

VAALCO ENERGY INC /DE/
Form 10-K
March 08, 2019

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-K

(Mark One)

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended December 31, 2018

OR

TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from to

Commission file number: 1-32167

VAALCO Energy, Inc.

(Exact name of registrant as specified on its charter)

Delaware 76-0274813
(State or other jurisdiction of (I.R.S. Employer
incorporation or organization) Identification No.)

9800 Richmond Avenue

Suite 700

Houston, Texas 77042

(Address of principal executive offices) (Zip Code)

(Registrant's telephone number, including area code): (713) 623-0801

Securities registered under Section 12(b) of the Exchange Act:

Title of each class	Name of exchange on which registered
Common Stock, \$.10 par value	New York Stock Exchange

Securities registered under Section 12(g) of the Exchange 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 No

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

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 No

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes No

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§ 229.405 of this chapter) 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.

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

Large accelerated filer Accelerated filer Non accelerated filer Smaller reporting company

Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes No

As of June 30, 2018, the aggregate market value of the voting and non-voting common equity of the registrant held by non-affiliates was approximately \$160.0 million based on a closing price of \$2.73 on June 30, 2018.

As of February 27, 2019, there were outstanding 59,595,742 shares of common stock, \$0.10 par value per share, of the registrant.

Documents incorporated by reference: Portions of the definitive Proxy Statement of VAALCO Energy, Inc. relating to the Annual Meeting of Stockholders to be filed within 120 days after the end of the fiscal year covered by this Form 10-K, which are incorporated into Part III of this Form 10-K.

VAALCO ENERGY, INC.

TABLE OF CONTENTS

	Page
<u>Glossary of Oil and Natural Gas Terms</u>	3
<u>PART I</u>	6
<u>Item 1. Business</u>	6
<u>Item 1A. Risk Factors</u>	17
<u>Item 1B. Unresolved Staff Comments</u>	26
<u>Item 2. Properties</u>	26
<u>Item 3. Legal Proceedings</u>	26
<u>Item 4. Mine Safety Disclosures</u>	26
<u>PART II</u>	26
<u>Item 5. Market for Registrant’s Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities</u>	26
<u>Item 6. Selected Financial Data</u>	28
<u>Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations</u>	28
<u>Item 7A. Quantitative and Qualitative Disclosures About Market Risk</u>	37
<u>Item 8. Consolidated Financial Statements and Supplementary Data</u>	37
<u>Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure</u>	37
<u>Item 9A. Controls and Procedures</u>	37
<u>Item 9B. Other Information</u>	40
<u>PART III</u>	40
<u>Item 10. Directors, Executive Officers and Corporate Governance</u>	40
<u>Item 11. Executive Compensation</u>	40
<u>Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters</u>	40
<u>Item 13. Certain Relationships and Related Transactions, and Director Independence</u>	40
<u>Item 14. Principal Accountant Fees and Services</u>	40
<u>PART IV</u>	40
<u>Item 15. Exhibits and Financial Statement Schedules</u>	40
<u>INDEX TO CONSOLIDATED FINANCIAL INFORMATION</u>	40
<u>Item 16. Form 10-K Summary</u>	43

Glossary of Terms

Terms used to describe quantities of oil and natural gas

- Bbl — One stock tank barrel, or 42 United States (“U.S.”) gallons liquid volume, of crude oil or other liquid hydrocarbons.
- BOE — One barrel of oil equivalent, converting natural gas to oil at the ratio of 6 Mcf of natural gas to 1 Bbl of oil. The ratio of six Mcf of natural gas to one Bbl of oil or natural gas liquids is commonly used in the oil and natural gas business and represents the approximate energy equivalency of natural gas to oil or liquids, and does not represent the sales price equivalency of natural gas to oil or liquids.
- BOPD — One barrel of oil per day.
- MBbl — One thousand Bbls.
- MBOE — One thousand barrels of oil equivalent.
- MBOPD — One thousand barrels of oil per day.
- Mcf — One thousand cubic feet of natural gas.
- MMbtu — One million British thermal units, a measure commonly used for natural gas pricing.
- MMcf — One million cubic feet of natural gas.
- MMBbl — One million Bbls.

Terms used to describe legal ownership of oil and natural gas properties, and other terms applicable to our operations

- Carried interest — Working interest (as described below) where the carried interest owner’s share of costs are paid by the non-carried working interest owners. The carried costs are repaid to the non-carried working interest owners from the revenues of the carried working interest owner.
- Gabon — Republic of Gabon.
- Consortium — A consortium of four companies granted rights and obligations in the Etame Marin block offshore Gabon under a Production Sharing Contract with Gabon.
- PSC — A production sharing contract; Etame PSC is the Etame Production Sharing Contract, as amended, and as it may be further amended, that we have entered into with Gabon, related to the Etame Marin block located offshore Gabon.
- FPSO — A floating, production, storage and offloading vessel.
- Participating interest — Working interest (as defined below) attributable to a non-carried interest owner adjusted to include its relative share of the benefits and obligations attributable to carried working interest owners.
- Royalty interest — A real property interest entitling the owner to receive a specified portion of the gross proceeds of the sale of oil and natural gas production or, if the conveyance creating the interest provides, a specific portion of oil and natural gas produced, without any deduction for the costs to explore for, develop or produce the oil and natural gas.
- Working interest — A real property interest entitling the owner to receive a specified percentage of the proceeds of the sale of oil and natural gas production or a percentage of the production, but requiring the owner of the working interest to bear the cost to explore for, develop and produce such oil and natural gas. A working interest owner who owns a portion of the working interest may participate either as operator or by voting his percentage interest to approve or disapprove the appointment of an operator and drilling and other major activities in connection with the development and operation of a property.

Terms used to describe interests in wells and acreage

- Gross oil and natural gas wells or acres — Gross wells or gross acres represent the total number of wells or acres in which a working interest is owned, before consideration of the ownership percentage.
- Net oil and natural gas wells or acres — Determined by multiplying “gross” wells or acres by the owned working interest.

Terms used to classify reserve quantities

- Proved developed oil and natural gas reserves — Developed oil and natural gas reserves are reserves of any category 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 to the cost of a new well; and

3

(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 oil and natural gas reserves — Proved oil and natural gas reserves are 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.

(i) The area of the reservoir considered as proved includes:

(A) The area identified by drilling and limited by fluid contacts, if any, and

(B) Adjacent undrilled portions of the reservoir that can, with reasonable certainty, be judged to be continuous with it and to contain economically producible oil or natural gas on the basis of available geoscience and engineering data.

(ii) In the absence of data on fluid contacts, proved quantities in a reservoir are limited by the lowest known hydrocarbons (LKH) as seen in a well penetration unless geoscience, engineering, or performance data and reliable technology establishes a lower contact with reasonable certainty.

(iii) Where direct observation from well penetrations has defined a highest known oil (HKO) elevation and the potential exists for an associated natural gas cap, proved oil reserves may be assigned in the structurally higher portions of the reservoir only if geoscience, engineering, or performance data and reliable technology establish the higher contact with reasonable certainty.

(iv) Reserves which can be produced economically through application of improved recovery techniques (including, but not limited to, fluid injection) are included in the proved classification when:

(A) Successful testing by a pilot project in an area of the reservoir with properties no more favorable than in the reservoir as a whole, the operation of an installed program in the reservoir or an analogous reservoir, or other evidence using reliable technology establishes the reasonable certainty of the engineering analysis on which the project or program was based; and

(B) The project has been approved for development by all necessary parties and entities, including governmental entities.

(v) Existing economic conditions include prices and costs at which economic producibility from a reservoir is to be determined. The price shall be the average price during the 12-month period prior to the ending date of the period covered by the report, determined as an unweighted arithmetic average of the first-day-of-the-month price for each month within such period, unless prices are defined by contractual arrangements, excluding escalations based upon future conditions.

· Reserves — Reserves are 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 projects 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.

· Proved undeveloped oil and natural gas reserves — Proved undeveloped oil and natural gas reserves are 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.

(i) 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.

(ii) Undrilled locations can be classified as having proved 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.

(iii) 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.

· Unproved properties — Properties with no proved reserves.

Terms used to assign a present value to reserves

- Standardized measure — The standardized measure of discounted future net cash flows (“standardized measure”) is the present value, discounted at an annual rate of 10%, of estimated future net revenues to be generated from the production of proved reserves, determined in accordance with the rules and regulations of the Securities and Exchange Commission (“SEC”), using the 12-month unweighted average of first-day-of-the-month Brent prices adjusted for historical marketing differentials, (the “12-month average”), without giving effect to non–property related expenses such as certain general and administrative expenses, debt service, derivatives or to depreciation, depletion and amortization.

Terms used to describe seismic operations

- Seismic data — Oil and natural gas companies use seismic data as their principal source of information to locate oil and natural gas deposits, both to aid in exploration for new deposits and to manage or enhance production from known reservoirs. To gather seismic data, an energy source is used to send sound waves into the subsurface strata. These waves are reflected back to the surface by underground formations, where they are detected by geophones which digitize and record the reflected waves. Computers are then used to process the raw data to develop an image of underground formations.
- 2-D seismic data. — 2-D seismic survey data has been the standard acquisition technique used to image geologic formations over a broad area. 2-D seismic data is collected by a single line of energy sources which reflect seismic waves to a single line of geophones. When processed, 2-D seismic data produces an image of a single vertical plane of sub-surface data.
- 3-D seismic data — 3-D seismic data is collected using a grid of energy sources, which are generally spread over several miles. A 3-D survey produces a three dimensional image of the subsurface geology by collecting seismic data along parallel lines and creating a cube of information that can be divided into various planes, thus improving visualization. Consequently, 3-D seismic data is a more reliable indicator of potential oil and natural gas reservoirs in the area evaluated.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K (this “Annual Report”) includes “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”) which are intended to be covered by the safe harbors created by those laws. We have based these forward-looking statements on our current expectations and projections about future events. These forward-looking statements include information about possible or assumed future results of our operations. All statements, other than statements of historical facts, included in this Annual Report that address activities, events or developments that we expect or anticipate may occur in the future, including without limitation, statements regarding our financial position, operating performance and results, reserve quantities and net present values, market prices, business strategy, derivative activities, the amount and nature of capital expenditures and plans and objectives of management for future operations are forward-looking statements. When we use words such as “anticipate,” “believe,” “estimate,” “expect,” “intend,” “forecast,” “outlook,” “aim,” “target,” “will,” “could,” “should,” “may,” “probably,” the negative of such terms or similar expressions, we are making forward-looking statements. Many risks and uncertainties that could affect our future results and could cause results to differ materially from those expressed in our forward-looking statements include, but are not limited to:

- volatility of, and declines and weaknesses in oil and natural gas prices;
- the discovery, acquisition, development and replacement of oil and natural gas reserves;
- future capital requirements;
- our ability to maintain sufficient liquidity in order to fully implement our business plan;
- our ability to generate cash flows that, along with our cash on hand, will be sufficient to support our operations and cash requirements;
- our ability to attract capital;
-

our ability to resolve satisfactorily matters related to our exit from Angola, including our obligations to pay the amount, as it is ultimately determined, of our liabilities to Sonangol E.P. with respect to our production sharing contract;

- our ability to pay the expenditures required in order to develop certain of our properties offshore Equatorial Guinea;
- operating hazards inherent in the exploration for and production of oil and natural gas;
- difficulties encountered during the exploration for and production of oil and natural gas;
- the impact of competition;
- weather conditions;
- the uncertainty of estimates of oil and natural gas reserves;
- currency exchange rates and regulations;
- unanticipated issues and liabilities arising from non-compliance with environmental regulations;

- the ultimate resolution of our abandonment funding obligations with the government of Gabon and the audit of our operations in Gabon currently being conducted by the government of Gabon;
- the availability and cost of seismic, drilling and other equipment;
 - difficulties encountered in measuring, transporting and delivering oil to commercial markets;
- timing and amount of future production of oil and natural gas;
- hedging decisions, including whether or not to enter into derivative financial instruments;
- our ability to effectively integrate assets and properties that we acquire into our operations;
- general economic conditions, including any future economic downturn, disruption in financial markets and the availability of credit;
- our ability to enter into new customer contracts;
- changes in customer demand and producers' supply;
- actions by the governments of and events occurring in the countries in which we operate;
- actions by our joint venture owners;
- compliance with, or the effect of changes in, governmental regulations regarding our exploration, production, and well completion operations including those related to climate change;
- the outcome of any governmental audit; and
- actions of operators of our oil and natural gas properties.

The information contained in this Annual Report, including the information set forth under the heading "Item 1A. Risk Factors," identifies additional factors that could cause our results or performance to differ materially from those we express in forward-looking statements. Although we believe that the assumptions underlying our forward-looking statements are reasonable, any of these assumptions and therefore also the forward-looking statements based on these assumptions, could themselves prove to be inaccurate. In light of the significant uncertainties inherent in the forward-looking statements which are included in this Annual Report, our inclusion of this information is not a representation by us or any other person that our objectives and plans will be achieved. When you consider our forward-looking statements, you should keep in mind these risk factors and the other cautionary statements in this Annual Report.

Our forward-looking statements speak only as of the date made, and reflect our best judgment about future events and trends based on the information currently available to us. Our results of operations can be affected by inaccurate assumptions we make or by risks and uncertainties known or unknown to us. Therefore, we cannot guarantee the accuracy of the forward-looking statements. Actual events and results of operations may vary materially from our current expectations and assumptions. Our forward-looking statements, express or implied, are expressly qualified in their entirety by this "Special Note Regarding Forward-Looking Statements," which constitute cautionary statements. These cautionary statements 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 occurring after the date of this Annual Report.

EXPLANATORY NOTE-RESTATEMENT OF FINANCIAL INFORMATION

This Annual Report on Form 10-K for the year ended December 31, 2018 includes a restated balance sheet as of September 30, 2018. See Item 8, "Financial Statements and Supplementary Data" and Item 9A, "Controls and Procedures," in Part II of this Annual Report on Form 10-K, including Notes 2 and 16 of the notes to the Consolidated Financial Statements, for more information concerning this restatement. We do not plan to amend our previously filed Form 10-Q for the quarter ended September 30, 2018 in connection with this restatement. The financial information that has been previously filed or otherwise reported for this period is superseded by the information included in this Annual Report on Form 10-K.

PART I

Item 1. Business

BACKGROUND

VAALCO Energy, Inc. is a Delaware corporation, incorporated in 1985 and headquartered at 9800 Richmond Avenue, Suite 700, Houston, Texas 77042. Our telephone number is (713) 623-0801 and our website address is www.vaalco.com. As used in this Annual Report, the terms, “we,” “us,” “our,” the “Company” and “VAALCO” refer to VAALCO Energy, Inc. and its consolidated subsidiaries, unless the context otherwise requires.

We are a Houston, Texas-based independent energy company engaged in the acquisition, exploration, development and production of crude oil. Our primary source of revenue has been from the Etame PSC related to the Etame Marin block located offshore Gabon in

West Africa. We also currently own interests in an undeveloped block offshore Equatorial Guinea, West Africa. Our consolidated subsidiaries are VAALCO Gabon (Etame), Inc., VAALCO Production (Gabon), Inc., VAALCO Gabon S.A., VAALCO Angola (Kwanza), Inc., VAALCO UK (North Sea), Ltd., VAALCO International, Inc., VAALCO Energy (EG), Inc., VAALCO Energy Mauritius (EG), Limited and VAALCO Energy (USA), Inc.

STRATEGY

We own producing properties and conduct operating activities offshore West Africa with a focus on maximizing the value of our Gabon resources and expanding into new development opportunities across Africa. Our financial results are heavily dependent upon the margins between prices received for our offshore Gabon oil production and the costs to find and produce such oil. In light of the volatility of oil prices over the past several years, we have focused on maximizing our margins by reducing costs, paying off debt, divesting non-core assets, minimizing capital expenditures and maintaining our existing production at optimal levels. On September 25, 2018, the term of the Etame PSC with Gabon related to the Etame Marin block located offshore Gabon was extended through 2028 with options to extend up to an additional ten years (“PSC Extension”). The PSC Extension provides us with the extended time horizon necessary to pursue developing the resources we have identified at Etame. As a result of these efforts, our financial position has improved, and we believe that we have working capital sufficient to sustain current operations and fund development projects on our Etame license in Gabon. In combination with improved oil pricing and positive production performance, the PSC Extension enabled us to increase proved reserves during 2018 by 76% to 5.4 MMBbls at December 31, 2018 which include reserves for wells we are drilling in 2019. We are seeking to further increase production and reserves by pursuing accretive growth opportunities where we can leverage our proven technical and operational capabilities in areas where we have established favorable relationships with host governments and local joint venture owners.

Our strategy is to create long-term value for all stakeholders by focusing on profitable growth from low-risk reserve development while maintaining financial discipline. Specifically, we seek to:

- Focus on maintaining production and lowering costs to increase margins and preserve optionality to capitalize on an increase in prices;
- Manage capital expenditures related to our Etame 2019 drilling program so that expenditures can be funded by cash on hand and cash from operations;
- Continue our focus on operating safely and complying with internationally accepted environmental operating standards;
- Optimize production through careful management of wells and infrastructure, including minimizing downtime;
- Maximize our cash flow and income generation;
 - Continue planning for additional development in Etame as well as future exploration and development in Equatorial Guinea;
- Preserve a strong balance sheet by maintaining conservative leverage ratios and exhibiting financial discipline;
- Opportunistically hedge against exposures to changes in oil prices; and
- Actively pursue strategic, value-accretive mergers and acquisitions of similar properties to diversify our portfolio of producing assets.

We believe that we have strong management and technical expertise specific to West Africa, and that our strengths include:

- Our reputation as a safe and efficient operator in Africa;
- Our history of establishing favorable operating relationships with host governments and local joint venture owners;
- Our subsurface knowledge of key plays and risks in the broader regional framework of discoveries and fields;
- Our operational capacity to take on new development projects;
- Our familiarity with local practices and infrastructure; and
- Our market intelligence to provide early insight into available opportunities.

SEGMENT AND GEOGRAPHIC INFORMATION

For operating segment and geographic financial information, see Note 5 to the Financial Statements. Our only reportable operating segments are Gabon and Equatorial Guinea.

Gabon Segment

Offshore – Etame Marin Block

Our most significant asset, which accounts for approximately 100% of our current revenues, is the Etame PSC related to the Etame Marin block located offshore Gabon. The Etame Marin block covers an area of approximately 46,200 gross acres located 20 miles offshore in water depths of approximately 250 feet. The Etame, Avouma/South Tchibala, Ebouri, Southeast Etame and North Tchibala fields are included in the block. Our working interest in the Etame Marin block is 31.1%, and we are designated as the operator on behalf of a consortium of four companies (which we refer to as the “Consortium”). The fields are subject to a 7.5% back-in carried interest by the government of Gabon, which they have assigned to a third party. Our working interest decreases to 30.3% in June 2026 when the back-in carried interest increases to 10%.

Fields in the Etame Marin block. There are currently five producing fields in the Etame Marin block: the Etame field which currently has five producing wells; the Avouma/South Tchibala field which currently has three producing wells; the Ebouri field which currently has one producing well; the Southeast Etame field which currently has one producing well and the North Tchibala field which has two wells producing from the Dentale formation.

Development. Following the installation of the platform for the Etame field and the platform for the Southeast Etame/North Tchibala fields in 2014, we commenced a multi-well drilling campaign which brought on five new wells in 2015. In February 2016, due to the continuing low commodity prices, we released the rig and incurred expenses of \$7.9 million in 2016, net to us, related to its demobilization and early release. These expenses are reflected in “Other operating expenses” in the Financial Statements. See also “Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations – Results of Operations – Year Ended December 31, 2017 Compared to Year Ended December 31, 2016.”

On November 22, 2016, we closed on the purchase of an additional 2.98% working interest (3.23% participating interest) in the Etame Marin block from Sojitz Etame Limited (“Sojitz”), which had an effective date of August 1, 2016. See Note 4 of the Financial Statements for further discussion.

Periodically, we perform workovers on our wells to maintain or restore production. In May 2018 we mobilized a hydraulic workover unit to the Avouma platform to replace the electronic submersible pump (“ESP”) systems in the Avouma 2-H and the South Tchibala 1-HB wells and restored production to both wells in June 2018. While the hydraulic workover unit was on location, we decided to pro-actively replace the ESPs in the South Tchibala 2-H well to upgrade the system to those just installed in the other two wells. Since completion of the Avouma workovers in 2018, the new ESP systems have operated continuously as designed. Excluding the Avouma platform wells, the wells with ESPs on our three other platforms have operated without incident for up to four years.

As discussed in Note 9, the PSC Extension requires the Consortium to drill two wells and two appraisal well bores by September 16, 2020. The Consortium is planning to drill the two wells and two appraisal well bores during the second half of 2019. The Consortium may drill a third well as part of this drilling campaign.

Our current net production is averaging approximately 3,752 BOPD, up from a 3,500 BOPD average for fiscal year 2017 as a result of the workovers performed in 2018.

At December 31, 2018, we had estimated net proved reserves of 5.4 MMBbls. For 2018, our proved reserve additions of 3.7 MMBbl were equal to 270% of our 2018 Gabon production, as reflected in the reserve report issued by our independent petroleum engineering firm, Netherland, Sewell & Associates, Inc. (“NSAI”). We added 1.1 MMBbls of reserves through reservoir performance additions and proved undeveloped reserves, 2.2 MMBO as a result of the PSC Extension and 0.4 MMBbls through positive pricing revisions. The increase in the average of the first-day-of-the-month prices adjusted for quality, transportation fees and market differentials required by SEC rules to determine reserves, was from \$53.49 for the 2017 year-end report to \$70.83 for the 2018 year-end report.

For 2018, our total proved reserves replacement was 270% of our 2018 total net production in Gabon. See “— Reserve Information” below. These results occurred primarily due to (i) better-than-forecasted results for production and (ii) increased crude oil prices.

Production. Production operations in the Etame Marin block include nine platform wells, plus three subsea wells across all fields tied back by pipelines to deliver oil and associated natural gas through a riser system to allow for delivery, processing, storage and ultimately offloading the oil from a leased FPSO vessel anchored to the seabed on the block. Production from seven of our wells is aided by ESPs. We currently have twelve producing wells. The FPSO has production limitations of approximately 25,000 BOPD and 30,000 barrels of total fluids per day. For the years ended December 31, 2018, 2017 and 2016, aggregate production from the block was approximately 5.1 MMBbls (1.4 MMBbls net to us), 5.6 MMBbls (1.5 MMBbls net to us) and 6.2 MMBbls (1.5 MMBbls net to us),

respectively. Our net share of barrels produced reflects an allocation of cost oil and profit oil after reduction for a royalty of approximately 13%.

Hydrogen Sulfide Impact

Four of our wells are currently shut-in for safety and marketability reasons because of high levels of hydrogen sulfide (“H₂S”). These wells have been excluded from the above-referenced well count. To re-establish and maximize production from the impacted areas, additional capital investment will be required, including the construction of one or more processing facilities capable of removing H₂S, the recompletion of the temporarily abandoned wells and the potential drilling of additional wells. Previously, these identified processing facilities were not economic; however, the Consortium will be re-evaluating this during 2019. As of December 31, 2018, we had no proved reserves booked for the wells impacted by high levels of H₂S.

Exploration

At December 31, 2018, we had \$13.7 million in undeveloped leasehold costs related to the Etame Marin block. These costs are associated with the exploitation area expansion related to the PSC Extension.

Abandonment Costs

Under the PSC terms, the Consortium has agreed to a cash funding arrangement for the eventual abandonment of all offshore wells, platforms and facilities on the Etame Marin block. We are required under the Etame PSC to conduct abandonment studies to update the amounts being funded for the eventual abandonment of the offshore wells, platforms and facilities on the Etame Marin block. The current abandonment study was completed in November 2018 resulting in estimated gross abandonment costs of approximately \$61.8

million (\$19.2 million, net to VAALCO) on an undiscounted basis. Through December 31, 2018, \$37.4 million (\$11.6 million, net to VAALCO) on an undiscounted basis has been funded. The annual abandonment cost requirements net to VAALCO are expected to be \$0.8 million for 2019 through 2028. Amounts paid are reimbursable through the Cost Account and are non-refundable. Our estimated liabilities for the abandonment of these Gabon offshore facilities as of December 31, 2018 and 2017 were \$14.8 million and \$20.2 million, respectively, which are included in the total "Asset retirement obligation" line item on our consolidated balance sheets as of December 31, 2018 and 2017. Initial recording of this liability is offset by a corresponding capitalization of asset retirement costs reflected under "Property and equipment – successful efforts method" in the line item "Wells, platforms and other production facilities" on our consolidated balance sheets as of December 31, 2018 and 2017.

Equatorial Guinea Segment

We have a 31% working interest in an undeveloped portion of a block offshore Equatorial Guinea that we acquired in 2012 (the "Block P interest"). For a number of years, the Block P interest was in suspension; however, in September 2018, the Ministry of Mines and Hydrocarbons lifted the suspension. We are awaiting the Ministry of Mines and Hydrocarbons (the "EG MMH") to approve our appointment as technical operator for Block P. Compania Nacional de Petroleos de Guinea Equatorial ("GEPetrol") will act as the administrative operator. Under the terms of lifting of the suspension, a new joint owner is expected to assume GEPetrol's working interest obligations and be presented to the EG MMH by March 28, 2019. Once the joint owner is approved, we are required to drill one exploration well within one year. While there is no monetary penalty for failing to meet the terms of the lifting of the suspension, we would lose our interest in the license, and the associated capitalized unproved leasehold costs of \$10.0 million as of December 31, 2018 would become impaired. We and our joint venture owners are evaluating the timing and budgeting for development and exploration activities under a development and production area in the block, including the approval of a development and production plan. Our production sharing contract covering this development and production area provides for a development and production period of 25 years from the date of approval of a development and production plan.

Organization of Petroleum Exporting Countries ("OPEC") Production Reductions

During 2017 and 2018, Gabon, as a member of OPEC, agreed to reduce its production by up to 9,000 Bbl per day. As a result of natural production declines, production in 2017 and 2018 was not impacted by this agreement. In December 2018, OPEC decided to further reduce overall production by 0.8 MBOPD for the first six months of 2019 versus the October 2018 levels. We have not been advised whether this will require us to reduce production for 2019. We do not expect our production or drilling plans will be impacted by the agreement because of natural declines in production and because production from the new wells would not occur until later in 2019. Nevertheless, there can be no assurance that this agreement or future agreements would not result in limitations on our production.

DRILLING ACTIVITY

We have had no drilling activity during the period from January 1, 2016 through December 31, 2018. As discussed above, we are planning to drill up to two to three wells, and two appraisal well bores during 2019 at the Etame Marin block.

ACREAGE AND PRODUCTIVE WELLS

Below is the total acreage under lease or covered by the PSC and the total number of productive oil and natural gas wells as of December 31, 2018:

Acreage in thousands	International	
	Gross	Net
Developed acreage	28.7	8.9
Undeveloped acreage	74.5	23.1 (1)
Total acreage	103.2	32.0

Productive oil wells 12.0 (2) 3.7

(1) We have net undeveloped acreage of 5,400 acres offshore Gabon and 17,700 acres offshore Equatorial Guinea.

(2) Excludes the Etame 8-H, the Etame 5-H and two Ebouri field wells shut-in due to the presence of high levels of H₂S.

RESERVE INFORMATION

Estimated Reserves and Estimated Future Net Revenues

Reserve Data

In accordance with the current guidelines of the SEC, estimates of future net cash flow from our properties and the present value thereof are made using an unweighted, arithmetic average of the first-day-of-the-month price for each of the 12 months of the year adjusted for quality, transportation fees and market differentials. Such prices are held constant throughout the life of the properties except where such guidelines permit alternate treatment, including the use of fixed and determinable contractual price escalations. For

2018, the average of such price used for our reserve estimates was \$70.83 per Bbl for crude oil from Gabon. This compares to the average of such price used for 2017 of \$53.49 per Bbl.

Reserves reported below consist of net proved reserves related to the Etame Marin block located offshore Gabon in West Africa. There have been no estimates of total proved net oil or natural gas reserves filed with or included in reports to any federal authority or agency other than the SEC since the beginning of the last fiscal year. The table below sets forth our estimated net proved reserve quantities for the years ended December 31, 2018, 2017, and 2016 as prepared by NSAI, independent petroleum engineers.

	As of December 31,		
	2018	2017	2016
	(in thousands)		
Crude oil			
Proved developed reserves (MBbls)	3,388	3,049	2,642
Proved undeveloped reserves (MBbls)	1,982	—	—
Total proved reserves (MBbls)	5,370	3,049	2,642
Standardized Measure and Changes in Proved Reserves			

The following table shows changes in total proved reserves for all presented years:

	Proved Reserves		
	Crude Oil	Natural Gas	Oil Equivalent
	(MBbls)	(MMCF)	(MBOE)
	(in thousands)		
Balance at January 1, 2016	2,855	1,053	3,031
Production	(1,518)	(124)	(1,539)
Purchases of minerals in place	308	—	308
Sales of minerals in place	(12)	(929)	(167)
Revisions of previous estimates	1,009	—	1,009
Balance at December 31, 2016	2,642	—	2,642
Production	(1,518)	—	(1,518)
Revisions of previous estimates	1,925	—	1,925
Balance at December 31, 2017	3,049	—	3,049
Production	(1,369)	—	(1,369)
Additions associated with PSC extension	2,235	—	2,235
Revisions of previous estimates	1,455	—	1,455
Balance at December 31, 2018	5,370	—	5,370

Standardized measure of discounted future net cash flows as of December 31, 2018 \$ 80,057 \$ 22,490 \$ 9,441

The information set forth in the foregoing tables includes revisions for certain reserve estimates attributable to proved properties included in preceding years' estimates. Such revisions are the result of additional information from subsequent completions and production history from the properties involved or the result of an increase or decrease in the projected economic life of such properties resulting from changes in product prices. Crude oil amounts shown for Gabon are recoverable under a PSC, and the reserves in place at the end of the contract remain the property of the Gabon government. The reserves at the end of the contract are not included in the table above.

We do not reflect proved reserves on discoveries in our reserve estimates until such time as a development plan has been prepared and approved by our joint owners and the government, where applicable. The proved undeveloped reserves at December 31, 2018 in the table above are related to the two wells which the Consortium plans to drill in 2019.

In 2018, we replaced 270% of production by adding a total of 3.7 MMBbls of proved reserves including 2.2 MMBbls of proved reserves additions as a result of extending the Etame PSC in Gabon. VAALCO also added 1.1 MMBbls of proved reserves as a result of improved reservoir performance and another 0.4 MMBbls of proved reserves as a result of higher oil pricing.

The upward revision of the previous estimates of proved reserves in 2017 were primarily a result of improved well performance and to a lesser degree the higher average crude oil prices.

The upward revision of the previous estimates of proved reserves in 2016 was primarily a result of improved well performance and lower costs. Purchases of minerals in place in 2016 was related to the additional 2.98% working interest in the Etame Marin block we acquired from Sojitz in November 2016. The lower average crude oil price used for 2016 estimates only partially offset the favorable

impacts of well performance, operating cost reductions, and the other factors. Sales of minerals in place in 2016 was related to the sale of the Hefley field in the U.S. in December 2016.

There are numerous uncertainties inherent in estimating quantities of proved reserves and in projecting future rates of production and timing of development expenditures, including many factors beyond our control. Reserve engineering is a subjective process of estimating underground accumulations of oil and natural gas that cannot be measured in an exact manner, and the accuracy of any reserve estimate is a function of the quality of available data and of engineering and geological interpretation and judgment. The quantities of oil and natural gas that are ultimately recovered, production and operating costs, the amount and timing of future development expenditures and future oil and natural gas sales prices may all differ from those assumed in these estimates. The standardized measure of discounted future net cash flows should not be construed as the current market value of the estimated oil and natural gas reserves attributable to our properties.

Historically, we have reviewed on an annual basis all of our proved undeveloped reserves (“PUDs”) to ensure an appropriate plan for development exists. At December 31, 2018, we had PUDs associated with the two wells which the Consortium plans to drill in 2019. As a result of crude oil prices in 2017 and 2016, our PUDs were uneconomic to develop at prices calculated in accordance with SEC guidelines. Accordingly, we had no PUDs recorded at December 31, 2017 and 2016.

Controls over Reserve Estimates

Our policies and practices regarding internal controls over the recording of reserves is structured to objectively and accurately estimate our oil and natural gas reserves quantities and present values in compliance with SEC regulations and generally accepted accounting principles in the U.S. (“GAAP”). Compliance with these rules and regulations with respect to our reserves is the responsibility of a reservoir engineer, who is our principal engineer. Our principal engineer has over 20 years of experience in the oil and natural gas industry, including over 10 years as a reserve evaluator and trainer, and is a qualified reserves estimator, as defined by the Society of Petroleum Engineers’ standards. Further professional qualifications include a Bachelor’s degree in mechanical engineering and Master’s degree in petroleum engineering, extensive internal and external reserve training, and asset evaluation and management. In addition, the principal engineer is an active participant in industry reserve seminars, professional industry groups and is a member of the Society of Petroleum Engineers. The Audit Committee of the Board of Directors meets periodically with management to discuss matters and policies related to reserves.

Our controls over reserve estimation include retaining NSAI as our independent petroleum and geological firm for all years presented. We provide information to NSAI about our oil and natural gas properties which includes, but is not limited to, production profiles, ownership and production sharing rights, prices, costs and future drilling plans. NSAI prepares its own estimates of the reserves attributable to our properties. The reserves estimates shown herein have been independently evaluated by NSAI, a worldwide leader of petroleum property analysis for industry and financial organizations and government agencies. NSAI was founded in 1961 and performs consulting petroleum engineering services under Texas Board of Professional Engineers Registration No. F-2699. Within NSAI, the technical persons primarily responsible for preparing the estimates set forth in the NSAI reserves report incorporated herein are Mr. John R. Cliver and Mr. Zachary R. Long. Mr. Cliver, a Licensed Professional Engineer in the State of Texas, has been practicing consulting petroleum engineering at NSAI since 2009 and has over 5 years of prior industry experience. He graduated from Rice University in 2004 with a Bachelor of Science Degree in Chemical Engineering and from the University of Texas at Austin in 2008 with a Master of Business Administration Degree. Mr. Long, a Licensed Professional Geoscientist in the State of Texas, has been practicing consulting petroleum geoscience at NSAI since 2007 and has over 2 years of prior industry experience. He graduated from University of Louisiana at Lafayette in 2003 with a Bachelor of Science Degree in Geology and from Texas A&M University in 2005 with a Master of Science Degree in Geophysics.

Net Volumes sold, Prices, and Production Costs

Net volumes sold, average sales prices per unit, and production costs per unit for our 2018, 2017, and 2016 operations are shown in the tables below. There were no natural gas sales in 2018 and 2017.

	Year Ended December 31,				
	2018	2017	2016	Oil and	Natural
	Oil and	Oil and	Oil Equivalent	Condensate	Gas(MMcf)
	(MBbl)	(MBbl)	(MBOE)	(MBbl)	
Net production sold					
International	1,442	1,423	1,485	1,485	—
U.S.	—	—	24	3	124
Total production sold	1,442	1,423	1,509	1,488	124

	Year Ended December 31,				
	2018	2017	2016		
	Oil and Condensate (\$/Bbl)	Oil and Condensate (\$/Bbl)	Oil Equivalent (\$/BOE)	Oil and Condensate (\$/Bbl)	Natural Gas(\$/Mcf)
Average sales price					
International	\$ 70.32	\$ 52.58	\$ 40.17	\$ 40.17	\$ —
U.S.	—	—	13.50	23.54	1.95
Overall average sales price	70.32	52.58	39.62	40.13	1.95

	Year Ended December 31,		
	2018	2017	2016
Average production expense per MBOE			
International	\$ 28.03	\$ 27.90	\$ 25.22
U.S.	—	—	5.58
Overall average production expense	28.03	27.90	24.91

DISCONTINUED OPERATIONS-ANGOLA

On September 30, 2016, we notified Sonangol P&P, our joint venture owners, that we were withdrawing from the joint operating agreement effective October 31, 2016. Further to our decision to withdraw from Angola, we have closed our office in Angola and do not intend to conduct future activities in Angola. As a result of this strategic shift, the Angola segment has been classified as discontinued operations in the Financial Statements for all periods

presented. See “Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations – Discontinued Operations - Angola.”

AVAILABLE INFORMATION

We file annual, quarterly and current reports, proxy statements and other information with the SEC. Our SEC filings are available to the public at the SEC’s website at www.sec.gov.

You may also obtain copies of our annual, quarterly and current reports, proxy statements and certain other information filed with the SEC, as well as amendments thereto, free of charge from our website at www.vaalco.com. No information from either the SEC’s or our website is incorporated by reference herein. We have placed on our website copies of charters for our Audit Committee, Compensation Committee and Nominating and Corporate Governance Committee as well as our Code of Business Conduct and Ethics, Corporate Governance Principles and Code of Ethics for the CEO and Senior Financial Officers. Stockholders may request a printed copy of these governance materials by writing to the Corporate Secretary, VAALCO Energy, Inc., 9800 Richmond Avenue, Suite 700, Houston, Texas 77042.

CUSTOMERS

For the years ended December 31, 2018, 2017 and 2016, we sold our crude oil production from Gabon under a term contract with pricing based upon an average of Dated Brent in the month of lifting, adjusted for location and market factors. The contracted purchaser was Glencore Energy UK Ltd. (“Glencore”) for these periods and through January 2019. Sales of oil to Glencore were approximately 100% of revenues sold to customers for 2018. We have signed a new contract with Mercuria Energy Trading SA which covers sales from February 2019 through January 2020.

The terms of the Etame PSC includes provisions for payments to the government of Gabon for: royalties based on 13% of production at the published price and a shared portion of “Profit Oil” determined based on daily production rates, as well as a gross carried working interest of 7.5% (increasing to 10% beginning June 20, 2026) for all costs. Prior to February 1, 2018, the government of Gabon did not take any of its share of Profit Oil in-kind. Beginning February 1, 2018, the government of Gabon elected to take its Profit Oil in-kind with the only lifting made in September 2018.

EMPLOYEES

As of December 31, 2018, we had 108 full-time employees, 75 of whom were located in Gabon. We are not subject to any collective bargaining agreements, although some of the national employees in Gabon are members of the NEOP (National Organization of Petroleum Workers) union. We believe relations with our employees are satisfactory.

COMPETITION

The oil and natural gas industry is highly competitive. Competition is particularly intense from other independent operators and from major oil and natural gas companies with respect to acquisitions and development of desirable oil and natural gas properties and licenses, and contracting for drilling equipment. There is also competition for the hiring of experienced personnel. In addition, the

drilling, producing, processing and marketing of oil and natural gas is affected by a number of factors beyond our control which may delay drilling, increase prices and have other adverse effects which cannot be accurately predicted.

Our competition for acquisitions, exploration, development and production includes the major oil and natural gas companies in addition to numerous independent oil companies, individual proprietors, investors and others. Many of these competitors have financial and technical resources and staff that are substantially larger than ours. As a result, our competitors may be able to pay more for desirable oil and natural gas assets, or to evaluate, bid for and purchase a greater number of properties and licenses than our financial or personnel resources will permit. Furthermore, these companies may also be better able to withstand the financial pressures of lower commodity prices, unsuccessful wells, volatility in financial markets and generally adverse global and industry-wide economic conditions. These companies may also be better able to absorb the burdens resulting from changes in relevant laws and regulations, which may adversely affect our competitive position. Our ability to generate reserves in the future will depend on our ability to select and acquire suitable producing properties and/or developing prospects for future drilling and exploration.

INSURANCE

For protection against financial loss resulting from various operating hazards, we maintain insurance coverage, including insurance coverage for certain physical damage, blowout/control of a well, comprehensive general liability, worker's compensation and employer's liability. We maintain insurance at levels we believe to be customary in the industry to limit our financial exposure in the event of a substantial environmental claim resulting from sudden, unanticipated and accidental discharges of certain prohibited substances into the environment. Such insurance might not cover the complete claim amount and would not cover fines or penalties for a violation of environmental law. We are not fully insured against all risks associated with our business either because such insurance is unavailable or because premium costs are considered uneconomic. A material loss not fully covered by insurance could have an adverse effect on our financial position, results of operations or cash flows.

REGULATORY

General

Our operations and our ability to finance and fund our operations and growth are affected by political developments and laws and regulations in the areas in which we operate. In particular, oil and natural gas production operations and economics are affected by:

- change in governments;
- civil unrest;
- price and currency controls;
- limitations on oil and natural gas production;
- tax, environmental, safety and other laws relating to the petroleum industry;
- changes in laws relating to the petroleum industry;
- changes in administrative regulations and the interpretation and application of administrative rules and regulations; and
- changes in contract interpretation and policies of contract adherence.

In any country in which we may do business, the oil and natural gas industry legislation and agency regulation are periodically changed, sometimes retroactively, for a variety of political, economic, environmental and other reasons. Numerous governmental departments and agencies issue rules and regulations binding on the oil and natural gas industry, some of which carry substantial penalties for the failure to comply. The regulatory burden on the oil and natural gas industry increases our cost of doing business and our potential for economic loss.

Gabon

Our exploration and production activities offshore Gabon are subject to Gabonese regulations. Failure to comply with these laws and regulations may result in the suspension or termination of our operations and subject us to administrative, civil and criminal penalties. Moreover, these laws and regulations could change in ways that could substantially increase our costs or affect our operations. The following is a summary of certain applicable regulatory frameworks in Gabon.

In 2014, a new Hydrocarbons Law entered into force to regulate oil and gas activities in Gabon. It repealed some prior laws relating to oil activities as well as all contradictory regulations contained in the remaining non-repealed laws of the oil and gas sector.

Pursuant to the Hydrocarbons Law, petroleum resources in Gabon are the property of the Gabon and petroleum companies undertake operations on behalf of the Government of Gabon. In order to conduct petroleum operations, oil and gas companies must enter into a hydrocarbons agreement, typically an exploration and production sharing contract, which is signed on behalf of Gabon by the Minister in charge of Hydrocarbons and the Minister in charge of Economy. Such agreement is subject to enactment by Presidential Decree, and its provisions must conform to the Hydrocarbons Law, subject to being null and void.

Furthermore, under Article 260 of the 2014 Hydrocarbons Law, all oil and gas companies, even those carrying out operations under the previous legal framework, must make payment of two financial contributions set forth in the new Hydrocarbons Law, namely the Investment Diversification Fund (payment of 1% of the Contractor's turnover during the production phase), and the Hydrocarbons

Investment Fund (payment of 2% of the Contractor's turnover during the production phase), within two years of the entry into force thereof. Under Article 260, oil and gas companies must also, within a maximum of one year from publication of the Hydrocarbons Law, set up and domicile the site rehabilitation funds for the Hydrocarbon activities at the Banque des Etats de l'Afrique Centrale or at a Gabonese banking or financial institution.

The Hydrocarbons Law provides for a detailed legal framework in terms of organization of the sector, contents and terms and conditions of hydrocarbons agreements, liability, local content, safety and environment, domestic supply requirements, fiscal terms such as production sharing, royalty, bonuses and other charges, corporate income tax, customs, and local training obligations.

The powers to make many of the day-to-day decisions concerning petroleum activities, including the granting of certain consents and authorizations, remain vested with the Hydrocarbons General Directorate, a government authority. In addition, the national oil company—Société Nationale des Hydrocarbures du Gabon—currently holds, manages and takes participations in petroleum activities on behalf of Gabon. Pursuant to Article 4 of the Hydrocarbons Law, Gabon may acquire an equity stake of up to 20%, at market value, within any companies applying for or already holding an exclusive production authorization. The contractor must carry Gabon in its 20% participating interest in the hydrocarbons agreements during the exploration phase. The parties are free to agree on a higher stake at market value. Further, under Article 86 of the Hydrocarbons Law, the national oil company may also acquire participating interests of up to 15%, at market value.

In addition to general labor regulations, which require that the workforce of any company in Gabon complies with a 90/10 ratio of Gabon national to foreign expatriate workers, pursuant to the Hydrocarbons Law, subcontracting activities are awarded in priority to Gabonese companies in which at least 80% of the workforce consists of Gabonese nationals. In this respect, only technically qualified license holders may be hired as subcontractors.

Under the 2014 Hydrocarbons Law, assignment of interests in production sharing contracts is subject to the Ministry of Hydrocarbons' consent and to Gabon's preemption rights. Foreign companies carrying out production activities under the form of a local branch must incorporate a local company within two years of the entry into force of the Hydrocarbons Law under its Article 254.

With respect to natural gas, Gabon shall enjoy exclusive marketing rights for non-associated gas while any non-commercial share of associated natural gas remains the property of Gabon.

Hydrocarbons agreements entered into prior to the Hydrocarbon Law's publication remain in force until their expiration and should continue to be governed by their own provisions. Our understanding is that the Hydrocarbons Law applies to any issues not expressly dealt with in these contracts' provisions.

Our production sharing contract governing our rights to the Etame Marin block offshore Gabon was entered into before the publication of the Hydrocarbon Law. The Etame PSC contains a stabilization clause, which provides for the stability of the legal, tax, economic and financial conditions in force at the signing of the Etame PSC. Pursuant to the Etame PSC, these conditions may not be adversely altered during the term of the agreement; however, we can make no assurance that the interpretation of the Hydrocarbon Law will not adversely affect our operations or assets in Gabon.

As discussed in “— Segment and Geographic Information—Gabon Segment—Offshore – Etame Marin Block—Production,” production from the Etame block is stored in an FPSO which we lease from a third party. Over the past 15 years, this vessel was imported under a temporary import license. In November 2018, a permanent import license for the FPSO was issued.

Equatorial Guinea

Our exploration and production activities in Equatorial Guinea are subject to the applicable regulations of the country. Failure to comply with these laws and regulations may result in the suspension or termination of our operations and subject us to administrative, civil and criminal penalties. Moreover, these laws and regulations could change in ways that could substantially increase our costs or affect our operations. The following is a summary of certain applicable regulatory frameworks in Equatorial Guinea.

All hydrocarbons existing in Equatorial Guinea's onshore territory, as well as in its sovereign and jurisdictional waters, are Gabon property and part of the public domain. The monetization of such hydrocarbons is to be pursued exclusively by Gabon under its constitution, which reserves the exploitation of mineral and hydrocarbons resources exclusively to Gabon and the public sector. However, the constitution also provides that Gabon can delegate to, grant a concession to or associate itself with private parties for purposes of exploration and production activities in the manner and cases set forth by law.

Private oil companies have been allowed to conduct petroleum operations in Equatorial Guinea through PSCs signed by the minister responsible for petroleum operations on behalf of Gabon. PSCs are subject to ratification by the President of the Republic and become effective only on the date the contractor is notified of presidential ratification. The powers to sign and amend PSCs and supervise their performance belong to the ministry responsible for petroleum operations. In addition, GEPetrol, holds, manages and takes participations in petroleum activities on behalf of Gabon.

In 2006, the Parliament of Equatorial Guinea passed a new hydrocarbons law ("2006 Hydrocarbons Law") which superseded the previous 1981 Hydrocarbons Law, as amended in 2000, incorporating not only the regime applicable to the exploration, appraisal, development and production of hydrocarbons, but also rules on their transportation, distribution, storage, preservation,

decommissioning, refining, marketing, sale and other disposal. The 2006 Hydrocarbons Law contains provisions on a number of aspects concerning exploration and production operations and contracts, such as national content obligations, unitization, transfers and abandonment. The 2006 Hydrocarbons Law has increased the Gabon's benefits under exploration and production contracts and, to a certain extent, has reduced the ability of the minister responsible for petroleum operations to negotiate some contractual terms (e.g. by imposing minimum royalties of 13%).

The 2006 Hydrocarbons Law expressly repeals any conflicting provisions of equal or lower standing, in particular the 1981 Hydrocarbons Law, and provides that all petroleum operations are subject thereto. However, the 2006 Hydrocarbons Law does not amend any conflicting clauses of existing PSCs which continue to govern the performance of petroleum operations. In 2013, the 2006 Hydrocarbons Law was complemented by the Petroleum Regulations, which address in further detail a broad range of matters concerning upstream, midstream and downstream activities.

The Block P PSC was entered into before the publication of the 2006 Hydrocarbons Law and Petroleum Regulations. The Etame PSC contains a stabilization clause, whereby in case the economic balance of Gabon or the contractor under the Etame PSC is materially altered as a result of any change in laws, orders or regulations in Equatorial Guinea, the parties should make the necessary adjustments to the relevant provisions to the Etame PSC, observing the principle that the affected party should be restored to substantially the same economic conditions if such changes had not occurred. However, we can make no assurance that the interpretation of the 2006 Hydrocarbons Law or Petroleum Regulations will not adversely affect our operations or assets in Equatorial Guinea.

ENVIRONMENTAL REGULATIONS

General

Our operations are subject to various federal, state, local and international laws and regulations, including laws and regulations in Gabon and Equatorial Guinea, governing the discharge of materials into the environment or otherwise relating to environmental protection or pollution control. The cost of compliance could be significant. Failure to comply with these laws and regulations may result in the assessment of administrative, civil and criminal penalties, the imposition of remedial and damage payment obligations, or the issuance of injunctive relief (including orders to cease operations). Environmental laws and regulations are complex and have tended to become more stringent over time. We also are subject to various environmental permit requirements. Some environmental laws and regulations may impose strict liability, which could subject us to liability for conduct that was lawful at the time it occurred or for conduct or conditions caused by prior operators or third parties. To the extent laws are enacted or other governmental action is taken that prohibits or restricts drilling or imposes environmental protection requirements that result in increased costs to the oil and natural gas industry in general, our business and financial results could be adversely affected. Although no assurances can be made, we believe that, absent the occurrence of an extraordinary event, compliance with existing laws, rules and regulations regulating the release of materials into the environment or otherwise relating to the protection of the environment will not have a material effect upon our capital expenditures, earnings or competitive position with respect to our existing assets and operations. We cannot predict, however, what effect future environmental regulation or legislation, enforcement policies, or claims for damages to property, employees, other persons, the environment or natural resources could have on us.

In addition, a number of governmental bodies have adopted, have introduced or are contemplating regulatory changes in response to the potential impact of climate change and to the lobbying effects of various climate change non-governmental organizations. Legislation and increased regulation regarding climate change could impose significant costs on us, our venture joint owners, and our suppliers, including costs related to increased energy

requirements, capital equipment, environmental monitoring and reporting, and other costs to comply with such regulations. Given the political significance and uncertainty around the impact of climate change and how it should be dealt with, we cannot predict how legislation and regulation will affect our financial condition and operating performance. In addition, increased awareness and any adverse publicity in the global marketplace about potential impacts on climate change by us or other companies in our industry could harm our reputation or impact the marketability of oil and natural gas. The potential physical impacts of climate change on our operations are highly uncertain and would be particular to the geographic circumstances in areas in which we operate. These may include changes in rainfall and storm patterns and intensities, water shortages, changing sea levels, and changing temperatures. These impacts may adversely impact the cost, production, and financial performance of our operations.

In part because they are developing countries, it is unclear how quickly and to what extent Gabon or Equatorial Guinea will increase their regulation of environmental issues in the future; any significant increase in the regulation or enforcement of environmental issues by Gabon or Equatorial Guinea could have a material effect on us. Developing countries, in certain instances, have patterned environmental laws after those in the U.S., which are discussed below. However, the extent to which any environmental laws are enforced in developing countries varies significantly.

With regards to our development operations offshore West Africa, we are a member of Oil Spill Response Limited (OSRL), a global emergency and oil spill-response organization headquartered in London. OSRL has aircraft and equipment available for dispersant application or equipment transport, including active recovery boom systems and other booms that can be used for offshore or shoreline responses. In addition, OSRL can provide communications equipment, safety equipment, transfer pumps, dispersant application systems, temporary storage equipment, generators, boats and vessels and oiled wildlife equipment.

See “Item 1A. Risk Factors” for further discussion on the impact of these and other regulations relating to environmental protection.

Environmental Regulations in the U.S.

Currently, we conduct no operations in the U.S. and have only inconsequential interests in two U.S. properties. However, our prior operations in the U.S., and any future operations we may conduct in the U.S., may subject us to certain liabilities under U.S. federal, state and local environmental laws and regulations. In the U.S., environmental laws and regulations are administered by the U.S. Environmental Protection Agency (“EPA”) and counterpart state agencies.

These U.S. laws and regulations, as well as state counterparts, generally restrict the level of pollutants emitted to ambient air, discharges to surface water, and disposals or other releases to surface and below-ground soils and ground water. Failure to comply with these laws and regulations may result in the assessment of sanctions, including administrative, civil, and criminal penalties; the imposition of investigatory, remedial, and corrective action obligations or the incurrence of capital expenditures; delays in the permitting, development, or expansion of projects; and the issuance of injunctions restricting or prohibiting some or all of our activities in a particular area. Moreover, multiple environmental laws provide for citizen suits, which allow environmental organizations to act in the place of the government and sue operators for alleged violations of environmental law.

Some of our prior operations on U.S. onshore properties involved hydraulic fracturing activities associated with drilling in shale formations. Hydraulic fracturing has been increasingly the subject of significant focus among many non-governmental organizations and regulators. Hydraulic fracturing requires the use and disposal of water, and public concern has been growing over its possible effects on drinking water supplies, as well as the adequacy of both water supply sources and disposal methods.

Superfund

The federal Comprehensive Environmental Response, Compensation and Liability Act (“CERCLA”), also known as the “Superfund” law, generally imposes joint and several liability for costs of investigation and remediation and for natural resource damages, without regard to fault or the legality of the original conduct, on certain classes of persons with respect to the release into the environment of substances designated under CERCLA as hazardous substances (“Hazardous Substances”). These classes of persons, or so-called potentially responsible parties (“PRPs”), include the current and certain past owners and operators of a facility where there has been a release or threat of release of a Hazardous Substance and persons who disposed of or arranged for the disposal of Hazardous Substances found at a facility. CERCLA also authorizes the EPA and, in some cases, third parties to take actions in response to threats to the public health or the environment and to seek to recover from the PRPs the costs of such action.

Although CERCLA generally exempts “petroleum” from the definition of a Hazardous Substance, in the course of our prior U.S. operations, we may have generated substances that may fall within CERCLA’s definition of a “Hazardous Substance” and may have disposed of these substances at disposal sites owned and operated by others. Also, properties that we own and properties that we may have owned or operated may have been sites on which Hazardous Substances have been released. To our knowledge, neither we nor our predecessors have been designated as a PRP by the EPA under CERCLA; we also do not know of any prior owners or operators of its properties that are named as PRPs related to their ownership or operation of such properties. States such as Texas have comparable statutes which may cover substances (including petroleum) in addition to those covered under CERCLA. In the event soil or groundwater contamination is discovered at a site on which we have been an owner or operator or to which we sent regulated substances, we could be liable for costs of investigation and remediation and damages to natural resources.

The Oil Pollution Act of 1990

The Oil Pollution Act of 1990 (“OPA”), which amends and augments the oil spill provisions of the Clean Water Act (“CWA”) imposes certain duties and liabilities on certain “responsible parties” related to the prevention of oil spills and damages resulting from such spills in or threatening U.S. waters or adjoining shorelines. A liable “responsible party”

includes the owner or operator of a facility, vessel or pipeline that is a source of an oil discharge or that poses the substantial threat of discharge, or in the case of offshore facilities, the lessee or permittee of the area in which a discharging facility is located. OPA assigns joint and several liability, without regard to fault, to each liable party for oil removal costs and a variety of public and private damages. Although defenses exist to the liability imposed by OPA, they are limited. In the event of an oil discharge or substantial threat of discharge, we may be liable for costs and damages. The OPA also imposes ongoing requirements on a responsible party, including proof of financial responsibility to cover at least some costs in a potential spill.

Other Environmental Regulation in the U.S.

In the past, we may have generated wastes, including hazardous wastes that are subject to the federal Resource Conservation and Recovery Act (“RCRA”) and comparable state statutes which may limit disposal options. Although most oil and natural gas wastes are exempt from regulation as a hazardous waste under RCRA at the federal level, not all comparable state statutes have provided the same exemption, and certain wastes that we previously generated may have been subject to RCRA or comparable state statutes.

The CWA and analogous state laws impose restrictions and strict controls regarding the discharge (including spills and leaks) of pollutants, including produced waters and other oil and natural gas wastes as well as fill materials, into state waters and waters of the U.S., a term broadly defined but which remains subject to litigation and rulemaking over its scope.

The Clear Air Act and analogous state laws govern emissions from sources of air pollution. These laws may require new and modified sources of air pollutants to obtain permits prior to commencing construction and may require the installation of stringent control methods.

The Endangered Species Act (“ESA”) was established to protect endangered and threatened species. Pursuant to that act, if a species is listed as threatened or endangered, restrictions may be imposed on activities adversely affecting that species’ habitat. A critical habitat or suitable habitat designation by the U.S. Fish and Wildlife Service could also result in further material restrictions to land use and may materially delay or prohibit land access for oil and natural gas development.

Most environmental laws and regulations provide for fines, penalties and injunctive relief for violations of their requirements. Some laws and regulations also provide for citizen suits, which allow a private citizen to sue to enforce the requirements of the applicable regulatory program.

Item 1A. Risk Factors

Our business faces many risks. You should carefully consider the following risk factors in addition to the other information included in this Annual Report. If any of these risks or uncertainties actually occurs, our business, financial condition and results of operations could be materially adversely affected. Any risks discussed elsewhere in this Annual Report and in our other SEC filings could also have a material impact on our business, financial position or results of operations. Additional risks not presently known to us or which we consider immaterial based on information currently available to us may also materially adversely affect us.

Oil and natural gas prices are highly volatile, and a return to a very depressed price regime for a prolonged period of time will negatively affect our financial results.

Our revenues, cash flow, profitability, oil and natural gas reserves value and future rate of growth are substantially dependent upon prevailing prices for oil and natural gas. Our ability to borrow funds and to obtain additional capital on reasonable terms is also substantially dependent on oil and natural gas prices. Historically, world-wide oil and natural gas prices and markets have been volatile, and may continue to be volatile in the future. In particular, the prices of oil and natural gas declined dramatically in the second half of 2014 and decreased further in 2015 and early 2016. During 2016, the spot price per Bbl of Brent crude oil ranged from a high of \$55 to a low of \$26. During 2017, the spot price per Bbl of Brent crude oil ranged from a high of \$67 to a low of \$44. During 2018, the spot price per Bbl of Brent crude oil ranged from a high of \$86 to a low of \$51. The average price at which we sold our crude oil in 2018 was \$70.32 per Bbl compared to 2017 was \$52.58 per Bbl and \$40.13 per Bbl in 2016. Because the oil price we are required to use by the SEC to estimate our future net cash flows is the average price over the 12 months prior to the date of determination of future net cash flows, the full effect of increasing or falling prices may not be reflected in our estimated net cash flows for several quarters. We review the carrying value of our properties on a quarterly basis and once incurred, a write-down in the carrying value of our properties is not reversible at a later date, even if oil and natural gas prices increase.

Prices for oil and natural gas are subject to wide fluctuations in response to relatively minor changes in the supply of and demand for oil and natural gas, market uncertainty and a variety of additional factors that are beyond our control. These factors include, but are not limited to, increases in supplies from U.S. shale production, international political conditions, including uprisings and political unrest in the Middle East and Africa, the domestic and foreign supply of oil and natural gas, actions by OPEC member countries and other state-controlled oil companies to agree upon and maintain oil price and production controls, the level of consumer demand which is impacted by economic growth rates, weather conditions, domestic and foreign governmental regulations and taxes, the price and availability of alternative fuels, the health of international economic and credit markets, and general economic conditions. In addition, various factors, including the effect of federal, state and foreign regulation of production and transportation, general economic conditions, changes in supply due to drilling by other producers and changes in demand may adversely affect our ability to market our oil and natural gas production.

Unless we are able to replace the proved reserve quantities that we have produced, our cash flows and production will decrease over time.

At December 31, 2018, we had 2.0 MBbl of PUDs while we had no PUDs at December 31, 2017. As discussed above in “Item 1. Business — Segment and Geographic Information — Gabon Segment”, we are planning to drill two wells and two appraisal well bores in the second half of 2019.

Our future success depends upon our ability to find, develop or acquire additional oil and natural gas reserves that are economically recoverable. In general, production from oil and natural gas properties declines as reserves are depleted, with the rate of decline depending on reservoir characteristics. Our ability to make the necessary capital investment to maintain or expand our asset base of oil and natural gas reserves would be limited to the extent cash flow from operations is reduced and external sources of capital become limited or unavailable. We may not be successful in exploring for, developing or acquiring additional reserves. Except to the extent that we conduct successful exploration or development activities or acquire properties containing proved reserves, our estimated net proved reserves will generally decline as reserves are produced.

There can be no assurance that our development and exploration projects and acquisition activities will result in significant additional reserves or that we will have continuing success drilling productive wells at economic finding costs. The drilling of oil and natural gas wells involves a high degree of risk, especially the risk of dry holes or of wells that are not sufficiently productive to provide an economic return on the capital expended to drill the wells. In addition, our drilling operations may be curtailed, delayed or canceled as a result of numerous factors, including declines in oil or natural gas prices and/or prolonged periods of historically low oil and natural gas prices, title problems, weather conditions, political instability, availability of capital, economic/currency imbalances, compliance with governmental requirements, receipt of additional seismic data or the reprocessing of existing data, failure of wells drilled in similar formations, equipment failures (such as ESPs), delays in the delivery of equipment and availability of drilling rigs.

All of the value of our production and reserves is concentrated in a single block offshore Gabon, and any production problems or reductions in reserve estimates related to this property would adversely impact our business.

The Etame Marin block consists of five fields with 12 producing wells. Production from these fields constituted 100% of our total production for the year ended December 31, 2018. In addition, at December 31, 2018, 100% of our total reserves were attributable to these fields. If mechanical problems, storms or other events curtailed a substantial portion of this production, or if the actual reserves associated with this producing property are less than our estimated reserves, our results of operations, financial condition, and cash flows could be materially adversely affected.

Because our properties are concentrated in the same geographic area, many of our rights under the Etame PSC will be affected by the same conditions at the same time, resulting in a relatively greater impact on our results of operations than with respect to companies that have a more diversified portfolio of licenses and properties located across diverse geographic areas.

Exploring for, developing, or acquiring reserves is capital intensive and uncertain.

We may not be able to economically find, develop, or acquire additional reserves, or may not be able to make the necessary capital investments to develop our reserves, if our cash flows from operations decline or external sources of capital become limited or unavailable. Offshore drilling and development operations require capital-intensive techniques. If we do not replace the reserves we produce, our reserves revenues and cash flow will decrease over time, which could have a material effect on our business, financial condition, results of operations and liquidity.

Our business requires significant capital expenditures, and we may not be able to obtain needed capital or financing on satisfactory terms or at all.

Our exploration and development activities are capital intensive. To replace and grow our reserves, we must make substantial capital expenditures for the acquisition, exploitation, development, exploration and production of oil and natural gas reserves. Historically, we have financed these expenditures primarily with cash flow from operations, debt, asset sales, and private sales of equity. We are the operator of the Etame Marin block offshore Gabon, and are thus responsible for contracting on behalf of all the remaining parties participating in the project. We rely on the timely payment of cash calls by our joint owners to pay for 66.43% of the offshore Gabon budget. With respect to Block P, we are awaiting approval by the EG MMH of our appointment as technical operator. Once we are appointed, we will rely on the timely payment of cash calls by our joint owners to pay for 61% of the Equatorial Guinea budget. The continued economic health of our joint owners could be adversely affected by low oil prices, thereby adversely affecting their ability to make timely payment of cash calls.

If low oil and natural gas prices, operating difficulties or declines in reserves result in our revenues being less than expected or limit our ability to borrow funds, or our joint owners fail to pay their share of project costs, we may be unable to obtain or expend the capital necessary to undertake or complete future drilling programs. Our ability to secure additional or replacement financing is currently limited. We cannot assure you that additional debt or equity financing or cash generated by operations will be available to meet our capital requirements. We may not be able to obtain debt or equity financing on terms favorable to us, or at all. If cash generated by operations or cash available under any financing sources is not sufficient to meet our capital requirements, the failure to obtain additional financing could result in a curtailment of our operations relating to the development of our properties. Such a curtailment in operations could lead to a decline in our estimated net proved reserves, and would likely adversely affect our business, financial condition and results of operations.

If oil and natural gas prices decline materially, we may be required to take write-downs in the value of our oil and natural gas properties.

The estimated future net revenues attributable to our net proved reserves are prepared in accordance with current SEC guidelines and are not intended to reflect the fair market value of our reserves. In accordance with the rules of the SEC, our reserve estimates are prepared using the un-weighted average price received for oil and natural gas based on closing prices on the first day of each month during the twelve-month period prior to the end of the reporting period. During 2016, 2017 and 2018, no impairments were necessary with respect to the Etame Marin block. Material declines in crude oil prices will cause the estimated quantities and present values of our reserves to be reduced, which may necessitate write-downs. Material declines in crude oil prices could also cause a decline in the estimated fair value and/or the economic viability of projects associated with our undeveloped leasehold costs for the Etame Marin block and the Equatorial Guinea Block P resulting in write-downs of these costs.

Our offshore operations involve special risks that could adversely affect our results of operations.

Offshore operations are subject to a variety of operating risks specific to the marine environment. Our production facilities are subject to hazards such as capsizing, sinking, grounding, collision and damage from severe weather conditions. The relatively deep offshore drilling conducted by us involves increased drilling risks of high pressures and mechanical difficulties, including stuck pipe, collapsed casing and separated cable. The impact that any of these risks may have upon us is increased due to the low number of producing properties we own. We could incur substantial expenses that could reduce or eliminate the funds available for exploration, development or license acquisitions, or result in loss of equipment and license interests.

Exploration and development operations offshore Africa often lack the physical and oilfield service infrastructure present in other regions. As a result, a significant amount of time may elapse between an offshore discovery and the marketing of the associated oil and natural gas, increasing both the financial and operational risks involved with these operations. Offshore drilling operations

generally require more time and more advanced drilling technologies, involving a higher risk of equipment failure and usually higher drilling costs. In addition, there may be production risks of which we are currently unaware. For example, the production of hydrogen sulfide at certain of our Etame Marin block wells create unexpected production losses and delays in our development plans; see “Item 1. Business – Segment and Geographic Information – Hydrogen Sulfide Impact.” The development of new subsea infrastructure and use of floating production systems to transport oil from producing wells, may require substantial time for installation or encounter mechanical difficulties and equipment failures that could result in loss of production, significant liabilities, cost overruns or delays.

In addition, in the event of a well control incident, containment and, potentially, cleanup activities for offshore drilling are costly. The resulting regulatory costs or penalties, and the results of third party lawsuits, as well as associated legal and support expenses, including costs to address negative publicity, could well exceed the actual costs of containment and cleanup. As a result, a well control incident could result in substantial liabilities for us, and have a significant negative impact on our earnings, cash flows, liquidity, financial position, and stock price.

Our drilling activities require us to risk significant amounts of capital that may not be recovered.

Drilling activities are subject to many risks, including the risk that no commercially productive reservoirs will be encountered. There can be no assurance that new wells drilled by us will be productive or that we will recover all or any portion of our investment. Drilling for oil and natural gas may involve unprofitable efforts, not only from dry wells, but also from wells that are productive but do not produce sufficient net revenues to return a profit after drilling, operating and other costs. The cost of drilling, completing and operating wells is often uncertain and cost overruns are common. Our drilling operations may be curtailed, delayed or canceled as a result of numerous factors, many of which are beyond our control, including title problems, weather conditions, equipment failures or accidents, elevated pressure or irregularities in geologic formations, compliance with governmental requirements and shortages or delays in the delivery of equipment and services.

We have less control over our investments in foreign properties than we would have with respect to domestic investments, and added risk in foreign countries may affect our foreign investments.

Our international assets and operations are subject to various political, economic and other uncertainties, including, among other things, the risks of war, expropriation, nationalization, renegotiation or nullification of existing contracts, taxation policies, foreign exchange restrictions, changing political conditions, international monetary fluctuations, currency controls, decisions of international financial institutions such as the International Monetary Fund and the Banking Commission of Central Africa, changes in laws and regulations relating to banking institutions and deposit accounts, requirements to hold funds in government-owned banks and the risk of foreign banking institution failure, possible changes in government personnel, the development of new administrative policies, practices and political conditions that may affect the enforcement or administration of laws and regulations, adoption of new or amendments to regulatory regimes for foreign investment, uncertainties as to whether the laws and regulations will be applicable in any particular circumstance, uncertainty as to whether VAALCO will be able to demonstrate to the satisfaction of the applicable governing authorities, compliance with governmental or contractual requirements and foreign governmental regulations that favor or require the awarding of drilling contracts to local contractors or require foreign contractors to employ citizens of, or purchase supplies from, a particular jurisdiction.

For example, the Gabonese government’s oil company may seek to participate in oil and natural gas projects in a manner that could be dilutive to the interest of current license holders and the Gabonese government is under pressure from the Gabonese labor union to require companies to hire a higher percentage of Gabonese citizens. In 2016, the government of Gabon conducted an audit of our operations in Gabon, covering the years 2013 through 2014. We received the findings from this audit and responded to the audit findings in January 2017. Since providing our response, there have been changes in the Gabonese officials responsible for the audit. We are working with the current representatives to resolve the audit findings. While we do not anticipate that we will be subject to assessments related to this audit that have significant, if any, negative impact on our reported earnings or cash flows, we can make

no assurances that this will be the case. In addition, if a dispute arises with our foreign operations, we may be subject to the exclusive jurisdiction of foreign courts or may not be successful in subjecting foreign persons, especially foreign oil ministries and national oil companies, to the jurisdiction of the U.S.

Additionally, on February 28, 2019, the Gabonese branch of the international commercial bank holding the abandonment funds in a U.S. dollar denominated account advised that the bank regulator required transfer of the funds to the Central Bank for “CEMAC” (the Central African Economic and Monetary Community), of which Gabon is one of the six member states, for conversion to local currency with a credit back to the Gabonese branch in local currency. See risk factor, “Our results of operations, financial conditions and cash flows could be adversely affected by changes in currency exchange rates and regulations.” Amendment 5 to the PSC provides that in the event that the Gabonese bank fails for any reasons to reimburse all of the principal and interest due, the Contractor shall no longer be held liable for the obligation to remediate the sites.

Private ownership of oil and natural gas reserves under oil and natural gas leases in the U.S. differs distinctly from our rights in foreign reserves where the state generally retains ownership of the minerals, and in many cases participates in, the exploration and production of hydrocarbon reserves. Accordingly, operations outside the U.S. may be materially affected by host governments through royalty payments, export taxes and regulations, surcharges, value added taxes, production bonuses and other charges.

Beginning in February 2018, Gabon elected to take the portion of their oil attributable to Profit Oil in-kind rather than our continuing to market their share of production on their behalf. Gabon took their Profit Oil in-kind with the September 2018 lifting. We anticipate that this will continue to cause fluctuations in the timing of and realized prices for oil sales.

All of our proved reserves are related to the Etame Marin block located offshore Gabon. We have operated in Gabon since 1995 and believe we have good relations with the current Gabonese government. However, there can be no assurance that present or future administrations or governmental regulations in Gabon will not materially adversely affect our operations or cash flows.

Our operations may be adversely affected by violent acts such as from civil disturbances, terrorist acts, regime changes, cross-border violence, war, piracy, or other conflicts that may occur in regions that encompass our operations.

Violent acts resulting in loss of life, destruction of property, environmental damage and pollution occur around the world. Many incidents are driven by civil, ethnic, religious or economic strife. In addition, the number of incidents attributed to various terrorist organizations has increased significantly. We operate in regions of the world that have experienced such incidents or are in close proximity to areas where violence has occurred. For example, in January 2019, there was a failed military coup attempt in Gabon. While the disruption from this event was minimal and was suppressed quickly, these types of events can expand quickly into more serious and costly ones and could adversely affect Gabon's economy and government.

We monitor the economic and political environments of the countries in which we operate. However, we are unable to predict the occurrence of disturbances such as those noted above. In addition, we have limited ability to mitigate their impact.

Civil disturbances, terrorist acts, regime changes, coups, wars, or conflicts, or the threats thereof, could have the following results, among others:

- volatility in global crude oil prices which could negatively impact the global economy, resulting in slower economic growth rates, which could reduce demand for our products;
- negative impact on the world crude oil supply if infrastructure or transportation are disrupted, leading to further commodity price volatility;
- difficulty in attracting and retaining qualified personnel to work in areas with potential for conflict;
- inability of our personnel or supplies to enter or exit the countries where we are conducting operations;
- disruption of our operations due to evacuation of personnel;
- inability to deliver our production due to disruption or closing of transportation routes;
- reduced ability to export our production due to efforts of countries to conserve domestic resources;
- damage to or destruction of our wells, production facilities, receiving terminals or other operating assets;
- damage to or destruction of property belonging to our commodity purchasers leading to interruption of deliveries, claims of force majeure, and/or termination of commodity sales contracts, resulting in a reduction in our revenues;
- inability of our service and equipment providers to deliver items necessary for us to conduct our operations resulting in a halt or delay in our planned exploration activities, delayed development of major projects, or shut-in of producing fields;
- lack of availability of drilling rig, oilfield equipment or services if third party providers decide to exit the region;
- shutdown of a financial system, communications network, or power grid causing a disruption to our business activities; and
- capital market reassessment of risk and reduction of available capital making it more difficult for us and our joint owners to obtain financing for potential development projects.

Loss of property and/or interruption of our business plans resulting from civil unrest could have a significant negative impact on our earnings and cash flow. In addition, we may not have enough insurance to cover any loss of property or

other claims resulting from these risks.

Our business could be materially and adversely affected by security threats, including cybersecurity threats, and other disruptions.

As an oil producer, we face various security threats, including cybersecurity threats to gain unauthorized access to sensitive information or to render data or systems unusable; threats to the security of our facilities and infrastructure or third party facilities and infrastructure, such as processing plants and pipelines; and threats from terrorist acts. The potential for such security threats has subjected our operations to increased risks that could have a material adverse effect on our business. In particular, our implementation of various procedures and controls to monitor and mitigate security threats and to increase security for our information, facilities and infrastructure may result in increased capital and operating costs. Costs for insurance may also increase as a result of security threats, and some insurance coverage may become more difficult to obtain, if available at all. Moreover, there can be no assurance that such procedures and controls will be sufficient to prevent security breaches from occurring. If any of these security breaches were to occur, they could lead to losses of sensitive information, critical infrastructure or capabilities essential to our operations and could have a material adverse effect on our reputation, financial position, results of operations and cash flows.

Cybersecurity attacks in particular are becoming more sophisticated. We rely extensively on information technology systems, including Internet sites, computer software, data hosting facilities and other hardware and platforms, some of which are hosted by

third parties, to assist in conducting our business. Our technologies systems and networks, and those of our business associates may become the target of cybersecurity attacks, including without limitation malicious software, attempts to gain unauthorized access to data and systems, and other electronic security breaches that could lead to disruptions in critical systems and materially and adversely affect us in a variety of ways, including the following:

- unauthorized access to and release of seismic data, reserves information, strategic information or other sensitive or proprietary information, which could have a material adverse effect on our ability to compete for oil and gas resources;
- data corruption or operational disruption of production infrastructure, which could result in loss of production or accidental discharge;
- unauthorized access to and release of personal identifying information of employees and vendors, which could expose us to allegations that we did not sufficiently protect that information;
- a cybersecurity attack on a vendor or service provider, which could result in supply chain disruptions and could delay or halt operations; and
- a cybersecurity attack on third-party gathering, transportation, processing, fractionation, refining or export facilities, which could delay or prevent us from transporting and marketing our production, resulting in a loss of revenues.

These events could damage our reputation and lead to financial losses from remedial actions, loss of business or potential liability. Additionally, certain cyber incidents, such as surveillance, may remain undetected for an extended period.

Competitive industry conditions may negatively affect our ability to conduct operations.

The oil and natural gas industry is intensely competitive. We compete with, and may be outbid by, competitors in our attempts to acquire exploration and production rights in oil and natural gas properties. These properties include exploration prospects as well as properties with proved reserves. There is also competition for contracting for drilling equipment and the hiring of experienced personnel. Factors that affect our ability to compete in the marketplace include, among other things:

- our access to the capital necessary to drill wells and acquire properties;
 - our ability to acquire and analyze seismic, geological and other information relating to a property;
- our ability to retain and hire experienced personnel, especially for our engineering, geoscience and accounting departments; and
- the location of, and our ability to access, platforms, pipelines and other facilities used to produce and transport oil and natural gas production.

Our competitors include major integrated oil companies and substantial independent energy companies, many of which possess greater financial, technological, personnel and other resources than we do. These companies may be better able to: competitively bid for and purchase oil and natural gas properties; evaluate, bid for and purchase a greater number of properties than our financial or human resources permit; continue drilling during periods of low oil and natural gas prices; contract for drilling equipment; and secure trained personnel. Our competitors may also use superior technology which we may be unable to afford or which would require costly investment by us in order to compete.

Weather, unexpected subsurface conditions and other unforeseen operating hazards may adversely impact our oil and natural gas activities.

The oil and natural gas business involves a variety of operating risks, including fire, explosions, blow-outs, pipe failure, casing collapse, abnormally pressured formations and environmental hazards such as oil spills, natural gas leaks, ruptures and discharges of toxic gases, underground migration and surface spills or mishandling of fracture fluids including chemical additives, the occurrence of any of which could result in substantial losses to us due to injury and loss of life, severe damage to and destruction of property, natural resources and equipment, pollution and

other environmental damage, clean-up responsibilities, regulatory investigation and penalties and suspension of operations.

We maintain insurance against some, but not all, potential risks; however, there can be no assurance that such insurance will be adequate to cover any losses or exposure for liability. The occurrence of a significant unfavorable event not fully covered by insurance could have a material adverse effect on our financial condition, results of operations and cash flows. Furthermore, we cannot predict whether insurance will continue to be available at a reasonable cost or at all.

Significant physical effects of climate change have the potential to damage our facilities, disrupt our production activities and cause us to incur significant costs in preparing for or responding to those effects.

Climate change could have an effect on the severity of weather (including hurricanes and floods), sea levels, the arability of farmland, and water availability and quality. If such effects were to occur, our exploration and production operations have the potential to be adversely affected. Potential adverse effects could include damages to our facilities from powerful winds or rising waters in low-lying areas, disruption of our production activities because of climate-related damages to our facilities, less efficient or non-routine operating practices necessitated by climate effects or increased costs for insurance coverages in the aftermath of such effects. Significant physical effects of climate change could also have an indirect effect on our financing and operations by disrupting the transportation or process-related services provided by midstream companies, service companies or suppliers with whom we have a

business relationship. We may not be able to recover through insurance some or any of the damages, losses or costs that may result from potential physical effects of climate change.

We may not have enough insurance to cover all of the risks we face and operators of prospects in which we participate may not maintain or may fail to obtain adequate insurance.

Our business is subject to all of the operating risks normally associated with the exploration for and production, gathering, processing, and transportation of oil and natural gas, including blowouts, cratering and fire, any of which could result in damage to, or destruction of, oil and natural gas wells or formations, production facilities, and other property, as well as injury to persons. For protection against financial loss resulting from these operating hazards, we maintain insurance coverage, including insurance coverage for certain physical damage, blowout/control of a well, comprehensive general liability, worker's compensation and employer's liability. However, our insurance coverage may not be sufficient to cover us against 100% of potential losses arising as a result of the foregoing, and for certain risks, such as political risk, nationalization, business interruption, war, terrorism, and piracy, for which we have limited or no coverage. In addition, we are not insured against all risks in all aspects of our business, such as hurricanes. The occurrence of a significant event against which we are not fully insured could have a material adverse effect on our consolidated financial position, results of operations, or cash flows.

Our reserve information represents estimates that may turn out to be incorrect if the assumptions upon which these estimates are based are inaccurate. Any material inaccuracies in these reserve estimates or underlying assumptions will materially affect the quantities and present values of our reserves.

There are numerous uncertainties inherent in estimating quantities of proved oil and natural gas reserves, including many factors beyond our control. Reserve engineering is a subjective process of estimating the underground accumulations of oil and natural gas that cannot be measured in an exact manner. The estimates included in this document are based on various assumptions required by the SEC, including non-escalated prices and costs and capital expenditures subsequent to December 31, 2018, and, therefore, are inherently imprecise indications of future net revenues. Actual future production, revenues, taxes, operating expenses, development expenditures and quantities of recoverable oil and natural gas reserves may vary substantially from those assumed in the estimates. Any significant variance in these assumptions could materially affect the estimated quantity and value of our reserves.

In addition, our reserves may be subject to downward or upward revision based upon production history, results of future development, availability of funds to acquire additional reserves, prevailing oil and natural gas prices and other factors. Moreover, the calculation of the estimated present value of the future net revenue using a 10% discount rate as required by the SEC is not necessarily the most appropriate discount factor based on interest rates in effect from time to time and risks associated with our reserves or the oil and natural gas industry in general. It is also possible that reserve engineers may make different estimates of reserves and future net revenues based on the same available data.

The estimated future net revenues attributable to our net proved reserves are prepared in accordance with current SEC guidelines, and are not intended to reflect the fair market value of our reserves. In accordance with the rules of the SEC, our reserve estimates are prepared using an average of beginning of month prices received for oil and natural gas for the preceding twelve months. Future reductions in prices below the average calculated for 2018 would result in the estimated quantities and present values of our reserves being reduced.

Our proved reserves are in foreign countries and are or will be subject to service contracts, production sharing contracts and other arrangements. The quantity of oil and natural gas that we will ultimately receive under these arrangements will differ based on numerous factors, including the price of oil and natural gas, production rates, production costs, cost recovery provisions and local tax and royalty regimes. Changes in many of these factors could affect the estimates of proved reserves in foreign jurisdictions.

Our results of operations, financial condition and cash flows could be adversely affected by changes in currency exchange rates and by currency regulations.

We are exposed to foreign currency risk from our foreign operations. While oil sales are denominated in U.S. dollars, portions of our costs in Gabon are denominated in the local currency. A weakening U.S. dollar will have the effect of increasing costs while a strengthening U.S. dollar will have the effect of reducing operating costs. The Gabon local currency is tied to the Euro. The exchange rate between the Euro and the U.S. dollar has fluctuated widely in recent years in response to international political conditions, general economic conditions, the European sovereign debt crisis and other factors beyond our control. Our financial statements, presented in U.S. dollars, may be affected by foreign currency fluctuations through both translation risk and transaction risk. In addition, currency devaluation can result in a loss to us for any deposits of that currency, such as our deposits in the Etame PSC abandonment account which have been converted from U.S. dollar to Gabon local currency. See the risk factor “We have less control over our investments in foreign properties than we would have with respect to domestic investments, and added risk in foreign countries may affect our foreign investments.” Hedging foreign currencies can be difficult, especially if the currency is not actively traded.

We are also subject to risks relating to governmental regulation of foreign currency, which may limit our ability to:

- Transfer funds from or convert currencies in certain countries;
 - Repatriate foreign currency received in excess of local currency requirements; and
- Repatriate funds held by our foreign subsidiaries to the U.S. at favorable tax rates.

Acquisitions and divestitures of properties and businesses subject us to additional risks and uncertainties. We may be unable to integrate successfully the operations of any acquisitions with our operations, and we may not realize all the anticipated benefits of any future acquisitions or divestitures. Any sales or divestments of properties we make may result in certain liabilities that we are required to retain under the terms of such sale or divestment.

Failure to successfully exploit any acquisitions we engage in could adversely affect our financial condition and results of operations. Further, unexpected costs and challenges may arise whenever businesses with different operations or management are combined, and we may experience unanticipated delays in realizing the benefits of an acquisition. If we consummate any future acquisition, our capitalization and results of operation may change significantly, and you may not have the opportunity to evaluate the economic, financial and other relevant information that we will consider in evaluating future acquisitions.

In the case of sales or divestitures of our properties and businesses, we may become exposed to future liabilities that arise under the terms of those sales or divestitures. Under such terms, sellers typically are required to retain certain liabilities for matters with respect to their sold properties or businesses. The magnitude of any such retained liability or indemnification obligation may be difficult to quantify at the time of the transaction and ultimately may be material. Also, as is typical in divestiture transactions, third parties may be unwilling to release us from guarantees or other credit support provided prior to the sale of the divested assets. As a result, after a sale, we may remain secondarily liable for the obligations guaranteed or supported to the extent that the buyer of the assets fails to perform these obligations.

Properties that we buy may not produce as projected, and we may be unable to determine reserve potential, identify liabilities associated with the properties or obtain protection from sellers against such liabilities, which could result in material liabilities and adversely affect our financial condition.

One of our growth strategies is to capitalize on opportunistic acquisitions of oil and natural gas reserves. Any future acquisition will require an assessment of recoverable reserves, title, future oil and natural gas prices, operating costs, potential environmental hazards, potential tax and employer liabilities, and other liabilities and similar factors. Ordinarily, our review efforts are focused on the higher valued properties and are inherently incomplete because it generally is not feasible to review in depth every potential liability on each individual property involved in each acquisition. Even a detailed review of records and properties may not necessarily reveal existing or potential problems, nor will it permit a buyer to become sufficiently familiar with the properties to assess fully their deficiencies and potential. Inspections may not always be performed on every well, and potential problems, such as ground water contamination and other environmental conditions and deficiencies in the mechanical integrity of equipment are not necessarily observable even when an inspection is undertaken. Any unidentified problems could result in material liabilities and costs that negatively impact our financial condition.

Additional potential risks related to acquisitions include, among other things:

- incorrect assumptions regarding the reserves, future production and revenues, or future operating or development costs with respect to the acquired properties, as well as future prices of oil and natural gas;
- decreased liquidity as a result of using a significant portion of our cash from operations or borrowing capacity to finance acquisitions;
- significant increases in our interest expense or financial leverage if we incur additional debt to finance acquisitions;
- the assumption of unknown liabilities, losses or costs for which we are not indemnified or for which our indemnity is inadequate;
- an increase in our costs or a decrease in our revenues associated with any claims or disputes with governments or other interest owners;
- the risk that oil and natural gas reserves acquired may not be of the anticipated magnitude or may not be developed as anticipated;
-

difficulties in the assimilation of the assets and operations of the acquired business, especially if the assets acquired are in a new business segment or geographic area;

- the diversion of management's attention from other business concerns;
- losses of key employees at the acquired businesses;
- operating a significantly larger combined organization and adding operations;
- the failure to realize expected profitability or growth;
- the failure to realize expected synergies and cost savings; and
- coordinating or consolidating corporate and administrative functions.

If we consummate any future acquisitions, our capitalization and results of operations may change significantly.

We have been, and in the future may become, involved in legal proceedings with governmental and private litigants, and, as a result, may incur substantial costs in connection with those proceedings.

Our business subjects us to liability risks from litigation or government actions. From time to time we may be a defendant or plaintiff in various lawsuits. The nature of our operations exposes us to further possible litigation claims in the future. There is risk

that any matter in litigation could be decided unfavorably against us regardless of our belief, opinion, and position, which could have a material adverse effect on our financial condition, results of operations, and cash flow. Litigation can be very costly, and the costs associated with defending litigation could also have a material adverse effect on our net income, net cash flows and financial condition. Adverse litigation decisions or rulings may also damage our business reputation.

Often, our operations are conducted through joint ventures over which we may have limited influence and control. Private litigation or government proceedings brought against us could also result in significant delays in our operations.

Compliance with environmental and other government regulations could be costly and could negatively impact production.

The laws and regulations of the U.S., Gabon, and Equatorial Guinea regulate our current business. These laws and regulations may require that we obtain permits for our development activities, limit or prohibit drilling activities in certain protected or sensitive areas, or restrict the substances that can be released in connection with our operations. Our operations could result in liability for personal injuries, property damage, natural resource damages, oil spills, discharge of hazardous materials, remediation and clean-up costs and other environmental damages. Failure to comply with environmental laws and regulations may trigger a variety of administrative, civil and criminal enforcement measures, including the assessment of monetary penalties and the issuance of orders enjoining operations. In addition, we could be liable for environmental damages caused by, among others, previous property owners or operators of properties that we purchase or lease. Some environmental laws provide for joint and several strict liabilities for remediation of releases of hazardous substances, rendering a person liable for environmental damage without regard to negligence or fault on the part of such person. As a result, we may incur substantial liabilities to third parties or governmental entities and may be required to incur substantial remediation costs. We could also be affected by more stringent laws and regulations adopted in the future, including any related to climate change and greenhouse gases and the use of hydraulic fracturing fluids, resulting in increased operating costs. As a result, substantial liabilities to third parties or governmental entities may be incurred, the payment of which could have a material adverse effect on our financial condition, results of operations and liquidity.

These laws and governmental regulations, which cover matters including drilling operations, taxation and environmental protection, may be changed from time to time in response to economic or political conditions and could have a significant impact on our operating costs, as well as the oil and natural gas industry in general. While we believe that we are currently in compliance with environmental laws and regulations applicable to our operations, no assurances can be given that we will be able to continue to comply with such environmental laws and regulations without incurring substantial costs.

If our assumptions underlying accruals for abandonment costs are too low, we could be required to expend greater amounts than expected.

Almost all of our properties which have future abandonment obligations are located offshore. The costs to abandon offshore wells may be substantial. For financial accounting purposes, we record the fair value of a liability for an asset retirement obligation in the period in which it is incurred and capitalize the related costs as part of the carrying amount of the long-lived assets. The estimated liability is reflected in the "Asset retirement obligation" line item of our consolidated balance sheets.

As part of the Etame field production license, we are subject to an agreed upon cash funding arrangement for the eventual abandonment of all offshore wells, platforms and facilities on the Etame Marin block. Based upon the most recent abandonment study completed in November 2018, the abandonment cost estimate used for this purpose is approximately \$61.8 million (\$19.2 million net to our company) on an undiscounted basis. On an annual basis over the remaining life of the production license, we must fund a portion of these estimated abandonment costs. See "Item

1. Business – Segment and Geographic Information – Gabon Segment —Abandonment Costs,” for further information. Future changes to the anticipated abandonment cost estimates could change our asset retirement obligations and increase the amount of future abandonment funding payments we are obligated to make.

We operate in international jurisdictions, and we could be adversely affected by violations of the U.S. Foreign Corrupt Practices Act and similar worldwide anti-corruption laws.

The U.S. Foreign Corrupt Practices Act and similar worldwide anti-corruption laws generally prohibit companies and their intermediaries from making improper payments to government and other officials for the purpose of obtaining or retaining business. Our internal policies mandate compliance with these anti-corruption laws. Despite our training and compliance programs, we cannot be assured that our internal control policies and procedures will always protect us from acts of corruption committed by our employees or agents. Any additional expansion outside the U.S., including in developing countries, could increase the risk of such violations in the future. Violations of these laws, or allegations of such violations, could disrupt our business and result in a material adverse effect on our financial condition, results of operations and cash flows.

We may incur a significant penalty for failing to drill all the commitment wells under our production sharing contract in Angola.

In November 2006, we signed a production sharing contract for Block 5 offshore Angola. Under a production sharing agreement (“PSA”), we and the other participating interest owner, Sonangol P&P, were obligated to perform exploration activities that included specified seismic activities and drilling a specified number of wells during each of the exploration phases under the PSA. The specified seismic activities were completed, and one well, the Kindele #1 well, was drilled in 2015. The PSA provides a stipulated payment of \$10.0 million for each exploration well for which a drilling obligation remains under the terms of the PSA, of which our participating interest share would be \$5.0 million per well. We are currently engaged in discussions with newly appointed

representatives from Sonangol E.P. regarding this potential payment and other possible solutions and believe that the ultimate amount paid will be substantially less than the accrued amount.

Due to the uncertainties as to the ultimate outcome, we have reflected an accrual of \$15.0 million for a potential payment as of December 31, 2018 and 2017, which represents what we believe to be the maximum potential amount attributable to our interest under the PSA. However, an unfavorable result on the resolution of the ultimate amount of the penalty could have a material adverse effect on our financial position, results of operations, or cash flows.

We could incur substantial penalties for not fulfilling our work commitment under the terms of the PSC Extension.

We, along with the Consortium, are required within a period of two years from September 17, 2018, to drill two wells and two appraisal well bores. We plan to fulfill this commitment with the wells and appraisal well bores planned in connection with the 2019 drilling campaign at an estimated cost of \$61.2 million (\$20.5 million, net to VAALCO). If we are unable to do so, we will be required to pay within thirty days of the expiration date of such period, an indemnity equal to the cost of works not carried out, as required with the work commitment.

We could lose our interest in Block P if the terms for lifting the suspension are not met.

Under the terms of lifting of the suspension, a new joint owner is expected to assume GEPetrol's working interest obligations and be presented to the EG MMH by March 28, 2019. Once the joint owner is approved, we are required to drill one exploration well within one year. While there is no monetary penalty for failing to meet the terms of the lifting of the suspension, we would lose our interest in the license, and the associated capitalized unproved leasehold costs of \$10.0 million as of December 31, 2018 would become impaired.

Commodity derivatives transactions we enter into may fail to protect us from declines in commodity prices.

In order to reduce the impact of commodity price uncertainty and increase cash flow predictability relating to the marketing of our crude oil and natural gas, we have entered into derivatives arrangements with respect to a portion of our expected production. Our derivative contracts consist of a series of commodity swap contracts and are limited in duration. Our derivatives program may be inadequate to protect us from significant and prolonged declines in the price of crude oil.

The distressed financial conditions of one or more hedge providers could have an adverse impact on us in the event these hedge providers are unable to pay us amounts owed to us under one or more financial hedge transactions by which we have hedged our exposure to commodity price volatility.

From time to time, we may enter into financial hedge transactions to hedge or mitigate our exposure to the risks of commodity price volatility with respect to the crude oil or natural gas we produce and sell. In such instances, the hedge provider will be obligated to make payments to us under such financial hedge transactions to the extent that the floating (market) price is below an agreed fixed (strike) price. Hedging agreements expose us to risk of financial loss if the counterparty to a hedging contract defaults on its contract obligations. This risk of counterparty performance is of particular concern given the disruptions that have occurred in the financial markets that led to sudden changes in counterparty's liquidity and hence their ability to perform under their hedging contracts with us. We are unable to predict sudden changes in counterparty's creditworthiness or ability to perform. Even if we do accurately predict sudden changes, our ability to negate the risk may be limited depending upon market conditions. If the creditworthiness of our counterparties deteriorates and results in their nonperformance, we could incur a significant loss.

There are inherent limitations in all control systems, and misstatements due to error or fraud that could seriously harm our business may occur and not be detected.

As described in “Item 9A. Controls and Procedures. Management’s Annual Report on Internal Control over Financial Reporting”, our management concluded that a control deficiency constituted a material weakness in our internal control over financial reporting. We determined that we did not maintain effective internal control over financial reporting with respect to the effectiveness and timeliness of the performance of a control related to the evaluation and reporting of the income tax effects related to significant, unusual and infrequent transactions. This material weakness resulted in a correction of an error in the condensed consolidated financial statements included in our quarterly report on Form 10-Q for September 30, 2018.

Our management, including our Chief Executive Officer and Chief Financial Officer, do not expect that our internal controls and disclosure controls will prevent all possible error and all fraud. A control system, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. In addition, the design of a control system must reflect the fact that there are resource constraints and the benefit of controls must be relative to their costs. Because of the inherent limitations in all control systems, an evaluation of controls can only provide reasonable assurance that all material control issues and instances of fraud, if any, in our company have been detected. These inherent limitations include the realities that judgments in decision-making can be faulty and that breakdowns can occur because of simple error or mistake. Further, controls can be circumvented by the individual acts of some persons or by collusion of two or more persons. The design of any system of controls is based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions. Because of inherent limitations in a cost-effective control system, misstatements due to error or fraud may occur and not be detected. A failure of our controls and procedures to detect error or fraud could seriously harm our business and results of operations.

Our business could suffer if we lose the services of, or fail to attract, key personnel.

We are highly dependent upon the efforts of our senior management and other key employees. The loss of the services of our Chief

Executive Officer and Chief Financial Officer, as well as any loss of the services of one or more other members of our senior management, could delay or prevent the achievement of our objectives. We do not maintain any “key-man” insurance policies on any of our senior management, and do not intend to obtain such insurance. In addition, due to the specialized nature of our business, we are highly dependent upon our ability to attract and retain qualified personnel with extensive experience and expertise in evaluating and analyzing drilling prospects and producing oil and natural gas from proved properties and maximizing production from oil and natural gas properties. There is competition for qualified personnel in the areas of our activities, and we may be unsuccessful in attracting and retaining these personnel.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

The location and general character of our principal oil and natural gas assets, production facilities, and other important physical properties have been described by segment under Item 1. “Business.” Information about oil and natural gas reserves, including the basis for their estimation, is discussed in Item 1. “Business.”

Item 3. Legal Proceedings

We are subject to litigation claims and governmental and regulatory proceedings arising in the ordinary course of business. It is management’s opinion that all claims and litigation we are currently involved in are not likely to have a material adverse effect on our consolidated financial position, cash flows or results of operations.

Item 4. Mine Safety Disclosures

Not applicable.