,452
Total assets	$ 15,197,569	12,310,999	$ 1,111,579	635,638
Accounts payable, non-guarantor subsidiaries	$ —	—	$ —	—
Accounts payable, related parties	397,333	514,705	—	35,028
Other current liabilities	942,256	945,647	—	—
Total current liabilities	1,339,589	1,460,352	—	35,028
Noncurrent liabilities	7,186,687	6,322,233	—	—
Total liabilities	$ 8,526,276	7,782,585	—	35,028
Noncontrolling interests	$ —	315,754	—	—

Statement of Operations

(in thousands)	Parent (Antero) Nine months ended September 30, 2019	Parent (Antero) Nine months ended September 30, 2020	Guarantor Subsidiaries Nine months ended September 30, 2019	Guarantor Subsidiaries Nine months ended September 30, 2020
Revenues	$ 3,453,124	2,158,743	—	93,318
Operating expenses	4,439,278	2,789,119	—	560,102
Income (loss) from operations	(986,154)	(630,376)	—	(466,784)
Net income and comprehensive income including noncontrolling interests	10,932	(844,755)	131,135	(510,969)
Net income and comprehensive income attributable to Antero Resources Corporation	$ 10,932	(826,758)	131,135	(510,969)

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

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with our unaudited condensed consolidated financial statements and related notes included elsewhere in this Quarterly Report on Form 10-Q. The following discussion contains "forward-looking statements" that reflect our future plans, estimates, beliefs and expected performance. We caution that assumptions, expectations, projections, intentions, or beliefs about future events may, and often do, vary from actual results, and the differences can be material. Some of the key factors that could cause actual results to vary from our expectations include changes in natural gas, NGLs, and oil prices, the timing of planned capital expenditures, our ability to fund our development programs, uncertainties in estimating proved reserves and forecasting production results, operational factors affecting the commencement or maintenance of producing wells, the condition of the capital markets generally, as well as our ability to access them, impacts of world health events, including the COVID-19 pandemic, potential shut-ins of production due to lack of downstream demand or storage capacity, and uncertainties regarding environmental regulations or litigation and other legal or regulatory developments affecting our business, as well as those factors discussed below, all of which are difficult to predict. In light of these risks, uncertainties and assumptions, the forward-looking events discussed may not occur. See "Cautionary Statement Regarding Forward-Looking Statements." Also, see the risk factors and other cautionary statements described under the heading "Item 1A. Risk Factors." We do not undertake any obligation to publicly update any forward-looking statements except as otherwise required by applicable law.

In this section, references to "Antero," the "Company," "we," "us," and "our" refer to Antero Resources Corporation and its subsidiaries, unless otherwise indicated or the context otherwise requires.

Our Company

We are an independent oil and natural gas company engaged in the exploration, development and production of natural gas, NGLs, and oil properties located in the Appalachian Basin. We focus on unconventional reservoirs, which can generally be characterized as fractured shale formations. Our management team has worked together for many years and has a successful track record of reserve and production growth as well as significant expertise in unconventional resource plays. Our strategy is to leverage our team's experience delineating and developing natural gas resource plays to profitably grow our reserves and production, primarily on our existing multi-year inventory of drilling locations.

We have assembled a portfolio of long-lived properties that are characterized by what we believe to be low geologic risk and repeatability. Our drilling opportunities are focused in the Marcellus Shale and Utica Shale of the Appalachian Basin. As of September 30, 2020, we held approximately 522,000 net acres of rich gas and dry gas properties located in the Appalachian Basin in West Virginia and Ohio. Our corporate headquarters are in Denver, Colorado.

We operate in the following industry segments: (i) the exploration, development, and production of natural gas, NGLs, and oil; (ii) marketing of excess firm transportation capacity; and (iii) our equity method investment in Antero Midstream Corporation. All of our operations are conducted in the United States. As described below and elsewhere in this Quarterly Report on Form 10-Q, effective March 13, 2019, the results of Antero Midstream Partners are no longer consolidated in Antero's results.

2020 Developments and Highlights

COVID-19 Pandemic

In March 2020, the World Health Organization declared the COVID-19 outbreak a pandemic. Governments have tried to slow the spread of the virus by imposing social distancing guidelines, travel restrictions and stay-at-home orders, which have caused a significant decrease in activity in the global economy and the demand for oil and, to a lesser extent, natural gas and NGLs. Also in March 2020, Saudi Arabia and Russia failed to agree to cut production of oil along with the Organization of the Petroleum Exporting Countries ("OPEC"), and Saudi Arabia significantly reduced the price at which it sells oil and announced plans to increase production, which contributed to a sharp drop in the price of oil. While OPEC, Russia and other allied producers reached an agreement in April 2020 to reduce production, oil prices have remained low. The imbalance between the supply of and demand for oil, as well as the uncertainty around the extent and timing of an economic recovery, have caused extreme market volatility and a substantial adverse effect on commodity prices.

As a producer of natural gas, NGLs and oil, we are recognized as an essential business under various federal, state and local regulations related to the COVID-19 pandemic. We have continued to operate as permitted under these regulations while taking steps to protect the health and safety of our employees and workers. We have implemented protocols to reduce the risk of an outbreak within our field operations, and these protocols have not reduced production or efficiency in a significant manner. A substantial portion of our non-field level employees continue to operate in remote work from home arrangements, and we have been able to maintain a consistent level of effectiveness through these arrangements, including maintaining our day-to-day operations, our financial reporting systems and our internal control over financial reporting.

Our natural gas, NGLs and oil producing properties are located in the liquids-rich Appalachian Basin. Although the decline in oil prices has negatively impacted our oil revenue, oil sales represented approximately 4% of our total revenue for each of the nine months ended September 30, 2020 and the year ended December 31, 2019. While natural gas prices also declined during the first half of 2020, benchmark Henry Hub prices recovered during the third quarter and averaged $2.58/Mcf in September. Similarly, C3+ NGL prices also improved during the third quarter as gasoline demand increased, supporting prices for normal butane (nC4), isobutane (iC4), and pentane (C5), all of which are used for gasoline. The COVID-19 induced demand destruction on gasoline, which forced C5 prices below propane prices for much of April to under $0.40 per gallon, has since rebounded with benchmark C5 price in October in the range of $0.85 to $0.95 per gallon.

In addition, we have hedged through fixed price contracts the sale of 1.3 Bcf per day of natural gas at a weighted average price of $2.84 per MMBtu for the remainder of 2020. Our hedges cover a substantial majority of our expected natural gas production in 2020. We also have fixed priced contracts for the sale of 10,315 barrels per day of propane at a weighted average price of $0.65 per gallon, 24,500 barrels per day of ethane at a weighted average price of $0.20 per gallon and 26,000 barrels per day of oil at a weighted average price of $55.63 per barrel for the remainder of 2020. All of our hedges are financial hedges and do not have physical delivery requirements. As such, any decreases in anticipated production, whether as a result of decreased development activity, shut-ins, or through transactions under our asset sale plan, will not impact our ability to realize the benefits of the hedges.

Our natural gas and NGLs are primarily used in manufacturing, power generation and heating rather than transportation. While we have seen a decrease in the overall demand for these products, demand for natural gas and NGLs has not declined as much as demand for oil, and there has not been as substantial an oversupply of natural gas and NGLs as there has been of oil. Furthermore, the decrease in demand for oil has significantly reduced the number of rigs drilling for oil in the continental U.S. and, as a result, estimates of future gas supply associated with oil production have declined. Additionally, the restart of economic activity in Asia and Europe, coupled with lower LPG production from refineries in the U.S., Europe, and Asia during the second quarter, provided support for international LPG prices relative to oil. Further, reductions in OPEC+ and North American oil production and the associated NGL volumes are expected to have a supportive effect on propane and butane prices through the remainder of 2020 and into 2021.

During the third quarter of 2020, we shipped 54% of our total C3+ NGL net production on Mariner East 2 for export and realized a $0.04 per gallon premium to Mont Belvieu pricing on these volumes at Marcus Hook, PA. We sold the remaining 46% of C3+ NGL net production at a $0.12 per gallon discount to Mont Belvieu pricing at Hopedale, OH. We expect to sell at least 50% of our C3+ NGL full-year production in 2020 at Marcus Hook for export at a premium to Mont Belvieu.

Condensate differentials to WTI were approximately $15/Bbl during the third quarter. Pre-hedge oil realizations were negatively impacted during the second quarter and beginning of the third quarter as Antero sold volumes at a material discount to WTI in order to keep from shutting in production volumes. This period of weak condensate demand driven by the pandemic coincided with an active well completion period for Antero that brought on large condensate volumes. The negative impact from wider oil differentials was more than offset by the benefit of maintaining full natural gas and NGL volumes through this period. Antero expects its full year 2020 realized oil price differential to be at the high end of the $10.00/Bbl to $12.00/Bbl range, as the differential normalizes during the fourth quarter of 2020.

Our supply chain also has not experienced any significant interruptions. The industry continues to experience storage capacity constraints for oil and certain NGL products, and we may become subject to those constraints if we are not able to sell our production or certain components thereof, or enter into additional storage arrangements. The lack of a market or available storage for any one NGL product or oil could result in our having to delay or discontinue well completions and commercial production or shut in production for other products because we cannot curtail the production of individual products in a meaningful way without reducing production of other products. Potential impacts of these constraints may include partial shut-in of production, although we are not able to determine the extent of shut-ins or for how long they may last. However, because some of our wells produce rich gas, which is processed, and some produce dry gas, which does not require processing, we can change the mix of products that we produce and wells that we complete to adjust our production to address takeaway capacity constraints for certain products. For example, we can shut-in rich gas wells and still produce from our dry gas wells if processing or storage capacity of NGL products becomes further limited or constrained. Also, prior to the COVID-19 pandemic, we had developed a diverse set of buyers and destinations, as well as in-field and off-site storage capacity for our condensate volumes, and such capacity is still largely available to us.

During the third quarter of 2020, condensate differentials to WTI were notably wider as a result of COVID-19 demand destruction at both the Appalachia regional level and national level. To protect against production curtailments and shut-ins due to insufficient storage capacity, Antero expanded its customer base and its condensate storage capacity within the basin. In addition, Antero entered into transactions that required buyers to transport product to more distant markets and storage, which coincided with substantially weakened crack spreads for refined products. To date, Antero has not shut in or curtailed any production from its assets as a result of COVID-19 demand issues and does not expect to shut in any volumes during 2020.

In addition, as discussed below in "—2020 Capital Budget and Capital Spending," in April 2020, we announced a 34% reduction in our drilling and completion capital budget for 2020. During the third quarter, our ongoing emphasis on completion efficiencies and drilling longer laterals resulted in material improvements in well costs. Well costs average $640 per lateral foot during the third quarter, benefiting from these efficiency improvements and lateral lengths that averaged over 15,000 feet. Well costs were $675 per foot when normalized for a 12,000 foot lateral length. We expect well costs to average $675 per foot during the fourth quarter of 2020, based on a 12,000 foot lateral. We continue to monitor our five-year drilling plan and will make further revisions as appropriate. Reducing the 2020 capital budget may impact production levels in 2021 and forward to the extent fewer wells are brought online.

During the first quarter of 2020 and the two preceding quarters, we recognized various impairment charges related to the decline in commodity prices and the value of our investment in Antero Midstream Corporation. At this time, we do not anticipate any further impairment charges in our equity method investment in Antero Midstream Corporation, as the value of our equity method investment has increased since the end of the first quarter of 2020. Additional impairment charges related to our assets may occur if we experience disruptions in production, additional or sustained declines in the forward commodity price strip from September 30, 2020, unresolved storage capacity restraints or other consequences caused by the COVID-19 pandemic.

In October 2020, the borrowing base supporting our Credit Facility was subject to its semi-annual redetermination and was re-affirmed our borrowing base at $2.85 billion. Lender commitments also remained unchanged at $2.64 billion, providing us with a consistent amount of available borrowings. Our next semi-annual borrowing base redetermination is in April 2021, which could impact our available borrowings and liquidity.

In addition, our borrowing capacity is directly impacted by the amount of financial assurance we are required to provide in the form of letters of credit to third parties, primarily pipeline capacity providers. The amount of financial assurance we must provide has not increased during the COVID-19 pandemic and, thus far, we have not experienced any losses due to counterparty risk. However, our ability to limit any additional financial assurance we are required to provide, as well as to protect ourselves from the counterparty risk of our financial hedges, may be limited in the future. Since the onset of the COVID-19 pandemic, we have timely serviced our debt and other obligations, and we have not implemented or requested any concessions or materially modified the terms of any agreements.

The COVID-19 pandemic, commodity market volatility and resulting financial market instability are variables beyond our control and may adversely impact our generation of funds from operating cash flows, distributions from unconsolidated affiliates, available borrowings under our Credit Facility and our ability to access the capital markets. We have announced $751 million in asset sales since December 2019, inclusive of up to $51 million of contingent consideration, with proceeds used for absolute debt reduction. Any additional asset sales or excess cash flows is expected to be used for further debt reduction. Instability in the financial markets and uncertainty in the general business environment resulting from the COVID-19 pandemic may impact our ability to further execute our asset sale program on the terms and the timeframe previously anticipated.

Volumetric Production Payment Transaction

On August 10, 2020, we completed a volumetric production payment transaction and received net proceeds of approximately $215 million (the "VPP"). In connection with the VPP, we entered into a purchase and sale agreement, together with a conveyance agreement and production and marketing agreement, with J.P. Morgan Ventures Energy Corporation ("JPM-VEC") to convey, effective July 1, 2020, an overriding royalty interest in dry gas producing properties in West Virginia (the "VPP Properties") equal to 136,589,000 MMBtu over the expected seven-year term of the VPP.

We accounted for the VPP as a conveyance under Accounting Standard Codifications ("ASC") Topic 932,*Extractive Industries—Oil and Gas*, and the net proceeds were recognized as deferred revenue as of September 30, 2020. Deferred revenue is recognized as volumes are delivered using the units-of-production method over the term of the VPP. Under the production and marketing agreement, we and our affiliates provide certain marketing services as JPM-VEC's agent, and any income or expenses related to these services will be recorded as marketing revenue or marketing expenses (as the case may be).

Contemporaneously with the VPP transaction, we executed a call option related to the production volumes associated with our retained interest in the VPP properties, which is collateralized by a mortgage on the VPP properties. Additionally, the production and marketing agreement contains an embedded put option related to the production volumes for our retained interest in the VPP properties, which has been bifurcated from the production and marketing arrangement and accounted for as a derivative instrument recorded at fair value as of September 30, 2020. See Note 12—Derivative Instruments to the unaudited condensed consolidated financial statements for further discussion of such derivative instruments.

Conveyance of Overriding Royalty Interest

On June 15, 2020, we announced the consummation of a transaction with an affiliate of Sixth Street Partners, LLC ("Sixth Street") relating to certain overriding royalty interests across our existing asset base (the "ORRIs"). In connection with the transaction, we contributed the ORRIs to a newly formed subsidiary, Martica Holdings LLC ("Martica"), and Sixth Street at the initial closing contributed $300 million in cash (subject to customary adjustments) and agreed to contribute up to an additional $102 million in cash if certain production targets attributable to the ORRIs are achieved in the third quarter of 2020 and first quarter of 2021. All cash contributed by Sixth Street was distributed to us. As of September 30, 2020, we determined we met the production threshold related to the third quarter of 2020 whereby we became entitled to receive a $51 million cash distribution that will be paid in the fourth quarter of 2020.

The ORRIs include an overriding royalty interest of 1.25% of our working interest in all of its proved developed operated properties in West Virginia and Ohio, subject to certain excluded wells (the "Initial PDP Override"), and an overriding royalty interest of 3.75% of our working interest in all of its undeveloped properties in West Virginia and Ohio (the "Development Override"). Wells turned to sales after April 1, 2020 and prior to the later of (a) the date on which we turn to sales 2.2 million lateral feet (net to our interest) of horizontal wells burdened by the Development Override and (b) the earlier of (i) April 1, 2023 and (ii) the date on which we turn to sales 3.82 million lateral feet (net to our interest) of horizontal wells are subject to the Development Override.

The ORRIs also include an additional overriding royalty interest of 2.00% of our working interest in the properties underlying the Initial PDP Override (the "Incremental Override"). The Incremental Override (or a portion thereof, as applicable) may be re-conveyed to us (at our election) if certain production targets attributable to the ORRIs are achieved through March 31, 2023. Any portion of the Incremental Override that may not be re-conveyed to us based on us achieving such production volumes through March 31, 2023 will remain with Martica.

Prior to Sixth Street achieving an internal rate of return of 13% and 1.5x cash-on-cash return (the "Hurdle"), Sixth Street will receive all distributions in respect of the Initial PDP Override and the Development Override, and we will receive all distributions in respect of the Incremental Override, unless certain production targets are not achieved, in which case Sixth Street will receive some or all of the distributions in respect of the Incremental Override. Following Sixth Street achieving the Hurdle, we will receive 85% of the distributions in respect of the ORRIs to which Sixth Street was entitled immediately prior to the Hurdle being achieved.

Production and Financial Results

Three months ended September 30, 2020. For the three months ended September 30, 2020 our net production totaled 347 Bcfe, or 3,772 MMcfe per day, a 12% increase in daily gas equivalent production compared to 310 Bcfe, or 3,367 MMcfe per day, for the three months ended September 30, 2019. Production increases resulted from an increase in the number of producing wells as a result of our drilling and completion activity. Our average price received for production for the three months ended September 30, 2020 was $2.30 per Mcfe compared to $2.74 per Mcfe for the three months ended September 30, 2019. These prices are before the effects of gains on settled commodity derivatives in both periods and included the proceeds related to a certain lawsuit in the three months ended September 30, 2019. Our average realized price after the effects of gains on settled commodity derivatives was $2.92 per Mcfe for the three months ended September 30, 2020 compared to $3.13 per Mcfe for the three months ended September 30, 2019, a decrease of 7%.

We generated consolidated cash flows from operations of $176 million, net loss attributable to Antero Resources of $536 million, and Adjusted EBITDAX of $272 million for the three months ended September 30, 2020. This compares to consolidated cash flows from operations of $198 million, consolidated net loss attributable to Antero Resources of $879 million, and Adjusted EBITDAX of $258 million for the three months ended September 30, 2019. See "—Non-GAAP Financial Measures" for a definition of Adjusted EBITDAX and a reconciliation of Adjusted EBITDAX to net cash provided by operating activities and net income (loss).

Cash flows from operations decreased by $22 million for the three months ended September 30, 2020 compared to the prior year period primarily due to decreases in commodity prices both before and after the effects of settled commodity derivatives, increases in processing and transportation costs, and changes in current assets and liabilities. Consolidated net loss attributable to

Antero Resources of $536 million for the three months ended September 30, 2020 decreased from consolidated net loss attributable to Antero Resources of $879 million for the three months ended September 30, 2019 primarily due to impairments of oil and gas properties in 2019, partially offset by decreases in commodity derivative fair value gains (losses) and commodity prices and expense increases in processing and transportation costs.

Adjusted EBITDAX increased from $258 million for the three months ended September 30, 2019 to $272 million for the three months ended September 30, 2020, an increase of 6%, primarily due to higher commodity derivative settlement gains and decreased operating expenses per Mcfe, partially offset by lower commodity prices between periods.

Nine months ended September 30, 2020. For the nine months ended September 30, 2020 our net production totaled 974 Bcfe, or 3,554 MMcfe per day, a 10% increase in daily combined production compared to 882 Bcfe, or 3,232 MMcfe per day, for the nine months ended September 30, 2019. Production increases resulted from an increase in the number of producing wells as a result of our drilling and completion activity. Our average price received for production, before the effects of gains on settled commodity derivatives for the nine months ended September 30, 2020 was $2.15 per Mcfe compared to $3.15 per Mcfe for the nine months ended September 30, 2019. Our average realized price, after the effects of gains on settled commodity derivatives in both periods and including the proceeds related to a certain lawsuit in the three months ended September 30, 2019, was $2.91 per Mcfe for the nine months ended September 30, 2020 compared to $3.44 per Mcfe for the nine months ended September 30, 2019, a decrease of 15%.

We generated consolidated cash flows from operations of $493 million, net loss attributable to Antero of $1.3 billion, and Adjusted EBITDAX of $703 million for the nine months ended September 30, 2020. This compares to consolidated cash flows from operations of $956 million, consolidated net income attributable to Antero Resources of $142 million, and Adjusted EBITDAX of $952 million for the nine months ended September 30, 2019.

Cash flows from operations decreased by $463 million for the nine months ended September 30, 2020 compared to the prior year period primarily due to decreases in commodity prices both before and after the effects of settled commodity derivatives, increases in processing and transportation costs and changes in current assets and liabilities. Consolidated net loss attributable to Antero Resources of $1.3 billion for the nine months ended September 30, 2020 decreased from consolidated net income attributable to Antero Resources of $142 million for the nine months ended September 30, 2019 primarily due to lower commodity prices between periods as well as the gain on deconsolidation of Antero Midstream Partners in 2019 partially offset by impairment of oil and gas properties in 2019. The nine months ended September 30, 2020 was also impacted by an impairment of equity investment due to the decline in Antero Midstream Corporation's fair value, Antero Midstream Corporation's reporting a loss for such period, and the decreases in commodity prices both before and after the effects of settled commodity derivatives and increases in gathering, compression, processing and transportation costs.

Adjusted EBITDAX decreased from $982 million for the nine months ended September 30, 2019 to $703 million for the nine months ended September 30, 2020, a decrease of 26%, primarily due to the decrease in commodity prices of 32% per Mcfe before and 15% per Mcfe after the effects of settled commodity derivatives, and increased processing and transportation costs per Mcfe. A portion of the cost increases are the result of the deconsolidation of Antero Midstream Partners as costs that were previously eliminated in consolidation are now expensed.

2020 Capital Budget and Capital Spending

On April 20, 2020, we announced our revised 2020 drilling and completion capital budget of $750 million. We do not include acquisitions in our capital budget. We periodically review our capital expenditures and adjust our budget and its allocation based on commodity prices, takeaway constraints, operating cash flow and liquidity.

Three months ended September 30, 2020. For the three months ended September 30, 2020, our capital expenditures were approximately $151 million, including drilling and completion costs of $141 million, leasehold acquisitions of $9 million, and other capital expenditures of $1 million. Our capital expenditures for the three months ended September 30, 2019 of approximately $292 million included drilling and completion costs of $278 million, leasehold acquisitions of $13 million, and other capital expenditures of $1 million. This 48% reduction in capital costs was a result of our decreased activity levels during the third quarter of 2020 as well as well cost savings initiatives, which include savings resulting from service cost deflation, sand and water logistics optimization, and operational efficiency gains.

Nine months ended September 30, 2020. For the nine months ended September 30, 2020, our capital expenditures were approximately $726 million, including drilling and completion costs of $694 million, leasehold acquisitions of $31 million, and other capital expenditures of $1 million. Our exploration and production capital expenditures for the nine months ended September 30, 2019 of approximately $1.1 billion included drilling and completion costs of $958 million, leasehold acquisitions of $70 million, and other capital expenditures of $6 million. This 30% reduction in capital costs was a result of our decreased activity levels during 2020 as well as our well cost savings initiatives, which include savings resulting from service cost deflation, sand and water logistics optimization, and operational efficiency gains.

In addition, consolidated capital expenditures for the nine months ended September 30, 2019 included gathering and compression expenditures of $48 million and water handling and treatment expenditures of $24 million. Antero Midstream Partners also invested $25 million in a joint venture. These expenditures relate to the period prior to deconsolidation of Antero Midstream Partners on March 12, 2019.

Hedge Position (Excluding Martica)

As of September 30, 2020, we had fixed price natural gas swap contracts on NYMEX Henry Hub for the period from October 2020 through December 2023 covering 1.3 Tcf of our projected natural gas production at a weighted average index price of $2.69 per MMBtu, including contracts for the remainder of 2020 of approximately 190 Bcf of natural gas at a weighted average index price of $2.84 per MMBtu. As of September 30, 2020, we also had basis swaps for the period from October 2020 through December 2024 for approximately 78.6 Bcf of our projected natural gas production with pricing differentials ranging from $0.35 to $0.53 per MMBtu that hedge the difference between TCO and the NYMEX Henry Hub. In addition, we have a call option agreement, which entitles the holder, if exercised, to enter into a fixed price swap agreement for approximately 428 MMBtu per day at a price of $2.77 per MMBtu in 2024.

As of September 30, 2020, we had fixed price oil swap contracts on NYMEX-WTI for the period from October 2020 through December 2021 covering approximately 3.5 million barrels of our projected oil production at a weighted average index price of $55.48 per barrel. Additionally, we had fixed price propane swap contracts on ARA Propane for the period from October 2020 through December 2020 covering approximately 0.9 million barrels of our projected propane production at a weighted average index price of $0.65 per gallon. We also had fixed price ethane swap contracts on OPIS Ethane Mt Belv for the period from October 2020 through March 2021 covering approximately 4.0 million barrels of our projected ethane production at a weighted average index price of $0.20 per gallon.

As of September 30, 2020, we also had an embedded put option tied to NYMEX pricing for the production volumes associated with our retained interest in the VPP properties of 120,667,000 MMBtu remaining through December 31, 2026 at a weighted average strike price of $2.60 per MMBtu.

We believe our hedge position provides some certainty to cash flows supporting our future operations and capital spending plans. As of September 30, 2020, the estimated fair value of our commodity derivative contracts was a net liability of approximately $130 million.

Results of Operations

We have three operating segments: (1) the exploration, development and production of natural gas, NGLs, and oil; (2)marketing and utilization of excess firm transportation capacity gathering and processing; and (3) equity method investment in Antero Midstream Corporation. Revenues from Antero Midstream Corporation's operations were primarily derived from intersegment transactions for services provided to our exploration and production operations by Antero Midstream Partners. All intersegment transactions were eliminated upon consolidation, including revenues from water handling and treatment services provided by Antero Midstream Partners, which we capitalized as proved property development costs. Through March 12, 2019, the results of Antero Midstream Partners were included in our consolidated financial statements. Effective March 13, 2019, the results of Antero Midstream Partners are no longer included in our results; however, our disclosures include the segments of our unconsolidated affiliates due to their significance to our operations. See Note 3—Deconsolidation of Antero Midstream Partners LP and Note 18—Segment Information to the unaudited condensed consolidated financial statements. Marketing revenues are primarily derived from activities to purchase and sell third-party natural gas and NGLs and to market and utilize excess firm transportation capacity.

Three Months Ended September 30, 2019 Compared to Three Months Ended September 30, 2020

The operating results of our reportable segments were as follows for the three months ended September 30, 2019 and 2020 (in thousands):

	Exploration and production	Marketing	Equity Method Investment in Antero Midstream Corporation	Elimination of intersegment transactions and unconsolidated affiliates	Consolidated total
Three months ended September 30, 2019:					
Revenue and other:					
Natural gas sales	$ 524,448	—	—	—	524,448
Natural gas liquids sales	284,958	—	—	—	284,958
Oil sales	40,561	—	—	—	40,561
Commodity derivative fair value gains	220,788	—	—	—	220,788
Gathering, compression, water handling and treatment	—	—	272,658	(272,658)	—
Marketing	—	46,645	—	—	46,645
Other income (loss)	1,481	—	(28,863)	28,863	1,481
Total	$ 1,072,236	46,645	243,795	(243,795)	1,118,881
Operating expenses:					
Lease operating	$ 35,928	—	49,050	(49,050)	35,928
Gathering and compression	209,752	—	13,091	(13,091)	209,752
Processing	230,377	—	—	—	230,377
Transportation	163,731	—	—	—	163,731
Production and ad valorem taxes	28,863	—	1,179	(1,179)	28,863
Marketing	—	108,216	—	—	108,216
Exploration	208	—	—	—	208
Impairment of oil and gas properties	1,041,469	—	—	—	1,041,469
Impairment of midstream assets	—	—	465,278	(457,478)	7,800
Depletion, depreciation, and amortization	241,503	—	24,460	(24,460)	241,503
Accretion of asset retirement obligations	927	—	54	(54)	927
General and administrative (excluding equity-based compensation)	32,048	—	10,466	(10,466)	32,048
Equity-based compensation	3,875	—	20,129	(20,129)	3,875
Change in fair value of contingent acquisition consideration	—	—	1,977	(1,977)	—
Contract termination and rig stacking	62	—	—	—	62
Total	1,988,743	108,216	585,684	(577,884)	2,104,759
Operating income (loss)	$ (916,507)	(61,571)	(341,889)	334,089	(985,878)
Equity in earnings of unconsolidated affiliates	$ (117,859)	—	18,478	(18,478)	(117,859)

	Exploration and production	Marketing	Equity Method Investment in Antero Midstream Corporation	Elimination of intersegment transactions and unconsolidated affiliates	Consolidated total
Three months ended September 30, 2020:					
Revenue and other:					
Natural gas sales	$ 436,304	—	—	—	436,304
Natural gas liquids sales	327,426	—	—	—	327,426
Oil sales	34,265	—	—	—	34,265
Commodity derivative fair value losses	(514,751)	—	—	—	(514,751)
Gathering, compression, water handling and treatment	—	—	251,215	(251,215)	—
Marketing	—	91,497	—	—	91,497
Amortization of deferred revenue, VPP	5,175	—	—	—	5,175
Other income	675	—	(17,800)	17,800	675
Total	$ 289,094	91,497	233,415	(233,415)	380,591
Operating expenses:					
Lease operating	$ 21,450	—	—	—	21,450
Gathering and compression	221,004	—	38,052	(38,052)	221,004
Processing	244,888	—	—	—	244,888
Transportation	190,723	—	—	—	190,723
Production and ad valorem taxes	25,790	—	—	—	25,790
Marketing	—	128,580	—	—	128,580
Exploration	454	—	—	—	454
Impairment of oil and gas properties	29,392	—	—	—	29,392
Impairment of midstream assets	—	—	947	(947)	—
Depletion, depreciation, and amortization	238,418	—	26,801	(26,801)	238,418
Accretion of asset retirement obligations	1,115	—	39	(39)	1,115
General and administrative (excluding equity-based compensation)	25,941	—	9,554	(9,554)	25,941
Equity-based compensation	5,699	—	3,678	(3,678)	5,699
Contract termination and rig stacking and other expenses	1,246	—	2,527	(2,527)	1,246
Total	1,006,120	128,580	81,598	(81,598)	1,134,700
Operating income (loss)	$ (717,026)	(37,083)	151,817	(151,817)	(754,109)
Equity in earnings of unconsolidated affiliates	$ 24,419	—	23,173	(23,173)	24,419

Exploration and Production Segment Results for the Three Months Ended September 30, 2019 Compared to the Three Months Ended September 30, 2020

The following table sets forth selected operating data of the exploration and production segment for the three months ended September 30, 2019 compared to the three months ended September 30, 2020:

	Three months ended September 30, 2019	Three months ended September 30, 2020	Amount of Increase (Decrease)	Percent Change
Production data [1]:				
Natural gas (Bcf)	210	226	16	8 %
C2 Ethane (MBbl)	4,307	5,459	1,152	27 %
C3+ NGLs (MBbl)	11,472	13,400	1,928	17 %
Oil (MBbl)	865	1,367	502	58 %
Combined (Bcfe)	310	347	37	12 %
Daily combined production (MMcfe/d)	3,367	3,772	405	12 %
Average prices before effects of derivative settlements [2]:				
Natural gas (per Mcf)	$ 2.50	$ 1.93	$ (0.57)	(23)%
C2 Ethane (per Bbl)	$ 6.15	$ 5.94	$ (0.21)	(3)%
C3+ NGLs (per Bbl)	$ 22.53	$ 22.01	$ (0.52)	(2)%
Oil (per Bbl)	$ 46.86	$ 25.07	$ (21.79)	(47)%
Weighted Average Combined (per Mcfe)	$ 2.74	$ 2.30	$ (0.44)	(16)%
Average realized prices after effects of derivative settlements [2]:				
Natural gas (per Mcf)	$ 3.05	$ 2.73	$ (0.32)	(10)%
C2 Ethane (per Bbl)	$ 6.15	$ 5.67	$ (0.48)	(8)%
C3+ NGLs (per Bbl)	$ 22.67	$ 23.81	$ 1.14	5 %
Oil (per Bbl)	$ 50.00	$ 34.96	$ (15.04)	(30)%
Weighted Average Combined (per Mcfe)	$ 3.13	$ 2.92	$ (0.21)	(7)%
Average costs (per Mcfe):				
Lease operating	$ 0.12	$ 0.06	$ (0.06)	(50)%
Gathering and compression	$ 0.68	$ 0.64	$ (0.04)	(6)%
Processing	$ 0.74	$ 0.71	$ (0.03)	(4)%
Transportation	$ 0.53	$ 0.55	$ 0.02	4 %
Production taxes	$ 0.09	$ 0.07	$ (0.02)	(22)%
Marketing, net	$ 0.20	$ 0.11	$ (0.09)	(45)%
Depletion, depreciation, amortization and accretion	$ 0.78	$ 0.69	$ (0.09)	(12)%
General and administrative (excluding equity-based compensation)	$ 0.10	$ 0.07	$ (0.03)	(30)%

(1) Production data excludes volumes related to the VPP.

(2) Average sales prices shown in the table reflect both the before and after effects of our settled commodity derivatives. Our calculation of such after effects includes gains on settlements of commodity derivatives, which do not qualify for hedge accounting because we do not designate or document them as hedges for accounting purposes. Oil and NGLs production was converted at 6 Mcf per Bbl to calculate total Bcfe production and per Mcfe amounts. This ratio is an estimate of the equivalent energy content of the products and does not necessarily reflect their relative economic value.

Natural gas sales. Revenues from production of natural gas decreased from $524 million for the three months ended September 30, 2019 to $436 million for the three months ended September 30, 2020, a decrease of $88 million, or 17% (calculated as the change in year-over-year volumes times the change in year-to-year average price). Higher natural gas production volumes during the three months ended September 30, 2020 accounted for an approximate $40 million increase in year-over-year natural gas revenues (calculated as the change in year-to-year volumes times the prior year average price), and changes in our prices, excluding the effects of derivative settlements, accounted for an approximate $128 million decrease in year-over-year revenues (calculated as the change in the year-to-year average price times current year production volumes).

NGLs sales. Revenues from production of NGLs increased from $285 million for the three months ended September 30, 2019 to $327 million for the three months ended September 30, 2020, an increase of $42 million, or 15% (calculated as the change in year-over-year volumes times the change in year-to-year average price). Increased NGLs production volumes accounted for an approximate $50 million increase in year-over-year NGL revenues (calculated as the change in year-to-year volumes times the prior year average price), and changes in our prices, excluding the effects of derivative settlements, accounted for an approximate $8 million decrease in year-over-year revenues (calculated as the change in the year-to-year average price times current year production volumes).

Oil sales. Revenues from production of oil decreased from $41 million for the three months ended September 30, 2019 to $34 million for the three months ended September 30, 2020, a decrease of $7 million, or 16% (calculated as the change in year-over-year volumes times the change in year-to-year average price). Increased oil production volumes accounted for an approximate $23 million increase in year-over-year oil revenues (calculated as the change in year-to-year volumes times the prior year average price), and changes in our prices, excluding the effects of derivative settlements, accounted for an approximate $30 million decrease in year-over-year revenues (calculated as the change in the year-to-year average price times current year production volumes).

Commodity derivative fair value gains (losses). To achieve more predictable cash flows, and to reduce our exposure to price fluctuations, we enter into fixed for variable price swap contracts, basis swap contracts and collar contracts when management believes that favorable future sales prices for our production can be secured. Because we do not designate these derivatives as accounting hedges, they do not receive hedge accounting treatment. Consequently, all mark-to-market gains or losses, as well as cash receipts or payments on settled derivative instruments, are recognized in our statements of operations. The commodity derivative fair value gains (losses) included $120 million and $234 million gains on cash settled derivatives for the three months ended September 30, 2019 and 2020, respectively. For the three months ended September 30, 2019 and 2020, our commodity hedges resulted in derivative fair value gains of $221 million and losses of $515 million, respectively.

Commodity derivative fair value gains or losses vary based on future commodity prices and have no cash flow impact until the derivative contracts are settled or monetized prior to settlement. Derivative asset or liability positions at the end of any accounting period may reverse to the extent future commodity prices increase or decrease from their levels at the end of the accounting period, or as gains or losses are realized through settlement. We expect continued volatility in commodity prices and the related fair value of our derivative instruments in the future.

Amortization of deferred revenue, VPP. The three months ended September 30, 2020 include amortization of $5 million of deferred revenues associated with the VPP, which relate to the production volumes delivered under the terms of the agreement during such period at approximately $1.61 per MMBtu. See Note 4—Transactions to the unaudited condensed consolidated financial statements included elsewhere in this Quarterly Report on Form 10-Q for more information on this transaction.

Other income. Other income remained relatively consistent at $1 million for the three months ended September 30, 2019 and 2020.

Lease operating expense. Lease operating expense decreased from $36 million for the three months ended September 30, 2019 to $21 million for the three months ended September 30, 2020, a decrease of $15 million, or 40%. On a per unit basis, lease operating expenses decreased from $0.12 for the three months ended September 30, 2019 to $0.06 for the three months ended September 30, 2020, primarily due to lower water handling costs resulting from improved operating efficiencies including the reuse of produced and flowback water in completion operations.

Gathering, compression, processing, and transportation expense. Gathering, compression, processing, and transportation expense increased by $53 million, or 9%, from $604 million for the three months ended September 30, 2019 to $657 million for the three months ended September 30, 2020 primarily due to a 12% increase in production, partially offset by lower costs between periods. Gathering and compression costs decreased from $0.68 per Mcfe to $0.64 per Mcfe primarily as a result of lower fuel costs as a result of decreased natural gas prices and a $12 million incentive fee rebate from Antero Midstream Corporation. Processing costs primarily decreased from $0.74 to $0.71 per Mcfe as a result of decreased terminal fees at Mariner East 2. Our transportation costs increased from $0.53 per Mcfe to $0.55 per Mcfe due to increased rates on the Rockies Express pipeline.

Production and ad valorem tax expense. Production and ad valorem taxes decreased from $29 million for the three months ended September 30, 2019 to $26 million for the three months ended September 30, 2020, a decrease of $3 million, or 11%. This decrease is primarily as a result of decreases in commodity prices. Production and ad valorem taxes as a percentage of natural gas revenues was relatively consistent at 6% in the three months ended September 30, 2019 and 2020.

Impairment of oil and gas properties. During the three months ended September 30, 2019, we recognized an $881 million impairment to write-down our Utica Shale proved properties to fair value because the carrying value of such properties exceeded the estimated undiscounted cash flows based on future strip commodity prices as of September 30, 2019. We also recorded $160 million of impairments for the three months ended September 30, 2019 related to expiring leases and the design and initial costs related to pads we no longer plan to place into service. During the three months ended September 30, 2020, we recognized impairment of $29 million primarily related to expiring leases and the design and initial costs related to pads we no longer plan to place into service.

Depletion, depreciation, and amortization expense ("DD&A"). DD&A expense decreased from $242 million for the three months ended September 30, 2019 to $238 million for the three months ended September 30, 2020, a decrease of $4 million, or 1%. DD&A per Mcfe decreased from $0.78 per Mcfe during the three months ended September 30, 2019 to $0.69 per Mcfe during the three months ended September 30, 2020, primarily due to a lower depletable cost basis as a result of the Utica proved property impairment of $881 million in 2019, which was partially offset by downward reserve revisions that resulted from lower SEC prices between periods.

General and administrative expense. General and administrative expense (excluding equity-based compensation expense) was $32 million for the three months ended September 30, 2019 and $26 million for the three months ended September 30, 2020, a decrease of $6 million, or 19%. This decrease was primarily due to decreases in employee related expenses in the three months ended September 30, 2020 as a result of ongoing cost savings initiatives related to lower headcount in 2020. We had 569 employees as of September 30, 2019 and 520 employees as of September 30, 2020. On a per-unit basis, general and administrative expense excluding equity-based compensation decreased by 30%, from $0.10 per Mcfe during the three months ended September 30, 2019 to $0.07 per Mcfe during the three months ended September 30, 2020 as a result of higher production volumes and lower overall costs between periods.

Equity-based compensation expense. Noncash equity-based compensation expense was $4 million for the three months ended September 30, 2019 and $6 million for the three months ended September 30, 2020, an increase of $2 million, or 47%. This increases was primarily due to new equity-based compensation awards granted in the three months ended September 30, 2020. See Note 10—Equity Based Compensation to the unaudited condensed consolidated financial statements included elsewhere in this Quarterly Report on Form 10-Q for more information on equity-based compensation awards.

Contract termination and rig stacking. We incurred contract termination and rig stacking costs of less than $1 million during the three months ended September 30, 2019 compared to $1 million for the three months ended September 30, 2020. Contract termination and rig stacking costs represent fees incurred upon the delay or cancellation of drilling and completion contracts with third-party contractors in order to align our drilling and completion activity level with our capital budget.

Discussion of the Marketing Segment for the Three Months Ended September 30, 2019 Compared to the Three Months Ended September 30, 2020

Marketing. We have entered into long-term firm transportation agreements for our current and expected future production to secure guaranteed capacity to favorable markets. Where feasible, we purchase and sell third-party natural gas and NGLs to utilize our excess firm transportation capacity, or release capacity to third parties to conduct these activities on our behalf, to reduce our net costs related to the unused capacity under these transportation agreements.

Operating losses on our marketing activities, or our net marketing expense, decreased from $62 million, or $0.20 per Mcfe, for the three months ended September 30, 2019 to $37 million, or $0.11 per Mcfe, for the three months ended September 30, 2020. The decrease was driven by higher volumes and the mitigation of some of our excess firm transportation expense.

Marketing revenues increased from $47 million for the three months ended September 30, 2019 to $92 million for the three months ended September 30, 2020, an increase of $45 million, or 96%. Marketing expenses increased from $108 million for the three months ended September 30, 2019 to $129 million for the three months ended September 30, 2020, an increase of $21 million, or 19%. Marketing expenses include firm transportation costs related to current excess firm capacity as well as the cost of third-party purchased gas and NGLs. Firm transportation costs included in the expenses above were $62 million and $32 million for the three months ended September 30, 2019 and 2020, respectively.

Discussion of Antero Midstream Corporation Segment for the Three Months Ended September 30, 2019 Compared to the Three Months Ended September 30, 2020

Antero Midstream Corporation. Revenue from the Antero Midstream Corporation segment decreased from $244 million for the three months ended September 30, 2019 to $235 million for the three months ended September 30, 2020, a decrease of $9 million, or 4%, primarily due to a reduction in water handling revenues. Total operating expenses related to the segment decreased from $586 million for the three months ended September 30, 2019 to $82 million for the three months ended September 30, 2020. The decrease was primarily due to impairment expense of $457 million on Antero Midstream Corporation's wastewater treatment facility and related goodwill and customer relationships in the three months ended September 30, 2019.

Discussion of Items Not Allocated to Segments for the Three Months Ended September 30, 2019 Compared to the Three Months Ended September 30, 2020

Interest expense. Our interest expense was relatively flat at $48 million for each of the three months ended September 30, 2019 and 2020 due to lower total indebtedness resulting from repurchases of our unsecured senior notes at prices below their stated value, partially offset by the interest that accrued on the newly issued 2026 Convertible Notes (as defined below). Interest expense included approximately $2.6 million and $3.1 million of non-cash amortization of deferred financing costs for the three months ended September 30, 2019 and 2020, respectively.

Transaction expense. We incurred transaction expense of less than $1 million in the three months ended September 30, 2020 and did not incur comparable costs in the three months ended September 30, 2019. These expenses included legal and transaction fees associated with the ORRI transaction. See Note 4—Transactions to the unaudited condensed consolidated financial statements included elsewhere in this Quarterly Report on Form 10-Q for more information on this transaction.

Income tax benefit. Income tax benefit decreased from a deferred tax benefit of $273 million, with an effective tax rate of 24%, for the three months ended September 30, 2019 to a deferred tax benefit of $169 million, with an effective tax rate of 23%, for the three months ended September 30, 2020. The change was primarily a result of an increase in book income due to the impairment of proved properties in the Utica Shale in the prior period.

Nine months ended September 30, 2019 Compared to Nine months ended September 30, 2020

The operating results of our reportable segments were as follows for the nine months ended September 30, 2019 and 2020 (in thousands):

	Exploration and production	Marketing	Equity Method Investment in Antero Midstream Corporation	Elimination of intersegment transactions and unconsolidated affiliates	Consolidated total
Nine months ended September 30, 2019:					
Revenue and other:					
Natural gas sales	$ 1,735,086	—	—	—	1,735,086
Natural gas liquids sales	902,606	—	—	—	902,606
Oil sales	137,675	—	—	—	137,675
Commodity derivative fair value gains	471,847	—	—	—	471,847
Gathering, compression, water handling and treatment	—	—	592,699	(588,220)	4,479
Marketing	—	200,911	—	—	200,911
Other income	4,999	—	(39,178)	37,527	3,348
Total	$ 3,252,213	200,911	553,521	(550,693)	3,455,952
Operating expenses:					
Lease operating	119,754	—	111,427	(112,664)	118,517
Gathering and compression	632,733	—	28,324	(138,810)	522,247
Processing	593,394	—	—	—	593,394
Transportation	479,582	—	—	—	479,582
Production and ad valorem taxes	94,569	—	2,549	(1,609)	95,509
Marketing	—	408,839	—	—	408,839
Exploration	648	—	—	—	648
Impairment of oil and gas properties	1,253,712	—	—	—	1,253,712
Impairment of midstream assets	—	—	472,854	(458,072)	14,782
Depletion, depreciation, and amortization	702,299	—	68,557	(46,850)	724,006
Loss on sale of assets	951	—	—	—	951
Accretion of asset retirement obligations	2,758		133	(70)	2,821
General and administrative (excluding equity-based compensation)	111,363	—	31,931	(16,114)	127,180
Equity-based compensation	16,850	—	53,095	(50,618)	19,327
Change in fair value of contingent acquisition consideration	—	—	5,323	(5,323)	—
Contract termination and rig stacking	14,026	—	—	—	14,026
Total	4,022,639	408,839	774,193	(830,130)	4,375,541
Operating income (loss)	$ (770,426)	(207,928)	(220,672)	279,437	(919,589)
Equity in earnings of unconsolidated affiliates	$ (102,457)	—	34,981	(22,717)	(90,193)

	Exploration and production	Marketing	Equity Method Investment in Antero Midstream Corporation	Elimination of intersegment transactions and unconsolidated affiliates	Consolidated total
Nine months ended September 30, 2020:					
Revenue and other:					
Natural gas sales	$ 1,214,801	—	—	—	1,214,801
Natural gas liquids sales	797,296	—	—	—	797,296
Oil sales	78,233	—	—	—	78,233
Commodity derivative fair value losses	(116,933)	—	—	—	(116,933)
Gathering, compression, water handling and treatment	—	—	749,870	(749,870)	—
Marketing	—	201,855	—	—	201,855
Amortization of deferred revenue, VPP	5,175	—	—	—	5,175
Other income	2,180	—	(53,011)	53,011	2,180
Total	$ 1,980,752	201,855	696,859	(696,859)	2,182,607
Operating expenses:					
Lease operating	$ 71,836	—	—	—	71,836
Gathering and compression	616,785	—	128,847	(128,847)	616,785
Processing	697,716	—	—	—	697,716
Transportation	562,583	—	—	—	562,583
Production and ad valorem taxes	71,481	—	—	—	71,481
Marketing	—	334,906	—	—	334,906
Exploration	895	—	—	—	895
Impairment of oil and gas properties	155,962	—	—	—	155,962
Impairment of midstream assets	—	—	665,491	(665,491)	—
Depletion, depreciation, and amortization	652,130	—	81,889	(81,889)	652,130
Accretion of asset retirement obligations	3,330	—	142	(142)	3,330
General and administrative (excluding equity-based compensation)	84,263	—	29,478	(29,478)	84,263
Equity-based compensation	17,001	—	9,713	(9,713)	17,001
Contract termination and rig stacking and other expenses	12,317	—	13,920	(13,920)	12,317
Total	2,946,299	334,906	929,480	(929,480)	3,281,205
Operating loss	$ (965,547)	(133,051)	(232,621)	232,621	(1,098,598)
Equity in earnings (loss) of unconsolidated affiliates	$ (83,408)	—	63,197	(63,197)	(83,408)

Exploration and Production Segment Results for the Nine months ended September 30, 2019 Compared to the Nine months ended September 30, 2020

The following table sets forth selected operating data of the exploration and production segment for the nine months ended September 30, 2019 compared to the nine months ended September 30, 2020:

	Nine months ended September 30, 2019	Nine months ended September 30, 2020	Amount of Increase (Decrease)	Percent Change
Production data [1]:				
Natural gas (Bcf)	617	649	32	5 %
C2 Ethane (MBbl)	11,536	14,686	3,150	27 %
C3+ NGLs (MBbl)	29,842	36,167	6,325	21 %
Oil (MBbl)	2,823	3,308	485	17 %
Combined (Bcfe)	882	974	92	10 %
Daily combined production (MMcfe/d)	3,232	3,554	322	10 %
Average prices before effects of derivative settlements[2]:				
Natural gas (per Mcf)	$ 2.81	$ 1.87	$ (0.94)	(33)%
C2 Ethane (per Bbl)	$ 8.01	$ 5.85	$ (2.16)	(27)%
C3+ NGLs (per Bbl)	$ 27.15	$ 19.67	$ (7.48)	(28)%
Oil (per Bbl)	$ 48.77	$ 23.65	$ (25.12)	(52)%
Weighted Average Combined (per Mcfe)	$ 3.15	$ 2.15	$ (1.00)	(32)%
Average realized prices after effects of derivative settlements[2]:				
Natural gas (per Mcf)	$ 3.23	$ 2.80	$ (0.43)	(13)%
C2 Ethane (per Bbl)	$ 8.01	$ 5.72	$ (2.29)	(29)%
C3+ NGLs (per Bbl)	$ 27.24	$ 22.25	$ (4.99)	(18)%
Oil (per Bbl)	$ 50.16	$ 38.00	$ (12.16)	(24)%
Weighted Average Combined (per Mcfe)	$ 3.44	$ 2.91	$ (0.53)	(15)%
Average costs (per Mcfe):				
Lease operating	$ 0.14	$ 0.07	$ (0.07)	(50)%
Gathering and compression	$ 0.72	$ 0.63	$ (0.09)	(13)%
Processing	$ 0.67	$ 0.72	$ 0.05	7 %
Transportation	$ 0.54	$ 0.58	$ 0.04	7 %
Production and ad valorem taxes	$ 0.11	$ 0.07	$ (0.04)	(36)%
Marketing expense, net	$ 0.24	$ 0.14	$ (0.10)	(42)%
Depletion, depreciation, amortization, and accretion	$ 0.80	$ 0.67	$ (0.13)	(16)%
General and administrative (excluding equity-based compensation)	$ 0.13	$ 0.09	$ (0.04)	(31)%

(1) Production data excludes volumes related to the VPP.

(2) Average sales prices shown in the table reflect both the before and after effects of our settled commodity derivatives. Our calculation of such after effects includes gains on settlements of commodity derivatives, which do not qualify for hedge accounting because we do not designate or document them as hedges for accounting purposes. Oil and NGLs production was converted at 6 Mcf per Bbl to calculate total Bcfe production and per Mcfe amounts. This ratio is an estimate of the equivalent energy content of the products and does not necessarily reflect their relative economic value.

Natural gas sales. Revenues from production of natural gas decreased from $1.7 billion for the nine months ended September 30, 2019 to $1.2 billion for the nine months ended September 30, 2020, a decrease of $520 million, or 30% (calculated as the change in year-over-year volumes times the change in year-to-year average price). Higher natural gas production volumes during the nine months ended September 30, 2020 accounted for an approximate $90 million increase in year-over-year natural gas revenues (calculated as the change in year-to-year volumes times the prior year average price), and changes in our prices, excluding the effects of derivative settlements, accounted for an approximate $610 million decrease in year-over-year revenues (calculated as the change in the year-to-year average price times current year production volumes).

NGLs sales. Revenues from production of NGLs decreased from $903 million for the nine months ended September 30, 2019 to $797 million for the nine months ended September 30, 2020, a decrease of $106 million, or 12% (calculated as the change in year-over-year volumes times the change in year-to-year average price). Increased NGLs production volumes accounted for an approximate $196 million increase in year-over-year NGL revenues (calculated as the change in year-to-year volumes times the prior year average price), and changes in our prices, excluding the effects of derivative settlements, accounted for an approximate $302 million decrease in year-over-year revenues (calculated as the change in the year-to-year average price times current year production volumes).

Oil sales. Revenues from production of oil decreased from $138 million for the nine months ended September 30, 2019 to $78 million for the nine months ended September 30, 2020, a decrease of $59 million, or 43% (calculated as the change in year-over-year volumes times the change in year-to-year average price). Increased oil production volumes accounted for a $24 million increase in year-over-year oil revenues (calculated as the change in year-to-year volumes times the prior year average price), and changes in our prices, excluding the effects of derivative settlements, accounted for an approximate $83 million decrease in year-over-year revenues (calculated as the change in the year-to-year average price times current year production volumes).

Commodity derivative fair value gains (losses). To achieve more predictable cash flows, and to reduce our exposure to price fluctuations, we enter into fixed for variable price swap contracts, basis swap contracts and collar contracts when management believes that favorable future sales prices for our production can be secured. Because we do not designate these derivatives as accounting hedges, they do not receive hedge accounting treatment. Consequently, all mark-to-market gains or losses, as well as cash receipts or payments on settled derivative instruments, are recognized in our statements of operations. The commodity derivative fair value gains (losses) included $262 million and $759 million of gains on cash settled derivatives for the nine months ended September 30, 2019 and 2020, respectively. For the nine months ended September 30, 2019 and 2020, our commodity hedges resulted in derivative fair value gains of $472 million and losses of $117 million, respectively.

Commodity derivative fair value gains or losses vary based on future commodity prices and have no cash flow impact until the derivative contracts are settled or monetized prior to settlement. Derivative asset or liability positions at the end of any accounting period may reverse to the extent future commodity prices increase or decrease from their levels at the end of the accounting period, or as gains or losses are realized through settlement. We expect continued volatility in commodity prices and the related fair value of our derivative instruments in the future.

Amortization of deferred revenue, VPP. The nine months ended September 30, 2020 include amortization of $5 million of deferred revenues associated with the VPP, which relate to the production volumes delivered under the terms of the agreement during such period at approximately $1.61 per MMBtu. See Note 4—Transactions to the unaudited condensed consolidated financial statements included elsewhere in this Quarterly Report on Form 10-Q for more information on this transaction.

Other income. Other income remained relatively consistent at $3 million and $2 million for the nine months ended September 30, 2019 and 2020, respectively.

Lease operating expense. Lease operating expense decreased from $119 million for the nine months ended September 30, 2019 to $72 million for the nine months ended September 30, 2020, a decrease of $47 million, or 39%. On a per unit basis, lease operating expenses decreased from $0.14 per Mcfe for the nine months ended September 30, 2019 to $0.07 per Mcfe for the nine months ended September 30, 2020 primarily due to lower water handling costs resulting from improved operating efficiencies, including the reuse of produced and flowback water in completion operations.

Gathering, compression, processing, and transportation expense. Gathering, compression, processing, and transportation expense increased by $282 million, or 18%, from $1.6 billion for the nine months ended September 30, 2019 to $1.9 billion for the nine months ended September 30, 2020 primarily due to a 10% increase in production between periods as well as higher processing and transportation costs. Gathering and compression costs decreased from $0.72 per Mcfe for the nine months ended September 30, 2019 to $0.63 per Mcfe for the nine months ended September 30, 2020 primarily due to lower fuel costs as a result of decreased natural gas prices and $36 million in incentive fee rebates from Antero Midstream Corporation. Processing costs primarily increased from $0.67 per Mcfe to $0.72 per Mcfe for the nine months ended September 30, 2019 and 2020, respectively, due to increased NGL production in our production mix. Processing costs, however, remained relatively unchanged per NGL barrel. Transportation costs increased from $0.54 per Mcfe to $0.58 per Mcfe for the nine months ended September 30, 2019 and 2020, respectively, primarily due to increased rates on the Rockies Express pipeline and demand charges for Mountaineer Xpress pipeline, which came on-line in February 2019.

Production and ad valorem tax expense. Production and ad valorem taxes decreased from $96 million for the nine months ended September 30, 2019 to $72 million for the nine months ended September 30, 2020, a decrease of $24 million, or 25% primarily due to lower in commodity prices between periods. Production and ad valorem taxes as a percentage of natural gas revenues was relatively consistent at 6% in each of the nine months ended September 30, 2019 and 2020.

Impairment of oil and gas properties. During the nine months ended September 30, 2019, we recognized an $881 million impairment to write-down our Utica Shale proved properties to fair value because the carrying value of such properties exceeded the estimated undiscounted cash flows based on future strip commodity prices as of September 30, 2019. We also recorded $373 million of impairments for the nine months ended September 30, 2019 related to expiring leases and the design and initial costs related to pads we no longer plan to place into service. During the nine months ended September 30, 2020 we recognized impairment of $156 million primarily related to expiring leases and the design and initial costs related to pads we no longer plan to place into service.

Depletion, depreciation, and amortization expense. DD&A expense decreased from $724 million for the nine months ended September 30, 2019 to $652 million for the nine months ended September 30, 2020, a decrease of $72 million, or 10%. DD&A per Mcfe decreased from $0.80 per Mcfe during the nine months ended September 30, 2019 to $0.67 per Mcfe during the nine months ended September 30, 2020, primarily due to a lower depletable cost basis as a result of the Utica proved property impairment of $881 million in 2019, partially offset by downward reserve revisions that resulted from lower SEC prices between periods.

General and administrative expense. General and administrative expense (excluding equity-based compensation expense) was $127 million for the nine months ended September 30, 2019 and $84 million for the nine months ended September 30, 2020, a decrease of $43 million, or 34%. This decrease was primarily due to decreases in employee related expenses in the nine months ended September 30, 2020 as a result of ongoing cost savings initiatives related to lower headcount in 2020. We had 569 employees as of September 30, 2019 and 520 employees as of September 30, 2020. On a per-unit basis, general and administrative expense excluding equity-based compensation decreased by 31%, from $0.13 per Mcfe during the nine months ended September 30, 2019 to $0.09 per Mcfe during the nine months ended September 30, 2020 as a result of higher production volumes and lower overall costs between periods.

Equity-based compensation expense. Noncash equity-based compensation expense decreased from $19 million for the nine months ended September 30, 2019 to $17 million for the nine months ended September 30, 2020, a decrease of $2 million, or 12%. This decrease was the result of equity award forfeitures, as well as a decrease in the total value of awards to officers and employees in 2019, which impacts future expense recognition. When an equity award is forfeited, expense previously recognized for the award is reversed. See Note 10—Equity Based Compensation to the unaudited condensed consolidated financial statements included elsewhere in this Quarterly Report on Form 10-Q for more information on equity-based compensation awards.

Contract termination and rig stacking. We incurred contract termination and rig stacking costs of $14 million during the nine months ended September 30, 2019 compared to $12 million for the nine months ended September 30, 2020. Contract termination and rig stacking costs represent fees incurred upon the delay or cancellation of drilling and completion contracts with third-party contractors in order to align our drilling and completion activity level with our capital budget.

Discussion of the Marketing Segment for the Nine months ended September 30, 2019 Compared to the Nine months ended September 30, 2020

Marketing. We have entered into long-term firm transportation agreements for our current and expected future production to secure guaranteed capacity to favorable markets. Where feasible, we purchase and sell third-party natural gas and NGLs to utilize our excess firm transportation capacity, or release capacity to third parties to conduct these activities on our behalf, in order to reduce our net costs related to the unused capacity under these transportation agreements.

Our net marketing expense decreased from $208 million, or $0.24 per Mcfe, for the nine months ended September 30, 2019 to $133 million, or $0.14 per Mcfe, for the nine months ended September 30, 2020. The decrease was driven by higher volumes and the mitigation of some of our excess firm transportation expense.

Marketing revenues remained relatively flat at $201 million and $202 million for the nine months ended September 30, 2019 and 2020, respectively.

Marketing expenses decreased from $409 million for the nine months ended September 30, 2019 to $335 million for the nine months ended September 30, 2020, a decrease of $74 million, or 18%. Marketing expenses include firm transportation costs related to current excess firm capacity as well as the cost of third-party purchased gas and NGLs. Firm transportation costs included in the expenses above were $127 million and $122 million for the nine months ended September 30, 2019 and 2020, respectively.

Discussion of Antero Midstream Corporation Segment for the Nine months ended September 30, 2019 Compared to the Nine months ended September 30, 2020

Through March 12, 2019, the results of Antero Midstream Partners are included in our consolidated financial statements. Effective March 13, 2019, we no longer consolidate the results of Antero Midstream Partners in our results. As such, the nine months ended September 30, 2019 include the results of Antero Midstream Partners through March 12, 2019. See Note 3—Deconsolidation of Antero Midstream Partners LP to the unaudited condensed consolidated financial statements.

Antero Midstream Corporation. Revenue from the Antero Midstream Corporation segment increased from $554 million for the nine months ended September 30, 2019 to $697 million for the nine months ended September 30, 2020, an increase of $143 million, or 26%, primarily due to the nine months ended September 30, 2019 only including Antero Midstream Corporation's results following the closing of the simplification transactions on March 12, 2019. Total operating expenses related to the segment increased from $774 million for the nine months ended September 30, 2019 to $929 million for the nine months ended September 30, 2020. The increase was primarily due to impairments by Antero Midstream Corporation of $89 million on its freshwater pipelines and equipment, and an impairment expense of $575 million on its goodwill.

Discussion of Items Not Allocated to Segments for the Nine months ended September 30, 2019 Compared to the Nine months ended September 30, 2020

Impairment of equity investment. At March 31, 2020, we determined that events and circumstances indicated that the carrying value of our equity method investment in Antero Midstream Corporation had experienced an other-than-temporary decline and we recorded an impairment of $611 million. The fair value of the equity method investment in Antero Midstream Corporation was based on the quoted market share price of Antero Midstream Corporation at March 31, 2020.

Interest expense. Our interest expense exclusive of interest expense related to Antero Midstream Partners' indebtedness decreased from $157 million for the nine months ended September 30, 2019 to $153 million for the nine months ended September 30, 2020 primarily due to the reduction in debt as a result of our debt repurchases of our unsecured senior notes at prices below their stated value, partially offset by interest that accrued on the newly issued 2026 Convertible Notes.

Consolidated interest expense decreased from $174 million for the nine months ended September 30, 2019 to $153 million for the nine months ended September 30, 2020, a decrease of $21 million, or 12%. During the nine months ended September 30, 2019, interest related to Antero Midstream Partners' debt through March 12, 2019 is included in consolidated interest expense. Interest expense includes approximately $8.3 million and $8.0 million of non-cash amortization of deferred financing costs for the nine months ended September 30, 2019 and 2020, respectively.

Transaction expense. We incurred transaction expense of $7 million in the nine months ended September 30, 2020 and did not incur comparable costs in the nine months ended September 30, 2019. These expenses included legal and transaction fees associated with the sale of our ORRI and the creation of Martica, as well as the VPP transaction. See Note 4—Transactions to the unaudited condensed consolidated financial statements included elsewhere in this Quarterly Report on Form 10-Q for more information on these transactions.

Income tax expense/benefit. Income tax expense decreased from a deferred tax expense of $33 million, with an effective tax rate of 15%, for the nine months ended September 30, 2019 to a deferred tax benefit of $421 million, with an effective tax rate of 24%, for the nine months ended September 30, 2020. The change was primarily a result of an increase in book income due to the simplification transactions and the associated deconsolidation of Antero Midstream Partners for the nine months ended September 30, 2019, offset by a decrease in book income resulting from the impairment of our investment in Antero Midstream Corporation and reduced revenue due to commodity price decreases for the nine months ended September 30, 2020.

Capital Resources and Liquidity

Our primary sources of liquidity have been through net cash provided by operating activities including proceeds from derivatives, borrowings under the Credit Facility, issuances of debt and equity securities, distributions/dividends from unconsolidated affiliates and proceeds from our asset sale program, including the sale of the overriding royalty interest. Our primary use of cash has been for the exploration, development, and acquisition of oil and natural gas properties. As we develop our reserves, we continually monitor what capital resources, including equity and debt financings, are available to meet our future financial obligations, planned capital expenditure activities, and liquidity requirements. Our future success in growing our proved reserves and production will be highly dependent on net cash provided by operating activities and the capital resources available to us.

During the nine months ended September 30, 2020, we repurchased shares of our common stock under our share repurchase program that expired March 31, 2020. We repurchased and retired 28,193,237 common shares at a weighted average price per share of $1.54 for approximately $43 million during the nine months ended September 30, 2020.

We may also seek to retire or purchase our outstanding debt securities from time to time through cash purchases, in open market purchases, privately negotiated transactions or otherwise. Any such repurchases will depend on prevailing market conditions, our liquidity requirements, contractual restrictions and other factors. During the three and nine months ended September 30, 2020, we repurchased $461 million and $1.1 billion, respectively, principal amount of debt at a weighted average discount of 13% and 17%, respectively, which purchases included a portion of the 2021 Notes, 2022 Notes, 2023 Notes and 2025 Notes. Repurchases of the principal amount of debt during the three and nine months ended September 30, 2020 include repurchases of $367 million on the 2021 Notes, 2022 Notes and 2023 Notes through previously disclosed tender offers at a weighted average discount of 10%. These repurchases, at a discount, have resulted in a net reduction in total debt outstanding and interest expense.

As of September 30, 2020, we believe that funds from operating cash flows, distributions from unconsolidated affiliates, available borrowings under the Credit Facility, or capital market transactions will be sufficient to meet our cash requirements, including normal operating needs, debt service obligations, capital expenditures, and commitments and contingencies for at least the next 12 months.

Our 2021 Notes are due November 1, 2021 and our Credit Facility will become due 91 days prior to that date, or on August 1, 2021, if the 2021 Notes are not repaid prior to August 1, 2021. Under our business plan, we intend to extinguish the 2021 Notes prior to August 1, 2021 with proceeds from our asset sales program, cash flow from operations and available borrowings under the Credit Facility. Consequently, we have classified our Credit Facility as long-term debt. The classification of our Credit Facility does not impact any of our financial covenants.

For more information on our outstanding indebtedness, see Note 8—Long Term Debt to the unaudited condensed consolidated financial statements included in this Quarterly Report on Form 10-Q. For information about the impacts of COVID-19 on our capital resources and liquidity, see "—COVID-19 Pandemic."

The following table summarizes our cash flows for the nine months ended September 30, 2019 and 2020:

	Nine Months Ended September 30,		Increase
(in thousands)	**2019**	**2020**	**(Decrease)**
Net cash provided by operating activities	$ 955,518	492,510	(463,008)
Net cash used in investing activities	(825,327)	(384,063)	441,264
Net cash provided by (used in) financing activities	489,341	(108,447)	(597,788)
Effect of deconsolidation of Antero Midstream Partners LP	(619,532)	—	619,532
Net increase (decrease) in cash and cash equivalents	$ —	—	—

The Company's condensed consolidated cash flow statements for the nine months ended September 30, 2019 includes the cash flows related to Antero Midstream Partners for periods prior to March 13, 2019. Effective March 13, 2019, the Company's cash flows include only the operating, investing and financing activities related to Antero. Therefore, the cash flows for the nine months ended September 30, 2019 may not be representative of our expected future cash flows. See Note 3—Deconsolidation of Antero Midstream Partners LP to the unaudited condensed consolidated financial statements for more information.

Cash Flows Provided by Operating Activities

Net cash provided by operating activities was $956 million and $493 million for the nine months ended September 30, 2019 and 2020, respectively. Cash flow from operations decreased primarily due to decreases in commodity prices both before and after the effects of settled commodity derivatives and increases in gathering, compression, processing, and transportation costs.

Our net operating cash flows are sensitive to many variables, the most significant of which is the volatility of natural gas, NGLs, and oil prices, as well as volatility in the cash flows attributable to settlement of our commodity derivatives. Prices for natural gas, NGLs, and oil are primarily determined by prevailing market conditions. Regional and worldwide economic activity, weather, infrastructure capacity to reach markets, storage capacity and other variables influence the market conditions for these products. For example, the impact of the COVID-19 outbreak has reduced domestic and international demand for natural gas, NGLs, and oil. These factors are beyond our control and are difficult to predict.

Cash Flows Used in Investing Activities

Cash flows used in investing activities decreased from $825 million for the nine months ended September 30, 2019 to $384 million for the nine months ended September 30, 2020, primarily due to a decrease in capital expenditures of $307 million during the nine months ended September 30, 2020 as compared to the same period in 2019, $297 million in proceeds received in connection with the simplification transactions impacting the nine months ended September 30, 2019 and $125 million in settlement of the water earnout impacting the nine months ended September 30, 2020.

In addition, the nine months ended September 30, 2019 included Antero Midstream Partners' investments in joint ventures of $25 million and capital expenditures for water handling and treatment systems and gas gathering and compression systems of $73 million. Due to the deconsolidation of Antero Midstream Partners on March 12, 2019, cash flows used in investing activities for the nine months ended September 30, 2020 do not include costs attributable to Antero Midstream Partner's investing activity. See Note 3—Deconsolidation of Antero Midstream Partners LP to the unaudited condensed consolidated financial statements.

Total capital expenditures for oil and gas properties decreased from $1.0 billion during the nine months ended September 30, 2019 to $726 million during the nine months ended September 30, 2020 primarily due to a decrease in drilling and completion activity, increased drilling and completion efficiencies and service cost deflation.

Our drilling and completion capital budget for 2020 has been reduced to $750 million from $1.15 billion. Our capital budget may be adjusted as business conditions warrant as the amount, timing, and allocation of capital expenditures is largely discretionary and within our control. If natural gas, NGLs, and oil prices decline to levels that do not generate an acceptable level of corporate returns, or costs increase to levels that do not generate an acceptable level of corporate returns, we may defer a significant portion of our budgeted capital expenditures until later periods to achieve the desired balance between sources and uses of liquidity, and to prioritize capital projects that we believe have the highest expected returns and potential to generate near-term cash flows. We routinely monitor and adjust our capital expenditures in response to changes in commodity prices, availability of financing, drilling and acquisition costs, industry conditions, the timing of regulatory approvals, the availability of rigs, the relative success in drilling activities, contractual obligations, internally generated cash flows, and other factors both within and outside our control.

Cash Flows Provided by (Used in) Financing Activities

Net cash flows provided by financing activities was $489 million for the nine months ended September 30, 2019, compared to net cash flows provided by financing activities of $108 million for the nine months ended September 30, 2020. This decrease was primarily due to the issuance of senior notes by Antero Midstream Partners prior to the simplification transactions and the associated deconsolidation of Antero Midstream Partners, partially offset by net repayments on our Credit Facility and Antero Midstream Partners' credit facility. Additionally, during the nine months ended September 30, 2020, we received $300 million for the sale of a noncontrolling interest in Martica and issued $288 million principal amount of the 2026 Convertible Notes. See Note 4—Transactions and Note 8—Long-Term Debt for more information on these transactions, respectively.

Net borrowings (repayments) on our Credit Facility and Antero Midstream Partners' credit facility changed from net repayments of $45 million during the nine months ended September 30, 2019 to net borrowings of $275 million during the nine months ended September 30, 2020. In the nine months ended September 30, 2020, approximately $900 million, partially funded with net borrowings on our Credit Facility, was used to repurchase a portion of our 2021 Notes, 2022 Notes, 2023 Notes and 2025 Notes. In addition, we repurchased and retired 28,193,237 common shares for approximately $43 million during the nine months ended September 30, 2020 compared to repurchases of common stock of $18 million during the nine months ended September 30, 2019. We did not repurchase any of our unsecured notes during the nine months ended September 30, 2019.

Debt Agreements and Contractual Obligations

Senior Secured Revolving Credit Facility. Our Credit Facility is with a consortium of bank lenders. Borrowings under the Credit Facility are subject to borrowing base limitations based on the collateral value of our assets and are subject to regular redeterminations. The borrowing base was re-affirmed in October 2020 at $2.85 billion and lender commitments are $2.64 billion. The next redetermination of the borrowing base is scheduled to occur in April 2021. The maturity date of the Credit Facility is the earlier of (i) October 26, 2022 and (ii) the date that is 91 days prior to the earliest stated redemption date of any series of our senior notes then outstanding.

At December 31, 2019, we had $552 million of borrowings under the Credit Facility with a weighted average interest rate of 3.28% and $623 million of letters of credit outstanding. As of September 30, 2020, we had $827 million of borrowings and $730 million of letters of credit outstanding under the Credit Facility. The average annualized interest rate incurred on the Credit Facility during the nine months ended September 30, 2020 was approximately 3.28%. Our Credit Facility provides for borrowing under either LIBOR or an Alternative Rate of Interest.

We were in compliance with the applicable covenants and ratios as of December31, 2019 and September 30, 2020. As of September 30, 2020, our current ratio was 2.41 to 1.0 and our interest coverage ratio was 7.78 to 1.0.

For more information on the terms, conditions, and restrictions under the Credit Facility, please refer to the 2019 Form 10-K.

Senior Notes. Please refer to Note 8—Long Term Debt to the unaudited condensed consolidated financial statements included in this Quarterly Report on Form 10-Q and to "Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations" included in the 2019 Form 10-K for information on our senior notes.

We may, from time to time, seek to retire or purchase our outstanding debt through cash purchases and/or exchanges for equity securities, in open market purchases, privately negotiated transactions, or otherwise. Such repurchases, if any, will depend on prevailing market conditions, our liquidity requirements, contractual restrictions, and other factors. The amounts involved could be material. During the nine months ended September 30, 2020, we repurchased $1.1 billion principal amount of debt at a 17% weighted average discount, including a portion of our 2021 Notes, 2022 Notes, 2023 Notes and 2025 Notes.

Convertible Senior Notes. On August 21, 2020, we issued $250 million in aggregate principal amount of 4.25% Convertible Senior Notes due September 1, 2026 (the "2026 Convertible Notes"). On September 2, 2020, we issued an additional $37.5 million aggregate principal amount of 2026 Convertible Notes pursuant to the partial exercise of the initial purchasers' option to purchase additional 2026 Convertible Notes. The 2026 Convertible Notes were issued pursuant to an indenture and are senior, unsecured obligations of Antero Resources and were issued in a private offering to qualified institutional buyers pursuant to Rule 144A under the Securities Act of 1933, as amended. The 2026 Convertible Notes bear interest at a fixed rate of 4.25% per annum, payable semi-annually in arrears on March 1 and September 1 of each year, commencing on March 1, 2021. Proceeds from the issuance of the 2026 Convertible Notes totaled $278.6 million, net of initial purchasers' fees and issuance costs of $8.9 million. We used the net proceeds from this issuance to repay a portion of the debt outstanding under its Credit Facility. Please refer to Note 8—Long Term Debt to the unaudited condensed consolidated financial statements included in this Quarterly Report on Form 10-Q for more information.

Contractual Obligations. A summary of our contractual obligations as of September 30, 2020 is provided in the table below. Future capital contributions to unconsolidated affiliates are excluded from the table as neither the amounts nor the timing of the obligations can be determined in advance.

(in millions)	Remainder of 2020	Year ended December 31, 2021	2022	2023	2024	2025	Thereafter	Total
Recorded contractual obligations:								
Credit Facility[1]	$ —	827	—	—	—	—	—	827
Antero senior notes—principal[2]	—	315	661	579	—	590	288	2,433
Antero senior notes—interest[2]	42	124	107	56	40	25	11	405
Operating leases[3]	66	247	267	301	335	307	1,139	2,662
Finance leases[3]	—	1	—	—	—	—	—	1
Imputed interest for leases[3]	91	344	312	274	232	187	419	1,859
Asset retirement obligations[4]	—	—	—	—	—	—	59	59
Unrecorded contractual obligations:								
Firm transportation[5]	278	1,076	1,034	1,061	1,021	981	6,941	12,392
Processing, gathering, and compression services[6]	14	55	53	59	59	47	106	393
Drilling and completion	2	—	—	—	—	—	—	2
Land payment obligations[7]	2	3	—	—	—	—	—	5
Total	$ 495	2,992	2,434	2,330	1,687	2,137	8,963	21,038

(1) Includes outstanding principal amounts as of September 30, 2020. This table does not include future commitment fees, interest expense, or other fees on our Credit Facility because they are floating rate instruments and we cannot determine with accuracy the timing of future loan advances, repayments, or future interest rates to be charged. The maturity date of the Credit Facility is the earlier of (i) October 26, 2022 and (ii) the date that is 91 days prior to the earliest stated redemption of any series of Antero's senior notes then outstanding, which is August 1, 2021 if the 2021 Notes are not repaid prior to such date. Under our business plan, we intend to extinguish the 2021 Notes prior to August 1, 2021 with proceeds from our asset sales program, cash flow from operations and available borrowings under our Credit Facility. Consequently, we have classified our Credit Facility as long-term debt.

(2) Our senior notes include our 2021 Notes, 2022 Notes, 2023 Notes, 2025 notes and 2026 Convertible Notes.

(3) Includes contracts for services provided by drilling rigs and completion fleets, processing, gathering and compression services agreements and office and equipment leases accounted for as leases. The values in the table represent the gross amounts that we are committed to pay; however, we will record in our financial statements our proportionate share of costs based on our working interests. See Note 13—Leases to the unaudited condensed consolidated financial statements for more information on our operating and finance leases.

(4) Represents the present value of our estimated asset retirement obligations. Neither the ultimate settlement amounts nor the timing of our asset retirement obligations can be precisely determined in advance; however, we believe it is likely that a very small amount of these obligations will be settled within the next five years.

(5) Includes firm transportation agreements with various pipelines in order to facilitate the delivery of our production to market. These contracts commit us to transport minimum daily natural gas or NGLs volumes at negotiated rates, or pay for any deficiencies at specified reservation fee rates. The amounts in this table reflect our minimum daily volumes at the reservation fee rates. The values in the table represent the gross amounts that we are committed to pay; however, we will record in our financial statements our proportionate share of costs based on our working interests and net of any fees for excess firm transportation marketed to third parties. None of these agreements were determined to be leases.

(6) Contractual commitments for processing, gathering, and compression services agreements represent minimum commitments under long-term agreements not accounted for as leases. The obligations determined to be leases are included within finance and operating leases in the table above.

(7) Includes contractual commitments for land acquisition agreements. The values in the table represent the minimum payments due under these arrangements. None of these agreements were determined to be leases.

Non-GAAP Financial Measures

Adjusted EBITDAX is a non-GAAP financial measure that we define as net income (loss), including noncontrolling interests, before interest expense, interest income, gains or losses from commodity derivatives and marketing derivatives, amortization of deferred revenue, but including net cash receipts or payments on derivative instruments included in derivative gains or losses other than proceeds from derivative monetizations, income taxes, impairments, depletion, depreciation, amortization, and accretion, exploration expense, equity-based compensation, gain or loss on early extinguishment of debt, contract termination and rig stacking costs, loss on sale of equity investment shares, equity in earnings or loss of unconsolidated affiliates, water earnout, simplification transaction fees, gain or loss on sale of assets and Antero Midstream Partners related adjustments.

Through March 12, 2019, the financial results of Antero MidstreamPartners were included in our consolidated results. Effective March 13, 2019, we no longer consolidate Antero Midstream Partners and account for our interest in Antero Midstream using the equity method of accounting. See Note 6—Equity Method Investments to the unaudited condensed consolidated financial statements for more information on our equity investments. Adjusted EBITDAX includes distributions received with respect to limited partner interests in Antero Midstream Partners common units through March 12, 2019.

Adjusted EBITDAX as used and defined by us, may not be comparable to similarly titled measures employed by other companies and is not a measure of performance calculated in accordance with GAAP. Adjusted EBITDAX should not be considered in isolation or as a substitute for operating income or loss, net income or loss, cash flows provided by operating, investing, and financing activities, or other income or cash flow statement data prepared in accordance with GAAP. Adjusted EBITDAX provides no information regarding our capital structure, borrowings, interest costs, capital expenditures, working capital movement, or tax position. Adjusted EBITDAX does not represent funds available for discretionary use because those funds may be required for debt service, capital expenditures, working capital, income taxes, exploration expenses, and other commitments and obligations. However, our management team believes Adjusted EBITDAX is useful to an investor in evaluating our financial performance because this measure:

- is widely used by investors in the oil and natural gas industry to measure operating performance without regard to items excluded from the calculation of such term, which may vary substantially from company to company depending upon accounting methods and the book value of assets, capital structure and the method by which assets were acquired, among other factors;

- helps investors to more meaningfully evaluate and compare the results of our operations from period to period by removing the effect of our capital and legal structure from our operating structure;

- is used by our management team for various purposes, including as a measure of our operating performance, in presentations to our Board of Directors, and as a basis for strategic planning and forecasting; and

- is used by our Board of Directors as a performance measure in determining executive compensation.

There are significant limitations to using Adjusted EBITDAX as a measure of performance, including the inability to analyze the effects of certain recurring and non-recurring items that materially affect our net income or loss, the lack of comparability of results of operations of different companies, and the different methods of calculating Adjusted EBITDAX reported by different companies.

The following table represents a reconciliation of our net income (loss), including noncontrolling interest, to Adjusted EBITDAX and a reconciliation of our Adjusted EBITDAX to net cash provided by operating activities per our unaudited condensed consolidated statements of cash flows, in each case, for the three and nine months ended September 30, 2019 and 2020. Adjusted EBITDAX excludes the results of Antero Midstream Partners in order to provide comparability with the current structure of Antero Resources as effective March 13, 2019, we no longer consolidate Antero Midstream Partners results. These adjustments are disclosed

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in the table below as Antero Midstream Partners related adjustments. Adjusted EBITDAX also excludes the noncontrolling interests in Martica and these adjustments are disclosed in the table below as Martica related adjustments.

(in thousands)	Three months ended September 30, 2019	Three months ended September 30, 2020	Nine months ended September 30, 2019	Nine months ended September 30, 2020
Reconciliation of net income (loss) to Adjusted EBITDAX:				
Net income (loss) and comprehensive income (loss) attributable to Antero Resources Corporation	$ (878,864)	(535,613)	$ 142,067	(1,337,727)
Net income (loss) and comprehensive income (loss) attributable to noncontrolling interests	—	(18,233)	46,993	(17,997)
Depletion, depreciation, amortization, and accretion	242,430	239,533	726,827	655,460
Impairment of oil and gas properties	1,041,469	29,392	1,253,712	155,962
Impairment of midstream assets	7,800	—	14,782	—
Unrealized commodity derivative gains (losses)	(100,785)	748,791	(210,053)	875,811
Proceeds from derivative monetizations	—	(18,073)	—	(18,073)
Amortization of deferred revenue, VPP	—	(5,175)	—	(5,175)
Equity-based compensation expense	3,875	5,699	19,327	17,001
Provision for income tax expense (benefit)	(272,627)	(168,778)	33,332	(421,167)
Gain on early extinguishment of debt	—	(55,633)	—	(175,365)
Equity in (earnings) loss of unconsolidated affiliates	117,859	(24,419)	90,193	83,408
Impairment of equity investment	—	—	—	610,632
Gain on deconsolidation of Antero Midstream Partners LP	—	—	(1,406,042)	—
Distributions/dividends from unconsolidated affiliates	48,714	42,755	109,241	128,267
Interest expense, net	47,754	48,043	173,868	152,956
Exploration expense	208	454	648	895
Gain on sale of assets	—	—	951	—
Contract termination and rig stacking	62	1,246	14,026	12,317
Simplification transaction fees	—	—	15,482	—
Transaction expense	—	524	—	6,662
	257,895	290,513	1,025,354	723,867
Antero Midstream Partners related adjustments [2]	—	—	(73,115)	—
Martica related adjustments [2]	—	(18,072)	—	(21,172)
Adjusted EBITDAX	$ 257,895	272,441	$ 952,239	702,695
Reconciliation of our Adjusted EBITDAX to net cash provided by operating activities:				
Adjusted EBITDAX	$ 257,895	272,441	$ 952,239	702,695
Antero Midstream Partners related adjustments [1]	—	—	73,115	—
Martica related adjustments [2]	—	18,072	—	21,172
Interest expense, net	(47,754)	(48,043)	(173,868)	(152,956)
Exploration expense	(208)	(454)	(648)	(895)
Changes in current assets and liabilities	(13,653)	(86,618)	127,322	(78,891)
Simplification transaction fees	—	—	(15,482)	—
Transaction expense	—	(524)	—	(6,662)
Proceeds from derivative monetizations	—	18,073	—	18,073
Other items	2,130	2,923	(7,160)	(10,026)
Net cash provided by operating activities	$ 198,410	175,870	$ 955,518	492,510

(1) Amounts reflected are net of any elimination adjustments for intercompany activity and include activity related to Antero Midstream Partners through March 12, 2019. Effective March 13, 2019, Antero accounts for its unconsolidated investment in Antero Midstream Corporation using the equity method of accounting. See Note 6—Equity Method Investments to the unaudited condensed consolidated financial statements for further discussion on equity method investments.

(2) Adjustments reflect noncontrolling interests in Martica not otherwise adjusted in amounts above.

Critical Accounting Policies and Estimates

The discussion and analysis of our financial condition and results of operations are based upon our consolidated financial statements, which have been prepared in accordance with GAAP. The preparation of our financial statements requires us to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenues and expenses, and related disclosure of contingent assets and liabilities. Certain accounting policies involve judgments and uncertainties to such an extent that there is reasonable likelihood that materially different amounts could have been reported under different conditions, or if different assumptions had been used. We evaluate our estimates and assumptions on a regular basis. We base our estimates on historical experience and various other assumptions that are believed to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates and assumptions used in preparation of our consolidated financial statements. Our more significant accounting policies and estimates include the successful efforts method of accounting for our production activities, estimates of natural gas, NGLs, and oil reserve quantities and standardized measures of future cash flows, and impairment of proved properties. We provide an expanded discussion of our more significant accounting policies, estimates and judgments in the 2019 Form 10-K. We believe these accounting policies reflect our more significant estimates and assumptions used in the preparation of our consolidated financial statements. Also, see Note 2—Summary of Significant Accounting Policies to the consolidated financial statements, included in the 2019 Form 10-K, for a discussion of additional accounting policies and estimates made by management.

We evaluate the carrying amount of our proved natural gas, NGLs, and oil properties for impairment for the Utica and Marcellus Shale properties, by property, when events or changes in circumstances indicate that a property's carrying amount may not be recoverable. Under GAAP for successful efforts accounting, if the carrying amount exceeds the estimated undiscounted future net cash flows (measured using future prices), we estimate the fair value of our proved properties and record an impairment charge for any excess of the carrying amount of the properties over the estimated fair value of the properties.

The estimated future net cash flows have been impacted by the COVID-19 pandemic and the decision in March 2020 by Saudi Arabia to reduce the price at which it sells oil and announcing plans to increase production. These events have caused, and continue to cause, significant volatility in future prices which are used in this evaluation. Based on future prices as of September 30, 2020, the estimated undiscounted future net cash flows exceeded the carrying amount and no further evaluation was required. We have not recorded any impairment expenses associated with our proved properties during the nine months ended September 30, 2019 and 2020. We recorded an impairment charge of $881 million related to the Utica Shale properties on September 30, 2019.

Estimated undiscounted future net cash flows are very sensitive to commodity price swings at current commodity price levels and a relatively small decline in prices could result in the carrying amount exceeding the estimated undiscounted future net cash flows at the end of a future reporting period, which would require us to further evaluate if an impairment charge would be necessary. If future prices decline further from September 30, 2020, the fair value of our properties may be below their carrying amounts and an impairment charge may be necessary. We are unable, however, to predict future commodity prices with any reasonable certainty.

New Accounting Pronouncements

On August 5, 2020, the Financial Accounting Standards Board issued Accounting Standards Update No. 2020-06, *Accounting for Convertible Instruments and Contracts in an Entity's Own Equity*, which eliminates the cash conversion model in ASC 470-20 (defined below in Item 1A. Risk Factors) that require separate accounting for conversion features that is currently being applied to the 2026 Convertible Notes, and instead, allows the debt instrument and conversion features to be accounted for as a single debt instrument. The new standard becomes effective on January 1, 2022, and early adoption is permitted. We are evaluating our plans for adoption, including the adoption date and transition method.

Upon adoption of this new standard, we expect to reclassify $62 million, net of deferred income taxes and equity issuance costs, to long-term debt and deferred income tax liability, as applicable, from stockholders' equity. Additionally, annual interest expense for the 2026 Convertible Notes will be based on an effective interest rate of 4.8% as compared to 11.7% for the three and nine months ended September 30, 2020 in the statement of operations and the weighted average diluted shares outstanding will increase from zero as of September 30, 2020 under the treasury-stock method to 66 million under the if-converted method. We do not believe that adoption of the standard will impact our operational strategies or growth prospects.

Off-Balance Sheet Arrangements

As of September 30, 2020, we did not have any off balance sheet arrangements other than contractual commitments for firm transportation, gas processing and fractionation, gathering, and compression services and land payment obligations. See "—Debt Agreements and Contractual Obligations—Contractual Obligations" for our commitments under these agreements.

Item 3. Quantitative and Qualitative Disclosures About Market Risk.

The primary objective of the following information is to provide forward-looking quantitative and qualitative information about our potential exposure to market risk. The term “market risk” refers to the risk of loss arising from adverse changes in natural gas, NGLs, and oil prices, as well as interest rates. These disclosures are not meant to be precise indicators of expected future losses, but rather indicators of reasonably possible losses. This forward-looking information provides indicators of how we view and manage our ongoing market risk exposures.

Commodity Hedging Activities

Our primary market risk exposure is in the price we receive for our natural gas, NGLs, and oil production. Pricing is primarily driven by spot regional market prices applicable to our U.S. natural gas production and the prevailing worldwide price for oil. Pricing for natural gas, NGLs, and oil has, historically, been volatile and unpredictable, and we expect this volatility to continue in the future. The prices we receive for our production depend on many factors outside of our control, including volatility in the differences between commodity prices at sales points and the applicable index price.

To mitigate some of the potential negative impact on our cash flows caused by changes in commodity prices, we enter into financial derivative instruments for a portion of our natural gas, NGLs, and oil production when management believes that favorable future prices can be secured.

Our financial hedging activities are intended to support natural gas, NGLs, and oil prices at targeted levels and to manage our exposure to natural gas, NGLs, and oil price fluctuations. These contracts may include commodity price swaps whereby we will receive a fixed price and pay a variable market price to the contract counterparty, collars that set a floor and ceiling price for the hedged production, basis differential swaps or embedded options. These contracts are financial instruments and do not require or allow for physical delivery of the hedged commodity. As of September 30, 2020, our commodity derivatives included fixed price swaps and basis differential swaps at index-based pricing.

As of September 30, 2020, we had in place natural gas swaps covering portions of our projected production through 2023. Our commodity hedge position as of September 30, 2020 is summarized in Note 12—Derivative Instruments to our unaudited condensed consolidated financial statements included elsewhere in this Quarterly Report on Form 10-Q. Under the Credit Facility, we are permitted to hedge up to 75% of our projected production for the next 60 months. We may enter into hedge contracts with a term greater than 60 months, and for no longer than 72 months, for up to 65% of our estimated production. Based on our production and our fixed price swap contracts and embedded put option that settled during the nine months ended September 30, 2020, our revenues would have decreased by approximately $31 million for each $0.10 decrease per MMBtu in natural gas prices and $1.00 decrease per Bbl in oil and NGLs prices, excluding the effects of changes in the fair value of our derivative positions which remain open as of September 30, 2020.

All derivative instruments, other than those that meet the normal purchase and normal sale scope exception or other derivative scope exceptions, are recorded at fair market value in accordance with GAAP and are included in our consolidated balance sheets as assets or liabilities. The fair values of our derivative instruments are adjusted for non-performance risk. Because we do not designate these derivatives as accounting hedges, they do not receive hedge accounting treatment; therefore, all mark-to-market gains or losses, as well as cash receipts or payments on settled derivative instruments, are recognized in our statements of operations. We present total gains or losses on commodity derivatives (for both settled derivatives and derivative positions which remain open) within operating revenues as “Commodity derivative fair value gains (losses).”

Mark-to-market adjustments of derivative instruments cause earnings volatility but have no cash flow impact relative to changes in market prices until the derivative contracts are settled or monetized prior to settlement. We expect continued volatility in the fair value of our derivative instruments. Our cash flows are only impacted when the associated derivative contracts are settled or monetized by making or receiving payments to or from the counterparty. As of September 30, 2020, the estimated fair value of our commodity derivative instruments was a net liability of $130 million comprised of current and noncurrent assets and liabilities. At December 31, 2019, the estimated fair value of our commodity derivative instruments was a net asset of $746 million comprised of current and noncurrent assets and liabilities.

By removing price volatility from a portion of our expected production through December 2023, we have mitigated, but not eliminated, the potential negative effects of changing prices on our operating cash flows for those periods. While mitigating the negative effects of falling commodity prices, these derivative contracts also limit the benefits we would receive from increases in commodity prices above the fixed hedge prices.

Counterparty and Customer Credit Risk

Our principal exposures to credit risk are through receivables resulting from the following: commodity derivative contracts ($127 million as of September 30, 2020); and the sale of our natural gas, NGLs and oil production ($301 million as of September 30, 2020), which we market to energy companies, end users, and refineries.

By using derivative instruments that are not traded on an exchange to hedge exposures to changes in commodity prices, we expose ourselves to the credit risk of our counterparties. Credit risk is the potential failure of a counterparty to perform under the terms of a derivative contract. When the fair value of a derivative contract is positive, the counterparty is expected to owe us, which creates credit risk. To minimize the credit risk in derivative instruments, it is our policy to enter into derivative contracts only with counterparties that are creditworthy financial institutions that management deems to be competent and competitive market makers. The creditworthiness of our counterparties is subject to periodic review. We have commodity hedges in place with 16 different counterparties, 13 of which are lenders under our Credit Facility. The fair value of the net liability of our commodity derivative contracts of approximately $130 million as of September 30, 2020 included the following derivative assets by bank counterparty: Canadian Imperial Bank of Commerce - $29 million; Morgan Stanley - $17 million; Scotiabank - $14 million; BNP Paribas - $5 million; PNC - $3 million; TD Energy - $3 million; Natixis - $2 million and Truist - $1 million. The estimated fair value of our commodity derivative assets has been risk-adjusted using a discount rate based upon the counterparties' respective published credit default swap rates (if available, or if not available, a discount rate based on the applicable Reuters bond rating) as of September 30, 2020 for each of the European and American banks. We believe that all of these institutions, currently, are acceptable credit risks. Other than as provided by the Credit Facility, we are not required to provide credit support or collateral to any of our counterparties under our derivative contracts, nor are they required to provide credit support to us. As of September 30, 2020, we did not have any past-due receivables from, or payables to, any of the counterparties to our derivative contracts.

We are also subject to credit risk due to the concentration of our receivables from several significant customers for sales of natural gas, NGLs, and oil. We generally do not require our customers to post collateral. The inability or failure of our significant customers to meet their obligations to us, or their insolvency or liquidation, may adversely affect our financial results.

Interest Rate Risks

Our primary exposure to interest rate risk results from outstanding borrowings under the Credit Facility, which has a floating interest rate. The average annualized interest rate incurred on the Credit Facility during the nine months ended September 30, 2020 was approximately 3.23%. We estimate that a 1.0% increase in the applicable average interest rates for the nine months ended September 30, 2020 would have resulted in an estimated $6.3 million increase in interest expense.

Item 4. Controls and Procedures.

Evaluation of Disclosure Controls and Procedures

As required by Rule 13a-15(b) under the Exchange Act, we have evaluated, under the supervision and with the participation of our management, including our principal executive officer and principal financial officer, the effectiveness of the design and operation of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act) as of the end of the period covered by this Quarterly Report on Form 10-Q. Our disclosure controls and procedures are designed to provide reasonable assurance that the information required to be disclosed by us in reports that we file or submit under the Exchange Act is accumulated and communicated to our management, including our principal executive officer and principal financial officer, as appropriate, to allow timely decisions regarding required disclosures and is recorded, processed, summarized and reported within the time periods specified in the rules and forms of the SEC. Based upon that evaluation, our principal executive officer and principal financial officer concluded that our disclosure controls and procedures were effective as of September 30, 2020 at a level of reasonable assurance.

Changes in Internal Control Over Financial Reporting

There have been no changes in our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) during the three months ended September 30, 2020 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

PART II—OTHER INFORMATION

Item 1. Legal Proceedings.

The information required by this item is included in Note 15—Contingencies to our unaudited condensed consolidated financial statements and is incorporated herein.

Item 1A. Risk Factors.

We are subject to certain risks and hazards due to the nature of the business activities we conduct. For a discussion of these risks, see "Item 1A. Risk Factors" in the 2019 Form 10-K and our Quarterly Report on Form 10-Q for the quarter ended March 31, 2020 in addition to the risks described below. Other than as described below, there have been no material changes to the risks described in the 2019 Form 10-K and our Quarterly Report on Form 10-Q for the quarter ended March 31, 2020. We may experience additional risks and uncertainties not currently known to us. Furthermore, as a result of developments occurring in the future, conditions that we currently deem to be immaterial may also materially and adversely affect us. Any such risk, in addition to those described below, in the 2019 Form 10-K and in the Quarterly Report on Form 10-Q for the quarter ended March 31, 2020, may materially and adversely affect our business, financial condition, cash flows and results of operations.

The accounting method for convertible debt securities that may be settled in cash, such as the 2026 Convertible Notes, could have a material effect on our reported financial results.

Under Accounting Standards Codification 470-20, Debt with Conversion and Other Options ("ASC 470-20"), an entity must separately account for the liability and equity components of the convertible debt instruments (such as the 2026 Convertible Notes) that may be settled entirely or partially in cash upon conversion in a manner that reflects the issuer's economic interest cost. The effect of ASC 470-20 on the accounting for the 2026 Convertible Notes is that the equity component is required to be included in the additional paid-in capital section of stockholders' equity on our consolidated balance sheet at the issuance date and the value of the equity component would be treated as a debt discount for purposes of accounting for the debt component of the 2026 Convertible Notes. As a result, we will be required to record a greater amount of non-cash interest expense as a result of the amortization of the discounted carrying value of the 2026 Convertible Notes to their face amount over the term of the 2026 Convertible Notes. We will report larger net losses (or lower net income) in our financial results because ASC 470-20 will require interest to include both the amortization of the debt discount and the instrument's non-convertible coupon interest rate, which could adversely affect our reported earnings and financial condition.

In addition, under certain circumstances, convertible debt instruments (such as the 2026 Convertible Notes) that may be settled entirely or partly in cash may be accounted for utilizing the treasury stock method, the effect of which is that the shares issuable upon conversion of such 2026 Convertible Notes are not included in the calculation of diluted earnings per share except to the extent that the conversion value of such 2026 Convertible Notes exceeds their principal amount. Under the treasury stock method, for diluted earnings per share purposes, the transaction is accounted for as if the number of shares of common stock that would be necessary to settle such excess, if we elected to settle such excess in shares, are issued. We cannot be sure that the accounting standards in the future will continue to permit the use of the treasury stock method. If we are unable or otherwise elect not to use the treasury stock method in accounting for the shares issuable upon conversion of the 2026 Convertible Notes, then our diluted earnings per share could be adversely affected. For example, in August 2020, the Financial Accounting Standards Board issued ASU No. 2020-06, Debt—Debt with Conversion and Other Options (Subtopic 470-20) and Derivatives and Hedging - Contracts in Entity's Own Equity (Subtopic 815-40) to amend current accounting standards to eliminate the treasury stock method for convertible instruments and instead require application of the "if-converted" method. Under that method, if it is adopted, diluted earnings per share would generally be calculated assuming that all the notes were converted solely into shares of common stock at the beginning of the reporting period, unless the result would be anti-dilutive. The application of the if-converted method may change previously reported per share results.

Conversion of the 2026 Convertible Notes may dilute the ownership interest of existing stockholders, including holders who had previously converted their 2026 Convertible Notes, or may otherwise depress the price of our common stock.

The conversion of some or all of the 2026 Convertible Notes will dilute the ownership interests of existing stockholders if we deliver shares of our common stock upon conversion of any of the 2026 Convertible Notes. The 2026 Convertible Notes may become convertible at the option of holders prior to their scheduled terms under certain circumstances. Any sales in the public market of the common stock issuable upon such conversion could adversely affect prevailing market prices of our common stock. In addition, the existence of the 2026 Convertible Notes may encourage short selling by market participants because the conversion of the 2026

Convertible Notes could be used to satisfy short positions, or anticipated conversion of the 2026 Convertible Notes into shares of our common stock could depress the price of our common stock.

We may be unable to raise the funds necessary to repurchase the 2026 Convertible Notes for cash following a fundamental change, or to pay any cash amounts due upon conversion, and our other indebtedness may limit our ability to repurchase the 2026 Convertible Notes or pay cash upon their conversion.

Holders of our 2026 Convertible Notes may, subject to a limited exception, require us to repurchase their 2026 Convertible Notes following a fundamental change at a cash repurchase price generally equal to 100% of the principal amount of the 2026 Convertible Notes to be repurchased, plus accrued and unpaid interest, if any. In addition, upon conversion, we will satisfy part or all of our conversion obligation in cash unless we elect to settle conversions solely in shares of our common stock. We may not have enough available cash or be able to obtain financing at the time we are required to repurchase the 2026 Convertible Notes or pay the cash amounts due upon conversion. In addition, applicable law, regulatory authorities and the agreements governing our other indebtedness, may restrict our ability to repurchase the 2026 Convertible Notes or pay the cash amounts due upon conversion. Our inability to satisfy our obligations under the 2026 Convertible Notes could affect the trading price of our common stock.

Our failure to repurchase the 2026 Convertible Notes or to pay the cash amounts due upon conversion when required will constitute a default under the indenture governing the 2026 Convertible Notes. A default under this indenture or the occurrence of the fundamental change itself could also lead to a default under agreements governing our other indebtedness, which may result in that other indebtedness becoming immediately payable in full. We may not have sufficient funds to satisfy all amounts due under the other indebtedness and the 2026 Convertible Notes.

Provisions of our 2026 Convertible Notes could delay or prevent an otherwise beneficial takeover of us.

Certain provisions of our 2026 Convertible Notes and the indenture governing such notes could make a third-party attempt to acquire us more difficult or expensive. For example, if a takeover constitutes a “Fundamental Change” (as defined in the indenture governing such notes), then holders of our 2026 Convertible Notes will have the right to require us to repurchase their 2026 Convertible Notes for cash. In addition, if a takeover constitutes a “Make-Whole Fundamental Change” (as defined in such indenture), then we may be required to temporarily increase the conversion rate. In either case, and in other cases, our obligations under the 2026 Convertible Notes and the indenture governing such notes could increase the cost of acquiring us or otherwise discourage a third party from acquiring us, including in a transaction that holders of our 2026 Convertible Notes or holders of our common stock may view as favorable.

Item 2. Unregistered Sales of Equity Securities

Issuer Purchases of Equity Securities

The following table sets forth our share purchase activity for each period presented:

Period	Total Number of Shares Purchased	Average Price Paid Per Share	Total Number of Shares Repurchased as Part of Publicly Announced Plans	Approximate Dollar Value of Shares that May Yet be Purchased Under the Plan
July 1, 2020 - July 31, 2020 (1)	14,485	$ 2.85	—	$ —
August 1, 2020 - August 31, 2020	—	$ —	—	$ —
September 1, 2020 - September 30, 2020	—	$ —	—	$ —
Total	14,485	$ 2.85	—	$ —

(1) The total number of shares purchased includes 14,485 shares repurchased in July representing shares of our common stock transferred to us in order to satisfy tax withholding obligations incurred upon the vesting of restricted stock and RSUs held by our employees.

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Item 6. Exhibits

Exhibit Number	Description of Exhibit
3.1	Amended and Restated Certificate of Incorporation of Antero Resources Corporation (incorporated by reference to Exhibit 3.1 to the Company's Current Report on Form 8-K (Commission File No. 001-36120) filed on October 17, 2013).
3.2	Amended and Restated Bylaws of Antero Resources Corporation (incorporated by reference to Exhibit 3.2 to the Company's Current Report on Form 8-K (Commission File No. 001-36120) filed on October 17, 2013).
4.1	Indenture related to the 4.25% Convertible Senior Notes due 2026, dated as of August 21, 2020, by and among Antero Resources Corporation, the several guarantors named therein and Wells Fargo Bank, National Association, as trustee (incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K (Commission File No. 001-36120) filed on August 21, 2020).
4.2	Form of 4.25% Convertible Senior Note due 2026 (incorporated by reference to Exhibit 4.2 to the Company's Current Report on Form 8-K (Commission File No. 001-36120) filed on August 21, 2020).
10.1*	Form of Retention Award Grant Notice and Retention Award Agreement under the Antero Resources Corporation 2020 Long-Term Incentive Plan (Employees).
10.2*	Form of Restricted Stock Unit Grant Notice and Restricted Stock Unit Agreement under the Antero Resources Corporation 2020 Long-Term Incentive Plan.
10.3*	Form of Performance Share Unit Grant Notice and Performance Share Unit Agreement under the Antero Resources Corporation 2020 Long-Term Incentive Plan.
22.1*	List of Guarantor Subsidiaries
31.1*	Certification of the Company's Chief Executive Officer Pursuant to Section 302 of the Sarbanes Oxley Act of 2002 (18 U.S.C. Section 7241).
31.2*	Certification of the Company's Chief Financial Officer Pursuant to Section 302 of the Sarbanes Oxley Act of 2002 (18 U.S.C. Section 7241).
32.1*	Certification of the Company's Chief Executive Officer Pursuant to Section 906 of the Sarbanes Oxley Act of 2002 (18 U.S.C. Section 1350).
32.2*	Certification of the Company's Chief Financial Officer Pursuant to Section 906 of the Sarbanes Oxley Act of 2002 (18 U.S.C. Section 1350).
101*	The following financial information from this Quarterly Report on Form 10-Q of Antero Resources Corporation for the quarter ended September 30, 2020 formatted in iXBRL (Inline eXtensible Business Reporting Language): (i) Condensed Consolidated Balance Sheets, (ii) Condensed Consolidated Statements of Operations and Comprehensive Income (Loss), (iii) Condensed Consolidated Statements of Equity, (iv) Condensed Consolidated Statements of Cash Flows, and (v) Notes to the Condensed Consolidated Financial Statements, tagged as blocks of text.
104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101).

The exhibits marked with the asterisk symbol (*) are filed or furnished with this Quarterly Report on Form 10-Q.

SIGNATURES

Pursuant to the requirements 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.

ANTERO RESOURCES CORPORATION

By: /s/ GLEN C. WARREN, JR.
Glen C. Warren, Jr.
President, Chief Financial Officer and Secretary

Date: October 28, 2020

Exhibit 10.1

ANTERO RESOURCES CORPORATION
2020 LONG-TERM INCENTIVE PLAN

RETENTION AWARD GRANT NOTICE

Pursuant to the terms and conditions of the Antero Resources Corporation 2020 Long-Term Incentive Plan, as amended from time to time (the "Plan"), Antero Resources Corporation (the "Company") hereby grants to the individual listed below ("you" or the "Participant") the Cash Award (the "Retention Award") set forth below. This Retention Award (this "Award") is subject to the terms and conditions set forth herein and in the Retention Award Agreement attached hereto as Exhibit A (the "Agreement") and the Plan, each of which is incorporated herein by reference. Capitalized terms used but not defined herein shall have the meanings set forth in the Plan.

Participant:	[__________________]
Date of Grant:	[__________________]
Total Amount of the Retention Award:	[__________________]
Vesting Commencement Date:	[__________________]
Vesting Schedule:	[__________________]

By your signature below, you agree to be bound by the terms and conditions of the Plan, the Agreement and this Retention Award Grant Notice (this "Grant Notice"). You acknowledge that you have reviewed the Agreement, the Plan and this Grant Notice in their entirety and fully understand all provisions of the Agreement, the Plan and this Grant Notice. You hereby agree to accept as binding, conclusive and final all decisions or interpretations of the Committee regarding any questions or determinations arising under the Agreement, the Plan or this Grant Notice. This Grant Notice may be executed in one or more counterparts (including portable document format (.pdf) and facsimile counterparts), each of which shall be deemed to be an original, but all of which together shall constitute one and the same agreement.

[Remainder of Page Intentionally Blank;
Signature Page Follows]

IN WITNESS WHEREOF, the Company has caused this Grant Notice to be executed by an officer thereunto duly authorized, and the Participant has executed this Grant Notice, effective for all purposes as provided above.

ANTERO RESOURCES CORPORATION

By: ______________________________

Alvyn A. Schopp
Chief Administrative Officer and Regional
Senior Vice President

PARTICIPANT

____

[Name of Employee]

SIGNATURE PAGE TO
RETENTION AWARD GRANT NOTICE

EXHIBIT A

RETENTION AWARD AGREEMENT

This Retention Award Agreement (this "Agreement") is made as of the Date of Grant set forth in the Grant Notice to which this Agreement is attached by and between Antero Resources Corporation, a Delaware corporation (the "Company"), and [__________________] ("Employee"). Capitalized terms used but not specifically defined herein shall have the meanings specified in the Plan or the Grant Notice.

1. **Award**. In consideration of Employee's past and/or continued employment with, or service to, the Company or an Affiliate and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, effective as of the Date of Grant set forth in the Grant Notice (the "Date of Grant"), the Company hereby grants to Employee the Retention Award set forth in the Grant Notice on the terms and conditions set forth in the Grant Notice, this Agreement and the Plan, which is incorporated herein by reference as a part of this Agreement. In the event of any inconsistency between the Plan and this Agreement, the terms of the Plan shall control. Unless and until the Retention Award has become vested in the manner set forth in the Grant Notice, Employee will have no right to receive any payments in respect of the Retention Award. Prior to settlement of this Award, this Award represents an unsecured obligation of the Company, payable only from the general assets of the Company.

2. **Vesting of the Retention Award**.

(a) Except as otherwise set forth in this Section 2, the Retention Award shall vest in accordance with the vesting schedule set forth in the Grant Notice. In the event of the termination of Employee's employment prior to the vesting of all of the Retention Award (but after giving effect to any accelerated vesting pursuant to this Section 2), any unvested portion of the Retention Award will be forfeited without further notice and at no cost to the Company.

(b) [__________________]

(c) [__________________]

3. **Settlement of the Retention Award**. As soon as administratively practicable following the vesting of the Retention Award (or any portion thereof) pursuant to Section 2, but in no event later than 30 days after such vesting date, the Company shall deliver to Employee (or Employee's permitted transferee, if applicable) an amount in cash equal to the portion of the Retention Award that has become vested on the applicable vesting date. Neither this Section 3 nor any action taken pursuant to or in accordance with this Agreement shall be construed to create a trust or a funded or secured obligation of any kind.

4. **Tax Withholding**. The Company or any Affiliate may withhold and deduct from any payments made or to be made pursuant to this Agreement all federal, state, local and other taxes as the Company or any Affiliate deems to be required pursuant to any law, ordinance or governmental regulation or ruling.

5. **Non-Transferability**. During the lifetime of Employee, the Retention Award may not be sold, pledged, assigned or transferred in any manner other than by will or the laws of descent and distribution, unless and until the cash underlying the Retention Award has been paid. Neither the Retention Award nor any interest or right therein shall be liable for the debts, contracts or engagements of Employee or his or her successors in interest or shall be subject to disposition by transfer, alienation, anticipation, pledge, encumbrance, assignment or any other means whether such disposition be voluntary or involuntary or by operation of law by judgment, levy, attachment, garnishment or any other legal or equitable proceedings (including bankruptcy), and any attempted disposition thereof shall be null and void and of no effect, except to the extent that such disposition is permitted by the preceding sentence.

6. **Execution of Receipts and Releases**. Any payment of cash to Employee or Employee's legal representative, heir, legatee or distributee, in accordance with this Agreement shall be in full satisfaction of all claims of such person hereunder. As a condition precedent to such payment or issuance, the Company may require Employee or Employee's legal representative, heir, legatee or distributee to execute a release of claims and receipt therefor in such form as it shall determine appropriate; provided, however, that any review period under such release will not modify the date of settlement with respect to any vested portion of the Retention Award.

7. **No Right to Continued Employment or Awards**.

(a) For purposes of this Agreement, Employee shall be considered to be employed by the Company as long as Employee remains an employee of the Company or any Affiliate, or an employee of a corporation or other entity (or a parent or subsidiary of such corporation or other entity) assuming or substituting a new award for this Award. Without limiting the scope of the preceding sentence, it is specifically provided that Employee shall be considered to have terminated employment with the Company at the time of the termination of the "Affiliate" status of the entity or other organization that employs Employee. Nothing in the adoption of the Plan, nor the Retention Award thereunder pursuant to the Grant Notice and this Agreement, shall confer upon Employee the right to continued employment by, or a continued service relationship with, the Company or any such Affiliate, or any other entity, or affect in any way the right of the Company or any such Affiliate, or any other entity to terminate such employment at any time. Unless otherwise provided in a written employment agreement or by applicable law, Employee's employment by the Company, or any such Affiliate, or any other entity shall be on an at-will basis, and the employment relationship may be terminated at any time by either Employee or the Company, or any such Affiliate, or other entity for any reason whatsoever, with or without cause or notice. Any question as to whether and when there has been a termination of such employment, and the cause of such termination, shall be determined by the Committee or its delegate, and such determination shall be final, conclusive and binding for all purposes.

(b) The grant of the Retention Award is a one-time benefit and does not create any contractual or other right to receive a grant of Awards or benefits in lieu of Awards in the future. Future Awards will be at the sole discretion of the Company.

8. **Notices**. Any notices or other communications provided for in this Agreement shall be sufficient if in writing. In the case of Employee, such notices or communications shall be

effectively delivered if hand delivered to Employee at Employee's principal place of employment or if sent by registered or certified mail to Employee at the last address Employee has filed with the Company. In the case of the Company, such notices or communications shall be effectively delivered if sent by registered or certified mail to the Company at its principal executive offices.

9. **Agreement to Furnish Information**. Employee agrees to furnish to the Company all information requested by the Company to enable it to comply with any reporting or other requirement imposed upon the Company by or under any applicable statute or regulation.

10. **Entire Agreement; Amendment**. This Agreement constitutes the entire agreement of the parties with regard to the subject matter hereof, and contains all the covenants, promises, representations, warranties and agreements between the parties with respect to the Retention Award granted hereby; provided, however, that the terms of this Agreement shall not modify and shall be subject to the terms and conditions of any employment and/or severance agreement between the Company (or an Affiliate or other entity) and Employee in effect as of the date a determination is to be made under this Agreement. Without limiting the scope of the preceding sentence, except as provided therein, all prior understandings and agreements, if any, among the parties hereto relating to the subject matter hereof are hereby null and void and of no further force and effect. The Committee may, in its sole discretion, amend this Agreement from time to time in any manner that is not inconsistent with the Plan; provided, however, that except as otherwise provided in the Plan or this Agreement, any such amendment that materially reduces the rights of Employee shall be effective only if it is in writing and signed by both Employee and an authorized officer of the Company.

11. **Governing Law**. This Agreement shall be governed by, and construed in accordance with, the laws of the State of Delaware, without regard to conflicts of law principles thereof.

12. **Successors and Assigns**. The Company may assign any of its rights under this Agreement without Employee's consent. This Agreement will be binding upon and inure to the benefit of the successors and assigns of the Company. Subject to the restrictions on transfer set forth herein and in the Plan, this Agreement will be binding upon Employee and Employee's beneficiaries, executors, administrators and the person(s) to whom the Retention Award may be transferred by will or the laws of descent or distribution.

13. **Clawback**. Notwithstanding any provision in this Agreement, the Grant Notice or the Plan to the contrary, to the extent required by (a) applicable law, including, without limitation, the requirements of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, any SEC rule or any applicable securities exchange listing standards and/or (b) any policy that may be adopted or amended by the Board from time to time, all amounts paid hereunder shall be subject to forfeiture, repurchase, recoupment and/or cancellation to the extent necessary to comply with such law(s) and/or policy.

14. **Counterparts**. The Grant Notice may be executed in one or more counterparts, each of which shall be deemed an original and all of which together shall constitute one instrument. Delivery of an executed counterpart of the Grant Notice by facsimile or pdf attachment to

electronic mail shall be effective as delivery of a manually executed counterpart of the Grant Notice.

15. **Severability**. If a court of competent jurisdiction determines that any provision of this Agreement is invalid or unenforceable, then the invalidity or unenforceability of such provision shall not affect the validity or enforceability of any other provision of this Agreement, and all other provisions shall remain in full force and effect.

16. **Nonqualified Deferred Compensation Rules**. None of the Retention Award or any amounts payable pursuant to this Agreement are intended to constitute or provide for a deferral of compensation that is subject to the Nonqualified Deferred Compensation Rules. Nevertheless, to the extent that the Committee determines that the Retention Award may not be exempt from the Nonqualified Deferred Compensation Rules, then, if Employee is deemed to be a "specified employee" within the meaning of the Nonqualified Deferred Compensation Rules, as determined by the Committee, at a time when Employee becomes eligible for settlement of the Retention Award upon Employee's "separation from service" within the meaning of the Nonqualified Deferred Compensation Rules, then to the extent necessary to prevent any accelerated or additional tax under the Nonqualified Deferred Compensation Rules, such settlement will be delayed until the earlier of: (a) the date that is six months following Employee's separation from service and (b) Employee's death. Notwithstanding the foregoing, the Company makes no representations that the payments provided under this Agreement are exempt from or compliant with the Nonqualified Deferred Compensation Rules and in no event shall the Company be liable for all or any portion of any taxes, penalties, interest or other expenses that may be incurred by Employee on account of non-compliance with the Nonqualified Deferred Compensation Rules.

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Exhibit 10.2

ANTERO RESOURCES CORPORATION
2020 LONG-TERM INCENTIVE PLAN

RESTRICTED STOCK UNIT GRANT NOTICE

Pursuant to the terms and conditions of the Antero Resources Corporation 2020 Long-Term Incentive Plan, as amended from time to time (the "Plan"), Antero Resources Corporation (the "Company") hereby grants to the individual listed below ("you" or the "Participant") the number of Restricted Stock Units (the "RSUs") set forth below. This award of RSUs (this "Award") is subject to the terms and conditions set forth herein and in the Restricted Stock Unit Agreement attached hereto as Exhibit A (the "Agreement") and the Plan, each of which is incorporated herein by reference. Capitalized terms used but not defined herein shall have the meanings set forth in the Plan.

Participant:	[_________________]
Date of Grant:	[_________________]
Total Number of Restricted Stock Units:	[_________________]
Vesting Commencement Date:	[_________________]
Vesting Schedule:	[_________________]

By your signature below, you agree to be bound by the terms and conditions of the Plan, the Agreement and this Restricted Stock Unit Grant Notice (this "Grant Notice"). You acknowledge that you have reviewed the Agreement, the Plan and this Grant Notice in their entirety and fully understand all provisions of the Agreement, the Plan and this Grant Notice. You hereby agree to accept as binding, conclusive and final all decisions or interpretations of the Committee regarding any questions or determinations arising under the Agreement, the Plan or this Grant Notice. This Grant Notice may be executed in one or more counterparts (including portable document format (.pdf) and facsimile counterparts), each of which shall be deemed to be an original, but all of which together shall constitute one and the same agreement.

[Remainder of Page Intentionally Blank;
Signature Page Follows]

IN WITNESS WHEREOF, the Company has caused this Grant Notice to be executed by an officer thereunto duly authorized, and the Participant has executed this Grant Notice, effective for all purposes as provided above.

ANTERO RESOURCES CORPORATION

By: ______________________________

Alvyn A. Schopp
Chief Administrative Officer and Regional
Vice President

PARTICIPANT

____

[Name of Employee]

SIGNATURE PAGE TO
RESTRICTED STOCK UNIT GRANT NOTICE

EXHIBIT A

RESTRICTED STOCK UNIT AGREEMENT

This Restricted Stock Unit Agreement (this "Agreement") is made as of the Date of Grant set forth in the Grant Notice to which this Agreement is attached by and between Antero Resources Corporation, a Delaware corporation (the "Company"), and [__________________] ("Employee"). Capitalized terms used but not specifically defined herein shall have the meanings specified in the Plan or the Grant Notice.

1. **Award**. In consideration of Employee's past and/or continued employment with, or service to, the Company or an Affiliate and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, effective as of the Date of Grant set forth in the Grant Notice (the "Date of Grant"), the Company hereby grants to Employee the number of RSUs set forth in the Grant Notice on the terms and conditions set forth in the Grant Notice, this Agreement and the Plan, which is incorporated herein by reference as a part of this Agreement. In the event of any inconsistency between the Plan and this Agreement, the terms of the Plan shall control. To the extent vested, each RSU represents the right to receive one share of Stock, subject to the terms and conditions set forth in the Grant Notice, this Agreement and the Plan. Unless and until the RSUs have become vested in the manner set forth in the Grant Notice, Employee will have no right to receive any Stock or other payments in respect of the RSUs. Prior to settlement of this Award, the RSUs and this Award represent an unsecured obligation of the Company, payable only from the general assets of the Company.

2. **Vesting of RSUs**.

(a) Except as otherwise set forth in this Section 2, the RSUs shall vest in accordance with the vesting schedule set forth in the Grant Notice. Unless and until the RSUs have vested in accordance with such vesting schedule, Employee will have no right to receive any dividends or other distribution with respect to the RSUs. In the event of the termination of Employee's employment prior to the vesting of all of the RSUs (but after giving effect to any accelerated vesting pursuant to this Section 2), any unvested RSUs (and all rights arising from such RSUs and from being a holder thereof) will terminate automatically without any further action by the Company and will be forfeited without further notice and at no cost to the Company.

(b) [________________]

(c) [________________]

3. **Settlement of RSUs**. As soon as administratively practicable following the vesting of RSUs pursuant to Section 2, but in no event later than 30 days after such vesting date, the Company shall deliver to Employee (or Employee's permitted transferee, if applicable) a number of shares of Stock equal to the number of RSUs subject to this Award that become vested on the applicable vesting date and cash equal to any DERs credited with respect to such vested RSUs or, at the discretion of the Committee, shares of Stock having a Fair Market Value equal to such DERs as of the applicable vesting date. Any fractional RSU that becomes vested hereunder shall be rounded down at the time shares of Stock are issued in settlement of such

RSU. No fractional shares of Stock, nor the cash value of any fractional shares of Stock, will be issuable or payable to Employee pursuant to this Agreement. All shares of Stock issued hereunder shall be delivered either by delivering one or more certificates for such shares to Employee or by entering such shares in book-entry form, as determined by the Committee in its sole discretion. The value of shares of Stock shall not bear any interest owing to the passage of time. Neither this Section 3 nor any action taken pursuant to or in accordance with this Agreement shall be construed to create a trust or a funded or secured obligation of any kind.

4. **Dividend Equivalent Rights**. Each RSU subject to this Award is hereby granted in tandem with a corresponding Dividend Equivalent ("DER"), which DER shall remain outstanding from the Date of Grant until the earlier of the settlement or forfeiture of the RSU to which it corresponds. Each vested DER shall entitle Employee to receive payments, subject to and in accordance with this Agreement, in an amount equal to any dividends paid by the Company in respect of the shares of Stock underlying the RSUs to which such DER relates. The Company shall establish, with respect to each RSU, a separate DER bookkeeping account for such RSU (a "DER Account"), which shall be credited (without interest) on the applicable dividend payment dates with an amount equal to any dividends paid during the period that such RSU remains outstanding with respect to the shares of Stock underlying the RSU to which such DER relates. Upon the vesting of an RSU, the DER (and the DER Account) with respect to such vested RSU shall also become vested. Similarly, upon the forfeiture of an RSU, the DER (and the DER Account) with respect to such forfeited RSU shall also be forfeited. DERs shall not entitle Employee to any payments relating to dividends paid after the earlier to occur of the applicable RSU settlement date or the forfeiture of the RSU underlying such DER.

5. **Rights as Stockholder**. Neither Employee nor any person claiming under or through Employee shall have any of the rights or privileges of a holder of shares of Stock in respect of any shares that may become deliverable hereunder unless and until certificates representing such shares have been issued or recorded in book entry form on the records of the Company or its transfer agents or registrars, and delivered in certificate or book entry form to Employee or any person claiming under or through Employee.

6. **Tax Withholding**. To the extent that the receipt or vesting of the RSUs results in compensation income or wages to Employee for federal, state, local or foreign tax purposes, Employee shall deliver to the Company or to any Affiliate nominated by the Company at the time of such receipt or lapse, as the case may be, such amount of money or, if permitted by the Committee in its sole discretion, shares of Stock as the Company or any Affiliate nominated by the Company may require to meet its obligations under applicable tax or social security laws or regulations, and if Employee fails to do so, the Company and its Affiliates are authorized to withhold, or cause to be withheld, from any cash or stock remuneration (including withholding any shares of Stock otherwise deliverable to Employee under this Agreement) then or thereafter payable to Employee in an amount equal to any tax or social security required to be withheld by reason of such resulting compensation income or wages, and to take such other action as may be necessary in the opinion of the Company to satisfy such withholding obligation. If such tax obligations are satisfied through the withholding of shares of Stock that are otherwise issuable to Employee pursuant to this Award (or through the surrender of shares of Stock by Employee to the Company), the number of shares of Stock that may be so withheld (or surrendered) by the Company or its Affiliate shall be the maximum number of shares of Stock that have an aggregate

Fair Market Value on the date of withholding or repurchase equal to the aggregate amount of such tax liabilities, determined based on the greatest withholding rates for federal, state, foreign, and/or local tax purposes, including payroll taxes, that may be utilized without creating adverse accounting treatment with respect to such Award, as determined by the Committee. Notwithstanding the foregoing, to the extent any cash payments are made to Employee under this Agreement, tax withholding obligations related thereto will be withheld from such payments. Employee acknowledges and agrees that none of the Board, the Committee, the Company or any of its Affiliates have made any representation or warranty as to the tax consequences to Employee as a result of the receipt of the RSUs, the vesting of the RSUs or the forfeiture of any of the RSUs. Employee represents that he is in no manner relying on the Board, the Committee, the Company or any of its Affiliates or any of their respective managers, directors, officers, employees or authorized representatives (including, without limitation, attorneys, accountants, consultants, bankers, lenders, prospective lenders and financial representatives) for tax advice or an assessment of such tax consequences. Employee represents that he has consulted with any tax consultants that Employee deems advisable in connection with the RSUs.

7. **Non-Transferability**. During the lifetime of Employee, the RSUs may not be sold, pledged, assigned or transferred in any manner other than by will or the laws of descent and distribution, unless and until the shares of Stock underlying the RSUs have been issued, and all restrictions applicable to such shares have lapsed. Neither the RSUs nor any interest or right therein shall be liable for the debts, contracts or engagements of Employee or his or her successors in interest or shall be subject to disposition by transfer, alienation, anticipation, pledge, encumbrance, assignment or any other means whether such disposition be voluntary or involuntary or by operation of law by judgment, levy, attachment, garnishment or any other legal or equitable proceedings (including bankruptcy), and any attempted disposition thereof shall be null and void and of no effect, except to the extent that such disposition is permitted by the preceding sentence.

8. **Compliance with Securities Law**. Notwithstanding any provision of this Agreement to the contrary, the issuance of shares of Stock hereunder will be subject to compliance with all applicable requirements of applicable law with respect to such securities and with the requirements of any stock exchange or market system upon which the Stock may then be listed. No shares of Stock will be issued hereunder if such issuance would constitute a violation of any applicable law or regulation or the requirements of any stock exchange or market system upon which the Stock may then be listed. In addition, shares of Stock will not be issued hereunder unless (a) a registration statement under the Securities Act is in effect at the time of such issuance with respect to the shares to be issued or (b) in the opinion of legal counsel to the Company, the shares to be issued are permitted to be issued in accordance with the terms of an applicable exemption from the registration requirements of the Securities Act. The inability of the Company to obtain from any regulatory body having jurisdiction the authority, if any, deemed by the Company's legal counsel to be necessary for the lawful issuance and sale of any shares of Stock hereunder will relieve the Company of any liability in respect of the failure to issue such shares as to which such requisite authority has not been obtained. As a condition to any issuance of Stock hereunder, the Company may require Employee to satisfy any requirements that may be necessary or appropriate to evidence compliance with any applicable law or regulation and to make any representation or warranty with respect to such compliance as may be requested by the Company.

9. **Legends**. If a stock certificate is issued with respect to shares of Stock delivered hereunder, such certificate shall bear such legend or legends as the Committee deems appropriate in order to reflect the restrictions set forth in this Agreement and to ensure compliance with the terms and provisions of this Agreement, the rules, regulations and other requirements of the SEC, any applicable laws or the requirements of any stock exchange on which the Stock is then listed. If the shares of Stock issued hereunder are held in book-entry form, then such entry will reflect that the shares are subject to the restrictions set forth in this Agreement.

10. **Execution of Receipts and Releases**. Any payment of cash or any issuance or transfer of shares of Stock or other property to Employee or Employee's legal representative, heir, legatee or distributee, in accordance with this Agreement shall be in full satisfaction of all claims of such person hereunder. As a condition precedent to such payment or issuance, the Company may require Employee or Employee's legal representative, heir, legatee or distributee to execute a release and receipt therefor in such form as it shall determine appropriate; provided, however, that any review period under such release will not modify the date of settlement with respect to vested RSUs.

11. **No Right to Continued Employment or Awards**.

(a) For purposes of this Agreement, Employee shall be considered to be employed by the Company as long as Employee remains an employee of the Company or any Affiliate, or an employee of a corporation or other entity (or a parent or subsidiary of such corporation or other entity) assuming or substituting a new award for this Award. Without limiting the scope of the preceding sentence, it is specifically provided that Employee shall be considered to have terminated employment with the Company at the time of the termination of the "Affiliate" status of the entity or other organization that employs Employee. Nothing in the adoption of the Plan, nor the award of the RSUs thereunder pursuant to the Grant Notice and this Agreement, shall confer upon Employee the right to continued employment by, or a continued service relationship with, the Company or any such Affiliate, or any other entity, or affect in any way the right of the Company or any such Affiliate, or any other entity to terminate such employment at any time. Unless otherwise provided in a written employment agreement or by applicable law, Employee's employment by the Company, or any such Affiliate, or any other entity shall be on an at-will basis, and the employment relationship may be terminated at any time by either Employee or the Company, or any such Affiliate, or other entity for any reason whatsoever, with or without cause or notice. Any question as to whether and when there has been a termination of such employment, and the cause of such termination, shall be determined by the Committee or its delegate, and such determination shall be final, conclusive and binding for all purposes.

(b) The grant of the RSUs is a one-time benefit and does not create any contractual or other right to receive a grant of Awards or benefits in lieu of Awards in the future. Future plans will be at the sole discretion of the Company.

12. **Notices**. Any notices or other communications provided for in this Agreement shall be sufficient if in writing. In the case of Employee, such notices or communications shall be effectively delivered if hand delivered to Employee at Employee's principal place of employment or if sent by registered or certified mail to Employee at the last address Employee

has filed with the Company. In the case of the Company, such notices or communications shall be effectively delivered if sent by registered or certified mail to the Company at its principal executive offices.

13. **Agreement to Furnish Information**. Employee agrees to furnish to the Company all information requested by the Company to enable it to comply with any reporting or other requirement imposed upon the Company by or under any applicable statute or regulation.

14. **Entire Agreement; Amendment**. This Agreement constitutes the entire agreement of the parties with regard to the subject matter hereof, and contains all the covenants, promises, representations, warranties and agreements between the parties with respect to the RSUs granted hereby; provided¸ however, that the terms of this Agreement shall not modify and shall be subject to the terms and conditions of any employment and/or severance agreement between the Company (or an Affiliate or other entity) and Employee in effect as of the date a determination is to be made under this Agreement. Without limiting the scope of the preceding sentence, except as provided therein, all prior understandings and agreements, if any, among the parties hereto relating to the subject matter hereof are hereby null and void and of no further force and effect. The Committee may, in its sole discretion, amend this Agreement from time to time in any manner that is not inconsistent with the Plan; provided, however, that except as otherwise provided in the Plan or this Agreement, any such amendment that materially reduces the rights of Employee shall be effective only if it is in writing and signed by both Employee and an authorized officer of the Company.

15. **Governing Law**. This Agreement shall be governed by, and construed in accordance with, the laws of the State of Delaware, without regard to conflicts of law principles thereof.

16. **Successors and Assigns**. The Company may assign any of its rights under this Agreement without Employee's consent. This Agreement will be binding upon and inure to the benefit of the successors and assigns of the Company. Subject to the restrictions on transfer set forth herein and in the Plan, this Agreement will be binding upon Employee and Employee's beneficiaries, executors, administrators and the person(s) to whom the RSUs may be transferred by will or the laws of descent or distribution.

17. **Clawback**. Notwithstanding any provision in this Agreement, the Grant Notice or the Plan to the contrary, to the extent required by (a) applicable law, including, without limitation, the requirements of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, any SEC rule or any applicable securities exchange listing standards and/or (b) any policy that may be adopted or amended by the Board from time to time, all shares of Stock issued hereunder shall be subject to forfeiture, repurchase, recoupment and/or cancellation to the extent necessary to comply with such law(s) and/or policy.

18. **Counterparts**. The Grant Notice may be executed in one or more counterparts, each of which shall be deemed an original and all of which together shall constitute one instrument. Delivery of an executed counterpart of the Grant Notice by facsimile or pdf attachment to electronic mail shall be effective as delivery of a manually executed counterpart of the Grant Notice.

19. **Severability**. If a court of competent jurisdiction determines that any provision of this Agreement is invalid or unenforceable, then the invalidity or unenforceability of such provision shall not affect the validity or enforceability of any other provision of this Agreement, and all other provisions shall remain in full force and effect.

20. **Nonqualified Deferred Compensation Rules**. None of the RSUs, DERs or any amounts payable pursuant to this Agreement are intended to constitute or provide for a deferral of compensation that is subject to the Nonqualified Deferred Compensation Rules. Nevertheless, to the extent that the Committee determines that the RSUs or DERs may not be exempt from the Nonqualified Deferred Compensation Rules, then, if Employee is deemed to be a "specified employee" within the meaning of the Nonqualified Deferred Compensation Rules, as determined by the Committee, at a time when Employee becomes eligible for settlement of the RSUs upon his "separation from service" within the meaning of the Nonqualified Deferred Compensation Rules, then to the extent necessary to prevent any accelerated or additional tax under the Nonqualified Deferred Compensation Rules, such settlement will be delayed until the earlier of: (a) the date that is six months following Employee's separation from service and (b) Employee's death. Notwithstanding the foregoing, the Company makes no representations that the payments provided under this Agreement are exempt from or compliant with the Nonqualified Deferred Compensation Rules and in no event shall the Company be liable for all or any portion of any taxes, penalties, interest or other expenses that may be incurred by Employee on account of non-compliance with the Nonqualified Deferred Compensation Rules.

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Exhibit 10.3

ANTERO RESOURCES CORPORATION
2020 LONG-TERM INCENTIVE PLAN

PERFORMANCE SHARE UNIT GRANT NOTICE

Pursuant to the terms and conditions of the Antero Resources Corporation 2020 Long-Term Incentive Plan, as amended from time to time (the "Plan"), Antero Resources Corporation (the "Company") hereby grants to the individual listed below ("you" or the "Participant") an award (this "Award") of Performance Share Units (the "PSUs") subject to the terms and conditions set forth herein and in the Performance Share Unit Agreement attached hereto as Exhibit A (the "Agreement") and the Plan, each of which is incorporated herein by reference. Capitalized terms used but not defined herein shall have the meanings set forth in the Plan.

Participant:	[___________]
Date of Grant:	[___________]
Target PSUs:	[___________] PSUs (the "Target Amount of PSUs")
Performance Periods:	[___________] to [___________]
Earning of PSUs:	[___________]

By your signature below, you agree to be bound by the terms and conditions of the Plan, the Agreement and this Performance Share Unit Grant Notice (this "Grant Notice"). You acknowledge that you have reviewed the Agreement, the Plan and this Grant Notice in their entirety and fully understand all provisions of the Agreement, the Plan and this Grant Notice. You hereby agree to accept as binding, conclusive and final all decisions or interpretations of the Committee regarding any questions or determinations arising under the Agreement, the Plan or this Grant Notice. This Grant Notice may be executed in one or more counterparts (including portable document format (.pdf) and facsimile counterparts), each of which shall be deemed to be an original, but all of which together shall constitute one and the same agreement.

[Remainder of Page Intentionally Blank;
Signature Page Follows]

IN WITNESS WHEREOF, the Company has caused this Grant Notice to be executed by an officer thereunto duly authorized, and the Participant has executed this Grant Notice, effective for all purposes as provided above.

ANTERO RESOURCES CORPORATION

By: ______________________________

Alvyn A. Schopp
Chief Administrative Officer and Regional
Senior Vice President

PARTICIPANT

____
[Name of Employee]

SIGNATURE PAGE TO
PERFORMANCE SHARE UNIT GRANT NOTICE

EXHIBIT A

PERFORMANCE SHARE UNIT AGREEMENT

This Performance Share Unit Agreement (this "Agreement") is made as of the Date of Grant set forth in the Grant Notice to which this Agreement is attached (the "Date of Grant") by and between Antero Resources Corporation, a Delaware corporation (the "Company"), and [__________________] ("Employee"). Capitalized terms used but not specifically defined herein shall have the meanings specified in the Plan or the Grant Notice.

1. **Award**. Effective as of the Date of Grant, the Company hereby grants to Employee the Target Amount of PSUs set forth in the Grant Notice on the terms and conditions set forth in the Grant Notice, this Agreement and the Plan, which is incorporated herein by reference as a part of this Agreement. In the event of any inconsistency between the Plan and this Agreement, the terms of the Plan shall control. To the extent earned, each PSU represents the right to receive one share of Stock, subject to the terms and conditions set forth in the Grant Notice, this Agreement and the Plan; provided, however, that, depending on the level of performance determined to be attained with respect to the Performance Goals, the number of shares of Stock that may be earned hereunder in respect of this Award may range from 0% to 150% of the Target Amount of PSUs. Unless and until the PSUs have become earned in the manner set forth in the Grant Notice and this Agreement, Employee will have no right to receive any Stock or other payments in respect of the PSUs. Prior to settlement of this Award, the PSUs and this Award represent an unsecured obligation of the Company, payable only from the general assets of the Company.

2. **Earning of PSUs**.

(a) Following [__________________], the Committee will determine the level of achievement of the Performance Goals for the applicable Performance Period as set forth in Exhibit B. The number of PSUs, if any, that shall become earned with respect to each Performance Period will be determined by the Committee in accordance with the Grant Notice and Exhibit B following the end of such Performance Period but shall not become vested until [__________________] (and any PSUs that have not been earned following the applicable Performance Period or do not become vested at [__________________] shall be automatically forfeited). Unless and until the PSUs have become earned and been settled in accordance with Section 3, Employee will have no right to receive any dividends or other distributions with respect to the PSUs. In the event of the termination of Employee's employment prior to [__________________], except as otherwise provided in Section 2(b) and 2(c) below, all of the PSUs, whether earned pursuant to a prior Performance Period or not (and all rights arising from such PSUs and from being a holder thereof), will terminate automatically without any further action by the Company and will be automatically forfeited without further notice and at no cost to the Company.

(b) [__________________]

(c) [__________________]

3. **Settlement of PSUs**. Except as provided in Sections 2(b) and 2(c), subject to Employee's continued employment through [__________________], as soon as administratively

practicable following the Committee's determination of the level of achievement of the Performance Goals for [__________________], but in no event later than 60 days following [__________________], Employee (or Employee's permitted transferee, if applicable) shall be issued a number of shares of Stock equal to the number of PSUs subject to this Award that become earned for each Performance Period based on the level of achievement of the Performance Goals as determined by the Committee in accordance with Section 2. Any fractional PSU that becomes earned hereunder shall be rounded down at the time shares of Stock are issued in settlement of such PSU. No fractional shares of Stock, nor the cash value of any fractional shares of Stock, will be issuable or payable to Employee pursuant to this Agreement. All shares of Stock issued hereunder shall be delivered either by delivering one or more certificates for such shares to Employee or by entering such shares in book-entry form, as determined by the Committee in its sole discretion. The value of shares of Stock shall not bear any interest owing to the passage of time. Neither this Section 3 nor any action taken pursuant to or in accordance with this Agreement shall be construed to create a trust or a funded or secured obligation of any kind.

4. **Rights as Stockholder**. Neither Employee nor any person claiming under or through Employee shall have any of the rights or privileges of a holder of shares of Stock in respect of any shares that may become deliverable hereunder unless and until certificates representing such shares have been issued or recorded in book entry form on the records of the Company or its transfer agents or registrars, and delivered in certificate or book entry form to Employee or any person claiming under or through Employee.

5. **Tax Withholding**. To the extent that the receipt, vesting or settlement of the PSUs results in compensation income or wages to Employee for federal, state, local and/or foreign tax purposes, the Company shall have the authority and the right to deduct or withhold (or cause one of its Affiliates to deduct or withhold), or to require Employee to remit to the Company (or one of its Affiliates), an amount sufficient to satisfy all applicable federal, state and local taxes required by law to be withheld with respect to such event. In satisfaction of the foregoing requirement, unless otherwise determined by the Committee, the Company or one of its Affiliates shall withhold, or cause to be surrendered, from any remuneration (including any of the shares of Stock that may be issuable under this Agreement) then or thereafter payable to Employee an amount equal to the aggregate amount of taxes required to be withheld with respect to such event. If such tax obligations are satisfied through net settlement or the surrender of previously owned shares of Stock, the maximum number of shares of Stock that may be so withheld (or surrendered) shall be the number of shares of Stock that have an aggregate Fair Market Value on the date of withholding or surrender equal to the aggregate amount of such tax liabilities determined based on the greatest withholding rates for federal, state, local and/or foreign tax purposes, including payroll taxes, that may be utilized without creating adverse accounting treatment for the Company with respect to the PSUs, as determined by the Committee. Employee acknowledges that there may be adverse tax consequences upon the receipt, vesting or settlement of the PSUs or disposition of the underlying shares of Stock and that Employee has been advised, and hereby is advised, to consult a tax advisor. Employee acknowledges and agrees that none of the Board, the Committee, the Company or any of its Affiliates have made any representation or warranty as to the tax consequences to Employee as a result of the receipt of the PSUs, the earning of the PSUs or the forfeiture of any of the PSUs. Employee represents that Employee is in no manner relying on the Board, the Committee, the Company or any of its Affiliates or any of their respective managers, directors, officers, employees or authorized representatives (including, without limitation,

attorneys, accountants, consultants, bankers, lenders, prospective lenders and financial representatives) for tax advice or an assessment of such tax consequences.

6. **Non-Transferability**. During the lifetime of Employee, the PSUs may not be sold, pledged, assigned or transferred in any manner other than by will or the laws of descent and distribution, unless and until the shares of Stock underlying the PSUs have been issued, and all restrictions applicable to such shares have lapsed. Neither the PSUs nor any interest or right therein shall be liable for the debts, contracts or engagements of Employee or his or her successors in interest or shall be subject to disposition by transfer, alienation, anticipation, pledge, encumbrance, assignment or any other means whether such disposition be voluntary or involuntary or by operation of law by judgment, levy, attachment, garnishment or any other legal or equitable proceedings (including bankruptcy), and any attempted disposition thereof shall be null and void and of no effect, except to the extent that such disposition is permitted by the preceding sentence.

7. **Compliance with Securities Law**. Notwithstanding any provision of this Agreement to the contrary, the issuance of shares of Stock hereunder will be subject to compliance with all applicable requirements of applicable law with respect to such securities and with the requirements of any stock exchange or market system upon which the Stock may then be listed. No shares of Stock will be issued hereunder if such issuance would constitute a violation of any applicable law or regulation or the requirements of any stock exchange or market system upon which the Stock may then be listed. In addition, shares of Stock will not be issued hereunder unless (a) a registration statement under the Securities Act is in effect at the time of such issuance with respect to the shares to be issued or (b) in the opinion of legal counsel to the Company, the shares to be issued are permitted to be issued in accordance with the terms of an applicable exemption from the registration requirements of the Securities Act. The inability of the Company to obtain from any regulatory body having jurisdiction the authority, if any, deemed by the Company’s legal counsel to be necessary for the lawful issuance and sale of any shares of Stock hereunder will relieve the Company of any liability in respect of the failure to issue such shares as to which such requisite authority has not been obtained. As a condition to any issuance of Stock hereunder, the Company may require Employee to satisfy any requirements that may be necessary or appropriate to evidence compliance with any applicable law or regulation and to make any representation or warranty with respect to such compliance as may be requested by the Company.

8. **Legends**. If a stock certificate is issued with respect to shares of Stock delivered hereunder, such certificate shall bear such legend or legends as the Committee deems appropriate in order to reflect the restrictions set forth in this Agreement and to ensure compliance with the terms and provisions of this Agreement, the rules, regulations and other requirements of the SEC, any applicable laws or the requirements of any stock exchange on which the Stock is then listed. If the shares of Stock issued hereunder are held in book-entry form, then such entry will reflect that the shares are subject to the restrictions set forth in this Agreement.

9. **Execution of Receipts and Releases**. Any issuance or transfer of shares of Stock or other property to Employee or Employee’s legal representative, heir, legatee or distributee, in accordance with this Agreement shall be in full satisfaction of all claims of such person hereunder. As a condition precedent to such payment or issuance, the Company may require Employee or Employee’s legal representative, heir, legatee or distributee to execute (and not revoke within any time provided to do so) a release and receipt therefor in such form as it shall determine appropriate;

provided, however, that any review period under such release will not modify the date of settlement with respect to earned PSUs.

10. **No Right to Continued Employment or Awards**.

(a) For purposes of this Agreement, Employee shall be considered to be employed by the Company as long as Employee remains an employee of the Company or any Affiliate, or a corporation or other entity (or a parent or subsidiary of such corporation or other entity) assuming or substituting a new award for this Award. Without limiting the scope of the preceding sentence, it is specifically provided that Employee shall be considered to have terminated employment with the Company at the time of the termination of the "Affiliate" status of the entity or other organization that employs Employee. Nothing in the adoption of the Plan, nor the award of the PSUs thereunder pursuant to the Grant Notice and this Agreement, shall confer upon Employee the right to continued employment by, or a continued service relationship with, the Company or any such Affiliate, or any other entity, or affect in any way the right of the Company or any such Affiliate, or any other entity to terminate such employment at any time. Unless otherwise provided in a written employment agreement or by applicable law, Employee's employment by the Company, or any such Affiliate, or any other entity shall be on an at-will basis, and the employment relationship may be terminated at any time by either Employee or the Company, or any such Affiliate, or other entity for any reason whatsoever, with or without cause or notice. Any question as to whether and when there has been a termination of such employment, and the cause of such termination, shall be determined by the Committee or its delegate, and such determination shall be final, conclusive and binding for all purposes.

(b) The grant of the PSUs is a one-time benefit and does not create any contractual or other right to receive a grant of Awards or benefits in lieu of Awards in the future. Any future Awards will be at the sole discretion of the Company.

11. **Notices**. Any notices or other communications provided for in this Agreement shall be sufficient if in writing. In the case of Employee, such notices or communications shall be effectively delivered if hand delivered to Employee at Employee's principal place of employment or if sent by registered or certified mail to Employee at the last address Employee has filed with the Company. In the case of the Company, such notices or communications shall be effectively delivered if sent by registered or certified mail to the Company at its principal executive offices.

12. **Consent to Electronic Delivery; Electronic Signature**. In lieu of receiving documents in paper format, Employee agrees, to the fullest extent permitted by law, to accept electronic delivery of any documents that the Company may be required to deliver (including, but not limited to, prospectuses, prospectus supplements, grant or award notifications and agreements, account statements, annual and quarterly reports and all other forms of communications) in connection with this and any other Award made or offered by the Company. Electronic delivery may be via a Company electronic mail system or by reference to a location on a Company intranet to which Employee has access. Employee hereby consents to any and all procedures the Company has established or may establish for an electronic signature system for delivery and acceptance of any such documents that the Company may be required to deliver, and agrees that his or her electronic signature is the same as, and shall have the same force and effect as, his or her manual signature.

13. **Agreement to Furnish Information**. Employee agrees to furnish to the Company all information requested by the Company to enable it to comply with any reporting or other requirement imposed upon the Company by or under any applicable statute or regulation.

14. **Entire Agreement; Amendment**. This Agreement constitutes the entire agreement of the parties with regard to the subject matter hereof, and contains all the covenants, promises, representations, warranties and agreements between the parties with respect to the PSUs granted hereby; provided¸ however, that the terms of this Agreement shall not modify and shall be subject to the terms and conditions of any employment and/or severance agreement between the Company (or an Affiliate or other entity) and Employee in effect as of the date a determination is to be made under this Agreement. Without limiting the scope of the preceding sentence, except as provided therein, all prior understandings and agreements, if any, among the parties hereto relating to the subject matter hereof are hereby null and void and of no further force and effect. The Committee may, in its sole discretion, amend this Agreement from time to time in any manner that is not inconsistent with the Plan; provided, however, that except as otherwise provided in the Plan or this Agreement, any such amendment that materially reduces the rights of Employee shall be effective only if it is in writing and signed by both Employee and an authorized officer of the Company.

15. **Governing Law**. This Agreement shall be governed by, and construed in accordance with, the laws of the State of Delaware, without regard to conflicts of law principles thereof.

16. **Successors and Assigns**. The Company may assign any of its rights under this Agreement without Employee's consent. This Agreement will be binding upon and inure to the benefit of the successors and assigns of the Company. Subject to the restrictions on transfer set forth herein and in the Plan, this Agreement will be binding upon Employee and Employee's beneficiaries, executors, administrators and the person(s) to whom the PSUs may be transferred by will or the laws of descent or distribution.

17. **Clawback**. Notwithstanding any provision in this Agreement, the Grant Notice or the Plan to the contrary, to the extent required by (a) applicable law, including, without limitation, the requirements of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, any SEC rule or any applicable securities exchange listing standards and/or (b) any policy that may be adopted or amended by the Board from time to time, all shares of Stock issued hereunder shall be subject to forfeiture, repurchase, recoupment and/or cancellation to the extent necessary to comply with such law(s) and/or policy.

18. **Counterparts**. The Grant Notice may be executed in one or more counterparts, each of which shall be deemed an original and all of which together shall constitute one instrument. Delivery of an executed counterpart of the Grant Notice by facsimile or pdf attachment to electronic mail shall be effective as delivery of a manually executed counterpart of the Grant Notice.

19. **Severability**. If a court of competent jurisdiction determines that any provision of this Agreement is invalid or unenforceable, then the invalidity or unenforceability of such

provision shall not affect the validity or enforceability of any other provision of this Agreement, and all other provisions shall remain in full force and effect.

20. **Nonqualified Deferred Compensation Rules**. If Employee is deemed to be a “specified employee” within the meaning of the Nonqualified Deferred Compensation Rules, as determined by the Committee, at a time when Employee becomes eligible for settlement of the PSUs upon his “separation from service” within the meaning of the Nonqualified Deferred Compensation Rules, then to the extent necessary to prevent any accelerated or additional tax under the Nonqualified Deferred Compensation Rules, such settlement will be delayed until the earlier of: (a) the date that is six months following Employee’s separation from service and (b) Employee’s death. Notwithstanding the foregoing, the Company makes no representations that the payments provided under this Agreement are exempt from or compliant with the Nonqualified Deferred Compensation Rules and in no event shall the Company be liable for all or any portion of any taxes, penalties, interest or other expenses that may be incurred by Employee on account of non-compliance with the Nonqualified Deferred Compensation Rules.

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EXHIBIT B

PERFORMANCE SHARE UNIT PERFORMANCE GOAL

[________________________________]

Exhibit 22.1

List of Guarantor Subsidiaries

The following subsidiaries of Antero Resources Corporation (the “Company”) were, as of September 30, 2020, guarantors of the Company’s 5.375% senior notes due 2021, 5.125% senior notes due 2022, 5.625% senior notes due 2023, 5.00% senior notes due 2025 and 4.25% convertible senior notes due 2026.

Guarantor	Jurisdiction of Organization
Monroe Pipeline LLC	Delaware
Antero Subsidiary Holdings LLC	Delaware
Antero Minerals LLC	Delaware
MU Marketing LLC	Delaware

CERTIFICATION OF CHIEF EXECUTIVE OFFICER
PURSUANT TO RULE 13A-14(A) AND RULE 15D-14(A)
OF THE SECURITIES EXCHANGE ACT OF 1934, AS AMENDED

I, Paul M. Rady, Chairman and Chief Executive Officer of Antero Resources Corporation, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q for the quarterly period ended September 30, 2020 of Antero Resources Corporation (the "registrant");

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(s) 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; and

   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; and

   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.

5. The registrant's other certifying officer(s) 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: October 28, 2020

/s/ Paul M. Rady
Paul M. Rady
Chief Executive Officer

CERTIFICATION OF CHIEF FINANCIAL OFFICER
PURSUANT TO RULE 13A-14(A) AND RULE 15D-14(A)
OF THE SECURITIES EXCHANGE ACT OF 1934, AS AMENDED

I, Glen C. Warren, Jr., President and Chief Financial Officer of Antero Resources Corporation, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q for the quarterly period ended September 30, 2020 of Antero Resources Corporation (the “registrant”);

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(s) 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; and

    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; and

    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.

5. The registrant’s other certifying officer(s) 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: October 28, 2020

/s/ Glen C. Warren, Jr.
Glen C. Warren, Jr.
Chief Financial Officer

Exhibit 32.1

CERTIFICATION OF
CHIEF EXECUTIVE OFFICER
OF ANTERO RESOURCES CORPORATION
PURSUANT TO 18 U.S.C. SECTION 1350

In connection with this Quarterly Report on Form 10-Q of Antero Resources Corporation for the quarter ended September 30, 2020,I, Paul M. Rady, Chief Executive Officer of Antero Resources Corporation, hereby certify pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

1. This Quarterly Report on Form 10-Q for the quarter ended September 30, 2020 fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

2. The information contained in this Quarterly Report on Form 10-Q for the quarter ended September 30, 2020 fairly presents, in all material respects, the financial condition and results of operations of Antero Resources Corporation for the periods presented therein.

Date: October 28, 2020

/s/ Paul M. Rady
Paul M. Rady
Chief Executive Officer

Exhibit 32.2

CERTIFICATION OF
CHIEF FINANCIAL OFFICER
OF ANTERO RESOURCES CORPORATION
PURSUANT TO 18 U.S.C. SECTION 1350

In connection with this Quarterly Report on Form 10-Q of Antero Resources Corporation for the quarter ended September 30, 2020, I, Glen C. Warren, Jr., Chief Financial Officer of Antero Resources Corporation, hereby certify pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

1. This Quarterly Report on Form 10-Q for the quarter ended September 30, 2020 fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

2. The information contained in this Quarterly Report on Form 10-Q for the quarter ended September 30, 2020 fairly presents, in all material respects, the financial condition and results of operations of Antero Resources Corporation for the periods presented therein.

Date: October 28, 2020

/s/ Glen C. Warren, Jr.
Glen C. Warren, Jr.
Chief Financial Officer