As filed with the Securities and Exchange Commission on January 23, 2015

Registration No. 333-200605

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549 Amendment No. 2

to

FORM S-4

REGISTRATION STATEMENT UNDER

THE SECURITIES ACT OF 1933

ANTERO RESOURCES CORPORATION*

(Exact Name of Registrant as Specified in Its Charter)

Delaware (State or Other Jurisdiction of

Incorporation or Organization) 1311 (Primary Standard Industrial Classification Code Number) **80-0162034** (I.R.S. Employer Identification Number)

1615 Wynkoop Street Denver, Colorado 80202

(303) 357-7310

(Address, Including Zip Code, and Telephone Number, Including Area Code, of Registrant's Principal Executive Offices)

Glen C. Warren, Jr. President, Chief Financial Officer and Secretary 1615 Wynkoop Street Denver, Colorado 80202 (303) 357-7310

(Name, Address, Including Zip Code, and Telephone Number, Including Area Code, of Agent For Service)

Copies to: W. Matthew Strock Vinson & Elkins L.L.P. 1001 Fannin, Suite 2500 Houston, Texas 77002-6760 (713) 758-2222

Approximate date of commencement of proposed sale of the securities to the public: As soon as practicable after the effective date of this Registration Statement.

If the securities being registered on this Form are being offered in connection with the formation of a holding company and there is compliance with General Instruction G, check the following box.

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

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

Large accelerated filer 🗷

Accelerated filer □

Non-accelerated filer □ (Do not check if a smaller reporting company) Smaller reporting company

If applicable, place an X in the box to designate the appropriate rule provision relied upon in conducting this transaction:

Exchange Act Rule 13e-4(i) (Cross-Border Issue Tender Offer)

Exchange Act Rule 14d-1(d) (Cross-Border Third-Party Tender Offer)

Each registrant hereby amends this Registration Statement on such date or dates as may be necessary to delay its effective date until the registrants shall file a further amendment which specifically states that this registration statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933 or until the Registration Statement shall become effective on such date as the Securities and Exchange Commission, acting pursuant to said Section 8(a), may determine.

***TABLE OF ADDITIONAL REGISTRANT GUARANTORS**

	State or Other	IRS Employer
	Jurisdiction of	
	Incorporation or	Identification
Exact Name of Registrant Guarantors(1)	Formation	Number
Antero Water LLC	Delaware	47-2263453
AR OHIO LLC	Delaware	47-2260793
Monroe Pipeline LLC	Delaware	46-0608234

(1) The address for each of the Registrant Guarantors is 1615 Wynkoop Street, Denver, Colorado 80202, and the telephone number for each of the Registrant Guarantors is (303) 357-7310. The Primary Industrial Classification Code for each of the Registrant Guarantors is 4922.

EXPLANATORY NOTE

This Amendment No. 2 (the "Amendment") to the Registration Statement on Form S-4 (Registration No. 333-200605) (the "Registration Statement") is an exhibit-only filing to re-file Exhibit 5.1 previously filed with the Registration Statement and to amend and restate the list of exhibits set forth in Item 21 of Part II of the Registration Statement. Accordingly, this Amendment consists only of the facing page, this explanatory note, Part II of the Registration Statement, the signature pages to the Registration Statement and the filed exhibits. The prospectus is unchanged and has been omitted.

PART II

INFORMATION NOT REQUIRED IN PROSPECTUS

Item 20. Indemnification of Directors and Officers

Antero Resources Corporation

Our amended and restated certificate of incorporation provides that a director will not be liable to the corporation or its stockholders for monetary damages for breach of fiduciary duty as a director, except for liability (1) for any breach of the director's duty of loyalty to the corporation or its stockholders, (2) for acts or omissions not in good faith or which involved intentional misconduct or a knowing violation of the law, (3) under section 174 of the DGCL for unlawful payment of dividends or improper redemption of stock or (4) for any transaction from which the director derived an improper personal benefit. In addition, if the DGCL is amended to authorize the further elimination or limitation of the liability of directors, then the liability of a director of the corporation, will be limited to the fullest extent permitted by the amended DGCL. Our amended and restated bylaws provides that the corporation will indemnify, and advance expenses to, any officer or director to the fullest extent authorized by the DGCL.

Section 145 of the DGCL provides that a corporation may indemnify directors and officers as well as other employees and individuals against expenses, including attorneys' fees, judgments, fines and amounts paid in settlement in connection with specified actions, suits and proceedings whether civil, criminal, administrative, or investigative, other than a derivative action by or in the right of the corporation, if they acted in good faith and in a manner they reasonably believed to be in or not opposed to the best interests of the corporation and, with respect to any criminal action or proceeding, had no reasonable cause to believe their conduct was unlawful. A similar standard is applicable in the case of derivative actions, except that indemnification extends only to expenses, including attorneys' fees, incurred in connection with the defense or settlement of such action and the statute requires court approval before there can be any indemnification where the person seeking indemnification has been found liable to the corporation. The statute provides that it is not exclusive of other indemnification that may be granted by a corporation's certificate of incorporation, bylaws, disinterested director vote, stockholder vote, agreement or otherwise.

Our amended and restated certificate of incorporation also contains indemnification rights for our directors and our officers. Specifically, our amended and restated certificate of incorporation provides that we shall indemnify our officers and directors to the fullest extent authorized by the DGCL.

We have obtained directors' and officers' insurance to cover our directors, officers and some of our employees for certain liabilities.

We have entered into written indemnification agreements with our directors and officers. Under these agreements, if an officer or director makes a claim of indemnification to us, either a majority of the independent directors or independent legal counsel selected by the independent directors must review the relevant facts and make a determination whether the officer or director has met the standards of conduct under Delaware law that would permit (under Delaware law) and require (under the indemnification agreement) us to indemnify the officer or director.

Antero Water LLC AR OHIO LLC Monroe Pipeline LLC

Section 18-108 of the Delaware Limited Liability Company Act provides that, subject to such standards and restrictions, if any, as are set forth in its limited liability company agreement, a Delaware limited liability company may, and has the power to, indemnify and hold harmless any member or manager or other person from and against any and all claims and demands whatsoever.

II-1

Antero Water LLC's, AR OHIO LLC's and Monroe Pipeline LLC's limited liability company agreements each provide for the indemnification of its member and officers for any act or omission done or omitted by him in good faith, unless such act or omission constitutes gross negligence, willful misconduct, or a breach of such limited liability agreement on the part of the member or officers of Antero Water LLC, AR OHIO LLC or Monroe Pipeline LLC. Antero Water LLC, AR OHIO LLC and Monroe Pipeline LLC shall indemnify its member or officers to the fullest extent permitted by law against any loss, liability, damage, judgment, demand, claim, cost or expense incurred by or asserted against the member or officers of Antero Water LLC, AR OHIO LLC or Monroe Pipeline LLC (including, without limitation, reasonable attorneys' fees and disbursements incurred in the defense thereof) arising out of any act or omission of the member or officers of Antero Water LLC, AR OHIO LLC or Monroe Pipeline LLC, AR OHIO LLC or Monroe Pipeline LLC or Monroe Pipeline LLC (including, without limitation, reasonable attorneys' fees and disbursements incurred in the defense thereof) arising out of any act or omission of the member or officers of Antero Water LLC, AR OHIO LLC or Monroe Pipeline LLC, AR OHIO LLC or Monroe Pipeline LLC, and the part of such member or officers of Antero Water LLC, AR OHIO LLC or Monroe Pipeline LLC, and the part of such member or officers.

Item 21. Exhibits and Financial Statement Schedules

(a) The following documents are filed as exhibits to this Registration Statement, including those exhibits incorporated herein by reference to a prior filing under the Securities Act or the Exchange Act as indicated in parentheses:

Exhibit Number	Description of Exhibits
3.1	Amended and Restated Certificate of Incorporation of Antero Resources Corporation (incorporated by reference to Exhibit 3.1 to 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 Current Report on Form 8-K (Commission File No. 001-36120) filed on October 17, 2013).
4.1	Indenture related to the 5.125% Senior Notes due 2022, dated as of May 6, 2014, 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 Current Report on Form 8-K (Commission File No. 001-36120) filed on May 8, 2014).
4.2	Form of 5.125% Senior Notes due 2022 (incorporated by reference to Exhibit 4.2 to Current Report on Form 8-K (Commission File No. 001-36120) filed on May 7, 2014).
4.3*	*First Supplemental Indenture related to the 5.125% Senior Notes due 2022, dated as of November 24, 2014, by and among Antero Resources Corporation, the several guarantors named therein and Wells Fargo Bank, National Association, as trustee.
4.4	Registration Rights Agreement related to the 5.125% Senior Notes due 2022, dated as of May 6, 2014, by and among Antero Resources Corporation, the several guarantors named therein and J.P. Morgan Securities LLC as representative of the initial purchasers named therein (incorporated by reference to Exhibit 4.3 to Current Report on Form 8-K (Commission File No. 001-36120) filed on May 8, 2014).
4.5	Registration Rights Agreement related to the 5.125% Senior Notes due 2022, dated as of September 18, 2014, by and among Antero Resources Corporation, the several guarantors named therein and J.P. Morgan Securities LLC as representative of the initial purchasers named therein (incorporated by reference to Exhibit 4.3 to Current Report on Form 8-K (Commission File No. 001-36120) filed on September 24, 2014).

II-2

	hibit mber	Description of Exhibits
		*Second Supplemental Indenture related to the 5.125% Senior Notes due 2022, dated as of January 21, 2015, by and among Antero Resources Corporation, the several guarantors named therein and Wells Fargo Bank, National Association, as trustee.
	5.1*	Opinion of Vinson & Elkins L.L.P.
	12.1*	*Computation of Ratio of Earnings to Fixed Charges.
	23.1*	*Consent of KPMG, LLP.
	23.2*	*Consent of DeGolyer and MacNaughton, independent reserve engineers.
	23.3*	*Consent of Ryder Scott & Company.
	23.4*	Consent of Vinson & Elkins L.L.P. (included as part of Exhibit 5.1 hereto).
	24.1*	*Powers of Attorney (included on the signature pages of this registration statement).
	25.1*	*Form T-1 Statement of Eligibility and Qualification of Wells Fargo Bank, National Association.
*	Fi	led herewith
**	Pr	eviously filed

Item 22. Undertakings

Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the registrants, we have been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of a registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, such registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

Each registrant hereby undertakes:

To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:

- (a) to include any prospectus required by section 10(a)(3) of the Securities Act of 1933;
- (b) to reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than 20% change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement; and

(c) to include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement.

That, for the purpose of determining any liability under the Securities Act of 1933, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

That, for the purpose of determining liability under the Securities Act of 1933 to any purchaser, if such registrant is subject to Rule 430C, each prospectus filed pursuant to Rule 424(b) as part of a registration statement relating to an offering, other than registration statements relying on Rule 430B or other than prospectuses filed in reliance on Rule 430A, shall be deemed to be part of and included in the registration statement as of the date it is first used after effectiveness. Provided, however, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such first use, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such date of first use.

That, for the purpose of determining liability of such registrant under the Securities Act of 1933 to any purchaser in the initial distribution of the securities, in a primary offering of securities of such registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:

- (a) any preliminary prospectus or prospectus of the undersigned registrants relating to the offering required to be filed pursuant to Rule 424;
- (b) any free writing prospectus relating to the offering prepared by or on behalf of such registrant or used or referred to by the undersigned registrants;
- (c) the portion of any other free writing prospectus relating to the offering containing material information about the undersigned registrants or their securities provided by or on behalf of such registrant; and
- (d) any other communication that is an offer in the offering made by such registrant to the purchaser.

That, for purposes of determining any liability under the Securities Act of 1933, each filing of a registrant annual report pursuant to section 13(a) or section 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan's annual report pursuant to section 15(d) of the Securities Exchange Act of 1934) that is incorporated by reference in the registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

To deliver or cause to be delivered with the prospectus, to each person to whom the prospectus is sent or given, the latest annual report to security holders that is incorporated by reference in the prospectus and furnished pursuant to and meeting the requirements of Rule 14a-3 or Rule 14c-3 under the Securities Exchange Act of 1934; and, where interim financial information required to be presented

II-4

by Article 3 of Regulation S-X are not set forth in the prospectus, to deliver, or cause to be delivered to each person to whom the prospectus is sent or given, the latest quarterly report that is specifically incorporated by reference in the prospectus to provide such interim financial information.

To respond to requests for information that is incorporated by reference into the prospectus pursuant to Items 4, 10(b), 11, or 13 of this Form, within one business day of receipt of such request, and to send the incorporated documents by first class mail or other equally prompt means. This includes information contained in documents filed subsequent to the effective date of the registration statement through the date of responding to the request.

To supply by means of a post-effective amendment all information concerning a transaction, and the company being acquired involved therein, that was not the subject of and included in the registration statement when it became effective.

SIGNATURES

Pursuant to the requirements of the Security Act, the registrant has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Denver, State of Colorado, on January 23, 2015.

ANTERO RESOURCES CORPORATION

By: /s/ GLEN C. WARREN, JR.

Name: Glen C. Warren, Jr. Title: *President, Chief Financial Officer and* Secretary

Pursuant to the requirements of the Securities Act of 1933, this registration statement has been signed below by the following persons on January 23, 2015 in the capacities indicated.

Signature	Title
*	Chairman of the Board, Director and Chief Executive Officer (Principal Executive Officer)
Paul M. Rady /s/ GLEN C. WARREN, JR.	Director, President, Chief Financial Officer and Secretary (Principal Financial Officer)
Glen C. Warren, Jr. *	Chief Accounting Officer and Corporate Controller (Principal Accounting Officer)
K. Phil Yoo *	
Robert J. Clark *	Director
Richard W. Connor	Director
Benjamin A. Hardesty *	Director
Peter R. Kagan II-6	Director

Signature

	*		
	W. Howard Keenan, Jr.		Director
	*		
	James R. Levy		Director
	*		
	Christopher R. Manning		Director
*By:	/s/ GLEN C. WARREN, JR.		
	Glen C. Warren, Jr. Attorney-in-Fact		
		II-7	

Title

Pursuant to the requirements of the Securities Act, the co-registrants have duly caused this registration statement to be signed on their behalf by the undersigned, thereunto duly authorized, in the City of Denver, State of Colorado, on January 23, 2015.

ANTERO WATER LLC AR OHIO LLC MONROE PIPELINE LLC

By: Antero Resources Corporation, their sole member

By: /s/ GLEN C. WARREN, JR.

Name: Glen C. Warren, Jr. Title: *President, Chief Financial Officer and Secretary*

Title

Pursuant to the requirements of the Securities Act of 1933, this registration statement has been signed below by the following persons on January 23, 2015 in the capacities indicated.

Signature

	*	Chairman of the Board, Director and Chief
	Paul M. Rady	Executive Officer (Principal Executive Officer)
	/s/ GLEN C. WARREN, JR.	Director, President, Chief Financial Officer and
	Glen C. Warren, Jr.	Secretary (Principal Financial Officer)
_	*	Chief Accounting Officer and Corporate Controller
	K. Phil Yoo	(Principal Accounting Officer)
*By:	/s/ GLEN C. WARREN, JR.	
	Glen C. Warren, Jr. Attorney-in-Fact	
		II-8

INDEX TO EXHIBITS

Exhibit Number	Description of Exhibits
3.1	Amended and Restated Certificate of Incorporation of Antero Resources Corporation (incorporated by reference to Exhibit 3.1 to 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 Current Report on Form 8-K (Commission File No. 001-36120) filed on October 17 2013).
4.1	Indenture related to the 5.125% Senior Notes due 2022, dated as of May 6, 2014, 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 Current Report on Form 8-K (Commission File No. 001-36120) filed on May 8, 2014).
4.2	Form of 5.125% Senior Notes due 2022 (incorporated by reference to Exhibit 4.2 to Current Report on Form 8-K (Commission File No. 001-36120) filed on May 7, 2014).
4.3	**First Supplemental Indenture related to the 5.125% Senior Notes due 2022, dated as of November 24, 2014, by and among Antero Resources Corporation, the several guarantors named therein and Wells Fargo Bank, National Association, as trustee.
4.4	Registration Rights Agreement related to the 5.125% Senior Notes due 2022, dated as of May 6, 2014, by and among Antero Resources Corporation, the several guarantors named therein and J.P. Morgan Securities LLC as representative of the initial purchasers named therein (incorporated by reference to Exhibit 4.3 to Current Report on Form 8-K (Commission File No. 001-36120) filed on May 8, 2014).
4.5	Registration Rights Agreement related to the 5.125% Senior Notes due 2022, dated as of September 18, 2014, by and among Antero Resources Corporation, the several guarantors named therein and J.P. Morgan Securities LLC as representative of the initial purchasers named therein (incorporated by reference to Exhibit 4.3 to Current Report on Form 8-K (Commission File No. 001-36120) filed on September 24, 2014).
4.6'	**Second Supplemental Indenture related to the 5.125% Senior Notes due 2022, dated as of January 21, 2015, by and among Antero Resources Corporation, the several guarantors named therein and Wells Fargo Bank, National Association, as trustee.
5.1'	* Opinion of Vinson & Elkins L.L.P.
12.1'	**Computation of Ratio of Earnings to Fixed Charges.
23.1'	**Consent of KPMG, LLP.
23.2'	**Consent of DeGolyer and MacNaughton, independent reserve engineers.
23.3'	**Consent of Ryder Scott & Company.
23.4'	[*] Consent of Vinson & Elkins L.L.P. (included as part of Exhibit 5.1 hereto).
24.1'	**Powers of Attorney (included on the signature pages of this registration statement).
25.1'	**Form T-1 Statement of Eligibility and Qualification of Wells Fargo Bank, National Association.
Fi	led herewith
* P1	reviously filed
	II-9

QuickLinks

PART II INFORMATION NOT REQUIRED IN PROSPECTUS

Item 20. Indemnification of Directors and Officers Item 21. Exhibits and Financial Statement Schedules Item 22. Undertakings

SIGNATURES INDEX TO EXHIBITS

Vinson&Elkins

January 23, 2015

Antero Resources Corporation 1615 Wynkoop Street Denver, Colorado 80202

Re: Registration Statement on Form S-4

Ladies and Gentlemen:

We have acted as counsel for Antero Resources Corporation, a Delaware corporation (the "**Company**"), and certain of its subsidiaries with respect to the preparation of the Registration Statement on Form S-4 (the "**Registration Statement**") filed on or about the date hereof with the Securities and Exchange Commission (the "**Commission**") in connection with (i) the issuance by the Company of up to \$1,100,000,000 aggregate principal amount of its 5.125% Senior Notes due 2022 (the "**New Notes**") under the Securities Act of 1933, as amended (the "**Securities Act**"), in exchange for up to \$1,100,000,000 aggregate principal amount of the Company's outstanding 5.125% Senior Notes due 2022 (the "**Outstanding Notes**") and (ii) the guarantees (the "**Guarantees**") of certain subsidiaries of the Company listed in the Registration Statement as guarantors (the "**Guarantors**") of the Outstanding Notes and the New Notes. The New Notes will be issued under an Indenture, dated as of May 6, 2014 (the "**Base Indenture**"), among the Company, as issuer, Antero Resources Midstream LLC and Antero Midstream LLC, as subsidiary guarantors, and Wells Fargo Bank, National Association, as trustee. On November 24, 2014, the Base Indenture was amended by the First Supplemental Indenture, pursuant to which Antero Water LLC and AR OHIO LLC were designated as the Guarantors. The Base Indenture was further amended on January 21, 2015 by the Second Supplemental Indenture, pursuant to which Monroe Pipeline LLC was designated as a Guarantor. The Base Indenture, as so amended and supplemented, is referred to herein as the "**Indenture**."

We have examined originals or copies, certified or otherwise identified to our satisfaction, of the Registration Statement, the Indenture and such other certificates, statutes and other instruments and documents as we considered appropriate for purposes of the opinions hereafter expressed. In connection with this opinion, we have assumed that: (i) all information contained in all documents reviewed by us is true and correct; (ii) all signatures on all documents examined by us are genuine; (iii) all documents submitted to us as originals are authentic and all documents submitted to us as copies conform to the originals of those documents; (iv) the Registration Statement, and any amendments thereto (including post-effective amendments), will have become effective; and (v) the New Notes will be issued and sold in compliance with applicable federal and state securities laws and in the manner described in the Registration Statement.

Based upon and subject to the foregoing, we are of the opinion that when the New Notes have been duly executed, authenticated, issued and delivered in accordance with the provisions of the Indenture, (i) such New Notes will be legally issued and will constitute valid and binding obligations of the Company, enforceable against the Company in accordance with their terms and (ii) the Guarantees will constitute the valid and binding obligations of the Guarantors, enforceable against each Guarantor in accordance with their terms, except in each case as such enforcement is subject to any applicable bankruptcy, insolvency, reorganization or other law relating to or affecting creditors' rights generally and general principles of equity (whether considered in a proceeding in equity or at law).

Vinson & Elkins LLP Attorneys at Law

Abu Dhabi Austin Beijing Dallas Dubai Hong Kong Houston London Moscow New York Palo Alto Riyadh San Francisco Shanghai Tokyo Washington 1001 Fannin, Suite 2500 Houston, TX 77002-6760 Tel +1.713.758.2222 Fax +1.713.758.2346 www.velaw.com We express no opinions concerning (a) the validity or enforceability of any provisions contained in the Indenture or the New Notes that purport to waive or not give effect to rights to notices, defenses, subrogation or other rights or benefits that cannot be effectively waived under applicable law or (b) the enforceability of indemnification provisions to the extent they purport to relate to liabilities resulting from or based upon negligence or any violation of federal or state securities or blue sky laws.

The foregoing opinions are limited to the laws of the State of New York, the Delaware General Corporation Law, the Delaware Limited Liability Company Act and the federal laws of the United States of America, and we are expressing no opinion as to the effect of the laws of any other jurisdiction, domestic or foreign.

We hereby consent to the filing of this opinion as an exhibit to the Registration Statement and to the use of our firm name in the prospectus forming a part of the Registration Statement under the caption "Legal Matters." In giving this consent, we do not admit that we are within the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations thereunder.

Very truly yours,

/s/ Vinson & Elkins L.L.P.

QuickLinks

Exhibit 5.1