

April 17, 2014

Mara L. Ransom Assistant Director United States Securities and Exchange Commission Division of Corporation Finance 100 F Street, N.E. Washington, D.C. 20549-3561

Re: Antero Resources Midstream LLC

Amendment No. 1 to Registration Statement on Form S-1

Filed March 21, 2014 File No. 333-193798

Ladies and Gentlemen:

Set forth below are the responses of Antero Resources Midstream LLC (the "Company," "we," "us" or "our") to comments received from the staff of the Division of Corporation Finance (the "Staff") of the Securities and Exchange Commission (the "Commission") by letter dated April 8, 2014, with respect to Amendment No. 1 to the Registration Statement on Form S-1, File No. 333-193798, filed with the Commission on March 21, 2014 (the "Registration Statement").

Concurrently with the submission of this letter, we are filing through EDGAR Amendment No. 2 to the Registration Statement ("Amendment No. 2"). For your convenience, we will hand deliver three full copies of Amendment No. 2, as well as three copies of Amendment No. 2 marked to show all changes made since the filing of Amendment No. 1 to the Registration Statement. We are also concurrently providing certain information responsive to Comment 1 in a separate letter to the Staff (the "Supplemental Letter") pursuant to a confidential treatment request.

For your convenience, each response is prefaced by the exact text of the Staff's corresponding comment in bold, italicized text. All references to page numbers and captions correspond to Amendment No. 2 unless otherwise specified.

General

1. We acknowledge the supplemental materials that you furnished to us in response to prior comment 6 in our letter dated March 7, 2014. However, it is unclear from the supplemental materials provided how you determined that the Appalachian Basin is the second largest overall gas producer (third bullet point of prior comment 6) and how you determined that the focus of producers shifted over the past five years from shallower to deeper reservoirs (fourth bullet point of prior comment 6). Please provide an expanded response to address the third and fourth bullet points of our prior comment 6.

RESPONSE:

We acknowledge the Staff's comment and advise the Staff that we have revised the Registration Statement to reflect the Appalachian Basin's status as the largest overall gas producer. Please see page 111. We have provided to the Staff additional source material to support this statement, marked to highlight the specific supporting information, in the Supplemental Letter. In order to avoid potential investor confusion, we have removed the reference in the Registration Statement to producers' shifting focus over the past five years from shallower to deeper reservoirs. Please see page 111.

Summary, page 1

Our Existing Assets and Growth Projects, page 5

Gathering and Compression, page 5

2. We note your inclusion of oil pipeline mileage in your table of information regarding your gathering and compression system as of December 31, 2013 and your expectations for organic growth in such assets as of December 31, 2014 within the most recent amendment on pages 5 and 114. We presume by inclusion in the table that such assets are owned and operated by you. However, it does not appear that a discussion of any oil pipeline assets have been included within your business description, assumptions related to estimated cash available for distribution for the twelve-month period ending March 31, 2015, MD&A or your financial statements. Please explain or revise.

RESPONSE:

We acknowledge the Staff's comment and have revised our disclosure to clarify that we are referring to condensate gathering

pipelines that collect wellhead condensate associated with Antero Resources Corporation's ("*Antero*") liquids rich Utica Shale production. Please see pages 5, 114 and 115. In addition, we have revised our disclosure on pages 1, 89 and 109 to reflect that we have begun providing condensate gathering services to Antero pursuant to the gathering and compression agreement. Finally, we have revised our discussion of expansion capital expenditures during the twelve-month period ending March 31, 2015 to clarify that such expenditures include amounts related to the construction of additional condensate gathering pipelines in the Utica Shale. Please see page 68.

Our Cash Distribution Policy and Restrictions on Distributions, page 54

Estimated Cash Available for Distribution for the Twelve-Month Period Ending March 31, 2015, page 60

3. We note from your disclosure in the second paragraph on page 60 that your forecast of estimated cash available for distribution is provided to support your belief that you will have sufficient cash available to allow you to pay cash distributions at the minimum

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quarterly distribution rate. We also note your disclosure on page F-8 that you make distributions on the basis of available cash and not earnings. Please tell us whether the calculation of Available Cash, which directly impacts the actual cash distribution that will be made, contemplates that the GP could hold cash back from distribution for certain reasons. If so, please confirm our assumption that no such cash hold backs are anticipated at March 31, 2015 and disclose this to your investors. If cash hold backs are anticipated, it appears that your forecast should be adjusted for such cash reserves that would reduce the amount available to meet the minimum quarterly distribution.

RESPONSE:

We acknowledge the Staff's comment and respectfully submit that, unlike many other publicly traded partnerships, neither our partnership agreement nor our cash distribution policy will require us to distribute all of our "Available Cash"; rather, we intend to distribute at least the minimum quarterly distribution to the extent we have sufficient cash, after the establishment of cash reserves and the payment of our expenses. However, we believe that our investors will be best served by our distributing all of our available cash. Please see page 54.

The estimated cash available for distribution shown on page 61 has not been reduced for reserves contemplated by our general partner. It is provided to support our belief that we will generate from operations sufficient cash to allow us to pay cash distributions at the minimum quarterly distribution rate. To the extent that estimated cash available for distribution exceeds our contemplated minimum quarterly distribution rate, the excess will be reflected in the "Excess (Shortfall)" line of the calculation and is expected to be reserved by our general partner. We have revised our disclosure on page 60 to advise investors of this expected reserve and to clarify that we do not expect that our general partner will reserve amounts that impair our ability to pay the minimum quarterly distribution.

4. We note on page 61 you reconcile to both "Adjusted EBITDA" and "Estimated Cash Available for Distribution" from "Net Income." We also note your disclosure on page 67 that you have excluded stock compensation expense you expect to incur from your projected general and administrative expense for the twelve-month period ending March 31, 2015. While we note your disclosure on page 67 that these amounts are non-cash, it is unclear to us why you believe excluding stock compensation expense, which is required to be recognized under U.S. GAAP, would allow you to refer to the amount presented on page 61 as "Net Income." Additionally, it appears by excluding these amounts comparability issues now exist between this projection and your unaudited pro forma cash available for distribution on page 58. Please revise or explain.

RESPONSE:

We acknowledge the Staff's comment and have revised our calculation of estimated cash available for distribution for the twelve-month period ending March 31, 2015 to include in the calculation of net income the stock compensation expense that we expect to be allocated by Antero within general and administrative expense. Consistent with our calculation of pro forma net income for the twelve-month period ended March 31, 2015, however, we have also revised

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our disclosure to add back the non-cash stock compensation expense when calculating Adjusted EBITDA for the twelve-month period ending March 31, 2015. Please see page 61.

5. Refer to your disclosure regarding maintenance and expansion capital expenditures on pages 68 and 69. Please tell us whether you anticipate any capital expenditures during the forecasted period that would have characteristics of both maintenance and expansion. If not, please explain in detail why no such expenditures are expected to exist. Otherwise, please revise your disclosure to explain how you determine the portion to be allocated to maintenance and the portion to be allocated to expansion and quantify the total amount allocated and where it was classified. We believe this is useful information for your investors because many capital expenditures have varying degrees of both maintaining and expanding an asset. Given the subjective judgment in classifying such dual purpose expenditures, quantification is necessary. We may have further comment.

RESPONSE:

We acknowledge the Staff's comment and respectfully submit that our projected capital expenditures during the twelve-month period ending March 31, 2015 have been classified as either maintenance or expansion based on a dollar-based allocation (as described below and on page 69). As described on page 69, in the forecast period, the categorization of the expenditures as either maintenance or expansion is not being made based on the characteristics of specific projects, but rather on an allocation methodology.

Certain capital expenditures, for example those related to the construction of an entirely new processing facility or replacement of an existing pipeline, might be exclusively to expand or maintain our long-term operating capacity or operating income, and thus characterized exclusively as either expansion or maintenance capital expenditures. However, we have not included any such projects in the forecast period, as all maintenance activities are expensed during the forecast period. Rather, the types of capital expenditures that we have included in the forecast period relate to the construction of additional gathering, compression and fresh water delivery infrastructure as part of our existing systems to service Antero's growing production. As we describe on page 69, we have allocated the first \$18.2 million and \$5.5 million of capital expenditures related to gathering and compression and fresh water distribution, respectively, based on the amount we expect we would need to spend to maintain our long-term operating capacity or operating income. As a result, the amounts that would result in our maintaining a constant level of throughput volume — that is, those that are not expected to generate incremental distributable cash flow — are characterized as maintenance capital expenditures. The additional capital expenditures beyond those initial amounts — that is, those that are expected to generate incremental distributable cash flow — are characterized as expansion capital expenditures.

Security Ownership of Certain Beneficial Owners and Management, page 134

6. We note your response to prior comment 27 in our letter dated March 7, 2014. We re-issue the comment. Please disclose, by footnote or otherwise, the natural person(s) who have investment and/or voting power over the shares owned by Antero Resources

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Midstream Management LLC. Please refer to Question 140.02 of our Regulation S-K Compliance and Disclosure Interpretations, by analogy.

RESPONSE:

We acknowledge the Staff's comment and, although Antero Resources Midstream Management LLC does not own any common or subordinated units, we have revised our disclosure to indicate the natural persons who would have investment or voting power over any such units. Please see page 135.

Certain Relationships and Related Transactions, page 136

Services Agreement, page 138

7. We note your response to comment 28 in our letter dated March 7, 2014. To the extent you have disclosed in the "Our Cash Distribution Policy and Restrictions on Distributions" section the amounts you expect to incur in connection with the services agreement and partnership agreement, please provide such disclosure under the appropriate subheading of this section, as well.

RESPONSE:

We acknowledge the Staff's comment and have revised our disclosure to quantify the potential reimbursements under the services agreement. Please see page 139.

Unaudited Pro Forma Financial Statements of Antero Midstream Partners LP

Unaudited Pro Forma Statement of Operations For the Year Ended December 31, 2013, page F-4

8. We note your response to comment 31 in our letter dated March 7, 2014. Please confirm our understanding that you will enter into, or have a commitment, agreement or draft agreement for, a new revolving credit facility and will utilize the terms of such facility in the development of your pro forma adjustment to interest expense, and include this adjustment along with revised disclosure in an amendment prior to requesting effectiveness. To the extent you are unable to confirm this, we will have additional comments.

RESPONSE:

We acknowledge the Staff's comment and confirm that we will have a draft credit agreement that we expect to file a form of as an exhibit to a future amendment. The terms of such form will be used to develop our pro forma interest expense adjustment, which will be included in an amendment prior to our requesting effectiveness.

Pro Forma Adjustments, page F-6

9. Please tell us and disclose how you developed your estimate of interest expense. For example, what average outstanding balance and unused revolver capacity were utilized in developing the interest expense balance, and how were they determined. Please provide supporting calculations to assist our understanding

RESPONSE:

We acknowledge the Staff's comment and have revised our disclosure and pro forma interest expense to be based on the anticipated terms of the new revolving credit facility we expect to enter into in connection with the closing of the offering. Pro forma interest reflects amortization of the deferred finance costs related to the new revolving credit facility, estimated interest expense related to the borrowings under the new revolving credit facility and commitment fees on the estimated undrawn portion of the new revolving credit facility. We calculated pro forma interest expense quarterly based on average accumulated capital expenditures. We calculated our interest rate of 1.75% based on the anticipated terms of the new revolving credit facility we expect to enter into in connection with the closing of this offering. That rate is generally LIBOR plus 1.50% to 2.25%, depending on the Consolidated Total Leverage Ratio. We calculated the 0.25% commitment fee quarterly on the undrawn portion of the new revolving credit facility based on \$1.0 billion in lender commitments. The commitment fee applicable rate is generally 0.25% to 0.375%, depending on the Consolidated Total Leverage Ratio. Please see pages F-4 and F-6.

10. We note your response to comment 33 in our letter dated March 7, 2014, including your statement that <u>under your partnership agreement</u>, all units (common and subordinated, including the common units issued in the offering) will begin with the same per unit capital account equal to the price per unit that the public will pay in the offering. As the amount of capital contributed by purchasers of common units issued in the offering will likely be in excess of the amount contributed by Antero on a per unit book value basis, please explain, from a financial statement perspective, how all unitholders will begin with the same amount of equity per unit when there is a difference in the price paid by the public in the offering. If the partnership agreement has a different formula for allocating amounts to capital accounts than what is expected to be used for the financial statements immediately post-closing, please explain. If the capital allocation per the partnership agreement and the amount of equity per unit in the financial statements upon initial establishment are in agreement, please provide us with the supporting journal entries you expect to record in conjunction with the contribution and the offering that adjusts all the capital accounts to the same price per unit that the public will pay in the offering.

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RESPONSE:

We acknowledge the Staff's comment and respectfully submit that we will establish and maintain capital accounts for each unitholder in accordance with Treasury Regulations and partnership tax accounting conventions set forth in our partnership agreement. These partnership tax accounting conventions are based on fair market value of contributed property, which may (and likely will) differ from GAAP book values. As a result, the per unit capital accounts for the common units and subordinated units held by Antero will equal the per unit capital account of the common units purchased by the public, because the fair market value of the property contributed by Antero will be determined based on the price the public pays for the common units. In other words, the price per unit paid by the public purchasers will establish the fair market value of a common unit for capital account purposes and, in turn, the market value for us and our assets. However, these capital accounts have no relation to financial statements or the allocation of parent net investment on page F-5.

Accordingly, the partnership agreement per unit capital accounts will not tie to the per unit book value amounts in the financial statements, which will be calculated on a pro rata basis with respect to the number of common and subordinated units that will be issued to Antero in exchange for its contribution of assets to the partnership. We have revised the disclosure to reflect that we will defer allocating the \$263 million adjustment to parent net investment between common and the subordinated units until we know the number of each type of unit that will be issued to Antero in exchange for the contribution.

3. Pro Forma Net Income Per Limited Partner Unit, page F-7

11. We note your response to comment 34 in our letter dated March 7, 2014. If you believe your pro forma distributable cash flow for the twelve months ended December 31, 2013 would have provided you with sufficient available cash to pay the minimum quarterly distribution on both your common and subordinated unitholders, please revise to disclose this belief within your assumptions on page F-7. To the extent your pro forma distributable cash flow would have been insufficient to pay the minimum quarterly distribution to both common and subordinated unitholders, please revise your assumptions and calculation of earnings per unit accordingly.

RESPONSE:

We acknowledge the Staff's comment and note that, as described on page 57, we do not believe that our pro forma cash available for distribution would have been sufficient to pay the minimum quarterly distribution on all of our common and subordinated units during the twelve-month period ended December 31, 2013. Accordingly, we have revised our disclosure to remove the assumption that our pro forma cash available for distribution would have been sufficient to make such payment. Please see page F-7.

Antero Resources Midstream LLC Predecessor

Notes Accompanying the Financial Statements

Note 4 - Capital Leases, page F-19

12. Please tell us if the amounts presented within note 4 are in thousands of dollars. If another denomination, please revise as necessary.

RESPONSE:

We acknowledge the Staff's comment and have revised our disclosure on page F-18 to clarify that the amounts presented within the tables in Note 4 are in thousands.

Note 7 — Commitments and Contingencies, page F-23

13. We note your disclosure regarding transactions with affiliates on page F-18. As you have not included an interest charge on your historical financial statements, please expand on your discussion of your Parent Credit Facility on page F-23 to include an analysis of intercompany accounts as well as the average balance due to or from related parties for each period for which an income statement is required. The analysis of the intercompany accounts has taken the form of a listing of transactions (e.g., the allocation of costs to the subsidiary, intercompany purchases, and cash transfers between entities) for each period for which an income statement was required, reconciled to the intercompany accounts reflected in the balance sheets. Refer to SAB Topic 1.B.1 Question 4.

RESPONSE:

We acknowledge the Staff's comment and have revised our disclosure to clarify that all operations and capital expenditures were funded through capital contributions from our parent. Please see Note 3 — Transactions with Affiliations on page F-17. As funding was provided through capital contributions from our parent, we do not have historical intercompany accounts or intercompany debt balances where an interest charge would be applicable in the historical financial statements. We also do not believe that an expansion of our discussion of the Parent Credit Facility to include an analysis of intercompany accounts is required, as we maintain no intercompany accounts.

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Please direct any questions that you have with respect to the foregoing or if any additional supplemental information is required by the Staff, please contact Matthew R. Pacey of Vinson & Elkins L.L.P. at (713) 758-4786.

Very truly yours,

ANTERO RESOURCES MIDSTREAM, LLC

By: /s/ Glen C. Warren, Jr.

Name: Glen C. Warren, Jr.

Title: President, Chief Financial Officer and Secretary

Enclosures

cc: Dietrich A. King (Securities and Exchange Commission)
Jim Allegretto (Securities and Exchange Commission)
Jarrett Torno (Securities and Exchange Commission)
Jennifer López (Securities and Exchange Commission)
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