

PROSPECTUS SUPPLEMENT  
To Prospectus dated April 17, 2017



## Centennial Resource Development, Inc.

### 8,645,053 Shares of Class A Common Stock

This prospectus supplement supplements the prospectus dated April 17, 2017 (as supplemented to date, the "Prospectus"), of Centennial Resource Development, Inc. ("Centennial," "we," "our" and "us"), which is part of a registration statement on Form S-3 (File No. 333-214355) filed by Centennial with the Securities and Exchange Commission (the "SEC") relating to the resale of, among other things, shares of Class A common stock, par value \$0.0001 per share (the "Class A Common Stock"), of Centennial that may be issued to certain selling stockholders named therein, upon the redemption or exchange by such selling stockholders of their units representing common membership interests (the "CRP Common Units") in Centennial Resource Production, LLC, a controlled subsidiary of Centennial ("CRP"), for shares of Class A Common Stock pursuant to CRP's limited liability company agreement. This prospectus supplement should be read in conjunction with the Prospectus and this prospectus supplement is qualified by reference to the Prospectus, except to the extent that the information provided by this prospectus supplement supersedes the information contained in the Prospectus.

This prospectus supplement is provided solely to update the selling stockholder table included in the Prospectus.

This prospectus supplement is not complete without, and may not be delivered or utilized except in connection with, the Prospectus, with respect to the securities described above, including any amendments or supplements thereto.

**Investing in shares of our Class A Common Stock involves risks. See "Risk Factors" beginning on page 6 of the Prospectus and the risk factors set forth in our Annual Report on Form 10-K for the year ended December 31, 2017 and any subsequent report on Form 10-Q or Form 8-K filed by Centennial with the SEC.**

**Neither the SEC nor any other regulatory body has approved or disapproved of these securities or passed upon the accuracy or adequacy of this prospectus supplement. Any representation to the contrary is a criminal offense.**

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Prospectus Supplement dated June 19, 2018

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## **ABOUT THIS PROSPECTUS SUPPLEMENT**

On June 15, 2018, Centennial Resource Development, LLC, a Delaware limited liability company and member of CRP (“CRD”), liquidated and, in connection with such liquidation, transferred to its equity holders, including NGP X US Holdings, L.P. (together with its permitted transferees, “NGP”) 10,098,600 CRP Common Units and 10,098,600 shares of Class C common stock, par value \$0.0001 per share, of Centennial (the “Class C Common Stock” and, together with the Class A Common Stock, the “Common Stock”). Accordingly, this prospectus supplement is being filed solely to (i) remove CRD from the selling stockholder table included under the caption “Selling Stockholders” in the Prospectus and (ii) add NGP to such selling stockholder table. Capitalized terms that are not defined in this prospectus supplement are defined in the Prospectus.

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## SELLING STOCKHOLDERS

The table below sets forth certain information known to us with respect to the beneficial ownership of the shares of our Common Stock held by NGP. NGP may offer and sell, from time to time, any or all of the shares of Class A Common Stock being offered for resale by this prospectus supplement, which includes 8,645,053 shares of Class A Common Stock. The shares of Class A Common Stock that may be issued to NGP upon the redemption or exchange by NGP of its CRP Common Units are being registered pursuant to the Registration Rights Agreement entered into in connection with the Business Combination.

The following table provides, as of June 19, 2018, information regarding the beneficial ownership of our Class A Common Stock and Class C Common Stock held by NGP, the number of shares of Class A Common Stock that may be sold by NGP under this prospectus supplement and that NGP will beneficially own after this offering. The percentage of shares beneficially owned is based on 263,764,600 shares of our Class A Common Stock and 12,313,691 shares of Class C Common Stock outstanding as of June 19, 2018.

Because NGP may dispose of all, none or some portion of their securities, no estimate can be given as to the number of securities that will be beneficially owned by NGP upon termination of this offering. For purposes of the table below, however, we have assumed that after termination of this offering none of the securities covered by this prospectus supplement will be beneficially owned by NGP and further assumed that NGP will not acquire beneficial ownership of any additional securities during the offering. In addition, NGP may have sold, transferred or otherwise disposed of, or may sell, transfer or otherwise dispose of, at any time and from time to time, our securities in transactions exempt from the registration requirements of the Securities Act after the date on which the information in the table is presented.

Please see the section entitled “Plan of Distribution” in the Prospectus for further information regarding NGP’s method of distributing these shares.

<u>Name of Beneficial Owner</u>	<u>Share of Common Stock beneficially owned prior to this offering</u>		<u>Shares of Class A Common Stock offered hereby</u>	<u>Shares of Common Stock beneficially owned after this offering</u>	
	<u>Number</u>	<u>Percent</u>		<u>Number</u>	<u>Percent</u>
NGP X US Holdings, L.P. <sup>(1)</sup> .....	8,645,053 <sup>(2)</sup>	3.3%	8,645,053	—	—

<sup>(1)</sup> NGP X Holdings GP, L.L.C. (the sole general partner of NGP X US Holdings, L.P.), NGP Natural Resources X, L.P. (the sole member of NGP X Holdings GP, L.L.C.), G.F.W. Energy X, L.P. (the sole general partner of NGP Natural Resources X, L.P.) and GFW X, L.L.C. (the sole general partner of G.F.W. Energy X, L.P.) may each be deemed to share voting and dispositive power over the reported shares and therefore may also be deemed to be the beneficial owner of these shares. GFW X, L.L.C. has delegated full power and authority to manage NGP X US Holdings to NGP Energy Capital Management, L.L.C. (“NGP ECM”) and accordingly, NGP ECM may be deemed to share voting and dispositive power over these shares and therefore may also be deemed to be the beneficial owner of these shares. Each of NGP X Holdings GP, L.L.C., NGP Natural Resources X, L.P., G.F.W. Energy X, L.P. and GFW X, L.L.C. disclaim beneficial ownership of the reported shares except to the extent of its respective pecuniary interest therein.

Chris Carter and Tony R. Weber (one of Centennial’s directors), are managing partners of NGP ECM. In addition, Craig Glick, Chris Carter and Tony R. Weber are members of the executive committee of NGP ECM. Although none of Messrs. Carter, Weber, or Glick individually have voting or dispositive power over the reported shares, such individuals may be deemed to share voting and dispositive power over the reported shares and therefore may also be deemed to be the beneficial owner of the reported shares. Each of Messrs. Carter, Weber, and Glick disclaim beneficial ownership of the reported shares except to the extent of their respective pecuniary interest therein.

<sup>(2)</sup> Includes shares of Class C Common Stock. NGP also owns a corresponding number of CRP Common Units. Pursuant to the terms of the limited liability company agreement of CRP, NGP has the right to cause CRP to redeem all or a portion of its CRP Common Units in exchange for shares of our Class A Common Stock or, at CRP’s option, an equivalent amount of cash; provided that we may, at our option, effect a direct exchange of such cash or Class A Common Stock for such CRP Common Units in lieu of such a redemption by CRP. Upon future redemption or exchange of CRP Common Units by NGP, a corresponding number of shares of Class C Common Stock owned by NGP will be canceled. NGP also owns one share of Centennial’s Series A preferred stock, par value \$0.0001 per share. As the holder of the Series A preferred stock, NGP does not have any voting rights (other than the right to nominate and elect one director to Centennial’s board of directors) or rights with respect to dividends but is entitled to preferred distributions in liquidation in the amount of \$0.0001 per share.