Delaware 46-4314192 (State or other jurisdiction (I.R.S. Employer

of incorporation or organization) Identification No.)

303 Colorado Street, Suite 3000 78701

Austin, Texas (Address of principal executive offices) (Zip Code)

(737) 704-2300

(Registrant's telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Act:

Name of each exchange

Title of each class

on which registered

Class A Common Stock, \$0.01 par value New York Stock Exchange Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes x No "

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes "No x

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 x No "

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes x No "

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. x

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 filerx

Accelerated filer

Non-accelerated filer " (Do not check if a smaller reporting company) Smaller reporting company" Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes "No x

Aggregate market value of the voting and non-voting common equity held by non-affiliates of registrant as of June 30, 2015 was approximately \$1,319,941,307.

As of February 29, 2016, the registrant had 136,623,407 shares of Class A Common Stock and 32,145,296 shares of Class B Common Stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's definitive proxy statement for the 2016 Annual Meeting of Stockholders, to be filed no later than 120 days after the end of the fiscal year to which this Annual Report on Form 10-K relates, are incorporated by reference into Part III of this Annual Report on Form 10-K.

PARSLEY ENERGY, INC.

FORM 10-K

ANNUAL PERIOD ENDED DECEMBER 31, 2015

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CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

Various statements contained in or incorporated by reference into this Annual Report on Form 10-K (this "Annual Report") that express a belief, expectation, or intention, or that are not statements of historical fact, are "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"). These forward-looking statements include statements, projections and estimates concerning our operations, performance, business strategy, oil and natural gas reserves, drilling program, capital expenditures, liquidity and capital resources, the timing and success of specific projects, outcomes and effects of litigation, claims and disputes, derivative activities and potential financing. Forward-looking statements are generally accompanied by words such as "estimate," "project," "predict," "believe," "expect," "anticipate," "potential," "could," "may," "foresee," "plan," "goal" or other words that convey the uncertainty of future of the second sec or outcomes. Forward-looking statements are not guarantees of performance. We have based these forward-looking statements on our current expectations and assumptions about future events. These statements are based on certain assumptions and analyses made by us in light of our experience and our perception of historical trends, current conditions and expected future developments as well as other factors we believe are appropriate under the circumstances. Actual results may differ materially from those implied or expressed by the forward-looking statements. These forward-looking statements speak only as of the date of this Annual Report, or if earlier, as of the date they were made. We disclaim any obligation to update or revise these statements unless required by law, and we caution you not to rely on them unduly. While our management considers these expectations and assumptions to be reasonable, they are inherently subject to significant business, economic, competitive, regulatory and other risks, contingencies and uncertainties relating to, among other matters, the risks discussed under "Item 1A. Risk Factors," as well as those factors summarized below.

Forward-looking statements may include statements about our:

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business strategy;
 reserves;
 exploration and development drilling prospects, inventories, projects and programs;
 ability to replace the reserves we produce through drilling and property acquisitions;
 financial strategy, liquidity and capital required for our development program;
 realized oil, natural gas and natural gas liquids (NGLs) prices;
 timing and amount of future production of oil, natural gas and NGLs;
 hedging strategy and results;
 future drilling plans;
 competition and government regulations;
 ability to obtain permits and governmental approvals;
 pending legal or environmental matters;
       marketing of oil, natural gas and
       NGLs;
 leasehold or business acquisitions;
 costs of developing our properties;
 general economic conditions;
 credit markets;
 uncertainty regarding our future operating results; and
 plans, objectives, expectations and intentions contained in this Annual Report that are not historical.
Additionally, we caution you that reserve engineering is a process of estimating underground accumulations of oil,
natural gas and NGLs that cannot be measured in an exact way. The accuracy of any reserve estimate depends on the
quality of available data, the interpretation of such data and price and cost assumptions made by reserve engineers. In
addition, the results of drilling, testing and production activities may justify revisions of estimates that were made
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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 oil, natural gas and NGLs that are ultimately recovered.

Should one or more of the risks or uncertainties described in this Annual Report 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 Annual Report are expressly qualified in their entirety by this cautionary note. This cautionary note 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, all of which are expressly qualified by the statements in this section, to reflect events or circumstances after the date of this Annual Report.

GLOSSARY OF CERTAIN TERMS AND CONVENTIONS USED HEREIN

The terms defined in this section are used throughout this Annual Report:

"Bbl." One stock tank barrel, of 42 U.S. gallons liquid volume, used in reference to crude oil, condensate or natural gas liquids.

"Boe." One barrel of oil equivalent, with 6,000 cubic feet of natural gas being equivalent to one barrel of oil.

"Boe/d." One barrel of oil equivalent per day.

"British thermal unit" or "Btu." The heat required to raise the temperature of a one-pound mass of water from 58.5 to 59.5 degrees Fahrenheit.

"completion." The process of treating a drilled well followed by the installation of permanent equipment for the production of oil or natural gas, or in the case of a dry hole, the reporting of abandonment to the appropriate agency.

"condensate." A mixture of hydrocarbons that exists in the gaseous phase at original reservoir temperature and pressure, but that, when produced, is in the liquid phase at surface pressure and temperature.

"development well." A well drilled within the proved area of an oil or natural gas reservoir to the depth of a stratigraphic horizon known to be productive.

"dry hole." A well found to be incapable of producing hydrocarbons in sufficient quantities such that proceeds from the sale of such production exceed production expenses and taxes.

"economically producible." A resource that generates revenue that exceeds, or is reasonably expected to exceed, the costs of the operation. For a complete definition of economically producible, refer to the SEC's Regulation S-X, Rule 4-10(a)(10).

"exploitation." A development or other project which may target proven or unproven reserves (such as probable or possible reserves), but which generally has a lower risk than that associated with exploration projects.

"exploratory well." A well drilled to find a new field or to find a new reservoir in a field previously found to be productive of oil or natural gas in another reservoir.

"field." An area consisting of a single reservoir or multiple reservoirs all grouped on or related to the same individual geological structural feature and/or stratigraphic condition. The field name refers to the surface area, although it may refer to both the surface and the underground productive formations. Refer to the SEC's Regulation S-X, Rule 4-10(a)(15) for a complete definition of field.

"formation." A layer of rock which has distinct characteristics that differ from nearby rock.

"GAAP." Accounting principles generally accepted in the United States.

"gross acres" or "gross wells." The total acres or wells, as the case may be, in which an entity owns a working interest.

"horizontal drilling." A drilling technique where a well is drilled vertically to a certain depth and then drilled laterally within a specified target zone.

"identified drilling locations." Potential drilling locations specifically identified by our management based on evaluation of applicable geologic and engineering data accrued over our multi-year historical drilling activities.

"lease operating expense." All direct and allocated indirect costs of lifting hydrocarbons from a producing formation to the surface constituting part of the current operating expenses of a working interest. Such costs include labor, superintendence, supplies, repairs, maintenance, allocated overhead charges, workover, insurance and other expenses incidental to production, but exclude lease acquisition or drilling or completion expenses.

"LIBOR." London Interbank Offered Rate.

"MBbl." One thousand barrels of crude oil, condensate or NGLs.

"MBoe." One thousand barrels of oil equivalent.

"Mcf." One thousand cubic feet of natural gas.

"MMBtu." One million British thermal units.

"MMcf." One million cubic feet of natural gas.

"natural gas liquids" or "NGLs." The combination of ethane, propane, butane, isobutane and natural gasolines that when removed from natural gas become liquid under various levels of higher pressure and lower temperature.

"net acres" or "net wells." The percentage of total acres or wells, as the case may be, an owner has out of a particular number of gross acres or wells. For example, an owner who has 50% interest in 100 gross acres owns 50 net acres.

"NYMEX." The New York Mercantile Exchange.

"operator." The entity responsible for the exploration, development and production of a well or lease.

"PE Units." The single class of units, in which all of the membership interests (including outstanding incentive units) in Parsley LLC were converted to in connection with our initial public offering.

"proved developed reserves." Proved reserves that can be expected to be recovered:

- i. Through existing wells with existing equipment and operating methods or in which the cost of the required equipment is relatively minor compared with the cost of a new well; or
- ii. Through installed extraction equipment and infrastructure operational at the time of the reserves estimate if the extraction is by means not involving a well.

"proved reserves." Those quantities of oil and natural gas, which, by analysis of geoscience and engineering data, can be estimated with reasonable certainty to be economically producible—from a given date forward, from known reservoirs, and under existing economic conditions, operating methods and government regulations—prior to the time at which contracts providing the right to operate expire, unless evidence indicates that renewal is reasonably certain, regardless of whether deterministic or probabilistic methods are used for the estimation. The project to extract the hydrocarbons must have commenced, or the operator must be reasonably certain that it will commence, the project within a reasonable time. Refer to the SEC's Regulation S-X, Rule 4-10(a)(22) for a complete definition of proved oil and natural gas reserves.

"proved undeveloped reserves" or "PUDs." Proved reserves that are expected to be recovered from new wells on undrilled acreage, or from existing wells where a relatively major expenditure is required for recompletion.

Reserves on undrilled acreage shall be limited to those directly offsetting development spacing areas that are reasonably certain of production when drilled, unless evidence using reliable technology exists that establishes reasonable certainty of economic producibility at greater distances.

Undrilled locations can be classified as having undeveloped reserves only if a development plan has been adopted indicating that they are scheduled to be drilled within five years, unless the specific circumstances justify a longer time.

Under no circumstances shall estimates for proved undeveloped reserves be attributable to any acreage for which an application of fluid injection or other improved recovery technique is contemplated, unless such techniques have been proved effective by actual projects in the same reservoir or an analogous reservoir, or by other evidence using reliable technology establishing reasonable certainty.

"reasonable certainty." A high degree of confidence. For a complete definition, refer to the SEC's Regulation S-X, Rule 4-10(a)(24).

"recompletion." The process of re-entering an existing wellbore that is either producing or not producing and completing new reservoirs in an attempt to establish new production or increase existing production.

"reliable technology." A grouping of one or more technologies (including computational methods) that have been field tested and have been demonstrated to provide reasonably certain results with consistency and repeatability in the

formation being evaluated or in an analogous formation.

"reserves." Estimated remaining quantities of oil and natural gas and related substances anticipated to be economically producible, as of a given date, by application of development prospects to known accumulations. In addition, there must exist, or there must be a reasonable expectation that there will exist, the legal right to produce or a revenue interest in the production, installed means of delivering oil and natural gas or related substances to market and all permits and financing required to implement the project.

"reservoir." A porous and permeable underground formation containing a natural accumulation of producible hydrocarbons that is confined by impermeable rock or water barriers and is separate from other reservoirs.

"SEC." The United States Securities and Exchange Commission.

"spacing." The distance between wells producing from the same reservoir. Spacing is often established by regulatory agencies.

"undeveloped acreage." Lease acreage on which wells have not been drilled or completed to a point that would permit the production of economic quantities of oil or natural gas regardless of whether such acreage contains proved reserves.

"wellbore." The hole drilled by the bit that is equipped for oil or gas production on a completed well. Also called well or borehole.

"working interest." The right granted to the lessee of a property to explore for and to produce and own oil, natural gas or other minerals. The working interest owners bear the exploration, development and operating costs on either a cash, penalty or carried basis.

"workover" Operations on a producing well to restore or increase production.

"WTI." West Texas Intermediate crude oil, which is a light, sweet crude oil, characterized by an American Petroleum Institute gravity, or API gravity, between 39 and 41 and a sulfur content of approximately 0.4 weight percent that is used as a benchmark for other crude oils.

PART I

ITEM 1: BUSINESS

Overview

Parsley Energy, Inc. (either individually or together with its subsidiaries, as the context requires, the "Company," "we," "us" or "our") is an independent oil and natural gas company focused on the acquisition, development and exploitation of unconventional oil and natural gas reserves in the Permian Basin. The Permian Basin is located in West Texas and Southeastern New Mexico and is comprised of three primary sub-areas: the Midland Basin, the Central Basin Platform and the Delaware Basin. These areas are characterized by high oil and liquids-rich natural gas content, multiple vertical and horizontal target horizons, extensive production histories, long-lived reserves and historically high drilling success rates. Our properties are primarily located in the Midland and Delaware Basins and our activities have historically been focused on the vertical development of the Spraberry, Wolfberry and Wolftoka Trends of the Midland Basin. Our vertical wells in the Permian Basin are drilled into stacked pay zones that include the Spraberry, Wolfcamp, Upper Pennsylvanian (Cline), Strawn, Atoka and Mississippian formations. In 2015, we transitioned from primarily vertical development drilling activity to predominantly horizontal development drilling activity.

On May 29, 2014, we completed our initial public offering (the "IPO") of 57.5 million shares of Parsley Energy, Inc.'s Class A Common Stock, par value \$0.01 per share ("Class A Common Stock"), at a price of \$18.50 per share. Approximately 7.5 million of the shares were sold by selling stockholders and we did not receive any proceeds from the sale of those shares. The remaining approximately 50.0 million shares of Class A Common Stock that were sold resulted in gross proceeds of approximately \$924.3 million to us and net proceeds, after deducting underwriting discounts and commissions and offering expenses, of approximately \$867.8 million. A portion of the proceeds from the IPO was used to repay all outstanding borrowings under the revolving credit agreement entered into on September 10, 2013 (as amended, the "Revolving Credit Agreement"), to make a cash payment in settlement of the Preferred Return (as defined herein), to fund the acquisition of certain oil and gas properties and to pay fees and expenses related to the IPO. The remaining proceeds were used to fund a portion of our exploration and development program and for general corporate purposes.

We began operations in August 2008 when we acquired operator rights to wells producing from the Spraberry Trend in the Midland Basin from Joe Parsley, a co-founder of Parker and Parsley Petroleum Company ("Parker and Parsley"). As of December 31, 2015, we continue to operate 37 gross wells. Excluding those legacy 37 wells, as of December 31, 2015, we had an average working interest of 82% in 71 gross (58.2 net) horizontal wells, of which 67 gross (56.7 net) are in the Midland Basin. We operate 99.5% of the wells in which we have an interest and have the rights to develop 142,734 gross (110,967 net) acres in the Permian Basin, with approximately 84,441 net acres located in the Midland Basin. Since we commenced our drilling program in November 2009, we have operated up to 12 rigs simultaneously and averaged four operated rigs for the year ended December 31, 2015. We are currently operating four horizontal rigs and two vertical drilling rigs. The vertical rigs are used primarily to drill the vertical portion of horizontal wells. Our 2016 capital budget contemplates operating three to four horizontal rigs and one to two vertical rigs for 2016.

We intend to grow our reserves and production through the development, exploitation and drilling of our multi-year inventory of identified drilling locations. As of December 31, 2015, we have identified 147 80- and 40-acre potential vertical drilling locations, no 20-acre potential vertical drilling locations and 2,677 potential horizontal drilling locations on our existing acreage, which does not include any locations in our Southern Delaware Basin acreage. We commenced our vertical appraisal drilling program in the Delaware Basin during the first quarter of 2014 and as of the date of this Annual Report, we have drilled and completed three vertical appraisal wells and one horizontal appraisal well. As of December 31, 2015, we had an interest in four gross (1.5 net) wells in this area. We expect to supplement organic growth from our drilling program by proactively leasing additional acreage and selectively pursuing

acquisitions that meet our strategic and financial objectives, with an emphasis on oil-weighted reserves in the Midland Basin.

Our 2016 capital budget for drilling and completion is approximately \$380 million to \$430 million. Our capital budget excludes any amounts that may be paid for acquisitions. For the year ended December 31, 2015, our capital expenditures for drilling and completions were \$400.9 million, as compared to \$491.3 million for the year ended December 31, 2014, excluding, in each period, amounts paid for acquisitions. We expect the average working interest in wells we drill during 2016 will be approximately 90%.

The amount and timing of these capital expenditures is largely discretionary and within our control. We could choose to defer a portion of these planned capital expenditures depending on a variety of factors, including but not limited to the success of our drilling activities, prevailing and anticipated prices for oil and natural gas, the availability of necessary equipment, infrastructure and capital, the receipt and timing of required regulatory permits and approvals, seasonal conditions, drilling and acquisition costs and the level of participation by other interest owners.

The following table summarizes our technically identified horizontal drilling locations in the Permian Basin as of December 31, 2015:

Net Area (1) Acreage