

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

SCHEDULE 13D

Under the Securities Exchange Act of 1934

Antero Midstream GP LP

(Name of Issuer)

Common Shares Representing Limited Partner Interests

(Title of Class of Securities)

03675Y 103

(CUSIP Number)

**Glen C. Warren, Jr.
1615 Wynkoop Street
Denver, Colorado 80202
(303) 357-7310**

(Name, Address and Telephone Number of Person
Authorized to Receive Notices and Communications)

May 12, 2017

(Date of Event Which Requires Filing of this Statement)

If the filing person has previously filed a statement on Schedule 13G to report the acquisition which is the subject of this Schedule 13D, and is filing this schedule because of Rule 13d-1(e), 13d-1(f) or 13d-1(g), check the following box:

Note: Schedules filed in paper format shall include a signed original and five copies of the schedule, including all exhibits. See Rule 13d-7 for other parties to whom copies are to be sent.

* The remainder of this cover page shall be filled out for a reporting person's initial filing on this form with respect to the subject class of securities, and for any subsequent amendment containing information which would alter disclosures provided in a prior cover page.

The information required on the remainder of this cover page shall not be deemed to be "filed" for the purpose of Section 18 of the Securities Exchange Act of 1934 (the "Act") or otherwise subject to the liabilities of that section of the Act but shall be subject to all other provisions of the Act (however, see the Notes).

(Continued on following pages)

SCHEDULE 13 D

CUSIP No. 03675Y 103

1. Name of Reporting Person
Glen C. Warren, Jr.

2. Check the Appropriate Box if a Member of a Group

(a)

(b)

3. SEC Use Only

4. Source of Funds (See Instructions)

OO (please see Item 3)

5. Check Box if Disclosure of Legal Proceedings Is Required Pursuant to Items 2(d) or 2(e)

6. Citizenship or Place of Organization
United States

7. Sole Voting Power
14,369,050(1)

Number of
Shares
Beneficially
Owned by
Each
Reporting
Person With

8. Shared Voting Power
0

9. Sole Dispositive Power
14,369,050(1)

10. Shared Dispositive Power
0

11. Aggregate Amount Beneficially Owned by Each Reporting Person
14,369,050(1)

12. Check Box if the Aggregate Amount in Row (11) Excludes Certain Shares

13. Percent of Class Represented by Amount in Row (11)
7.7%(1)(2)

14. Type of Reporting Person
IN

(1) Includes 3,745,322 Common Shares held by Canton Investment Holdings LLC (“Canton”). Mr. Warren is the sole member of Canton. Mr. Warren disclaims beneficial ownership of all Common Shares held by Canton except to the extent of his pecuniary interest therein.

(2) Calculations are based upon 186,170,213 shares of Common Shares outstanding as of May 9, 2017.

Item 1. Security and Issuer

This Schedule 13D relates to the common shares representing limited partner interests (“*Common Shares*”) in Antero Midstream GP LP, a Delaware limited partnership (the “*Issuer*” or the “*Company*”), which has its principal executive offices at 1615 Wynkoop Street, Denver, Colorado 80202.

Item 2. Identity and Background

(a) This Schedule 13D is being filed on behalf of Glen C. Warren, Jr. (the “*Reporting Person*”).

(b) The principal business address of the Reporting Person is 1615 Wynkoop Street, Denver, Colorado 80202.

(c) The present principal occupation of the Reporting Person is Director, President and Secretary of Antero Resources Corporation (“*Antero Resources*”), a company principally engaged in the exploitation, development and acquisition of natural gas, natural gas liquids and oil properties located in the Appalachian Basin in West Virginia, Ohio and Pennsylvania. The Reporting Person is also a director and the President of the general partner of Antero Midstream Partners LP (“*Antero Midstream*”), a master limited partnership which owns, operates and develops midstream energy assets to service the rapidly increasing production of Antero Resources, and the general partner (the “*General Partner*”) of the Issuer, a master limited partnership which owns the general partner and incentive distribution rights representing limited partner interests in Antero Midstream.

(d) In the past five years, the Reporting Person has not been convicted in a criminal proceeding (excluding traffic violations or similar misdemeanors).

(e) In the past five years, the Reporting Person has not been a party to a civil proceeding of a judicial or administrative body of competent jurisdiction that has resulted in a judgment, decree or final order enjoining future violations of, or prohibiting or mandating activities subject to, federal or state securities laws or finding any violations with respect to such laws.

(f) The Reporting Person is a citizen of the United States.

Item 3. Source and Amount of Funds or Other Consideration

The Reporting Person holds a direct membership interest in Antero Resources Investment LLC, a Delaware limited liability company (“*Antero Investment*”), and a direct membership interest in Canton and Antero Resources Employee Holdings LLC, a Delaware limited liability company, both of which hold a direct membership interest in Antero Investment. The Common Shares reported on the cover page of this Schedule 13D were initially acquired by Antero Investment in connection with the Issuer’s corporate reorganization and initial public offering (the “*Offering*”). Pursuant to the limited liability company agreement of Antero Investment, a portion of the Common Shares held by Antero Investment were distributed to the members of Antero Investment, including the Reporting Person, on May 12, 2017, with no consideration being paid in connection therewith (the “*Distribution*”).

Item 4. Purpose of Transaction

The information contained in Item 3 above is incorporated herein by reference.

The Reporting Person acquired the Common Shares for investment purposes in connection with the Distribution. The Reporting Person intends to participate in and influence the affairs of the Issuer through his ownership interest in the General Partner and through his position as a board member and executive officer of the Issuer, as well as through the voting of his Common Shares.

(a) The Reporting Person at any time and from time to time may acquire additional Common Shares or dispose of any or all of the Common Shares that he owns depending upon an ongoing evaluation of the investment in the Common Shares, prevailing market conditions, other investment opportunities, other investment considerations and/or other factors.

(b) — (j) Except as disclosed herein, the Reporting Person has no plans or proposals which relate to, or could result in, any of the matters referred to in paragraphs (b) through (j) inclusive of the instructions to Item 4 of Schedule 13D. The Reporting Person may, at any time and from time to time, review or reconsider his position and/or change his purpose and/or formulate plans or proposals with respect thereto.

Item 5. Interest in Securities of the Issuer

(a) — (b) The aggregate number and percentage of shares of Common Shares beneficially owned by the Reporting Person (on the basis of a total of 186,170,213 shares issued and outstanding as of May 9, 2017) are as follows:

Amount beneficially owned: 21,553,575	Percentage: 7.7%
Number of shares to which the Reporting Person has:	
i. Sole power to vote or to direct the vote:	14,369,050
ii. Shared power to vote or to direct the vote:	0
iii. Sole power to dispose or to direct the disposition of:	14,369,050
iv. Shared power to dispose or to direct the disposition of:	0

The number of Common Shares to which the Reporting Person has sole voting and dispositive power includes 3,745,322 Common Shares held by Canton. Mr. Warren is the sole member of Canton. Mr. Warren disclaims beneficial ownership of all Common Shares held by Canton except to the extent of his pecuniary interest therein.

(c) The information contained in Item 3 above is incorporated herein by reference. Except as described therein, the Reporting Person has not effected any transactions in the Common Shares during the past 60 days.

(d) The Reporting Person has the right to receive the proceeds from the sale of the Common Shares reported on the cover page of this Schedule 13D and in this Item 5. Except for the foregoing, no other person is known by the Reporting Person to have the right to receive or the power to direct the receipt of the proceeds from the sale of the Common Shares beneficially owned by the Reporting Person.

(e) Not applicable.

Item 6. Contracts, Arrangements, Understandings or Relationships with Respect to Securities of the Issuer

The information provided or incorporated by reference in Item 3 and Item 4 is hereby incorporated by reference herein.

Registration Rights Agreement

In connection with the closing of the Offering, on May 9, 2017, the Issuer entered into a registration rights agreement (the “*Registration Rights Agreement*”) with certain members of Antero Resources Investment LLC (individually, each a “*Sponsor*,” collectively, the “*Sponsors*”) and certain of the Issuer’s affiliates. Pursuant to the Registration Rights Agreement, the Issuer has agreed to register the sale of shares of its Common Shares under certain circumstances.

At any time after the six month anniversary of the completion of the Offering, each Sponsor that, together with its affiliates, owns at least 3% of the Common Shares has the right to require the Issuer by written notice to register the sale of a number of their shares of Registrable Securities (as defined in the Registration Rights Agreement) in an underwritten offering. The Issuer is required to provide notice of the request within 10 days following the receipt of any such demand request to all additional holders of Registrable Securities, if any, who may, in certain circumstances, participate in the registration. The Issuer is not obligated to effect any demand registration in which the anticipated aggregate offering price included in such offering is less than \$50,000,000. Any such demand registration may be for a shelf registration statement.

If, at any time, the Issuer proposes to register an offering of its securities (subject to certain exceptions) for its own account, then it must allow each holder of Registrable Securities to include a specified number of Registrable Securities in that registration statement.

The Issuer may be required to undertake a future public or private offering and use the proceeds (net of underwriting or placement agency discounts, fees and commissions, as applicable) to redeem an equal number of Common Shares from holders of Registrable Securities.

These registration rights are subject to certain conditions and limitations, including the right of the underwriters to limit the number of Registrable Securities to be included in a registration and the Issuer’s right to delay or withdraw a registration statement under certain circumstances. The Issuer will generally pay all registration

expenses in connection with its obligations under the Registration Rights Agreement, regardless of whether a registration statement is filed or becomes effective.

The obligations to register Registrable Securities under the Registration Rights Agreement will terminate when no Registrable Securities remain outstanding. Registrable Securities will cease to be covered by the Registration Rights Agreement when they have (i) been sold pursuant to an effective registration statement under the Securities Act of 1933, as amended (the “*Securities Act*”), (ii) been sold in a transaction exempt from registration under the Securities Act (including transactions pursuant to Rule 144 of the Securities Act, (iii) ceased to be outstanding, (iv) been sold in a private transaction in which the Issuer’s rights under the Registration Rights Agreement are not assigned to the transferee or (v) become eligible for resale pursuant to Rule 144(b) of the Securities Act (or any similar rule then in effect under the Securities Act).

Limited Liability Company Agreement of the General Partner

On May 9, 2017, in connection with the closing of the Offering, the Sponsors entered into the Limited Liability Company Agreement of the General Partner (the “*LLC Agreement*”). The LLC Agreement provides for the designation of members of the board of directors of the General Partner by the Sponsors, including the Reporting Person.

Pursuant to the terms of the LLC Agreement, during the ten-year period commencing with the closing of the Offering, if the Reporting Person serves as an executive officer or in an active role in the management of any company (other than the Issuer, Antero Resources, Antero Midstream or their respective subsidiaries and joint ventures) that is primarily engaged in an operating oil and gas exploration, production, gathering, compression or water handling and treatment business, then the Reporting Person (or his designee) will be removed as a member of the board of directors of the General Partner and such individual will no longer be entitled to designate a member of the board of directors of the General Partner.

Lockup Agreements

The Reporting Person has agreed that, for a period of 180 days from May 3, 2017, he will not, without the prior written consent of Morgan Stanley & Co. LLC and subject to certain exceptions, dispose of any Common Shares or any securities convertible into or exchangeable for the Common Shares.

References to, and descriptions of, the Registration Rights Agreement as set forth in this Schedule 13D are qualified in their entirety by reference to the Registration Rights Agreement, dated as of May 9, 2017, by and among the Issuer Warburg Pincus Private Equity X O&G, L.P., Warburg Pincus X Partners, L.P., Warburg Pincus Private Equity VIII, LP, Warburg Pincus Netherlands Private Equity VIII C.V.I, WP-WPVIII Investors, L.P., Yorktown Energy Partners V, L.P., Yorktown Energy Partners VI, L.P., Yorktown Energy Partners VII, L.P., Yorktown Energy Partners VIII, L.P., Paul M. Rady and Glen C. Warren, Jr., filed as Exhibit 4.1 to the Issuer's Current Report on Form 8-K, filed with the Securities and Exchange Commission (the "*Commission*") on May 9, 2017 (Commission File No. 001-38075), which is incorporated by reference herein in its entirety. References to, and descriptions of, the LLC Agreement as set forth in this Schedule 13D are qualified in their entirety by reference to the Limited Liability Company Agreement of AMGP GP LLC, dated as of May 9, 2017, by and among Warburg Pincus Private Equity X O&G, L.P., Warburg Pincus X Partners, L.P., Warburg Pincus Private Equity VIII, LP, Warburg Pincus Netherlands Private Equity VIII C.V.I, WP-WPVIII Investors, L.P., Yorktown Energy Partners V, L.P., Yorktown Energy Partners VI, L.P., Yorktown Energy Partners VII, L.P., Yorktown Energy Partners VIII, L.P., Paul M. Rady and Glen C. Warren, Jr., filed as Exhibit 3.4 to the Issuer's Current Report on Form 8-K, filed with the Commission on May 9, 2017 (Commission File No. 001-38075), which is incorporated by reference herein in its entirety.

Item 7. Material to be Filed as Exhibits

Exhibit A Registration Rights Agreement, dated as of May 9, 2017, by and among Antero Midstream GP LP, Warburg Pincus Private Equity X O&G, L.P., Warburg Pincus X Partners, L.P., Warburg Pincus Private Equity VIII, LP, Warburg Pincus Netherlands Private Equity VIII C.V.I, WP-WPVIII Investors, L.P., Yorktown Energy Partners V, L.P., Yorktown Energy Partners VI, L.P., Yorktown Energy Partners VII, L.P., Yorktown Energy Partners VIII, L.P., Paul M. Rady and Glen C. Warren, Jr. (incorporated by reference to Exhibit 4.1 to Current Report on Form 8-K (Commission File No. 001-38075) filed on May 9, 2017).

Exhibit B Limited Liability Company Agreement of AMGP GP LLC, dated as of May 9, 2017, by and among Warburg Pincus Private Equity X O&G, L.P., Warburg Pincus X Partners, L.P., Warburg Pincus Private Equity VIII, LP, Warburg Pincus Netherlands Private Equity VIII C.V.I, WP-WPVIII Investors, L.P., Yorktown Energy Partners V, L.P., Yorktown Energy Partners VI, L.P., Yorktown Energy Partners VII, L.P., Yorktown Energy Partners VIII, L.P., Paul M. Rady and Glen C. Warren, Jr. (incorporated by reference to Exhibit 3.4 to Current Report on Form 8-K (Commission File No. 001-38075) filed on May 9, 2017).

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Signature

After reasonable inquiry and to the best of his knowledge and belief, the undersigned certifies that the information set forth in this statement is true, complete and correct.

Date: May 22, 2017

Glen C. Warren, Jr.

/s/Alvyn A. Schopp

Name: Alvyn A. Schopp

Title: Attorney in Fact*

* The Power of Attorney given by Mr. Warren was previously filed with the U.S. Securities and Exchange Commission on May 3, 2017 as an exhibit to the Form 3 filed by Mr. Warren with respect to the Issuer and is hereby incorporated by reference.

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