



**Annual Information Form  
Year Ended December 31, 2018**

**April 10, 2019**

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## GLOSSARY OF TERMS

Capitalized terms in this Annual Information Form have the meanings set forth below:

### *Entities*

**Board of Directors** means our board of directors.

**NDIC** means the North Dakota Industrial Commission.

**PetroShale, we, us, our** or the **Corporation** means PetroShale Inc. and where the context requires, means us and all our controlled entities on a consolidated basis, and where the context requires, also means our predecessor issuers, Mondak Petroleum Inc., Algonquin Oil & Gas Limited and their controlled entities on a consolidated basis.

**PetroShale US** means PetroShale (US), Inc., our subsidiary incorporated under the laws of Delaware.

**Shareholders** mean holders of our Common Shares.

### *Independent Engineering*

**COGE Handbook** means the Canadian Oil and Gas Evaluation Handbook, maintained by the Society of Petroleum Evaluation Engineers (Calgary Chapter), as amended from time to time.

**CSA 51-324** means Staff Notice 51-324 – *Glossary to NI 51-101 Standards of Disclosure for Oil and Gas Activities* of the Canadian Securities Administrators.

**NSAI** means Netherland, Sewell & Associates, Inc., worldwide independent petroleum consultants.

**NSAI Report** means the report prepared by NSAI dated March 12, 2019 evaluating the crude oil, natural gas and natural gas liquids reserves attributable to all of our oil and natural gas assets located in Montana and North Dakota, United States as at December 31, 2018.

**NI 51-101** means National Instrument 51-101– *Standards of Disclosure for Oil and Natural Gas Activities*.

### *Securities*

**Common Non-Voting Shares** means our common non-voting shares as presently constituted.

**Common Shares** means our common voting shares as presently constituted.

**Preferred Shares** means our class A preferred shares as presently constituted.

**Special Voting Shares** means our series 1 class A preferred shares as presently constituted.

**Subsidiary Preferred Shares** means the Series A Preferred Stock of PetroShale US as presently constituted.

### *Other*

**IFRS** means International Financial Reporting Standards.

**First Reserve** means FR XIII PetroShale Holdings L.P.

**United States** or **US** means the United States of America.

## ABBREVIATIONS

### Oil and Natural Gas Liquids

Bbl	barrel
Bbls	barrels
Bbls/d	barrels per day
Mbbls	thousand barrels

### Natural Gas

Mcf	thousand cubic feet
MMcf	million cubic feet
Mcf/d	thousand cubic feet per day
MMbtu	million British Thermal Units

### Other

API	American Petroleum Institute
°API	an indication of the specific gravity of crude oil measured on the API gravity scale
BOE or Boe	barrel or barrels of oil equivalent, using the conversion factor of 6 Mcf of natural gas being equivalent to one barrel of oil
Boe/d	barrels of oil equivalent per day
MBoe	thousand barrels of oil equivalent
Mmboe	million barrels of oil equivalent
NGL	natural gas liquids
WTI	West Texas Intermediate, the reference price paid in US dollars at Cushing, Oklahoma for the crude oil standard grade
\$000s	thousands of dollars

## CONVENTIONS

Certain terms used herein are defined in the "*Glossary of Terms*". Certain other terms used herein but not defined herein are defined in NI 51-101 and CSA 51-324 and, unless the context otherwise requires, shall have the same meanings herein as in NI 51-101 and CSA 51-324. References herein to "\$", "\$Cdn", "C\$" or "dollars" are to Canadian dollars and references herein to "US\$" or "US dollars" are to United States dollars. Unless otherwise indicated, all financial information herein has been presented in Canadian dollars.

## CONVERSIONS

The following table sets forth certain conversions between Standard Imperial Units and the International System of Units (or metric units).

<u>To Convert From</u>	<u>To</u>	<u>Multiply By</u>
Mcf	cubic metres	28.317
cubic metres	cubic feet	35.315
Bbls	cubic metres	0.159
cubic metres	Bbls	6.289
feet	metres	0.305
metres	feet	3.281
miles	kilometres	1.609
kilometres	miles	0.621
acres	hectares	0.405
hectares	acres	2.471
gigajoules	MMbtu	0.950
MMbtu	gigajoules	1.0526

## BARREL OF OIL EQUIVALENCY

The term "Boe" may be misleading, particularly if used in isolation. A Boe conversion ratio of six thousand cubic feet of natural gas to one barrel of oil (6 Mcf: 1 Bbl) is based on an energy equivalency conversion method primarily applicable at the burner tip and does not represent a value equivalency at the wellhead. **Given the value ratio based on the current price of crude oil as compared to natural gas is significantly different from the energy equivalency of 6 Mcf: 1 Bbl, utilizing a conversion ratio at 6 Mcf: 1 Bbl may be misleading as an indication of value.**

## FORWARD-LOOKING INFORMATION AND STATEMENTS

This Annual Information Form, including documents incorporated by reference herein, contains forward-looking information and statements (collectively, "**forward-looking statements**"). These forward-looking statements relate to our future events or our future performance. All information and statements other than statements of historical fact contained in this Annual Information Form are forward-looking statements. Such forward-looking statements may be identified by looking for words such as "about", "approximately", "may", "believe", "expects", "will", "intends", "should", "plan", "budget", "predict", "potential", "projects", "anticipates", "forecasts", "estimates", "continues" or similar words or the negative thereof or other comparable terminology. In addition, there are forward-looking statements in this Annual Information Form under the headings "*General Description of Our Business*" as to our business plan and strategy, the effect of negotiation of contracts; potential acquisitions and our acquisition plans and strategy; and meeting existing environmental standards and regulations ; "*Statement of Reserves Data and Other Oil and Natural Gas Information*" as to our reserves and future net revenue from our reserves, income taxes and pricing, exchange and inflation rates, the development of our proved undeveloped reserves and probable undeveloped reserves, the amount of future developments costs, our plans to fund future developments costs through a combination of internally generated cash flow, debt and equity issuances and anticipated funding costs; and as to our exploration and development plans and opportunities, anticipated land expiries, hedging and marketing policies, abandonment and reclamation obligations, tax horizon and future production; and "*Dividend Policy*" as to our dividend policy and the future payment of dividends.

In addition to the forward-looking statements identified above, this Annual Information Form contains forward-looking statements pertaining to the following:

- well completions and the timing thereof;
- the performance characteristics of our oil and natural gas properties;
- expectation of future production rates, volumes and product mixes;
- projections of market prices and costs, and exchange and inflation rates;
- supply and demand for oil and natural gas;
- expectations regarding our ability to raise capital and to continually add to reserves through acquisitions, development and optimization;
- treatment under governmental regulatory regimes and tax laws;
- productive capacity of wells, anticipated or expected production rates and anticipated dates of commencement of production and timing of results therefrom;
- fluctuations in depletion, depreciation and accretion rates;
- expectations regarding the costs and timing to drill and complete oil and natural gas wells;
- expectations regarding the costs to produce and transport our oil and natural gas to markets;
- expected changes in regulatory regimes in respect of royalty rates, production taxes and regulatory requirements and the effects of such changes;
- income tax payable;
- adjustments to the borrowing base in terms of redetermination;
- intention not to pay dividends in the foreseeable future;
- expectations of operating costs, costs to abandon and reclaim well sites and related production and transportation infrastructure; and
- plans to expand recovery from certain of our properties.

Statements relating to "reserves" are also deemed to be forward-looking statements, as they involve the implied assessment, based on certain estimates and assumptions, that the reserves described exist in the quantities predicted or estimated and that the reserves can be developed and profitably produced in the future.

Forward-looking statements are subject to risks, uncertainties and assumptions, including those discussed below and elsewhere in this Annual Information Form. Although we believe that the expectations represented in such forward-looking statements are reasonable, there can be no assurance that such expectations will prove to be correct. Some of the risks which could affect future results and could cause results to differ materially from those expressed in the forward-looking statements contained herein include the following:

- volatility in market prices for oil, natural gas, natural gas liquids and foreign exchange rates;
- operational risks and liabilities inherent in oil and natural gas operations;
- uncertainties associated with estimating oil and natural gas reserves;
- competition for, among other things, capital, acquisitions of reserves, undeveloped lands and skilled personnel;
- uncertainties in our plans and the plans of the operators of our oil and natural gas properties in regard to the timing of development programs;
- incorrect assessments of the value of acquisitions;
- geological, technical, drilling and processing problems;
- fluctuation in foreign exchange or interest rates;
- stock market volatility;
- environmental risks;
- the inability to access sufficient capital from internal and external sources to develop reserves;
- changes in general economic, market and business conditions;
- the accuracy of oil and natural gas reserves estimates and estimated production levels as they are affected by exploration and development drilling and estimated decline rates;
- fluctuations in the costs of borrowing;
- political or economic developments;
- ability to obtain regulatory and other third party approvals;
- the occurrence of unexpected events;
- the results of litigation or regulatory proceedings that may be brought against us;
- changes in income tax laws or changes in tax laws and incentive programs relating to the oil and gas industry; and
- the other factors discussed under "*Risk Factors*".

With respect to forward-looking statements contained in this Annual Information Form, we have made assumptions regarding, among other things: the timing of obtaining regulatory approvals; commodity prices and royalty and production tax regimes; availability of skilled labour; timing and amount of capital expenditures; future currency exchange rates; the realized price of our oil and natural gas production; the impact of increasing competition; conditions in general economic and financial markets; access to capital; changes in the Corporation's credit facility; receipt of regulatory approvals; availability of drilling and related equipment; effects of regulation by governmental agencies; royalty rates; and future operating costs.

We have included the above summary of assumptions and risks related to forward-looking statements provided in this Annual Information Form in order to provide investors with a more complete perspective on our current and future operations and such information may not be appropriate for other purposes.

You are further cautioned that the preparation of financial statements in accordance with IFRS requires management to make certain judgments and estimates that affect the reported amounts of assets, liabilities, revenues and expenses. Estimating reserves is also critical to several accounting estimates and requires judgments and decisions based on available geological, geophysical, engineering and economic data. These estimates may change, having either a negative or positive effect on net earnings as further information becomes available and as the economic environment changes. **The information contained in this Annual Information Form identifies additional factors that could**

**affect our operating results and performance. We urge you to carefully consider those factors.** See "*Risk Factors*".

The forward-looking statements contained herein are expressly qualified in their entirety by this cautionary statement. The forward-looking statements included in this Annual Information Form are made as of the date of this Annual Information Form and we undertake no obligation to publicly update such forward-looking statements to reflect new information, subsequent events or otherwise unless required by applicable securities laws.

## **NON-IFRS MEASURES**

Within this Annual Information Form, references are made to terms commonly used in the oil and natural gas industry. The term "netback" in this Annual Information Form is not a recognized measure under IFRS. We use "netback" as a key performance indicator and it is used by us to evaluate the operating performance of our petroleum and natural gas assets. It is determined by deducting royalties, realized gains or losses on financial derivatives and production and operating expenses from petroleum and natural gas revenue and is often presented on a per Boe basis. Readers are cautioned however that this measure should not be construed as an alternative to net earnings (loss) or cash flow from operating activities determined in accordance with IFRS as an indication of our performance.

## **PETROSHALE INC.**

### **General**

We are a junior oil and natural gas company engaged in the acquisition, development and production of oil-weighted assets primarily in the North Dakota Bakken/Three Forks. We incorporated as "Mondak Petroleum Inc." under the *Business Corporations Act* (Alberta) (the "**Act**") on November 9, 2011.

On March 8, 2012 we completed a reverse takeover of Algonquin Oil & Gas Limited pursuant to a plan of arrangement. Following such arrangement, we filed Articles of Amendment to re-designate our Common Shares, to create the Common Non-Voting Shares and to make consequential amendments to the rights, restrictions, privileges and conditions attached to our Preferred Shares. Also, on March 8, 2012, we filed Articles of Amendment to consolidate our Common Shares and Common Non-Voting Shares on a 10 for 1 basis and to change our name from Algonquin Oil & Gas Limited to "PetroShale Inc."

On July 1, 2013 we amalgamated with our then wholly-owned subsidiary Mondak Petroleum Inc.

In September of 2015 we divested of our Canadian working interest oil and gas properties and sold our then wholly owned subsidiary GEL Exploration Limited.

On January 24, 2018 we filed articles of amendment to create, and authorize for issuance, an unlimited number of Special Voting Shares.

Our corporate head office is located at Suite 3230, 421 – 7th Avenue SW, Calgary, T2P 4K9, our US head office is located at 303 E. 17<sup>th</sup> Avenue, Suite 940, Denver, CO 80203 and our registered office is located at 2400, 525 – 8<sup>th</sup> Avenue S.W., Calgary, Alberta T2P 1G1.

### ***Intercorporate Relationships***

Currently, we have one subsidiary, PetroShale US. PetroShale US was incorporated under the laws of Delaware on November 10, 2011 under the name "Mondak Petroleum (US), Inc." and changed its name to "PetroShale (US), Inc." on April 4, 2012. We are the owner of 100% of all 5,000 of the issued and outstanding voting common stock of PetroShale US and all 75,000 of the issued and outstanding Subsidiary Preferred Shares are owned by First Reserve. See "*General Development of Our Business – History and Development – Year Ended December 31, 2018*".

## GENERAL DEVELOPMENT OF OUR BUSINESS

### History and Development

#### Year Ended December 31, 2016

Effective April 1, 2016 the lenders of our then outstanding subordinated credit facility agreed to increase the facility commitment amount to US\$ 80 million and extended the maturity date to December 31, 2017. As partial consideration for the revised terms, we issued 2.0 million Common Share purchase warrants to the lenders of the subordinated credit facility. Each warrant entitled the holder thereof to acquire one Common Share at a price of \$0.75 for a period of 2 years from the date the amended loan terms were agreed to.

On June 17, 2016 the borrowing base of our senior credit facility was confirmed at US\$ 22.5 million, and the renewal date was extended from July 16, 2016 to June 16, 2017.

During the interim period ended June 30, 2016, we acquired additional acreage within our core Antelope area, located in the North Dakota Bakken, for US\$ 4.0 million.

In September, 2016, we commenced drilling the first well on our operated drilling spacing unit (73% working interest) in our core Antelope area.

On December 8, 2016, the borrowing base of our senior credit facility was increased to US\$ 23.7 million and the renewal date was extended to December 7, 2017. In addition, the senior lender agreed to provide that if the senior credit facility was not renewed at its scheduled renewal date, the facility would be converted to a non-revolving term facility with a maturity date of 12 months from such scheduled renewal date.

We acquired various producing and non-producing oil and natural gas properties during 2016 for an aggregate of \$8.5 million and spent \$20.4 million on well drilling and completion.

#### Year Ended December 31, 2017

On January 16, 2017, we announced initial production results from our operated well in the Antelope area, as well as the initial production results from three other non-operated wells in the Middle Bakken and Three Forks formations.

On March 1, 2017, the lender to our senior credit facility agreed to increase the borrowing base of that facility to US\$ 30.9 million and extend the maturity date to February 28, 2018. On July 21, 2017, the lender to our senior credit facility agreed to increase the borrowing base of that facility to US\$ 39.9 million and extend the maturity date to June 30, 2018.

On April 11, 2017, we closed a brokered equity offering from treasury of 122,265,000 Common Shares at an issue price of \$0.90 per Common Share, including full exercise of an agents' option granted to the agent in respect of such offering, for net proceeds of approximately \$106 million (approximately \$110 million of gross proceeds). We used the net proceeds to settle all outstanding interest and fees in relation to our subordinated credit facility and to settle approximately US\$ 40.0 million of principal outstanding under that facility. The remaining proceeds of approximately \$34 million were used to fund capital expenditures as well as for general corporate purposes.

On June 5, 2017, we announced the appointment of Mike Wood as our President and Chief Executive Officer and the retirement, effective in September 2017, of John Fair as the President of PetroShale US. Mr. James Fair also retired as a director of PetroShale at the commencement of our 2017 annual general meeting held on July 6, 2017. In addition, we announced the closing of an acquisition of additional acreage in the Corporation's core South Berthold area for US\$ 9.0 million.



## Year Ended December 31, 2018

On January 25, 2018, we completed a strategic financing transaction with First Reserve for gross proceeds of US\$ 75 million (the "**Financing**") pursuant to the terms of an investment agreement dated December 30, 2017 among us, PetroShale US and First Reserve (the "**Investment Agreement**"). Pursuant to the terms of the Investment Agreement, First Reserve acquired 75,000 Subsidiary Preferred Shares and 39,308,176 Special Voting Shares. The Subsidiary Preferred Shares have a term of five years (subject to extension for an additional year at the election of the holder) and entitle the holder to a cumulative annual dividend of 9% per year (except that no dividends shall be payable for the extension year, if any). The Subsidiary Preferred Shares are, subject to certain conditions, exchangeable into Common Shares at an exchange price of C\$2.40 per share (the "**Exchange Price**"). The Exchange Price represents a 22% premium to the 30-day volume weighted average trading price of the Common Shares on December 29, 2017, the last trading day prior to entering into the Investment Agreement. As part of the Financing, First Reserve also acquired 39,308,176 Special Voting Shares which entitle the holder to the "as-exchanged" voting rights of the Subsidiary Preferred Shares. A proportionate number of Special Voting Shares will be redeemed and cancelled by us, for nominal consideration, upon any redemption of the Subsidiary Preferred Shares or upon the exchange of the Subsidiary Preferred Shares for Common Shares, and carry no other material rights or privileges. For further information on the Subsidiary Preferred Shares and Special Voting Shares see "*Description of Our Capital Structure*".

Pursuant to the Investment Agreement, First Reserve has been provided, among other things: (i) certain consent and governance rights, including the right that so long as First Reserve owns not less than 60% of the number of shares it acquired pursuant to the Financing (including on exchange thereof) it shall be entitled to designate one nominee for election to our Board of Directors; (ii) the right to maintain its pro-rata ownership of our shares in connection with future financing transactions, subject to certain customary exclusions; and (iii) registration rights in respect of any public offering of shares owned by First Reserve.

Upon closing of the Financing on January 25, 2018, Brooks Shughart, a managing director of First Reserve, was appointed to our Board of Directors and all amounts outstanding under our subordinated credit facility were paid, in full, and our subordinated credit facility was terminated. A copy of the Investment Agreement is available under the Corporation's profile on SEDAR at [www.sedar.com](http://www.sedar.com).

On April 2, 2018, we announced an acquisition of additional acreage in the Corporation's core South Berthold area for an aggregate purchase price of US\$ 17.8 million, and the results of recently drilled operated and non-operated wells in North Dakota.

In April 2018, the Corporation's lender under its senior credit facility increased the borrowing base under the senior loan facility from US\$ 39.9 million to US\$ 49.9 million.

On August 17, 2018, we closed an acquisition of high quality, light oil-weighted assets situated in our South Berthold core focus area in the North Dakota Bakken. Total cash consideration for the acquisition was US\$ 52.6 million, after closing adjustments. The acquisition included approximately 550 boe/d (~90% light oil and liquids) of low decline production, as well as significant working interests in three primarily undeveloped drilling units which are operated by us. The acquisition was funded from a \$46 million bought deal public offering of subscription receipts (which included full exercise of the over-allotment option granted to the underwriters in connection with such financing), a \$12.5 million concurrent non-brokered private placement of subscription receipts and a US\$ 10.5 million draw on our senior credit facility. The subscription receipt financings closed in escrow on August 14, 2018 and following the closing of the acquisition, the funds were released to us and an aggregate of 31,622,205 Common Shares were issued upon the conversion of the subscription receipts. On closing of the acquisition, our borrowing base under our senior credit facility increased from US\$ 82 million to US\$ 92 million.

In November 2018, following the senior lenders' semi-annual review of our borrowing base, our senior credit facility was further increased to US\$ 125 million.

On November 30, 2018, David Rain retired as the Chief Financial Officer of the Corporation and the Corporation appointed Caleb Morgret as Chief Financial Officer of the Corporation effective December 3, 2018. Mr. Rain was appointed to the Board of Directors of the Corporation effective December 3, 2018.

## Recent Developments

In February 2019, we commenced a normal course issuer bid (the "NCIB") pursuant to which we may purchase for cancellation, from time to time, up to a maximum of 9,839,663 Common Shares, which at the time of commencement of the NCIB, represented 10% of our "pubic float" of Common Shares. The NCIB commenced on February 8, 2019 and will terminate on February 8, 2020 or such earlier time as the NCIB is completed or terminated. To the date hereof, we have not purchased any Common Shares pursuant to the NCIB.

## Significant Acquisitions

None of the acquisitions completed during the year ended December 31, 2018 qualified as "significant acquisitions" pursuant to Part 8 of National Instrument 51-102 – *Continuous Disclosure Obligations*.

## GENERAL DESCRIPTION OF OUR BUSINESS

### Stated Business Objectives and Strategy

We are an oil company engaged in the acquisition, development and production of oil-weighted assets in the North Dakota Bakken/Three Forks. Our strategy focuses on acquiring and developing leases in the most prolific areas of the Williston Basin where the resources and stacked pay zones are the most intense. We have a mix of operated and non-operated properties. We have several operated drilling spacing units and will continue to pursue operated working interests in our core fields. In addition, our non-operated interests are operated by large, experienced and capable operators. Acquiring non-operated working interests in fields being developed by efficient operators, helps us to manage risk and capital exposure while maximizing production, optimizing ultimate recoveries and enhancing rates of return.

### Cyclical and Seasonal Impact of Industry

Our operational results and financial condition are dependent on the prices received for our oil and natural gas production. Oil and natural gas prices have fluctuated widely during recent years. Commodity prices are determined by supply and demand, geopolitical factors, weather and general economic conditions, as well as conditions in other oil and natural gas regions. Declines in oil and natural gas prices could have an adverse effect on our financial condition. In addition, the development of oil and natural gas reserves is dependent on access to areas where drilling and other oilfield operations are to be undertaken. Seasonal weather variation including freeze-up and break-up, affect access in certain circumstances. See "*Risk Factors – Weakness in the Oil and Natural Gas Industry*" and "*Risk Factors – Exploration, Development and Production Risks*".

### Ongoing Acquisition Activities

#### *Potential Acquisitions*

We evaluate potential acquisitions of various types of oil and natural gas and other energy related assets as part of our ongoing asset portfolio management program. We may be in the process of evaluating and offering on several potential acquisitions at any one time which individually or together could be material and it is in the normal course of our business to routinely make offers on properties or acquisitions that fit within our business objectives.

### Environment Policies

The oil and natural gas industry is subject to extensive controls and regulations governing its operations imposed by legislation enacted by various levels of government with respect to pricing and taxation of oil and natural gas, all of which should be carefully considered by investors in the oil and natural gas industry. Since these requirements apply to all operators in the oil and natural gas industry, it is not anticipated that our competitive position within the industry will be adversely affected in a manner materially different than that of other oil and gas companies of similar size. All legislation is a matter of public record and we are unable to predict what additional legislation or amendments may be enacted.

Compliance with provincial, state and federal environmental legislation can require significant expenditures or operational restrictions. Breach of such requirements may result in the suspension or revocation of necessary licenses and authorizations, civil liability for pollution damage and the imposition of material fines and penalties, all of which have the potential to negatively impact our earnings and corporate growth. We maintain an active list of our expected future expenditures to reclaim our properties to acceptable regulatory standards. This list is reviewed on an ongoing basis and the present value of these costs is recorded as a liability on our financial statements. The expected future obligation is not outside the norm for a company of our size and operations. At present, we believe, to the best of our knowledge, that we, and the operators of our non-operated properties, meet all existing environmental standards and regulations and have included appropriate amounts in our capital expenditure budget to continue to meet current environmental protection requirements. We have internal procedures designed to ensure that the environmental aspects of new developments are taken into account prior to proceeding with them. See "*Risk Factors – Environmental*".

### **Renegotiation or Termination of Contracts**

As at the date hereof, we do not anticipate that any aspect of our business may be materially negatively affected in the remainder of 2019 by the renegotiation or termination of contracts or subcontracts, other than our ability to carry on business may be adversely affected if our senior credit facility was terminated. See "*Description of Our Capital Structure – Credit Facility*" and "*Risk Factors – Credit Facility Arrangements*".

### **Competitive Conditions**

We are a member of the petroleum industry, which is highly competitive at all levels. We compete with other companies for all of our business inputs, including development prospects, access to commodity markets, acquisition opportunities, available capital and staffing. Additionally, the area in which we seek to acquire assets and interests is a very competitive area of North Dakota and we are a smaller company than a majority of the players active in the same area. See "*Risk Factors – Competition*".

We strive to be competitive by maintaining financial flexibility, capitalizing on acquisitions and by utilizing current technologies to enhance optimization, development and operational activities.

### **Human Resources**

As at December 31, 2018 we had 13 employees and full-time contractors.

### **Material Restructuring Transactions**

Within the three most recently completed financial periods we have not completed any material reorganizations.

### **Foreign Operations**

We conduct our business in the United States through PetroShale US and, as such, our business is dependent upon foreign operations in the United States and associated risks. See "*Risk Factors*".

## **STATEMENT OF RESERVES DATA AND OTHER OIL AND NATURAL GAS INFORMATION**

The statement of reserves data and other oil and natural gas information set forth below is dated December 31, 2018 and the preparation date is March 12, 2019. The statement is effective as of December 31, 2018. The Report On Reserves Data By Independent Qualified Reserves Evaluators in Form 51-101F2 and the Report Of Management and Directors on Oil and Gas Disclosure in Form 51-101F3 are attached as Appendices B and C, respectively to this Annual Information Form.

## Disclosure of Reserves Data

The reserves data set forth below is based upon the evaluation by NSAI with an effective date of December 31, 2018 as contained in the NSAI Report. The reserves data summarizes our crude oil, natural gas liquids and natural gas reserves and the net present values of future net revenue for these reserves using forecast prices and costs, not including the impact of any price risk management activities. The NSAI Report has been prepared in accordance with the standards contained in the COGE Handbook and the reserve definitions contained in NI 51-101 and CSA 51-324. We engaged NSAI to provide an evaluation of our proved and proved plus probable reserves in the United States. No attempt was made to evaluate possible reserves.

Our reserves are in the United States, specifically in North Dakota and Montana. **All financial information provided herein with respect to our United States reserves are in US\$. The exchange rate in effect as at December 31, 2018 was US\$1.00 = \$1.36 Cdn.**

We determined the future net revenue and present value of future net revenue after income taxes by using NSAI's before income tax future net revenue and our estimate of income tax. Our estimates of the after income tax value of future net revenue have been prepared based on before income tax reserves information and include assumptions and estimates of our tax pools and the sequences of claims and rates of claim thereon. The values shown may not be representative of future income tax obligations, applicable tax horizon or after tax valuation. The after tax net present value of our oil and gas properties reflects the tax burden of our properties on a stand-alone basis. It does not provide an estimate of the value of us as a business entity, which may be significantly different. Our financial statements for the period ended December 31, 2018 should be consulted for additional information regarding our taxes.

**Forecasts of revenue, estimated using forecast prices and costs, arising from the anticipated development and production of resources, are presented net of the associated royalties, operating costs, development costs and abandonment and reclamation costs. The estimated future net revenue contained in the following tables does not necessarily represent the fair market value of our reserves. There is no assurance that the forecast price and cost assumptions contained in the NSAI Report will be attained and variations could be material. Other assumptions and qualifications relating to costs and other matters are summarized in the notes to or following the tables below. Readers should review the definitions and information contained in "Definitions and Notes to Reserves Data Tables" below in conjunction with the following tables and notes. The recovery and reserve estimates on our properties described herein are estimates only. The actual reserves on our properties may be greater or less than those calculated. See "Risk Factors".**

### Reserves Data (Forecast Prices and Costs)

#### SUMMARY OF OIL AND NATURAL GAS RESERVES AS OF DECEMBER 31, 2018 FORECAST PRICES AND COSTS

RESERVES CATEGORY	RESERVES					
	TIGHT OIL		SHALE GAS <sup>(1)</sup>		NATURAL GAS LIQUIDS <sup>(1)</sup>	
	Gross (Mbbls)	Net (Mbbls)	Gross (MMcf)	Net (MMcf)	Gross (Mbbls)	Net (Mbbls)
PROVED:						
Developed Producing	8,757.3	7,133.6	11,701.3	9,558.6	1,556.6	1,247.8
Developed Non-Producing	-	-	-	-	-	-
Undeveloped	28,715.8	23,618.5	25,961.3	21,397.0	3,875.0	3,128.5
TOTAL PROVED	37,473.1	30,752.1	37,662.6	30,955.5	5,431.6	4,376.3
PROBABLE	10,407.2	8,420.8	10,301.6	8,367.1	1,490.5	1,191.3
TOTAL PROVED PLUS PROBABLE	47,880.3	39,172.9	47,964.3	39,322.7	6,922.1	5,567.6

Note:

<sup>(1)</sup> All of our shale gas reserves and natural gas liquids are produced in solution with our tight oil.

**NET PRESENT VALUE OF FUTURE NET REVENUE  
FORECAST PRICES AND COSTS**

RESERVES CATEGORY	BEFORE INCOME TAXES DISCOUNTED AT (%/year)					Unit Value Before Income Tax Discounted at 10% per Year US\$/Boe <sup>(1)</sup>
	0% (US\$000s)	5% (US\$000s)	10% (US\$000s)	15% (US\$000s)	20% (US\$000s)	
PROVED:						
Developed Producing	360,580.9	263,316.2	208,352.3	173,847.8	150,378.8	20.89
Developed Non-Producing	-	-	-	-	-	-
Undeveloped	1,045,930.3	652,037.4	446,642.2	324,574.1	245,064.3	14.73
TOTAL PROVED	1,406,511.2	915,353.6	654,994.5	498,421.8	395,443.2	16.26
PROBABLE	469,547.3	285,215.4	195,621.9	144,834.9	112,792.6	17.77
TOTAL PROVED PLUS PROBABLE	1,876,058.4	1,200,569.0	850,616.4	643,256.7	508,235.8	16.58

Note:

<sup>(1)</sup> Unit values are based on net volumes.

RESERVES CATEGORY	AFTER INCOME TAXES DISCOUNTED AT (%/year)					
	0% (US\$000s)	5% (US\$000s)	10% (US\$000s)	15% (US\$000s)	20% (US\$000s)	
PROVED:						
Developed Producing		345,133.7	255,375.1	203,785.2	170,867.7	148,156.6
Developed Non-Producing		-	-	-	-	-
Undeveloped		789,600.4	491,290.7	335,582.9	242,842.9	182,269.9
TOTAL PROVED		1,134,734.1	746,665.8	539,368.2	413,710.6	330,426.5
PROBABLE		354,353.9	215,122.7	147,658.6	109,550.3	85,594.1
TOTAL PROVED PLUS PROBABLE		1,489,088.0	961,788.5	687,026.8	523,260.9	416,020.6

**TOTAL FUTURE NET REVENUE  
(UNDISCOUNTED)  
AS OF DECEMBER 31, 2018  
FORECAST PRICES AND COSTS**

RESERVES CATEGORY	REVENUE <sup>(1)</sup> (US\$000s)	ROYALTIES <sup>(2)</sup> (US\$000s)	OPERATING COSTS (US\$000s)	DEVELOPMENT COSTS (US\$000s)	ABANDONMENT AND RECLAMATION COSTS <sup>(3)</sup> (US\$000s)	FUTURE NET REVENUE BEFORE INCOME TAXES <sup>(4)</sup> (US\$000s)	INCOME TAXES (US\$000s)	FUTURE NET REVENUE AFTER INCOME TAXES <sup>(4)</sup> (US\$000s)
Total Proved	2,930,543.6	754,273.1	412,479.9	344,254.4	13,025.1	1,406,511.2	271,777.1	1,134,734.1
Total Proved plus Probable	3,787,669.0	983,693.7	508,797.0	404,193.9	14,926.0	1,876,058.4	386,970.4	1,489,088.0

Notes:

<sup>(1)</sup> Total revenue includes company revenue before royalty and includes other income.

<sup>(2)</sup> Royalties include freehold and overriding royalties and mineral production tax.

<sup>(3)</sup> For more information, see "*Significant Factors or Uncertainties Affecting Reserves Data – Abandonment and Reclamation Costs*".

<sup>(4)</sup> The estimated values of future net revenues disclosed do not represent fair market value.

**FUTURE NET REVENUE  
BY PRODUCT TYPE  
AS OF DECEMBER 31, 2018  
FORECAST PRICES AND COSTS<sup>(1)</sup>**

<b>RESERVES CATEGORY</b>	<b>PRODUCT TYPE</b>	<b>FUTURE NET REVENUE BEFORE INCOME TAXES (discounted at 10%/year) (US\$000s)</b>	<b>UNIT VALUE <sup>(2)</sup> (US\$/boe)</b>
Proved	Tight Oil <sup>(1)</sup>	654,994.5	16.26
	<b>Total</b>	<u>654,994.5</u>	
Proved plus Probable	Tight Oil <sup>(1)</sup>	850,616.4	16.58
	<b>Total</b>	<u>850,616.4</u>	

## Notes:

<sup>(1)</sup> All of our shale gas reserves and natural gas liquids are produced in solution with our tight oil. The natural gas liquid reserves are recovered from our natural gas reserves downstream of the wellhead. As such we are not able to break out the various capital and operating cost components for each product type.

<sup>(2)</sup> Unit values are based on net reserve volumes.

**Definitions and Notes to Reserves Data Tables**

In the tables set forth above in "*Reserves Data (Forecast Prices and Costs)*" and elsewhere in this Annual Information Form the following definitions and other notes are applicable:

1. **"Gross"** means:
  - (a) in relation to our interest in production and reserves, our working interest (operating and non-operating) share before deduction of royalties and without including any of our royalty interests;
  - (b) in relation to wells, the total number of wells in which we have an interest; and
  - (c) in relation to properties, the total area of properties in which we have an interest.
2. **"Net"** means:
  - (a) in relation to our interest in production and reserves, our working interest (operating and non-operating) share after deduction of royalty obligations, plus our royalty interest in production or reserves;
  - (b) in relation to wells, the number of wells obtained by aggregating our working interest in each of our gross wells; and
  - (c) in relation to our interest in a property, the total area in which we have an interest multiplied by our working interest.
3. Definitions used for reserve categories are as follows:

*Reserve Categories*

Reserves are estimated remaining quantities of oil and natural gas and related substances anticipated to be recoverable from known accumulations, from a given date forward, based on:

- (a) analysis of drilling, geological, geophysical and engineering data;

- (b) the use of established technology; and
- (c) specified economic conditions (see the discussion of "*Economic assumptions*" below).

Reserves are classified according to the degree of certainty associated with the estimates.

- (a) Proved reserves are those reserves that can be estimated with a high degree of certainty to be recoverable. It is likely that the actual remaining quantities recovered will exceed the estimated proved reserves.
  - (b) Probable reserves are those additional reserves that are less certain to be recovered than proved reserves. It is equally likely that the actual remaining quantities recovered will be greater or less than the sum of the estimated proved plus probable reserves.
4. "**Economic assumptions**" are the forecast prices and costs used in the estimate.

#### *Development and Production Status*

Each of the reserve categories (proved and probable) may be divided into developed and undeveloped categories:

- (a) Developed reserves are those reserves that are expected to be recovered from existing wells and installed facilities or, if facilities have not been installed, that would involve a low expenditure (for example, when compared to the cost of drilling a well) to put the reserves on production. The developed category may be subdivided into producing and non-producing.
  - (i) Developed producing reserves are those reserves that are expected to be recovered from completion intervals open at the time of the estimate. These reserves may be currently producing or, if shut-in, they must have previously been on production, and the date of resumption of production must be known with reasonable certainty.
  - (ii) Developed non-producing reserves are those reserves that either have not been on production, or have previously been on production, but are shut-in, and the date of resumption of production is unknown.
- (b) Undeveloped reserves are those reserves expected to be recovered from known accumulations where a significant expenditure (for example, when compared to the cost of drilling a well) is required to render them capable of production. They must fully meet the requirements of the reserves category (proved, probable) to which they are assigned.

#### *Levels of Certainty for Reported Reserves*

The qualitative certainty levels referred to in the definitions above are applicable to individual reserves entities (which refers to the lowest level at which reserves calculations are performed) and to reported reserves (which refers to the highest level sum of individual entity estimates for which reserves are presented). Reported reserves should target the following levels of certainty under a specific set of economic conditions:

- (a) at least a 90 percent probability that the quantities actually recovered will equal or exceed the estimated proved reserves; and
- (b) at least a 50 percent probability that the quantities actually recovered will equal or exceed the sum of the estimated proved plus probable reserves.

A quantitative measure of the certainty levels pertaining to estimates prepared for the various reserves categories is desirable to provide a clearer understanding of the associated risks and uncertainties. However, the majority of reserves estimates will be prepared using deterministic methods that do not provide a mathematically derived quantitative measure of probability. In principle, there should be no difference between estimates prepared using probabilistic or deterministic methods.

5. "**Exploratory well**" means a well that is not a development well, a service well or a stratigraphic test well.
6. "**Development costs**" means costs incurred to obtain access to our reserves and to provide facilities for extracting, treating, gathering and storing the oil and gas from our reserves. More specifically, development costs, including applicable operating costs of support equipment and facilities and other costs of development activities, are costs incurred to:
  - (a) gain access to and prepare well locations for drilling, including surveying well locations for the purpose of determining specific development drilling sites, clearing ground, draining, road building and relocating public roads, gas lines and power lines, to the extent necessary in developing the reserves;
  - (b) drill and equip development wells, development type stratigraphic test wells and service wells, including the costs of platforms and of well equipment such as casing, tubing, pumping equipment and wellhead assembly;
  - (c) acquire, construct and install production facilities such as flow lines, separators, treaters, heaters, manifolds, measuring devices and production storage tanks, natural gas cycling and processing plants, and central utility and waste disposal systems; and
  - (d) provide improved recovery systems.
7. "**Development well**" means a well drilled inside the established limits of an oil and gas reservoir, or in close proximity to the edge of the reservoir, to the depth of a stratigraphic horizon known to be productive.
8. "**Exploration costs**" means costs incurred in identifying areas that may warrant examination and in examining specific areas that are considered to have prospects that may contain oil and gas reserves, including costs of drilling exploratory wells and exploratory type stratigraphic test wells. Exploration costs may be incurred both before acquiring the related property and after acquiring the property. Exploration costs, which include applicable operating costs of support equipment and facilities and other costs of exploration activities, are:
  - (a) costs of topographical, geochemical, geological and geophysical studies, rights of access to properties to conduct those studies, and salaries and other expenses of geologists, geophysical crews and others conducting those studies;
  - (b) costs of carrying and retaining unproved properties, such as delay rentals, taxes (other than income and capital taxes) on properties, legal costs for title defence and the maintenance of land and lease records;
  - (c) dry hole contributions and bottom hole contributions;
  - (d) costs of drilling and equipping exploratory wells; and
  - (e) costs of drilling exploratory type stratigraphic test wells.



9. **"Service well"** means a well drilled or completed for the purpose of supporting production in an existing field. Wells in this class are drilled for the following specific purposes: gas injection (natural gas, propane, butane or flue gas), water injection, steam injection, air injection, salt water disposal, water supply for injection, observation or injection for combustion.
10. **"Forecast prices and costs"**  
These are future prices and costs that are:
  - (a) generally acceptable as being a reasonable outlook of the future; and
  - (b) if and only to the extent that, there are fixed or presently determinable future prices or costs to which we are legally bound by a contractual or other obligation to supply a physical product, including those for an extension period of a contract that is likely to be extended, those prices or costs rather than the prices and costs referred to in paragraph (a).
11. **"Natural Gas Liquids"** means those hydrocarbon components that can be recovered from natural gas as a liquid including, but not limited to, ethane, propane, butanes, pentanes plus, and condensates.
12. **"Shale gas"** means natural gas:
  - (a) contained in dense organic-rich rocks, including low-permeability shales, siltstones and carbonates, in which the natural gas is primarily adsorbed on the kerogen or clay minerals; and
  - (b) that usually requires the use of hydraulic fracturing to achieve economic production rates.
13. **"Tight oil"** means crude oil:
  - (a) contained in dense organic-rich rocks, including low-permeability shales, siltstones and carbonates, in which the crude oil is primarily contained in microscopic pore spaces that are poorly connected to one another; and
  - (b) that typically requires the use of hydraulic fracturing to achieve economic production rates.
14. Numbers may not add due to rounding.
15. The estimates of future net revenue presented in the tables above do not represent fair market value.
16. We do not have any synthetic oil or other products from non-conventional oil and gas activities.

### Pricing Assumptions

The forecast cost and price assumptions in this statement assume primarily increases in wellhead selling prices and take into account inflation with respect to future operating and capital costs. Crude oil and natural gas benchmark reference pricing, inflation and exchange rates utilized in the NSAI Report were as follows:

#### SUMMARY OF PRICING AND RATE ASSUMPTIONS FORECAST PRICES AND COSTS <sup>(1)</sup>

Year	GAS US HENRY HUB PRICE (US\$/MMBtu)				OIL WTI CRUDE OIL (US\$/Bbl)				NGL (US\$/Bbl) <sup>(3)</sup>
	McDaniel & Associates Consultants Ltd.	GLJ Petroleum Consultants	Sproule Worldwide Petroleum Consultants	NSAI Average	McDaniel & Associates Consultants Ltd.	GLJ Petroleum Consultants	Sproule Worldwide Petroleum Consultants	NSAI Average	NSAI
Forecast									
2019	3.00	3.00	3.00	3.000	56.50	56.25	63.00	58.58	18.75
2020	3.00	3.00	3.25	3.083	63.80	63.00	67.00	64.60	20.67
2021	3.15	3.15	3.50	3.267	67.60	67.00	70.00	68.20	21.82
2022	3.45	3.45	3.57	3.490	71.60	70.00	71.40	71.00	22.72
2023	3.60	3.60	3.64	3.614	73.10	72.50	72.83	72.81	23.30
2024	3.70	3.70	3.71	3.705	74.50	75.00	74.28	74.59	23.87
2025	3.75	3.75	3.79	3.763	76.00	77.50	75.77	76.42	24.45
2026	3.85	3.85	3.86	3.855	77.50	80.41	77.29	78.40	25.09
2027	3.90	3.90	3.94	3.914	79.10	82.02	78.83	79.98	25.59
2028	4.00	4.00	4.02	4.007	80.70	83.66	80.41	81.59	26.11
2029	4.05	4.05	4.10	4.067	82.30	85.33	82.02	83.22	26.63
2030	4.15	4.15	4.18	4.161	83.90	87.04	83.66	84.87	27.16
2031	4.25	4.25	4.27	4.255	85.60	88.78	85.33	86.57	27.70
2032	4.30	4.30	4.35	4.317	87.30	90.56	87.04	88.30	28.26
2033	4.40	4.40	4.44	4.413	89.10	92.37	88.78	90.08	28.83
Thereafter	2%/year	2%/year	2.0%/year	2%/year	2%/year	2%/year	2.0%/year	2%/year	2%/year

#### Notes:

- (1) As at December 31, 2018.
- (2) Inflation rate for costs used is 2.0 % per year.
- (3) NGL pricing reflects the fixed % differential to the NSAI average WTI price based on the company's historical results.

Weighted average historical prices realized by us for the period ended December 31, 2018, excluding price risk management activities, were US\$ 0.90/Mcf for shale gas, US\$ 59.64/Bbl for tight oil and US\$ 8.19/Bbl for natural gas liquids.

**Reserves Reconciliation**

**RECONCILIATION OF  
GROSS RESERVES  
BY PRINCIPAL PRODUCT TYPE  
FORECAST PRICES AND COSTS**

	TIGHT OIL			SHALE GAS			NATURAL GAS LIQUIDS		
	Gross Proved (Mbbls)	Gross Probable (Mbbls)	Gross Proved Plus Probable (Mbbls)	Gross Proved (MMcf)	Gross Probable (MMcf)	Gross Proved Plus Probable (MMcf)	Gross Proved (Mbbls)	Gross Probable (Mbbls)	Gross Proved Plus Probable (Mbbls)
<b>December 31, 2017</b>	<u>25,588.6</u>	<u>5,180.2</u>	<u>30,768.8</u>	<u>30,083.1</u>	<u>5,726.1</u>	<u>35,809.2</u>	-	-	-
Discoveries	-	-	-	-	-	-	-	-	-
Extensions and Improved Recovery	-	-	-	-	-	-	-	-	-
Product Type Transfers <sup>(1)</sup>	-	-	-	(8,788.1)	(1,522.9)	(10,311.0)	4,077.7	669.4	4,747.1
Technical Revisions <sup>(2)</sup>	(648.9)	3,153.2	2,504.3	3,685.0	3,696.7	7,381.7	348.0	669.1	1,017.1
Acquisitions <sup>(3)</sup>	14,091.6	2,082.6	16,174.2	14,405.4	2,411.4	16,816.8	1,276.9	152.0	1,428.8
Dispositions	-	-	-	-	-	-	-	-	-
Economic Factors	(49.4)	(8.8)	(58.2)	(72.9)	(9.6)	(82.5)	-	-	-
Production	<u>(1,508.7)</u>	-	<u>(1,508.7)</u>	<u>(1,649.9)</u>	-	<u>(1,649.9)</u>	<u>(271.0)</u>	-	<u>(271.0)</u>
<b>December 31, 2018</b>	<u>37,473.1</u>	<u>10,407.2</u>	<u>47,880.3</u>	<u>37,662.6</u>	<u>10,301.6</u>	<u>47,964.3</u>	<u>5,431.6</u>	<u>1,490.5</u>	<u>6,922.1</u>

## Notes:

- <sup>(1)</sup> Product type transfers reflects the initial inclusion of NGLs in the Company's reserves beginning on January 1, 2018, and the offsetting adjustment to wellhead gas as a result of NGL recovery.
- <sup>(2)</sup> Technical revisions include removal of locations based on development permitting and activity of our operators on non-operated properties and probable reserve assignments to Proved well locations. Additionally, it reflects changes to reserves based on estimates from further production information gathered in 2018 from our wells and analogous wells near our lands, and revisions to interest on certain non-operated wells.
- <sup>(3)</sup> The acquisitions amount is the estimate of reserves at December 31, 2018 adjusted for production associated with the acquired properties from the related acquisition date to December 31 2018.

**Additional Information Relating to Reserves Data****Undeveloped Reserves**

Undeveloped reserves are attributed by NSAI in the NSAI Report in accordance with standards and procedures contained in the COGE Handbook. Proved undeveloped reserves are those reserves that can be estimated with a high degree of certainty and are expected to be recovered from known accumulations where a significant expenditure is required to render them capable of production. Probable undeveloped reserves are those reserves that are less certain to be recovered than proved reserves and are expected to be recovered from known accumulations where a significant expenditure is required to render them capable of production.

In some cases, it will take longer than two years to develop these reserves and the anticipated development timeframe has been extended in the NSAI Report to reflect increases in forecast oil prices beyond the next two years. All of our proved undeveloped reserves are located in our core areas. Over the next several years, we anticipate actively spending capital to develop our operated properties as well as our non-operated properties, along with the operators of such properties, in these core areas. As such, we expect that the large majority of our booked undeveloped projects will be completed within a four year time frame. We intend to fund the development of our undeveloped reserves with internally generated cash flow and/or debt. We have been active in developing our operated properties and converting undeveloped reserves to producing reserves. We expect to continue our development activities, including participating in the development of our non-operated properties, to convert our undeveloped reserves to producing reserves. There are a number of factors that could result in delayed or cancelled development, including the following: (i) changing economic conditions (due to commodity prices, operating and capital expenditure fluctuations); (ii) changing technical conditions (including production anomalies, such as water breakthrough or accelerated depletion); (iii) multi-zone developments (for instance, a prospective formation completion may be delayed until the initial completion is no longer economic); (iv) a larger development program may need to be spread out over several years to optimize capital

allocation and facility utilization; (v) changes to our ability to obtain financing for such development; (vi) changes to development plans of the operators of our properties; and (vii) surface access issues (including those relating to land owners, weather conditions and regulatory approvals). For more information, see "*Risk Factors*".

### ***Proved Undeveloped Reserves***

The following table discloses, for each product type, the volumes of gross proved undeveloped reserves that were attributed in each of the most recent three financial years.

Year	Tight Oil (Mbbls)		Shale Gas (MMcf)		Natural Gas Liquids (Mbbls)	
	First Attributed	Cumulative at Year End	First Attributed	Cumulative at Year End	First Attributed	Cumulative at Year End
2016	2,360.1	16,707.4	2,424.4	18,773.7	-	-
2017	2,262.8	21,263.9	2,158.5	22,879.7	-	-
2018	12,883.0	28,715.8	11,727.5	25,961.3	1,314.8	3,875.0

The majority of our proved undeveloped reserves evaluated in the NSAI Report are attributable to our core properties in North Dakota. Proved undeveloped reserves have been assigned in areas where the reserves can be estimated with a high degree of certainty. In most instances, proved undeveloped reserves will be assigned on lands immediately offsetting existing producing wells within the same accumulation or pool. NSAI has assigned 36,917.7 Mboe of proved undeveloped reserves with respect to our oil and gas assets in the NSAI Report with US\$ 344.3 million of associated undiscounted capital, all of which is forecast to be spent in the next four years.

### ***Probable Undeveloped Reserves***

The following table discloses, for each product type, the volumes of gross probable undeveloped reserves that were first attributed in each of the most recent three financial years.

Year	Tight Oil (Mbbls)		Shale Gas (MMcf)		Natural Gas Liquids (Mbbls)	
	First Attributed	Cumulative at Year End	First Attributed	Cumulative at Year End	First Attributed	Cumulative at Year End
2016	1,427.3	5,340.6	1,567.6	5,854.4	-	-
2017	-	5,180.2	-	5,726.1	-	-
2018	1,901.4	8,083.8	1,665.4	6,932.8	180.4	1,065.1

Probable undeveloped reserves have been assigned in areas where the reserves can be estimated with less certainty. It is equally likely that the actual remaining quantities recovered will be greater or less than the proved plus probable reserves. In most instances probable undeveloped reserves have been assigned on lands in the area with existing producing wells but there is some uncertainty as to whether they are directly analogous to the producing accumulation or pool. NSAI has assigned 13,614.6 Mboe of probable undeveloped reserves with respect to our oil and gas assets in the NSAI Report with US\$ 59.9 million of associated undiscounted capital all of which is forecast to be spent in the next four years.

### ***Significant Factors or Uncertainties Affecting Reserves Data***

Changes in future commodity prices relative to the forecasts provided under "*Pricing Assumptions*" above could have a negative impact on our reserves and in particular the development of our undeveloped reserves unless future development costs are adjusted in parallel. The majority of our properties are operated by third parties, and as such the capital allocation decisions and uncertainties affecting the operators of our properties has a direct effect on our reserves. We do not anticipate any significant economic factors or significant uncertainties will affect any particular components of our reserves data. However, our reserves can be affected significantly by fluctuations in product pricing, capital expenditures, operating costs, royalty regimes and well performance that are beyond our control. See "*Risk Factors*".

### *Abandonment and Reclamation Costs*

Our overall abandonment and reclamation costs are based on well bore abandonment and reclamation costs and liability issues such as flare pit remediation, facility decommissioning, remediation and reclamation costs. These costs were estimated using relevant experience of operators in North Dakota. We and the operators of our non-operated properties review suspended or standing well bores for reactivation, recompletion or sale and conduct systematic abandonment programs for those well bores that do not meet established criteria. A portion of our liability issues are retired every year and facilities are decommissioned when all the wells producing to them have been abandoned. All of our liability reduction programs take into account seasonal access, high priority and stakeholder issues and opportunities for multi-location programs to reduce costs.

As at December 31, 2018 we had 341 gross (30.8 net) wells for which we expect to incur abandonment and reclamation costs. The NSAI Report deducted US\$14.9 million (undiscounted) and US\$2.1 million (10% discount) for abandonment costs of wells with proved and probable reserves in estimated future net revenues disclosed in this Annual Information Form. The undiscounted amount of estimated future abandonment and reclamation costs reflected in our December 31, 2018 financial statements is C\$9.7 million. Our estimate only reflects abandonment and reclamation costs for existing wells, and excludes costs associated with forecast wells to be drilled, which are included in the costs used by NSAI in estimating the future net revenues disclosed herein.

### *Future Development Costs*

The following table sets forth development costs deducted in the estimation of our future net revenue attributable to the reserve categories noted below.

Year	FORECAST PRICES AND COSTS	
	Proved Reserves (US\$000s)	Proved Plus Probable Reserves (US\$000s)
2019	82,381.3	82,489.4
2020	132,805.7	150,335.5
2021	115,829.3	144,892.8
2022	13,238.1	26,476.2
2023	-	-
Remaining	-	-
Total (Undiscounted)	344,254.4	404,193.9

We expect to fund the development costs of our reserves through a combination of internally generated cash flow, debt and equity issuances. We do not anticipate that the cost of obtaining the funds required for these development activities to have a material effect on our disclosed petroleum reserves. There can be no guarantee that funds will be available or that our Board of Directors will allocate funding to develop all of the reserves attributed in the NSAI Report. Failure to develop those reserves could have a negative impact on our future cash flow. Interest or other costs of external funding are not included in our reserves and future net revenue estimates and would reduce reserves and future net revenue to some degree depending upon the funding sources utilized. We do not anticipate that interest or other funding costs would make development of any of our properties uneconomic.

### **Description of Properties**

The following is a description of our principal oil and natural gas properties. Information in respect of current production is average production, net to our working interest.

Our assets are crude oil properties located primarily in the Fort Berthold region of North Dakota. We also have minor interests in Richland County, Montana and miscellaneous royalty interests in Alberta and Ontario, but these properties only have nominal reserves associated with them.

We have approximately 7,900 net acres of land in Fort Berthold, primarily in McKenzie and Dunn counties, of which 7,400 net acres are held by production. We operate approximately 71% of our current production. The North Dakota Bakken basin is characterized as multi-zone with high initial deliverability of light sweet crude oil (42° API), with associated natural gas. The associated natural gas has a high heat content and can provide a favourable NGL yield

following processing. During 2018, we spent approximately \$102 million on development of our assets and \$94 million on acquiring new properties in the Fort Berthold area. During the year, we participated in 37 gross (6.4 net) crude oil wells targeting both the Middle Bakken and Three Forks formations. Production averaged 5,630 Boe/d during 2018, with a liquids weighting of approximately 87%. As at December 31, 2018, we have 4 gross (2.5 net) operated wells which were drilled and not yet completed, 1 gross (0.5 net) partially drilled operated well and three gross (0.75 net) non-operated wells drilled and not yet completed.

During 2018, we added 28.1 Mmboe of proved plus probable reserves at our Fort Berthold property, after adjusting for production, including 20.4 Mmboe from acquisitions, as well as technical revisions and other factors. As at December 31, 2018, we have approximately 62.8 Mmboe of total proved plus probable reserves associated with this property, which is 71% higher than at December 31, 2017.

### Oil And Natural Gas Wells

The following table sets forth the number and status of wells in which we had a working interest as at December 31, 2018.

	OIL WELLS				NATURAL GAS WELLS			
	Producing		Non-Producing		Producing		Non-Producing	
	Gross	Net	Gross	Net	Gross	Net	Gross	Net
Montana	5.0	0.5	-	-	-	-	-	-
North Dakota	336.0	30.3	-	-	-	-	-	-
Total	341.0	30.8	-	-	-	-	-	-

Of the non-producing wells, no wells were drilled in 2018 that were capable of production and had reserves assigned to them.

### Properties with No Attributed Reserves

The following table sets out our developed and undeveloped land holdings as at December 31, 2018.

	UNDEVELOPED ACRES		DEVELOPED ACRES		TOTAL ACRES <sup>(1)(2)</sup>	
	Gross	Net	Gross	Net	Gross	Net
Montana	1,296	5	6,236	487	7,532	492
North Dakota	13,489	549	66,221	7,375	79,710	7,924
Total	14,784	554	72,457	7,862	87,242	8,416

Notes:

- (1) Of these undeveloped land holdings, nil net acres could expire by December 31, 2019 if not continued. We have no material work commitments on such properties and where we determine prudent to do so, we can extend expiring leases by either making the necessary applications to extend or performing the necessary work.
- (2) We do not have any interest in unproved properties.
- (3) When determining gross and net acreage for two or more leases covering the same lands but different rights, the acreage is reported for each lease. Where there are multiple discontinuous rights in a single lease, the acreage is reported only once.

### Significant Factors or Uncertainties Relevant to Properties With No Attributed Reserves

There are several economic factors and significant uncertainties that affect our anticipated development of our properties to which no reserves are attributed. We will be required to make substantial capital expenditures in order to prove, exploit, develop and produce oil and natural gas from these properties in the future. If cash flow from operations is not sufficient to satisfy our capital expenditure requirements, there can be no assurance that additional debt or equity financing will be available to meet these requirements or, if available, on terms acceptable to us. Failure to obtain such financing on a timely basis could cause us to forfeit our interest in certain properties, miss certain opportunities and reduce or terminate our operations on such properties. Our inability to access sufficient capital for

our exploration and development purposes could have a material adverse effect on our ability to execute our business strategy to develop these prospects. See also "*Risk Factors*".

The primary economic factors that affect the development of these lands to which no reserves have been attributed are future commodity prices for crude oil and natural gas (and our outlook relating to such prices) and the future costs of drilling, completing, tying in and operating wells at the time that such activities are considered.

The primary uncertainties that affect the development of such lands are the future drilling and completion results achieved in the development activities, drilling and completion results achieved by others on lands in close proximity to these lands, and future changes to applicable regulatory or royalty regimes that affect timing or economics of proposed development activities. All of these uncertainties have the potential to delay the development of such lands. Conversely, uncertainty as to the timing and nature of the evolution or development of better exploration, drilling, completion and production technologies have the potential to accelerate development activities and enhance the economics relating to such lands.

We do not expect any abandonment or reclamation costs to materially affect any potential activities on our properties with no attributed reserves.

### ***Forward Contracts***

We are exposed to market risks resulting from fluctuations in commodity prices, foreign exchange rates and interest rates in the normal course of operations. A variety of derivative instruments may be used by us from time to time to reduce our exposure to fluctuations in commodity prices and foreign exchange rates. We are exposed to losses in the event of default by the counterparties to these derivative instruments. We manage this risk by contracting with large, well capitalized counterparties.

We may use certain financial instruments to hedge exposure to commodity price fluctuations on a portion of our future crude oil and natural gas production. For further information, see note 10 to our financial statements for the year ended December 31, 2018. See "*Risk Factors – Hedging*".

### ***Tax Horizon***

Based on our recent developments and estimated pro-forma 2019 cash flow and capital expenditures, we expect income taxes may become payable in 2022.

### ***Costs Incurred***

The following table summarizes the costs incurred related to our activities for the year ended December 31, 2018.

<b>Expenditure</b>	<b>Year Ended December 31, 2018 (US\$000s)</b>
Property acquisition costs – Unproved properties	-
Property acquisition costs – Proved properties <sup>(1)</sup>	72,216
Corporate acquisition costs	-
Exploration costs <sup>(2)</sup>	-
Development costs <sup>(3)</sup>	78,403
Other	124
Total	150,743

Notes:

- <sup>(1)</sup> Net of dispositions, if any.
- <sup>(2)</sup> Geological and geophysical capital expenditures and drilling costs for exploration wells.
- <sup>(3)</sup> Development costs include development drilling, completion and equipping, tie-in and facility costs for all wells.

### Exploration and Development Activities

The Corporation participated in 37 gross (6.4 net) tight oil wells during the year ended December 31, 2018. In 2019, we expect to participate in the drilling of approximately 50 (9.2 net) tight oil wells in North Dakota.

### Production Estimates

The following table sets out the volumes of our working interest production estimated for the year ended December 31, 2019, which is reflected in the estimate of future net revenue disclosed in the forecast price tables contained above under the subheading "Disclosure of Reserves Data".

	Tight Oil (Bbls/d)	Shale Gas (Mcf/d)	Natural Gas Liquids (Bbls/d)	BOE (Boe/d)
<b>Total Proved</b>				
Montana	7.1	9.8	-	8.8
North Dakota	6,350.3	7,212.7	1,129.2	8,681.5
Total	6,357.4	7,222.5	1,129.2	8,690.3
<b>Total Proved plus Probable</b>				
Montana	7.6	10.6	-	9.4
North Dakota	6,994.2	8,003.8	1,243.8	9,572.0
Total	7,001.8	8,014.4	1,243.8	9,581.4

Our Antelope field in North Dakota is estimated to account for greater than 40% of the estimated production volumes set forth above. We estimate that our working interest production from the Antelope field will be 3,795 Boe/d on a total proved basis and 4,163 Boe/d on a total proved plus probable basis in 2019. Our South Berthold field in North Dakota is estimated to account for approximately 40% of the estimated production volumes set forth above. We estimate that our working interest production from the South Berthold field will be 3,440 Boe/d on a total proved basis and 3,802 Boe/d on a total proved plus probable basis in 2019.

### Production History

The following tables summarize certain information in respect of our production, product prices received, royalties paid, production taxes and transport, production costs and resulting netback for the year ended December 31, 2018:

	Quarter Ended 2018			
	March 31	June 30	September 30	December 31
<b>Average Daily Production</b>				
Tight Oil (bbls/d)	2,779	4,765	4,784	4,185
Shale Gas (Mcf/d)	1,669	4,327	6,257	5,765
Natural Gas Liquids (bbls/d)	258	864	971	868
Combined (boe/d)	3,315	6,350	6,797	6,014
<b>Average Net Production Prices Received</b>				
Tight Oil (\$/bbl)	74.02	81.40	86.77	64.89
Shale Gas (\$/Mcf)	1.76	0.98	1.09	1.24
Natural Gas Liquids (\$/bbl)	21.30	6.27	14.63	7.39
<b>Royalties Paid</b>				
Tight Oil (\$/bbl)	14.16	15.57	16.82	13.33
Shale Gas (\$/Mcf)	0.36	0.18	0.48	0.19
Natural Gas Liquids (\$/bbl)	4.43	1.32	5.22	1.21



	Quarter Ended 2018			
	March 31	June 30	September 30	December 31
<b>Production Taxes &amp; Transport</b>				
Tight Oil (\$/bbl)	6.96	8.02	8.45	7.18
Shale Gas (\$/Mcf)	0.06	0.08	0.08	0.10
Natural Gas Liquids (\$/bbl)	0.66	0.36	(0.05)	0.08
<b>Production Costs <sup>(1)</sup></b>				
Tight Oil (\$/bbl)	4.15	3.72	3.48	6.85
Shale Gas (\$/Mcf)	-	-	-	-
Natural Gas Liquids (\$/bbl)	-	-	-	-
<b>Netback Received</b>				
Tight Oil (\$/bbl)	48.75	54.09	58.02	37.53
Shale Gas (\$/Mcf)	1.34	0.72	0.53	0.95
Natural Gas Liquids (\$/bbl)	16.21	4.59	9.46	6.10

Note:

<sup>(1)</sup> All of our shale gas and NGL production is associated with our tight oil production. As such we are not able to break out production cost for each product type.

The following table indicates our average daily production (including production from our major areas) for the year ended December 31, 2018.

Area	Tight Oil (Bbls/d)	Shale Gas (Mcf/d)	Natural Gas Liquids (Bbls/d)	BOE (Boe/d)
Antelope	2,198	2,541	439	3,060
South Berthold	1,682	1,507	264	2,197
North Nesson	51	242	33	124
Stockyard	36	119	-	55
Other	168	111	6	193
Total	4,134	4,520	743	5,630

## DESCRIPTION OF OUR CAPITAL STRUCTURE

### Share Capital

#### Common Shares

The holders of Common Shares are entitled to: dividends if, as and when declared by the Board of Directors; to one vote per Common Share at meetings of the holders of our Common Shares; and upon liquidation, dissolution or winding up of the Corporation to receive pro rata the remaining property and assets of the Corporation. The Common Shares shall not be subdivided, consolidated, reclassified or otherwise adjusted unless, contemporaneously therewith, the Common Non-Voting Shares are subdivided, consolidated, reclassified or otherwise adjusted in the same proportion and in the same manner. As of April 9, 2019 there are 191,758,236 Common Shares issued and outstanding.

#### Common Non-Voting Shares

The holders of Common Non-Voting Shares are entitled to: dividends if, as and when declared by our Board of Directors provided that no dividend may be declared unless concurrently therewith the same dividend is conferred upon the holders of our Common Shares; and upon liquidation, dissolution or winding up of the Corporation to receive pro rata the remaining property and assets of the Corporation. A holder of Common Non-Voting shares shall have the right to convert all or some of the Common Non-Voting Shares into Common Shares on a one-for-one basis at any time, however the holder cannot convert the Common Non-Voting Shares if it would result in the holder beneficially owning or exercising control or direction of ten percent or more of our Common Shares at any time. The Common Non-Voting Shares shall not be subdivided, consolidated, reclassified or otherwise adjusted unless, contemporaneously therewith, the Common Shares are subdivided, consolidated, reclassified or otherwise adjusted in the same proportion and in the same manner. If an offer to acquire is made, the holders of the Common Non-Voting

Shares shall not be entitled to accept such offer until the offeror has made the offer to all of the holders of the Common Shares on the same terms and conditions as the offer was made to the holders of the Common Non-Voting shares. As of April 9, 2019 there are no Common Non-Voting Shares issued and outstanding.

### ***Preferred Shares***

Our Board of Directors may fix the designation, rights, privileges, restrictions and conditions attached to each series of our Preferred Shares prior to them being issued. In the event of liquidation, dissolution or winding-up of the Corporation, holders of each series of Preferred Shares shall be entitled to be paid in priority to holders of Common Shares and Common Non-Voting Shares on a distribution of the capital of the Corporation. As of April 9, 2019 the only Preferred Shares outstanding are the Special Voting Shares.

### ***Special Voting Shares***

The Special Voting Shares are the first series of Preferred Shares authorized by the Board of Directors for issuance, in an unlimited number. The Special Voting Shares entitle the holder thereof to one vote per Special Voting Share on all matters submitted to a vote of the holders of Common Shares, together as a single class. The Special Voting Shares may be redeemed, for nominal consideration, as necessary to ensure that the aggregate number of Special Voting Shares outstanding is equal to the "as exchanged" number of Subsidiary Preferred Shares issued and outstanding from time to time, based on the Exchange Price in effect at such time, subject to certain adjustments and restrictions. The Special Voting Shares are not entitled to any dividends, and shall only be entitled to a nominal amount of US\$ 0.000001 upon liquidation, dissolution or winding up of the Corporation. In the event of any subdivision, consolidation, reclassification or other adjustment to the Common Shares, the Special Voting Shares shall be subdivided, consolidated, reclassified or otherwise adjusted in the same proportion and in the same manner. The Special Voting Shares must be transferred together with the Subsidiary Preferred Shares and are, in effect, "stapled" securities. As of April 9, 2019, 39,308,176 Special Voting Shares are issued and outstanding and 75,000 Subsidiary Preferred Shares are issued and outstanding.

### ***Subsidiary Preferred Shares***

The Subsidiary Preferred Shares carry a 9.0% per annum cumulative dividend right, are non-voting, redeemable by PetroShale US in certain instances and are, subject to the restrictions and conditions described below, exchangeable for Common Shares of the Corporation at the Exchange Price. The Subsidiary Preferred Shares have an initial term of 5 years from closing on January 25, 2018, with the holder thereof having an option to extend the term for one (1) additional year with no additional dividend rights for the additional year (the "**Term**"). Provided the Subsidiary Preferred Shares have not otherwise previously been redeemed or exchanged pursuant to their terms prior to the end of the Term, on the expiry of the Term, the holder thereof will be entitled to the "Liquidation Preference" for each Subsidiary Preferred Share of US\$ 1,000 per share, plus all accrued and unpaid dividends as at such date.

As part of the original issuance of the Subsidiary Preferred Shares to First Reserve, First Reserve also concurrently acquired Special Voting Shares (as described above), which Special Voting Shares provide First Reserve voting rights in respect of the Corporation, in the same manner as if First Reserve had subscribed for voting shares of the Corporation. The number of Special Voting Shares initially issued to First Reserve are equal to the "as exchanged" number of Common Shares First Reserve would acquire on exchange of all of the Subsidiary Preferred Shares (i.e. such number of Common Shares as is equal to the Canadian dollar equivalent (based on an exchange rate of C\$1.00 = US\$ 0.795) of US\$ 75 million divided by the Exchange Price), which resulted in the issuance of 39,308,176 Special Voting Shares on the closing of such financing. Upon the exchange of every one Subsidiary Preferred Share (each with a deemed Liquidation Preference of US\$ 1,000), 524 Special Voting Shares will be redeemed and cancelled for nominal consideration and 524 Common Shares will be issued.

The Subsidiary Preferred Shares do not entitle the subscriber to attend at or to vote at any meetings of the shareholders of PetroShale US other than for the purposes of effecting or validating: (a) any issuance, authorization or creation of, or any increase by PetroShale US in the issued or authorized amount of, any specific class or series of shares of PetroShale US that rank in parity or senior to the Subsidiary Preferred Shares; (b) any increase in the number of issued or authorized amount of Subsidiary Preferred Shares or any reissuance thereof; (c) any exchange, reclassification or cancellation of the Subsidiary Preferred Shares; and (d) any amendment, modification or alteration of the constating

documents of the Subsidiary that would materially or adversely affect the rights, preferences, privileges or voting powers of the Subsidiary Preferred Shares.

In the event of any liquidation, winding-up or dissolution of the Corporation or PetroShale US, whether voluntary or involuntary (a "**Liquidation**"), PetroShale US is required to redeem all Subsidiary Preferred Shares outstanding. PetroShale US is required to effect such redemption by paying to the holders of the Subsidiary Preferred Shares, an amount equal to the applicable "Redemption Price", which "Redemption Price" is equal to the sum of: (i) the issue price per each Subsidiary Preferred Share (US\$ 1,000); (ii) any then applicable "make-whole premium"; and (iii) the amount of any accrued and unpaid dividends thereon. In accordance with the terms of the Subsidiary Preferred Shares, after the payment of the Redemption Price to the holders of Subsidiary Preferred Shares, the holders of Subsidiary Preferred Shares, in their capacities as such, shall have no right or claim to any of the remaining property or assets of PetroShale US (including any dividends) or the Corporation (including in respect of any Common Shares).

PetroShale US may redeem all (but not less than all) of the Subsidiary Preferred Shares for an amount, per share of Subsidiary Preferred Shares, equal to the value of the "Liquidation Preference" at such time plus the then applicable "make whole premium" amount and all accrued and unpaid dividends thereon.

As a result of amendments to the terms of the Subsidiary Preferred Shares in 2018, PetroShale US may, in certain circumstances and subject to certain limits, elect to pay certain quarterly dividend amounts "in kind" at a rate of 12.0% per annum in lieu of paying a cash dividend for such quarter. PetroShale US would be permitted to exercise such election, on or after the first anniversary of the date of issuance of the Subsidiary Preferred Shares (being January 25, 2018), with respect to a maximum of two (2) fiscal quarters during any consecutive twelve month period and six (6) fiscal quarters in total. In such event, the "Liquidation Preference" in respect of the Subsidiary Preferred Shares will increase by the dollar amount represented by the "in kind" dividend, and, as a result, additional Special Voting Shares would be issued by us at such time and the number of Common Shares to which the Subsidiary Preferred Shares may be exchangeable into will also be proportionately increased. In the event the Liquidation Preference is increased as a result of any "in kind" dividend payment, no additional Subsidiary Preferred Shares would be issued and the "in kind" amount will be reflected by the increased "Liquidation Preference". Based on certain assumptions with respect to the timing of the exercise of the "payment in kind" right, PetroShale estimates that up to an additional 8,349,057 Special Voting Shares may be issuable to First Reserve in the event that the maximum number of "payment in kind" elections were made by PetroShale US during the term of the Subsidiary Preferred Shares.

As at April 9, 2019, 75,000 Subsidiary Preferred Shares are issued and outstanding. At the Corporation's annual and special Shareholder meeting held on June 27, 2018, the Corporation received disinterested Shareholder approval, in accordance with the rules of the TSX Venture Exchange, for the creation of First Reserve as a "control person" of the Corporation. As such, First Reserve is entitled to vote all voting shares of the Corporation it owns or may subsequently own, without restriction, and may exchange all Subsidiary Preferred Shares it owns or may subsequently own (and PetroShale US may force the exchange of such Subsidiary Preferred Shares) without restriction.

### **Credit Facility**

We currently have a senior secured revolving line of credit with a syndicate of Canadian financial institutions. The senior credit facility has a borrowing base of US\$ 125.0 million and is guaranteed by PetroShale and PetroShale US. Our senior credit facility is a demand loan with a renewal date of June 30, 2019. At the renewal date, the bank has the option to extend the term or convert the loan into a non-revolving term facility with a term of 12 months. The senior lender is currently completing its annual borrowing base review and upon completion of that review, anticipated prior to June 30, 2019, the borrowing base of the facility may be subject to adjustment.

## MARKET FOR OUR SECURITIES

### Trading Price and Volume

Our Common Shares trade on the TSX Venture Exchange under the symbol "PSH". The following sets out the high and low trading prices and aggregate volume of trading of our Common Shares on the TSX Venture Exchange for the periods noted below:

Period	High (\$)	Low (\$)	Volume
<b>2018</b>			
January	2.50	2.00	1,952,318
February	2.35	1.87	601,190
March	2.40	1.99	802,998
April	2.18	1.93	1,128,150
May	2.36	1.86	2,835,225
June	2.26	1.93	2,267,177
July	2.11	1.85	1,122,366
August	1.95	1.75	1,737,615
September	1.83	1.70	1,561,455
October	1.84	1.57	1,492,198
November	1.60	1.14	2,342,619
December	1.34	1.05	2,294,476
<b>2019</b>			
January	1.28	1.09	783,099
February	1.18	1.00	1,010,000
March	1.30	1.04	840,760
April (to April 9)	1.36	1.21	387,280

### Prior Sales

During the year ended December 31, 2018, we issued:

- 31,622,205 subscription receipts on August 14, 2018 at a price of \$1.85 per subscription receipt for aggregate gross proceeds of \$46 million (which includes the full exercise of the over-allotment option granted to the underwriters in respect of the brokered portion of such financing). Each subscription was converted into one Common Share on August 17, 2018 in accordance with their terms (for no additional consideration);
- 475,000 restricted awards on December 3, 2018 under our restricted share award plan that may, at our option, be settled for an equal number of Common Shares; and
- 998,264 Common Shares on the exercise of options.

## DIRECTORS AND OFFICERS

The names, municipalities of residence, any offices held with us, the period served as a director and principal occupations of our directors and officers are set out below.

Name and Municipality of Residence	Position with PetroShale	Director Since	Principal Occupation
<b>M. Bruce Chernoff</b> <sup>(2)(3)</sup> Calgary, Alberta, Canada	Executive Chairman and Director	August 31, 2012	Our Executive Chairman and President of Caribou Capital Corp., a private investment company.
<b>Brett Herman</b> <sup>(1)(3)</sup> Calgary, Alberta, Canada	Director	March 8, 2012	President and Chief Executive Officer of TORC Oil & Gas Ltd., a public oil and gas company.
<b>Ken McCagherty</b> <sup>(1)(2)</sup> Calgary, Alberta, Canada	Director	November 25, 2013	President and Chief Executive Officer of Westbrick Energy Ltd., a private oil and gas company.
<b>David Rain</b> Calgary, Alberta, Canada	Director	December 3, 2018	Chief Financial Officer and Vice President of Caribou Capital Corp., a private investment company.
<b>Jacob Roorda</b> <sup>(1)(2)(3)</sup> Calgary, Alberta, Canada	Director	March 8, 2012	Managing director of Windward Capital Limited, a private investment company.
<b>Brooks Shughart</b> <sup>(3)</sup> Houston, Texas, USA	Director	January 25, 2018	Managing Director of First Reserve, a private equity investment firm.
<b>Mike Wood</b> Denver, Colorado, USA	President and Chief Executive Officer	N/A	Our President and Chief Executive Officer since June, 2017 and prior thereto Chief Operating Officer of Rimrock Oil & Gas.
<b>Caleb Morgret</b> Denver, Colorado, USA	Chief Financial Officer	N/A	Our Chief Financial Officer since December 2018 and prior thereto Chief Financial Officer of White Star Petroleum.
<b>Antonio Izzo</b> Calgary, Alberta, Canada	Vice President, Engineering and Business Development	N/A	Our Vice President, Engineering and Business Development and the Vice President, Business Development of Caribou Capital Corp.

Notes:

- <sup>(1)</sup> Member of our Audit Committee.
- <sup>(2)</sup> Member of our Reserves Committee.
- <sup>(3)</sup> Member of our Corporate Governance and Compensation Committee.

The term of office of each of our directors expires at the next annual meeting of our Shareholders.

As at April 9, 2019, our directors and executive officers, as a group, beneficially owned, or directed or controlled, directly or indirectly, 63,871,357 Common Shares or approximately 33.3% of our issued and outstanding Common Shares (27.6% of all outstanding voting shares) and no Special Voting Shares. First Reserve owns all 39,308,176 issued and outstanding Special Voting Shares and 2,702,702 Common Shares (approximately 18.2% of all currently outstanding voting shares) and all 75,000 issued and outstanding Subsidiary Preferred Shares. Brooks Shughart, one of our directors, is the managing director of First Reserve.

### Corporate Cease Trade Orders, Bankruptcies or Penalties or Sanctions

None of our directors or executive officers (nor any personal holding company of any of such persons) is, as of the date of this Annual Information Form, or was within ten years before the date of this Annual Information Form, a director, chief executive officer or chief financial officer of any company (including us), that was subject to a cease trade order (including a management cease trade order), an order similar to a cease trade order or an order that denied

the relevant company access to any exemption under securities legislation, in each case that was in effect for a period of more than 30 consecutive days (collectively, an "**Order**") that was issued while the director or executive officer was acting in the capacity as director, chief executive officer or chief financial officer, or was subject to an Order that was issued after the director or executive officer ceased to be a director, chief executive officer or chief financial officer and which resulted from an event that occurred while that person was acting in the capacity as director, chief executive officer or chief financial officer other than Mr. Roorda who was formerly a director of Argosy Energy Inc. ("**Argosy**") when it was cease traded for failure to file financials in April of 2012.

None of our directors or executive officers (nor any personal holding company of any of such persons), or Shareholder holding a sufficient number of our securities to affect materially the control of us is, as of the date of this Annual Information Form, or has been within the ten years before the date of this Annual Information Form, a director or executive officer of any company (including us) that, while that person was acting in that capacity, or within a year of that person ceasing to act in that capacity, became bankrupt, made a proposal under any legislation relating to bankruptcy or insolvency or was subject to or instituted any proceedings, arrangement or compromise with creditors or had a receiver, receiver manager or trustee appointed to hold its assets other than the following. Mr. Chernoff and Mr. Rain were each formerly directors of Calmena Energy Services Inc. ("**Calmena**") (a public oilfield service company) which was placed in receivership on January 20, 2015. Mr. Chernoff and Mr. Rain resigned as directors of Calmena effective January 15, 2015. Mr. Roorda was a director of TXCO Resources Ltd. ("**TXCO**"), a NASDAQ listed public company until February 11, 2010. On April 18, 2009, TXCO filed for creditor relief under the US Bankruptcy Code. The board of directors of TXCO obtained approval of a plan of reorganization which paid all creditors in full and which provided a recovery for common shareholders. Mr. Roorda was also a director of Argosy, a TSX listed company which entered receivership pursuant to a Court order resulting from a creditor petition. Concurrently with the receivership, Mr. Roorda resigned as a director of Argosy. On July 15, 2015, Sabine Oil & Gas Corporation and certain subsidiaries (collectively, "**Sabine**") filed voluntary petitions for relief under Chapter 11 of the US Bankruptcy Code to facilitate its restructuring. On July 27, 2016, the US Bankruptcy Court for the Southern District of New York entered an order confirming the Chapter 11 plan of reorganization (the "**Plan**"). The Plan became effective on August 11, 2016 (the "**Effective Date**") at which time Sabine emerged from bankruptcy as a private company. Mr. Shughart served on the board of directors of Sabine Oil & Gas Corporation from December 2014 until his resignation on the Effective Date.

Mr. Roorda was formerly an alternate director of Wolf Mineral Limited ("**Wolf**"), a specialty mining company based in Australia and the U.K., which was listed on the AIM market of the London Stock Exchange ("**AIM**") and the Australian Stock Exchange ("**ASX**"). Mr. Roorda served at the request of his employer at the time, a shareholder of Wolf. Wolf was placed into voluntary administration on October 10, 2018. Mr. Roorda served as an alternate director to a non-executive director of Wolf until his resignation as an alternate director effective October 10, 2018. On September 27, 2018, prior to its appointment into administration, Wolf announced that it had been voluntarily suspended from the ASX as a result of a failure to file its annual report when due. On October 10, 2018, Wolf announced that in connection with the appointment of an administrator, it had been suspended from trading on the AIM.

None of our directors or executive officers (nor any personal holding company of any of such persons), or Shareholder holding a sufficient number of our securities to affect materially the control of us is, has, within the ten years before the date of this Annual Information Form, become bankrupt, made a proposal under any legislation relating to bankruptcy or insolvency, or become subject to or instituted any proceedings, arrangement or compromise with creditors, or had a receiver, receiver manager or trustee appointed to hold the assets of the director, executive officer or Shareholder.

None of our directors or executive officers (nor any personal holding company of any of such persons), or Shareholder holding a sufficient number of our securities to affect materially the control of us, has been subject to any penalties or sanctions imposed by a court relating to securities legislation or by a securities regulatory authority or has entered into a settlement agreement with a securities regulatory authority or any other penalties or sanctions imposed by a court or regulatory body that would likely be considered important to a reasonable investor in making an investment decision.

## **Conflicts of Interest**

Our directors and officers may, from time to time, be involved with the business and operations of other oil and natural gas issuers, in which case a conflict may arise. See "*Risk Factors*". Circumstances may arise where members of our Board of Directors serve as directors or officers of corporations which are in competition to our interests. No assurances can be given that opportunities identified by such board members will be provided to us.

The Act provides that in the event a director has an interest in a contract or proposed contract or agreement, the director shall disclose his interest in such contract or agreement and shall refrain from voting on any matter in respect of such contract or agreement unless otherwise provided under the Act. To the extent that conflicts of interests arise, such conflicts will be resolved in accordance with the provisions of the Act.

## **AUDIT COMMITTEE INFORMATION**

The charter of our audit committee (the "**Audit Committee**") is attached to this Annual Information Form as Appendix "A".

### **Composition of the Audit Committee**

The current members of the Audit Committee are Messrs. Herman, McCagherty and Roorda. Each of the members of the Audit Committee is independent and is financially literate.

### **Relevant Education and Experience**

Mr. Herman is the chairman of our Audit Committee. Mr. Herman's education and experience relevant to the performance of his responsibilities as an Audit Committee member are derived from his professional training as a chartered accountant and over 25 years of experience as either a Vice President, Finance, a Chief Financial Officer or a President and Chief Executive Officer of various oil and gas firms.

Mr. McCagherty's education and experience relevant to the performance of his responsibilities as an Audit Committee member are derived from his over 35 years of experience in the energy industry as President and Chief Executive Officer and as a director of various oil and gas companies, and his training as a Professional Engineer.

Mr. Roorda's education and experience relevant to the performance of his responsibilities as an Audit Committee member are derived from his over 35 years of experience in the energy and financial services industry. Mr. Roorda has been a director and officer of several public companies and was the Managing Director of investment banking at Research Capital Corp. Mr. Roorda is a Professional Engineer and has a MBA from the University of Calgary.

### **Reliance on Certain Exemptions**

At no time since the commencement of our most recently completed financial year has the Corporation relied on the exemption in Section 2.4 of Multilateral Instrument 52-110 – *Audit Committees* ("**MI 52-110**") (De Minimis Non-audit Services), or an exemption from MI 52-110, in whole or in part, granted under Part 8 of MI 52-110.

### **Audit Committee Oversight**

At no time since the commencement of our most recently completed financial year was a recommendation of the Audit Committee to nominate or compensate an external auditor not adopted by the Board of Directors.

### **Pre-Approval Policies and Procedures**

The Audit Committee must pre-approve all non-audit services to be provided to the Corporation by the external auditors. The Audit Committee may delegate to one or more members of the Board of Directors, the authority to pre-approve non-audit services, provided that the member report to the Audit Committee at the next scheduled meeting

such pre-approval and the member complies with such other procedures as may be established by the Audit Committee from time to time.

### External Auditor Service Fees (By Category)

The aggregate fees billed by the Corporation's external auditors in each of the last two fiscal years for audit fees are as follows:

Financial Year Ending	Audit Fees	Audit Related Fees	Tax Fees	All Other Fees
2017	\$115,750	-	-	\$57,750
2018	\$143,424	-	-	\$111,109

### Exemption

We are relying on the exemption provided in Section 6.1 of MI 52-110 and, as such, we are exempt from Parts 3 (Composition of the Audit Committee) and 5 (Reporting Obligations) of MI 52-110.

### INTEREST OF MANAGEMENT AND OTHERS IN MATERIAL TRANSACTIONS

On January 25, 2018, we completed the Financing with First Reserve and in connection with the same we and our subsidiary, PetroShale US, entered into the Investment Agreement with First Reserve whereby First Reserve acquired 75,000 Subsidiary Preferred Shares and 39,308,176 Special Voting Shares and was provided, among other things: (i) certain consent and governance rights, including the right that so long as First Reserve owns not less than 60% of the number of shares it acquired pursuant to the Financing (including on exchange thereof) it shall be entitled to designate one nominee for election to our Board of Directors; (ii) the right to maintain its pro-rata ownership of our shares in connection with future financing transactions, subject to certain customary exclusions; and (iii) registration rights in respect of the public offering of shares owned by First Reserve. Brooks Shughart, a managing director of First Reserve has been appointed to our Board of Directors, pursuant to the Board of Director nomination rights provided to First Reserve pursuant to the Investment Agreement. First Reserve owns all 39,308,176 issued and outstanding Special Voting Shares (approximately 19.8% of all currently outstanding voting shares), 2,702,702 Common Shares and all 75,000 issued and outstanding Subsidiary Preferred Shares.

In connection with the Corporation's subscription receipt financing, which closed on August 14, 2018, First Reserve acquired 2,702,702 subscription receipts and an entity in which Mr. Chernoff, our Executive Chairman, controls acquired 2,702,703 subscription receipts pursuant to a non-brokered private placement of subscription receipts at an issue price of \$1.85 per subscription receipt. Upon the completion of the acquisition of assets by us on August 17, 2018, as further described under "*General Development of Our Business – History and Development – Year Ended December 31, 2018*", each subscription receipt was converted into one Common Share, without the requirement for payment of any additional consideration or action on the part of the holder thereof.

### DIVIDEND POLICY

We have not declared or paid any dividends on our Common Shares or Non-Voting Common Shares. Any decision to pay dividends on the Common Shares will be made by our Board of Directors on the basis of our earnings, financial requirements and other conditions that the Board of Directors may consider appropriate in the circumstances. It is not intended that dividends will be paid in the foreseeable future. The Special Voting Shares are not entitled to any dividends.

In accordance with the terms of the Subsidiary Preferred Shares, the holder(s) of Subsidiary Preferred Shares are entitled to a cumulative quarterly cash dividend at a rate of 9.0% per annum of the "Liquidation Preference" in respect of the Subsidiary Preferred Share, which based on the current aggregate "Liquidation Preference" of US\$ 75 million, results in dividends payments of US\$ 1,687,500 per quarter. In certain events (the "**Events of Non Compliance**"), the dividend rate of the Subsidiary Preferred Shares may increase by an increment of one percentage point. Thereafter, until such time as no Event of Non Compliance exists, the dividend rate shall increase automatically at the end of each



succeeding 90-day period by an additional increment of one percentage point(s) (but in no event shall the dividend rate increase more than three percentage points).

### Dividend History

We have not paid any dividends in the last three financial years. The following table sets forth details regarding the cash dividends that were declared on the Subsidiary Preferred Shares since the date of issuance on January 25, 2018 up to the date hereof:

<u>Record Date</u>	<u>Payment Date</u>	<u>Type</u>	<u>Amount (US\$)</u>
March 30, 2018	45 days after record date	Cash	1,237,500 <sup>(1)</sup>
June 30, 2018	45 days after record date	Cash	\$1,687,500
September 30, 2018	45 days after record date	Cash	\$1,687,500
December 31, 2018	45 days after record date	Cash	\$1,687,500
March 30, 2019	45 days after record date	Cash	\$1,687,500

Note:

<sup>(1)</sup> Represents dividend payable from date of issuance on January 25, 2018 until March 30, 2018.

The declaration and payment of dividends in any quarter on the Subsidiary Preferred Shares is subject to the discretion of the board of PetroShale US and may vary depending on a variety of factors and conditions existing from time to time. The payment of cash dividends to shareholders is not assured or guaranteed and dividends may be reduced or suspended. In addition to the foregoing, our ability to pay dividends now or in the future may be limited by covenants contained in the agreements governing any indebtedness that we have incurred or may incur in the future, including the terms of our senior secured credit facility. Our senior secured credit facility provides that we are not permitted to make any distribution (including dividends) at any time when an event of default exists or would reasonably be expected to exist upon making such distribution, unless such event of default arose subsequent to the ordinary course declaration of the applicable distribution. See also "*Risk Factors – Dividends*".

### INDUSTRY CONDITIONS

Companies operating in the oil and natural gas industry are subject to extensive regulation and control of operations (including land tenure, exploration, development, production, refining and upgrading, transportation and marketing) as a result of legislation enacted by various levels of government and with respect to the pricing and taxation of oil and natural gas through agreements among the governments of the United States, Montana and North Dakota, all of which should be carefully considered by investors in the oil and gas industry. All current legislation is a matter of public record and we are unable to predict what additional legislation or amendments may be enacted.

Our wholly-owned subsidiary, PetroShale US, holds interests in oil and natural gas properties and related assets in Montana and North Dakota in the United States. Outlined below are some of the principal aspects of legislation, regulations and agreements governing the oil and gas industry in the areas where we operate.

### Pricing, Taxes, Marketing and Transportation

#### *United States*

The sales prices of oil, natural gas liquids and natural gas are currently set by the market. However, we cannot predict whether new legislation to regulate the price of energy commodities might be proposed, what proposals, if any, might actually be enacted by the US Congress or the various state legislatures and what effect, if any, such proposals might have on the operations of the underlying properties.

On December 22, 2017, the United States enacted the *Tax Cuts and Jobs Act* which, among other things, includes changes to US federal tax rates, imposes new limitation on the utilization of net operating losses and the deductibility of interest and executive compensation, allows for expensing of capital expenditures, and eliminates the corporate Alternative Minimum Tax. In addition, various proposals have been made recommending the elimination of certain key US federal income tax incentives currently available to oil and gas exploration and production companies. While the December 2017 tax law changes did not eliminate these incentives, future legislation may be introduced which would implement these proposals. Some of these changes could include: (i) repeal of the percentage depletion allowance for oil and gas properties; (ii) the elimination of current deductions for intangible drilling and development costs; and (iii) an extension of the amortization period for certain geological and geophysical expenditures. It is unclear whether any of these changes will be enacted or how soon they could be effective.

The US Federal Energy Regulatory Commission ("**FERC**") regulates rates and service conditions for the transportation of natural gas in interstate commerce, which affects the marketing of natural gas we produce, as well as the revenues we receive for sales of such production. FERC exercises its ratemaking authority by applying cost-of-service principles, allowing for the negotiation of rates where there is a cost-based alternative rate or the granting of market-based rates in certain circumstances. FERC has also undertaken various initiatives to increase competition in the natural gas industry, which may indirectly affect our business and the markets for products derived from our business. These policies include regulations on open access transportation, natural gas quality, capacity release and market center promotion. We may be also indirectly subject to certain reporting requirements of FERC based on the sale of gas from producing properties in which we have interest.

The prices and terms of access to intrastate pipeline transportation are subject to state regulation. FERC has proposed and implemented new rules and regulations affecting gas transportation in recent years. We do not believe that we will be affected by any such rules or changes to existing rules in a manner materially different than any other similarly situated natural gas producer.

Rates and service conditions for the interstate transportation of oil and natural gas liquids are also regulated by FERC. In general, these rates must be cost-based or based on an indexing system of transportation rates that allows pipelines to take an annual inflation-based rate increase. FERC has also established market-based rates and settlement rates as alternative forms of ratemaking in certain circumstances. We cannot predict with any certainty what effect, if any, these regulations will have, but other factors being equal, the regulations may, over time tend to increase transportation costs which may have the effect of reducing net prices for oil and natural gas liquids.

Natural gas gathering facilities are exempt from regulation by FERC under Section 1(b) of the *Natural Gas Act*. We believe that pipelines in which we have an interest will meet the "primary function test" that FERC has used to establish a pipeline's status as a gathering system not subject to FERC jurisdiction. However, the distinction between FERC-regulated transmission pipelines and unregulated gathering systems has been subject to extensive litigation and is made by FERC on a case-by-case basis. Consequently, the classification and regulation of gathering facilities in which we have an interest may be subject to change based on future determinations by FERC, the courts or US Congress. Such a change may result in increased regulation of such assets and could have an adverse and material effect on our operations, operating expenses and revenues.

Finally, natural gas and crude oil take-away capacity is critical in the Williston Basin. Limited pipeline capacity and delayed development have led to the need for use of rail transportation and have created limits to market availability leading to downward price pressure on the Basin's crude oil and natural gas. North Dakota statutory limitations on flaring and venting have also placed pressure on take-away capacity for associated natural gas in the Williston Basin. New pipeline transportation infrastructure must continue to be developed for crude oil, natural gas and natural gas liquids in order to ensure continued stable production and exploration growth in North Dakota and the Williston Basin.

## **Land Tenure and Royalties**

### *United States*

In the United States, the federal government and each state have statutes and regulations which govern oil and gas lease terms, including tenure, royalties, production rates and other provisions. Oil and gas lessees are often required to pay annual rental payments to comply with federal, state and private lease provisions until production begins or the

lease term expires. Upon commencement of production, royalties and production taxes are paid on revenue received from oil and natural gas produced from federal, state and private lands. The royalty and production tax regime is a significant factor in the profitability of oil and natural gas production. Royalties payable on production from lands other than federal and state lands in the US are determined by negotiations between the private mineral owner and the lessee. Federal, US Indian and state royalties and production taxes in the US are determined by government regulation and are generally calculated as a percentage of the value of the gross production less approved marketing and transportation deductions. The royalty rate payable for federal leases is generally fixed at 12.5% and varies from state to state for leases covering state-owned minerals. State minerals in Dunn, McKenzie, Mountrail and Williams counties of North Dakota are currently being leased subject to an 18.75% royalty. State minerals in Montana are currently being leased subject to a 16.67% royalty rate. Other royalties and royalty-like interests are from time to time carved out of the working interest owner's interest through non-public transactions. These are often referred to as overriding royalty interests, or net profits interests.

Calculation of royalties on private lands in the United States is determined by individual lease terms but is also subject to specific rules and laws concerning payment of royalties and calculation of production or post-production costs. Generally, post-production costs are not deducted from the price used to calculate royalties. Costs of production, on the other hand, are taken from the gross revenue as an adjustment to the actual market value "at the well" in states such as North Dakota. Many US states require the producer to demonstrate that the cost deducted enhanced the value received for the production. States such as North Dakota require that the price at the well not reflect post production costs. The risk in North Dakota is in the characterization of costs in determination of whether the royalty calculation includes certain costs. Judicial determinations can alter these characterizations and may create the risk of large royalty-owner disputes with the potential for large damage awards.

Private mineral ownership in the US is prevalent and generally on lands settled and patented before the early 1900's. The federal government and the state in which the minerals are located also hold ownership to mineral rights. The federal mineral rights are administered by the Bureau of Land Management under the Department of the Interior ("**BLM**"). These owners, from governmental bodies to private individuals, grant rights to explore for and produce oil and gas pursuant to oil and gas leases, providing for varying consideration, term and royalties. As to those rights held by private owners, all terms and conditions may be negotiated. For those rights held by governmental agencies, typically the terms and conditions of the oil and gas lease have been predetermined by each governing or regulatory body and the consideration is determined by oral bidding.

A lease may generally be continued after the primary term provided certain minimum levels of drilling operations or production have been achieved and all lease rentals have been timely paid, subject to certain exceptions. To develop minerals, including oil and gas, it is necessary for the mineral estate owner(s) to have access to the surface estate. Under common law, the mineral estate is considered the "dominant" estate with the right to extract minerals subject to reasonable use of the surface. Each state has developed and adopted their own statutes that operators must follow both prior to drilling and following drilling including notification requirements and to provide compensation for lost land use and surface damages. The surface rights required for pipelines and facilities are generally governed by leases, easements, rights-of-way, permits or licenses granted by landowners or governmental authorities. The *North Dakota Surface Damage Compensation Act* governs much of our asset base and contains a number of requirements concerning notice, surface damage assessment and payments and loss of use by the surface owner. These requirements can lead to increased costs of production and must be complied with prior to beginning drilling operations.

## **Environmental Regulation**

### *United States*

Our US oil and natural gas operations are regulated by administrative agencies under statutory provisions of the states where such operations are conducted and by certain agencies of the federal government for operations on federal leases. These statutory provisions regulate matters such as the exploration for and production of crude oil and natural gas, including provisions related to permits for the drilling of wells, bonding requirements in order to drill or operate wells, the location of wells, the method of drilling and casing wells, the surface use and restoration of properties upon which wells are drilled and the abandonment of wells. Our US operations are also subject to various conservation laws and regulations which regulate matters such as the size of drilling and spacing units or proration units, the number of wells which may be drilled in a spacing unit and the unitization or pooling of crude oil and natural gas properties. In

addition, state conservation laws sometimes establish maximum rates of production from crude oil and natural gas wells, generally restrict the venting or flaring of natural gas, and impose certain requirements regarding the rateability or fair apportionment of production from fields and individual wells. In particular, the NDIC implemented new rules in 2014 mandating a natural gas capture plan and production restrictions to reduce gas flaring associated with oil production. Our operations in the US may also be subject to the regulation or threat of regulation initiated by the Mandan, Hidatsa and Arikara Native American Nations (also known as the Three Affiliated Tribes). Special interest groups opposing development also seek to enforce these requirements through litigation. Compliance with these requirements can involve significant expenditures, including expenditures related to the imposition of material fines and penalties, administrative, civil and criminal liability for pollution, resolving the suspension or revocation of necessary licenses and authorizations, and compliance with clean-up orders.

At the federal level, well planning and permitting is primarily regulated by the BLM and Bureau of Indian Affairs for operations on public and tribal lands under the *Federal Land Policy and Management Act* and the *National Environmental Policy Act* ("NEPA"). Environmental conservation and cultural and natural resources protection at the federal level are administered by numerous agencies under multiple statutes. The BLM can suspend permit approvals in specific areas while environmental analyses are being conducted and compliance documents required by the NEPA are being prepared (e.g. environmental assessments and environmental impact statements). Environmental planning, permitting and compliance related to media protection and contaminants at the federal level are administered primarily by the US Environmental Protection Agency (the "EPA") or by various states whose programs have been approved for implementation by the EPA. The EPA governs federal legislation, including the *Clean Air Act*, the *Clean Water Act*, the *Resource Conservation and Recovery Act* (other than oil and gas exempt wastes), the *Comprehensive Environmental Response, Compensation, and Liability Act*, the *Oil Pollution Act*, the *Emergency Planning and Community Right-to-Know Act*, the *Safe Drinking Water Act* (other than exclusions for underground injection) and federal Executive Orders. PetroShale US's operations are subject to various regulations, including those relating to well permits, linear facilities, hydraulic fracturing, underground injection and setbacks (buffers) for environmental protection, which are enforced by state agencies regulating oil and natural gas activities. In addition to the agencies that directly regulate oil and gas operations, there are other state and local conservation and environmental protection agencies that regulate air quality, state water quality, fish, wildlife, visual quality, transportation, noise, spills, incidents and transportation.

Additional regulations affecting our operations include: the Federal Implementation Plan for Oil and Natural Gas Production Facilities (which requires oil and natural gas owners and operators producing from the Bakken Pool on the Fort Berthold Indian Reservation in North Dakota to reduce emissions of volatile organic compounds) and EPA's 2012 air emission control rules for the oil and natural gas industry (which limit emissions of volatile organic compounds, sulphur dioxide and other air toxics in the oil and gas sector and include the first federal air standards for natural gas wells that are hydraulically fractured). In addition to providing emission control requirements, these regulations imposed monitoring, recordkeeping and reporting requirements. In June 2016, the EPA issued further regulations related to the oil and gas industry when it released a New Source Performance Standard for new, modified and reconstructed sources in the oil and gas production process which were not covered by the 2012 rule described above. The rule directly regulates methane emissions from these sources for the first time, and includes leak detection and repair, and coverage of oil wells that are hydraulically fractured. The rule was challenged in court. However, on March 28, 2017, President Trump issued Executive Order 13783, Promoting Energy Independence and Economic Growth, specifically calling for the EPA to review, suspend, revise or rescind the 2016 rule. The EPA proposed amendments and clarifications to the 2016 rule on October 15, 2018, but has not yet published final amendments and clarifications. Currently, it is uncertain whether the EPA will be investigating additional air emission control rules for the oil and gas industry in the foreseeable future.

At the request of US Congress, in 2011, the EPA began research under its Plan to Study the Potential Impacts of Hydraulic Fracturing on Drinking Water Resources. The purpose of the study is to assess the potential impacts of hydraulic fracturing on drinking water resources, and to identify the driving factors that may affect the severity and frequency of such impacts. The focus is primarily on hydraulic fracturing of shale formations to extract natural gas, with some study of other oil- and gas-producing formations, including tight sands and coalbeds. The results of this study were released in draft form for public comment and peer review in June of 2015. It concluded that hydraulic fracturing activities can impact drinking water resources under some circumstances and identifies factors that influence these impacts. The *Energy Policy Act of 2005* excluded hydraulic fracturing, except when diesel fuels are used, for oil, natural gas or geothermal production from regulation under the *Safe Drinking Water Act's* underground

injection control ("**UIC**") program. However, the EPA promotes its permitting guidance specific to oil and natural gas hydraulic fracturing activities using diesel fuels as best practices for hydraulic fracturing in general for States to implement. Currently, it is unclear whether the EPA will be investigating rules outside the UIC program pertaining to drinking water or groundwater for the oil and natural gas industry in the foreseeable future. The BLM, which regulates oil and gas operations located on federal and tribal lands, also issued rules imposing standards on hydraulic fracturing operations, which targeted groundwater protection by updating the requirements for well-bore integrity, wastewater disposal and public disclosure of chemicals during hydraulic fracturing operations. The BLM rescinded the hydraulic fracturing rule on December 29, 2017. However, the underlying question relevant to rescission regarding whether the BLM has statutory authority to regulate the environmental impacts of hydraulic fracturing is generally unresolved, and the BLM may again investigate rules to protect groundwater.

Pursuant to Executive Order 13783, the Secretary also ordered a review of three rules: (i) the final Waste Prevention, Production Subject to Royalties, and Resource Conservation Rule (effective Jan. 17, 2017); (2) the final General Provisions and Non-Federal Oil and Gas Rights Rule (effective Dec., 2016); and (3) the proposed Management of Non-Federal Oil and Gas Rights Rule (published Nov. 14, 2016). The most relevant of these rules was the Waste Prevention (also known as "**Venting and Flaring**") rule, which aimed to prevent the loss of natural gas through venting, flaring, and leaks on public lands, but was challenged in litigation as an unauthorized environmental regulation. On September 28, 2018, the BLM revised the Venting and Flaring rule due to its regulatory burden on energy production and jobs, and reinstated the rules that were in place before promulgation of the Venting and Flaring rule. Currently, it appears unlikely that BLM will promulgate rules that are more stringent than the state regulations addressing natural gas waste. For North Dakota, the NDIC has issued rules to reduce the volume of gas being flared in the state in 2014, and amended its gas capture rules in 2018. See "*Risk Factors – Gathering and Processing Facilities, Pipeline Systems and Rail*".

The Federal Department of Transportation's, Pipeline and Hazardous Material Safety Administration ("**PHMSA**") is responsible for establishing and monitoring safety regulations relating to the transportation of crude oil by rail and pipeline. A May 2015 PHMSA rule required the replacement or retrofitting of all DOT-111 rail tank cars to comply with new enhanced design and safety requirements. This led to a final rule mandating a phase-out for all DOT-111 tank cars used to transport crude oil in favor of new enhanced tank cars meeting the higher standards. On February 28, 2019, PHMSA issued a new rule to revise and clarify requirements for comprehensive oil spill response plans and to expand their applicability based on the amount of petroleum oil in an entire train, rather than a single tank car. The effective date of the rule is April 1, 2019. In addition, PHMSA has increased its oversight and monitoring of pipelines and required enhanced integrity management and reporting for liquid pipelines and gathering lines. At the State level, on January 18, 2019, the NDIC approved amendments to state crude oil conditioning requirements that are relevant to transportation and marketability of crude oil. While PetroShale may not own rail cars or pipelines, the costs associated with these enhanced requirements may impact our profitability.

States also have the authority to regulate hydraulic fracturing. North Dakota and Montana have regulations that require operators to disclose information about the chemicals used in their hydraulic fracturing fluids on the internet-based chemical registry FracFocus. FracFocus is operated by the Ground Water Protection Council, a group of state water officials, and the Interstate Oil and Gas Compact Commission, an association of oil and gas producing states. The online registry was created in 2011, in response, at least in part, to concerns from landowners about the chemical content of fracturing fluids that were being injected into oil and gas wells on their land as well as adjacent properties. FracFocus is widely accepted among the petroleum industry and currently lists over 1,200 companies as registry participants.

Implementation of more stringent environmental regulations could affect the capital and operating expenditures and plans for our operations. We minimize the potential of these impacts to our operations in many ways, including through participation and membership in trade organizations, such as the North Dakota Petroleum Council and focus on drilling near gas pipeline infrastructure.

We believe that, in all material respects, we and the operators of our non-operated properties are in compliance with, and have complied with, all applicable environmental laws and regulations. We have made and will continue to make expenditures in our efforts to comply with all environmental regulations and requirements. We consider these a normal, recurring cost of our ongoing operations and not an extraordinary cost of compliance with governmental regulations. We believe that our continued compliance with existing requirements has been accounted for and will not

have a material and adverse impact on our financial condition, results of operations and operating cash flows. However, we cannot predict the passage of or quantify the potential impact of any more stringent future laws and regulations at this time.

## Climate Change Regulation

### *United States*

Both Canada and the United States were part of the United Nations Framework Convention on Climate Change ("UNFCCC") meeting in Paris in 2015. The UNFCCC has instigated numerous policy experiments with respect to climate governance. On April 22, 2016, 197 countries signed the Paris Agreement, committing to prevent global temperatures from rising more than 2° Celsius above pre-industrial levels and to pursue efforts to limit this rise to no more than 1.5° Celsius. As of January 1, 2019, 184 of the 197 parties to the convention had ratified the Paris Agreement. However, in June of 2017, the United States announced its intention to withdraw from the Paris Agreement, delivering written notice of such to the United Nations on August 4, 2017. Although the United States announced its withdrawal from the Paris Agreement, federally the EPA has issued emissions regulations pursuant to the *Clean Air Act* that establish a reporting program for carbon dioxide, methane and other greenhouse gas emissions. It has also established a permitting program for certain large greenhouse gas emissions sources.

With respect to the permitting program, on December 15, 2009, the EPA published its final findings that emissions of carbon dioxide, methane and other greenhouse gases present an endangerment to public health and welfare of current and future generations. These findings allow the EPA to adopt and implement regulations that would restrict greenhouse gas emissions under existing provisions of the federal *Clean Air Act*.

One such regulation establishes greenhouse gas emissions thresholds that determine when stationary industrial sources must obtain permits under the Prevention of Significant Deterioration ("PSD") and Title V Operating Permit programs of the *Clean Air Act* (the "**Tailoring Rule**"). The permitting requirements of the PSD program apply only to newly-constructed or modified major sources of greenhouse gas emissions. Obtaining a PSD permit requires state and local permitting agencies to ensure that a source adopts the best available control technology ("**BACT**") for those regulated pollutants that are emitted in certain quantities. Montana and North Dakota are in a position to issue permits consistently with the Tailoring Rule as their existing rules and regulations are consistent with the framework for implementation of the Tailoring Rule provisions.

The Tailoring Rule established a phased in approach to provide time for large industrial facilities and state governments to develop the capacity to implement permitting requirements for greenhouse gas emissions. Phase I of the Tailoring Rule, which became effective on January 2, 2011, requires projects already triggering PSD permitting that are also increasing greenhouse gas emissions by more than 75,000 tons per year to adopt BACT for their greenhouse gas emissions. Phase II of the Tailoring Rule, which became effective on July 1, 2011, requires preconstruction permits using BACT for new projects that emit 100,000 tons of greenhouse gas emissions per year or existing facilities that make major modifications increasing greenhouse gas emissions by more than 75,000 tons per year. Phase III of the Tailoring Rule, which became effective on August 13, 2012, aims to streamline the permitting process and does not lower the current thresholds for applicability of the PSD and Title V Operating Permit programs. The EPA commenced a study on remaining greenhouse gas permitting burdens that would exist if the PSD and Title V Operating Permit programs were applied to smaller sources (the "**5-year Study**"). A final rule incorporating the results of the 5-year Study was originally expected by April 30, 2016. On June 23, 2014, the United States Supreme Court ruled that the EPA cannot treat greenhouse gases as an air pollutant for the purposes of determining whether a source is a major source required to obtain a PSD or title V permit. However, PSD permits that are otherwise required based on emissions of other pollutants (referred to as "anyway sources") may continue to impose limitations on greenhouse gas emissions based on BACT. As a result of the Supreme Court's decision, the Office of Air and Radiation determined the 5-year Study was no longer necessary and discontinued its work. However the EPA continued to evaluate greenhouse gas permitting data as appropriate with regard to the possible development and justification of an appropriate greenhouse gas significance level for determining the application of PSD BACT requirements to greenhouse gases in permitting of smaller sources. On October 3, 2016, EPA issued a proposed rule to bring its greenhouse gas PSD requirements in line with the Supreme Court decision. The proposed rulemaking involves changes to several regulatory definitions in the PSD and Title V regulations, revisions to the PSD provision in the greenhouse gas Plantwide Applicability Limitations, and revisions to other provisions necessary to ensure that neither

the PSD or Title V rules require a source to obtain a permit solely because the source emits or has the potential to emit greenhouse gases above applicable thresholds. EPA also proposed a significant emission rate of 75,000 tons per year for greenhouse gases under the PSD program that would establish an appropriate threshold below which BACT is not required for an anyway source's greenhouse gas emissions. It is unclear, at this time, if or when the EPA will finalize this proposal as currently written.

With respect to the permitting program, on November 30, 2010, the EPA published a final rule that expands its rule on mandatory reporting of greenhouse gas emissions to include owners and operators of petroleum and natural gas systems with greenhouse gas emissions above certain threshold levels (25,000 tons or more of greenhouse gas emissions per year). Monitoring of those newly covered emissions commenced on January 1, 2011. EPA later amended the program for Petroleum and Natural Gas Systems sources to add new monitoring methods consistent with New Source Performance Standards for the oil and gas industry, described above. We do not believe that any of the facilities in which we have an interest are required to report under this rule.

While the United States Congress has considered numerous legislative initiatives to reduce or tax greenhouse gas emissions, to date no laws in that regard have been enacted. On a state level, some states have enacted laws concerning greenhouse gas emissions. See "*Risk Factors – Climate Change*".

The adoption and implementation of any regulations imposing reporting obligations on, or limiting greenhouse gas emissions from, our operations, and the equipment utilized in those operations, could have a material adverse effect on our results of operations, cash flows and financial condition. Depending on the legislation or regulatory programs that may be adopted to address greenhouse gas emissions in the future, we could be required to incur costs to reduce greenhouse gas emissions resulting from our operations and could be required to purchase and surrender allowances for greenhouse gas emissions associated with our operations or the oil and natural gas we produce. Although we do not anticipate that we would be impacted to a greater degree than other similarly situated producers of oil and natural gas, a stringent greenhouse gas emissions control program could have an adverse effect on our cost of doing business and could reduce demand for the oil and natural gas we produce.

## **RISK FACTORS**

Investors should carefully consider the risk factors set out below and consider all other information contained herein and in our other public filings before making an investment decision. The risks set out below are not an exhaustive list and should not be taken as a complete summary or description of all the risks associated with our business and the oil and natural gas business generally.

### **Weakness in the Oil and Natural Gas Industry**

Recent market events and conditions, including global excess oil and natural gas supply, recent actions taken by the Organization of the Petroleum Exporting Countries ("**OPEC**"), slowing growth in China and emerging economies, market volatility and disruptions in Venezuela and Asia, weakening global relationships, isolationist trade policies, increased US shale production, sovereign debt levels and political upheavals in various countries have caused significant weakness and volatility in commodity prices. See "*Risk Factors – Political Uncertainty*". These events and conditions have caused a significant decrease in the valuation of oil and natural gas companies and a decrease in confidence in the oil and natural gas industry.

Lower commodity prices may also affect the volume and value of our reserves, rendering certain reserves uneconomic. In addition, lower commodity prices restrict our cash flow resulting in less funds from operations being available to fund our capital expenditure budget. Consequently, we may not be able to replace our production with additional reserves and both our production and reserves could be reduced on a year-over-year basis. See "*Risk Factors – Reserves Estimates*". Any decrease in value of our reserves may reduce the borrowing base under our credit facilities, which, depending on the level of our indebtedness, could result in us having to repay a portion of our indebtedness. See "*Risk Factors – Credit Facility Arrangements*". In addition to possibly resulting in a decrease in the value of our economically recoverable reserves, lower commodity prices may also result in a decrease in the value of our infrastructure and facilities, all of which could also have the effect of requiring a write down of the carrying value of our oil and natural gas assets on our balance sheet and the recognition of an impairment charge in our income statement. Given the current market conditions and the lack of confidence in the oil and natural gas industry, we may

have difficulty raising additional funds or if we are able to do so, it may be on unfavourable and highly dilutive terms. See "*Risk Factors – Additional Funding Requirements*".

### **Early Stage of Development**

An investment in us is subject to certain risks related to our early stage of development. There are numerous factors which may affect our success which are beyond our control including local, national and international economic conditions. Our foreign operations expose us to risks which may not exist for domestic operations such as political and currency risks. We have a limited history of operations. We recently drilled and completed our ninth operated well, but we do not have widespread experience in operating wells in North Dakota. Our business involves a high degree of risk and there can be no assurance that our business will be successful or profitable or that we will discover commercial quantities of crude oil or natural gas.

To become profitable, we would need to be successful in our acquisition, development and production activities, all of which are subject to many risks beyond our control. We cannot assure we will successfully implement our business plan or that we will achieve commercial profitability in the future. Even if we become profitable, we cannot assure profitability will be sustainable or increase on a periodic basis.

### **Exploration, Development and Production Risks**

Oil and natural gas operations involve many risks that even a combination of experience, knowledge and careful evaluation may not be able to overcome. Our long-term commercial success depends on our ability, and those of the operators of our non-operated properties, to find, acquire, develop and commercially produce oil and natural gas reserves. See also "*Risk Factors – Operational Dependence*" below. Without the continual addition of new reserves, our existing reserves, and the production from them will decline over time as we produce from such reserves. A future increase in our reserves will depend on both our ability and the ability of the operators of our non operated properties to explore and develop our existing properties and our ability to select and acquire suitable producing properties or prospects. There is no assurance that we will be able to continue to find satisfactory properties to acquire or participate in. Moreover, if such acquisitions or participations are identified, our management may determine that current markets, terms of acquisition, participation or pricing conditions make potential acquisitions or participation uneconomic. There is also no assurance that we will discover or acquire further commercial quantities of oil and natural gas.

Future oil and natural gas exploration may involve unprofitable efforts from dry wells or from wells that are productive but do not produce sufficient petroleum substances to return a profit after drilling, completing (including hydraulic fracturing), operating and other costs. Completion of a well does not ensure a profit on the investment or recovery of drilling, completion and operating costs. Drilling hazards, environmental damage and various field operating conditions could greatly increase the cost of operations and adversely affect the production from successful wells. Field operating conditions include, but are not limited to, delays in obtaining governmental approvals or consents, shut-ins of wells resulting from extreme weather conditions or relating to offsetting completion activities, insufficient storage or transportation capacity or geological and mechanical conditions. While diligent well supervision, effective maintenance operations and the development of enhanced oil recovery technologies can contribute to maximizing production rates over time, it is not possible to eliminate production delays and declines from normal field operating conditions, which can negatively affect revenue and cash flow levels to varying degrees.

Oil and natural gas exploration, development and production operations are subject to all the risks and hazards typically associated with such operations, including, but not limited to, fire, explosion, blowouts, cratering, sour gas releases, spills and other environmental hazards. These typical risks and hazards could result in substantial damage to oil and natural gas wells, production facilities, other property and the environment and cause personal injury or threaten wildlife. Particularly, we may explore for and produce sour gas in certain areas. An unintentional leak of sour gas could result in personal injury, loss of life or damage to property and may necessitate an evacuation of populated areas, all of which could result in liability to us.

Oil and natural gas production operations are also subject to geological and seismic risks, including encountering unexpected formations or pressures, premature decline of reservoirs and the invasion of water into producing formations. Losses resulting from the occurrence of any of these risks may have a material adverse effect on our business, financial condition, results of operations and prospects.



As is standard industry practice, we are not fully insured against all risks, nor are all risks insurable. Although we maintain liability insurance in an amount that we consider consistent with industry practice, liabilities associated with certain risks could exceed policy limits or not be covered. See "*Risk Factors – Insurance*". In either event, we could incur significant costs.

### **Operational Dependence**

Other companies operate some of the assets in which we have an interest. We have limited ability to exercise influence over the operation of those assets or their associated costs, which could adversely affect our financial performance. Our return on assets operated by others depends upon a number of factors that may be outside of our control, including, but not limited to, the timing and amount of capital expenditures, the operator's expertise and financial resources, the approval of other participants, the selection of technology and risk management practices.

In addition, due to the current low and volatile commodity prices, many companies, including companies that may operate some of the assets in which we have an interest, may be in financial difficulty, which could impact their ability to fund and pursue capital expenditures, carry out their operations in a safe and effective manner and satisfy regulatory requirements with respect to abandonment and reclamation obligations. If companies that operate some of the assets in which we have an interest fail to satisfy regulatory requirements with respect to abandonment and reclamation obligations we may be required to satisfy such obligations and to seek reimbursement from such companies. To the extent that any of such companies become bankrupt or insolvent or make a proposal or institute any proceedings relating to bankruptcy or insolvency, it could result in such assets being shut-in, the potential of us becoming subject to additional liabilities relating to such assets and us having difficulty collecting revenue due from such operators or recovering amounts owing to us from such operators for their share of abandonment and reclamation obligations. Any of these factors could materially adversely affect our financial and operational results.

### **Credit Facility Arrangements**

We currently have a credit facility and the amount authorized thereunder is dependent on the borrowing base determined by our lenders. We are required to comply with covenants under our credit facility which may, in certain cases, include certain financial ratio tests, which, from time to time, either affect the availability, or price, of additional funding and in the event that we do not comply with these covenants, our access to capital could be restricted or repayment could be required. Events beyond our control may contribute to our failure to comply with such covenants. A failure to comply with covenants could result in default under our credit facility, which could result in us being required to repay amounts owing thereunder. In addition, our credit facility may impose operating and financial restrictions on us that could include restrictions on, the payment of dividends, repurchase or making of other distributions with respect to our securities, incurring of additional indebtedness, the provision of guarantees, the assumption of loans, making of capital expenditures, entering into of amalgamations, mergers, take-over bids or disposition of assets, among others.

Our lenders use our reserves, anticipated future commodity prices, applicable discount rate and other factors to periodically determine our borrowing base. Commodity prices continue to be depressed and have fallen dramatically since 2014. There remains a substantial amount of uncertainty as to when and if commodity prices will recover. Depressed commodity prices could reduce our borrowing base, reducing the funds available to us under our credit facility which could result in the requirement to repay a portion, or all, of our bank indebtedness.

Notwithstanding that our assets are not located in Canada, the impact of the Supreme Court of Canada's decision in the Redwater case on lending practices in the crude oil and natural gas sector and actions taken by secured creditors and receivers/trustees of insolvent borrowers has not yet been determined but could affect lending practices as secured creditors will be subject to prior satisfaction of abandonment and restoration claims (with respect to Canadian based assets) which may not be capable of quantification at the time credit is advanced.

If our lenders require repayment of all or a portion of the amounts outstanding under our credit facilities for any reason, including for a default of a covenant, or the reduction of a borrowing base, there is no certainty that we would be in a position to make such repayment. Even if we are able to obtain new financing in order to make any required repayment under our credit facilities, it may not be on commercially reasonable terms, or terms that are acceptable to us. If we

are unable to repay amounts owing under credit facilities, the lenders under our credit facilities could proceed to foreclose or otherwise realize upon the collateral granted to them to secure the indebtedness.

### **Significant Debt**

Our senior credit facility contains certain financial and non-financial covenants. As at December 31, 2018, we were in compliance with all covenants under the terms of our senior credit facility, however, we may in the future fail to maintain our compliance with the terms of such credit facilities, which may give rise to the requirements to repay amounts owing thereunder, or other rights of the lenders, including the enforcement of their security. Additionally, absent an extension or full re-payment, the senior credit facility will mature on June 30, 2019. Although we have recently reduced our debt levels, there is no guarantee that we will have sufficient funds (or make sufficient arrangements) to reduce or eliminate the amounts owing under such facilities. There can be no assurance that these facilities will continue to be available to us in the future, or on terms that are acceptable to us. Any failure by us to receive an extension or amendment to such facilities, or otherwise repay in full on or prior to their respective maturity dates, may cast significant doubt with respect to our ability to continue as a going concern.

The Financing completed in January 2018 places additional obligations on us to fund the related 9.0% annual dividend payment. The Subsidiary Preferred Shares are presented as "debt" on our consolidated balance sheet.

Our debt levels could have important negative effects on us, such as:

- limiting our ability to obtain additional financing, if needed, or refinancing, when needed, for debt service requirements, working capital, capital expenditures or other purposes;
- increasing our vulnerability to current and future adverse economic and industry conditions;
- requiring us to dedicate a substantial portion of our cash flows from operations to make payments on our debt;
- causing us to monetize assets on terms that may be unfavourable to us;
- causing us to offer debt or equity securities on terms that may not be favourable to us or our Shareholders;
- reducing funds available for operations, future business opportunities or other purposes;
- limiting our flexibility in planning for, or reacting to, changes and opportunities in our business and industry;
- increasing employee turnover and uncertainty, diverting management's attention from routine business and hindering our ability to recruit qualified employees; and
- placing us at a competitive disadvantage compared to our competitors that have less debt.

### **Issuance of Debt**

From time to time, we may enter into transactions to acquire assets or shares of other entities. These transactions may be financed in whole, or in part, with debt, which may increase our debt levels above industry standards for oil and natural gas companies of similar size. Depending on future exploration and development plans, we may require additional debt financing that may not be available or, if available, may not be available on favourable terms. Neither our articles nor our by laws limit the amount of indebtedness that we may incur. The level of our indebtedness from time to time could impair our ability to obtain additional financing on a timely basis to take advantage of business opportunities that may arise.

### **Foreign Subsidiaries**

We conduct most of our operations through our US subsidiary, PetroShale US. The ability of our subsidiaries and other companies to make payments to us may be constrained by among other things: the level of taxation, particularly corporate profits and withholding taxes, in the jurisdiction in which they operate; and the introduction of exchange controls or repatriation restrictions.

## Foreign Operations

Our principal interests in oil and natural gas properties are located in the United States. As such, we are subject to political, economic and other uncertainties, including, but not limited to, expropriation of property without fair compensation, changes in energy policies or the personnel administering them, nationalization, currency fluctuations and devaluations, exchange controls, royalty and tax increases and other risks arising out of foreign governmental sovereignty over areas in which our operations are conducted. Our proposed operations may also be affected by laws and policies of Canada affecting foreign trade, taxation and investment. In the event of a dispute arising in connection with our operations outside of Canada, we may be subject to the exclusive jurisdiction of foreign courts or may not be successful in subjecting foreign persons to the jurisdictions of the courts of Canada or enforcing Canadian judgments in other jurisdictions. We may also be hindered or prevented from enforcing our rights with respect to a governmental instrumentality because of the doctrine of sovereign immunity. Accordingly, our exploration, development and production activities outside of Canada could be substantially impacted by factors beyond our control, any of which could have a material impact on us. We will seek to operate in such a manner as to minimize and mitigate our exposure to these risks. However, there can be no assurance that we will be successful in protecting ourselves from the impact of all of these risks.

## Third Party Credit Risk

We may be exposed to third party credit risk through our contractual arrangements with our current or future joint venture partners, marketers of our petroleum and natural gas production, counterparties to any hedge agreements and other parties. In addition, we may be exposed to third party credit risk from operators of our non operated properties. In the event such entities fail to meet their contractual obligations to us, such failures may have a material adverse effect on our business, financial condition, results of operations and prospects. In addition, poor credit conditions in the industry, generally, and of our joint venture partners may affect a joint venture partner's willingness to participate in our ongoing capital program, potentially delaying the program and the results of such program until we find a suitable alternative partner. To the extent that any of such third parties go bankrupt, become insolvent or make a proposal or institute any proceedings relating to bankruptcy or insolvency, it could result in us being unable to collect all or a portion of any money owing from such parties. Any of these factors could materially adversely affect our financial and operational results.

## Substantial Capital Requirements

We anticipate making substantial capital expenditures for the acquisition, exploration, development and production of oil and natural gas reserves in the future. As future capital expenditures will be financed out of cash generated from operations, borrowings and possible future equity issuances, our ability to do so is dependent on, among other factors:

- the overall state of the capital markets;
- commodity prices;
- our existing debt leverage;
- compliance with the terms of the Subsidiary Preferred Shares;
- interest rates;
- royalty rates;
- overall profitability of our existing operations and production;
- tax burden due to current and future tax laws; and
- investor appetite for investments in the energy industry and our securities in particular.

Further, if our revenues or reserves decline, we may not have access to the capital necessary to undertake or complete future drilling programs. The conditions in, or affecting, the oil and natural gas industry have negatively impacted the ability of oil and natural gas companies to access additional financing and/or the cost thereof. There can be no assurance that debt or equity financing, or cash generated by operations will be available or sufficient to meet these requirements or for other corporate purposes or, if debt or equity financing is available, that it will be on terms acceptable to us. Moreover, future activities may require us to alter our capitalization significantly, including selling a portion or all of our interest in one or more projects. We may be required to seek additional equity financing on terms that are highly dilutive to existing Shareholders. Our inability to access sufficient capital for our operations could have a material adverse effect on our business financial condition, results of operations and prospects.

## Prices, Markets and Marketing

Numerous factors beyond our control do, and will continue to affect the marketability and price of oil and natural gas acquired, produced or discovered by us. Our ability to market our oil and natural gas may depend upon our ability to acquire capacity on pipelines that deliver natural gas or crude oil to commercial markets or contract for the delivery of crude oil by rail or by truck. Deliverability uncertainties related to the distance of our reserves are from pipelines, railway lines, processing and storage facilities, operational problems affecting pipelines, railway lines and processing and storage facilities as well as government regulation relating to prices, taxes, royalties, land tenure, allowable production, the export of oil and natural gas and many other aspects of the oil and natural gas business may also affect us.

Prices for oil and natural gas are subject to large 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 beyond our control. These factors include economic and political conditions, in the United States, Canada, Europe, China and emerging markets, the actions of OPEC and other oil and natural gas exporting nations, governmental regulation, political stability in the Middle East, Northern Africa and elsewhere, the foreign supply and demand of oil and natural gas, risks of supply disruption, the price of foreign imports and the availability of alternative fuel sources. Prices for oil and natural gas are also subject to the availability of foreign markets and our ability to access such markets. A material decline in prices could result in a reduction of our net production revenue. The economics of producing from some wells may change because of lower prices, which could result in reduced production of oil or natural gas and a reduction in the volumes and the value of our economic reserves. We, or the operators of our properties, might also elect not to produce from certain wells at lower prices.

Despite the commencement of operations of the North Dakota Access Pipeline, which has enhanced pipeline takeaway capacity, oil supply from the region may increase in the future and exceed current pipeline and refining capacity, which could have a negative impact on the price we receive for our oil production. All these factors could result in a material decrease in our expected net production revenue and a reduction in our oil and natural gas production, development and exploration activities. Any substantial and extended decline in the price of oil and natural gas would have an adverse effect on the carrying value of our reserves, borrowing capacity, revenues, profitability and cash flows from operations and may have a material adverse effect on our business, financial condition, results of operations and prospects.

Oil and natural gas prices are expected to remain volatile for the near future because of market uncertainties over the supply and the demand of these commodities due to the current state of the world economies, increased growth of shale oil production in the United States, OPEC actions, political uncertainties, sanctions imposed on certain oil producing nations by other countries and ongoing credit and liquidity concerns. Volatile oil and natural gas prices make it difficult to estimate the value of producing properties for acquisitions and often cause disruption in the market for oil and natural gas producing properties, as buyers and sellers have difficulty agreeing on such value. Price volatility also makes it difficult to budget for and project the return on acquisitions and development and exploitation projects. See "*Risk Factors – Weakness in the Oil and Natural Gas Industry*".

## Lack of Diversification

Substantially all of our production currently comes from the North Dakota Bakken/Three Forks area and a majority from a limited number of producing wells. In addition, a significant portion of our undeveloped land is in the Antelope and South Berthold areas of North Dakota. As a result, we lack the diversification in terms of the size, nature and geographic scope of our business. Accordingly, factors affecting our particular properties, the oil and gas industry or the particular regions in North Dakota where we operate will likely impact us more acutely than if our business was more diversified.

## Market Price of Common Shares

The trading price of securities of oil and natural gas issuers is subject to substantial volatility often based on factors related and unrelated to the financial performance or prospects of the issuers involved. Factors unrelated to our performance could include macroeconomic developments nationally, within North America or globally, domestic and global commodity prices or current perceptions of the oil and natural gas market. In recent years, the volatility of

commodities has increased due, in part, to the implementation of computerized trading and the decrease of discretionary commodity trading. In addition, in certain jurisdictions, institutions, including government sponsored entities, have determined to decrease their ownership in oil and natural gas entities which may impact the liquidity of certain securities and may put downward pressure on the trading price of those securities. Similarly, the market price of our Common Shares could be subject to significant fluctuations in response to variations in our operating results, financial condition, liquidity and other internal factors. Accordingly, the price at which our Common Shares will trade cannot be accurately predicted.

Additionally, a large percentage of our Common Shares are held by a small number of holders and consequently this has an effect on the transparency and the availability of trading prices and the liquidity of our Common Shares. There can be no assurance that an active trading market will develop for our Common Shares, or if developed, that such market will be sustained.

### **Failure to Realize Anticipated Benefits of Acquisitions and Dispositions**

We consider acquisitions and dispositions of businesses and assets in the ordinary course of business. Achieving the benefits of acquisitions depends on successfully consolidating functions and integrating operations and procedures in a timely and efficient manner and our ability to realize the anticipated growth opportunities and synergies from combining the acquired businesses and operations with ours. The integration of acquired businesses and assets may require substantial management effort, time and resources diverting management's focus from other strategic opportunities and operational matters. Management continually assesses the value and contribution of services provided by third parties and the resources required to provide such services. In this regard, non-core assets may be periodically disposed of so that we can focus our efforts and resources more efficiently. Depending on the state of the market for such non-core assets, certain of our non-core assets may realize less on disposition than their carrying value on our financial statements.

### **Project Risks**

We, and the operators of our non-operated properties manage a variety of small and large projects in the conduct of our business. Project interruptions may delay expected revenues from operations. Significant project cost overruns could make a project uneconomic. Our ability to execute projects and market oil and natural gas depends upon numerous factors beyond our, and their, control, including:

- the availability of processing capacity;
- the availability and proximity of pipeline capacity;
- the availability of storage capacity;
- the availability of natural gas transportation and processing capacity;
- the availability of, and the ability to acquire, water supplies needed for drilling and hydraulic fracturing, availability and costs of fracturing sand, or our ability to dispose of water used or removed from strata at a reasonable cost and in accordance with applicable environmental regulations;
- the availability of alternative fuel sources;
- the effects of inclement weather;
- the availability of drilling, completion and oilfield service-related equipment, at a reasonable cost or at all;
- unexpected cost increases;
- accidental events;
- currency fluctuations;
- regulatory changes;
- the availability and productivity of skilled labour;
- shut-ins of producing wells resulting from extreme weather conditions, or inability to access pipelines or processing facilities for our oil and natural gas production; and
- the regulation of the oil and natural gas industry by various levels of government and governmental agencies including but not limited to the Bureau of Land Management, the Bureau of Indian Affairs, the Three Affiliated Tribes, and the NDIC in relation to our US assets.

Because of these factors, we, or the operators of our properties, could be unable to execute projects on time, on budget, or at all, and may be unable to market the oil and natural gas that we produce effectively.

## **Gathering and Processing Facilities, Pipeline Systems and Rail**

We deliver our products through gathering and processing facilities and pipeline systems, most of which we do not own, and by trucking or rail. The amount of oil and natural gas that we can produce and sell is subject to the accessibility, availability, proximity and capacity of these gathering and processing facilities, pipeline systems and railway lines. The lack of availability of capacity in any of the gathering and processing facilities, pipeline systems and railway lines, and in particular the processing facilities, could result in our inability to realize the full economic potential of our production or in a reduction of the price offered for our production. New gas flaring restrictions implemented by the NDIC in 2014 and amended by the NDIC in 2018 severely limit the amount of associated gas flaring that can take place on a well-by-well basis creating further potential restrictions on the ability to commence production from new wells without gas tie-in infrastructure in place. The lack of firm pipeline capacity continues to affect the oil and natural gas industry limits the ability to transport produced oil and natural gas to market. Unexpected shut downs or curtailment of capacity of pipelines for maintenance or integrity work or because of actions taken by regulators could also affect our production, operations and financial results. As a result, producers are increasingly turning to rail lines as an alternative means of transportation. In recent years, the volume of crude oil shipped by rail in North America has increased dramatically. Any significant change in market factors or other conditions affecting these infrastructure systems and facilities, as well as any delays or uncertainty in constructing new infrastructure systems and facilities could harm our business and, in turn, our financial condition, results of operations and cash flows.

Following major accidents in Lac-Mégantic, Quebec and North Dakota, the Transportation Safety Board of Canada and the United States National Transportation Board have recommended additional regulations for railway tank cars carrying crude oil. In June 2015, as a result of these recommendations, the Government of Canada passed the *Safe and Accountable Rail Act* which increased insurance obligations on the shipment of crude oil by rail and imposed a per tonne levy of \$1.65 on crude oil shipped by rail to compensate victims and for environmental cleanup in the event of a railway accident. In addition to this legislation, new regulations have implemented the TC-117 standard for all rail tank cars carrying flammable liquids which formalized the commitment to retrofit and eventually phase out the DOT-111 tank cars carrying crude oil. The increased regulation of rail transportation may reduce the ability of railway transportation to alleviate pipeline constraints and adds additional costs to the transportation of crude oil by rail.

A significant portion of our production is processed through facilities owned by third parties and over which we do not have control. From time to time these facilities may discontinue or decrease operations either as a result of normal servicing requirements or as a result of unexpected events. A discontinuation or decrease of operations could have a materially adverse effect on our ability to process our production and deliver the same for sale. Midstream and pipeline companies may take actions to maximize their return on investment, which may in turn adversely affect producers and shippers, especially when combined with a regulatory framework that may not always align with the interests of particular shippers.

### **Competition**

The petroleum industry is competitive in all of its phases. We compete with numerous other entities in the exploration, development, production and marketing of oil and natural gas. Our competitors include oil and natural gas companies that have substantially greater financial resources, staff and facilities than ours. Some of these companies not only explore for, develop and produce oil and natural gas, but also carry on refining operations and market oil and natural gas on an international basis. As a result of these complementary activities, some of these competitors may have greater and more diverse competitive resources to draw on than us. Our ability to increase our reserves in the future will depend not only on our ability to explore and develop our present properties, but also on our ability to select and acquire other suitable producing properties or prospects for exploratory drilling. Competitive factors in the distribution and marketing of oil and natural gas include price, process and reliability of delivery and storage.

### **Cost of New Technologies**

The petroleum industry is characterized by rapid and significant technological advancements and introductions of new products and services utilizing new technologies. Other companies may have greater financial, technical and personnel resources that allow them to implement and benefit from technological advantages. There can be no assurance that we will be able to respond to such competitive pressures and implement such technologies on a timely basis or at an

acceptable cost. If we do implement such technologies, there is no assurance that we will do so successfully. One or more of the technologies currently utilized by us or implemented in the future may become obsolete. In such case, our business, financial condition and results of operations could also be affected adversely and materially. If we are unable to utilize the most advanced commercially available technology, or we are unsuccessful in implementing certain technologies our business, financial condition and results of operations could also be adversely affected in a material way.

### **Alternatives to and Changing Demand for Petroleum Products**

Full conservation measures, alternative fuel requirements, increasing consumer demand for alternatives to oil and natural gas and technological advances in fuel economy and energy generation devices could reduce the demand for oil, natural gas and other liquid hydrocarbons. We cannot predict the impact of changing demand for oil and natural gas products, and any major changes may have a material adverse effect on our business, financial condition, results of operations and cash flows.

### **Regulatory**

Various levels of governments impose extensive controls and regulations on oil and natural gas operations (including exploration, development, production, pricing, marketing and transportation). Governments may regulate or intervene with respect to exploration and production activities, prices, taxes, royalties and the exportation of oil and natural gas. Amendments to these controls and regulations may occur from time to time in response to economic or political conditions. See "*Industry Conditions*". The implementation of new regulations or the modification of existing regulations affecting the oil and natural gas industry could reduce demand for crude oil and natural gas and increase our costs, either of which may have a material adverse effect on our business, financial condition, results of operations and prospects. In order to conduct oil and natural gas operations, we require regulatory permits, licenses, registrations, approvals and authorizations from various governmental authorities. There can be no assurance that we will be able to obtain all of the permits, licenses, registrations, approvals and authorizations that may be required to conduct operations that we may wish to undertake. In addition to regulatory requirements pertaining to the production, marketing and sale of oil and natural gas mentioned above, our business, financial condition and market value of our Common Shares could be influenced by federal legislation affecting, in particular, foreign investment, through legislation such as the *Competition Act* (Canada) and the *Investment Canada Act* (Canada).

### **Royalty Regimes**

There can be no assurance that the federal, provincial and US Federal or state governments in the jurisdictions in which we have assets will not adopt new royalty regimes or modify the existing royalty regimes which may have an impact on the economics of our projects. An increase in royalties would reduce our earnings and could make future capital investments, or our operations, less economic. Acquisitions of new assets in the US may require us to negotiate royalty rates with private landowners and there is a risk that such royalty rates may increase due to increased competition for such lands over time.

### **Hydraulic Fracturing**

Hydraulic fracturing involves the injection of water, sand and small amounts of additives under pressure into rock formations to stimulate the production of oil and natural gas. Specifically, hydraulic fracturing enables the production of commercial quantities of oil and natural gas from reservoirs that were previously unproductive. Any new laws, regulations or permitting requirements regarding hydraulic fracturing could lead to operational delays, increased operating costs, third party or governmental claims, and could increase our costs of compliance and doing business as well as delay the development of oil and natural gas resources from shale formations, which are not commercial without the use of hydraulic fracturing. Restrictions on hydraulic fracturing could also reduce the amount of oil and natural gas that we are ultimately able to produce from our reserves.

## **Environmental**

All phases of the oil and natural gas business present environmental risks and hazards and are subject to environmental regulation pursuant to a variety of federal, provincial, state and local laws and regulations. Environmental legislation provides for, among other things, restrictions and prohibitions on the spill, release or emission of various substances produced in association with certain oil and natural gas industry operations. In addition, such legislation sets out the requirements with respect to oilfield waste handling and storage, habitat protection and the satisfactory operation, maintenance, abandonment and reclamation of well and facility sites.

Compliance with environmental legislation can require significant expenditures and a breach of applicable environmental legislation may result in the imposition of fines and penalties, some of which may be material. Environmental legislation is evolving in a manner expected to result in stricter standards and enforcement, larger fines and liability and potentially increased capital expenditures and operating costs. The discharge of oil, natural gas or other pollutants into the air, soil or water may give rise to liabilities to governments and third parties and may require us to incur costs to remedy such discharge. Although we believe that we, and the operators of our properties, are in material compliance with current applicable environmental legislation, no assurance can be given that environmental compliance requirements will not result in a curtailment of production or a material increase in the costs of production, development or exploration activities or otherwise have a material adverse effect on our business, financial condition, results of operations and prospects.

In addition, increased attention to environmental issues in a changing political and regulatory environment could lead to greater opposition to oil and gas production activities by special-interest groups, including litigation.

## **Climate Change**

Our development and production facilities and other operations and activities emit greenhouse gases which may require us to comply with greenhouse gas emissions legislation at the regional, provincial, state or federal level. Climate change policy is evolving at regional, national and international levels, and political and economic events may significantly affect the scope and timing of climate change measures that are ultimately put in place. As a signatory to the UNFCCC and a participant to the Copenhagen Agreement (a non-binding agreement created by the UNFCCC), the Government of Canada announced on January 29, 2010 that it would seek a 17% reduction in greenhouse gas emissions from 2005 levels by 2020. This target is aligned with the United States target. However, these greenhouse gas emission reduction targets were not binding. As a result of the UNFCCC adopting the Paris Agreement on December 12, 2015, which Canada ratified on October 3, 2016, and which the United States under President Obama ratified in September 2016, the Governments' of Canada and the United States have agreed to implement greenhouse gas emission reduction targets. The United States announced its withdrawal from the Paris Agreement in 2017, but the EPA has promulgated greenhouse gas emissions regulations pursuant to the *Clean Air Act*. See "*Industry Conditions – Climate Change Regulation*". The direct or indirect costs of compliance with these regulations may have a material adverse effect on our business, financial condition, results of operations and prospects. In addition, concerns about climate change have resulted in a number of environmental activists and members of the public opposing the continued exploitation and development of fossil fuels. Given the evolving nature of the debate related to climate change and the control of greenhouse gas and resulting requirements, it is expected that current and future climate change regulations will have the effect of increasing our operating expenses and in the long-term may reduce the demand for oil and natural gas production, resulting in a decrease in our profitability and a reduction in the value of our assets or asset write-offs.

In addition, there has been public discussion that climate change may be associated with extreme weather conditions and increased volatility in seasonal temperatures. Extreme weather could interfere with our production and increase our costs. At this time, we are unable to determine the extent to which climate change may lead to increased storm or weather hazards affecting our operations.

## **Variations in Foreign Exchange Rates and Interest Rates**

World oil and natural gas prices are quoted in United States dollars. The Canadian/United States dollar exchange rate, which fluctuates over time, consequently affects the price received by Canadian producers of oil and natural gas. Material increases in the value of the Canadian dollar relative to the United States dollar will negatively affect our



production revenues. Accordingly, exchange rates between Canada and the United States could affect the future value of our reserves as determined by independent evaluators. Although a low value of the Canadian dollar relative to the United States dollar may positively affect the price we receive for our oil and natural gas production, it could also result in an increase in the price for certain goods used for our operations, which may have a negative impact on our financial results. PetroShale's production is primarily marketed in the United States and we receive payment for our production in US dollars, and the majority of our costs are also denominated and settled in US dollars. However, we present our financial results in Canadian dollars and any fluctuation in the exchange rate between the Canadian dollar and the US dollar could impact our financial results in Canadian dollars.

To the extent that we engage in risk management activities related to foreign exchange rates, there is a credit risk associated with counterparties with which we may contract.

An increase in interest rates could result in a significant increase in the amount we pay to service debt, resulting in a reduced amount available to fund our exploration and development activities, and if applicable, the cash available for dividends. Such an increase could also negatively impact the market price of our Common Shares.

### **Additional Funding Requirements**

Our cash flow from our reserves may not be sufficient to fund our ongoing activities at all times and from time to time, we may require additional financing in order to carry out our oil and natural gas acquisition, exploration and development activities. Failure to obtain financing on a timely basis could cause us to forfeit our interest in certain properties, miss certain acquisition opportunities and reduce or terminate our operations. Due to the conditions in the oil and natural gas industry and/or global economic and political volatility, we may from time to time have restricted access to capital and increased borrowing costs. The current conditions in the oil and natural gas industry have negatively impacted the ability of oil and natural gas companies to access, or the cost of, additional financing.

As a result of global economic and political volatility, we may, from time to time, have restricted access to capital and increased borrowing costs. Failure to obtain suitable financing on a timely basis could cause us to forfeit our interest in certain properties, miss certain acquisition opportunities and reduce or terminate our operations. If our revenues from our reserves decrease as a result of lower oil and natural gas prices or otherwise, it will affect our ability to expend the necessary capital to replace our reserves or to maintain our production. To the extent that external sources of capital become limited, unavailable, or available on onerous terms, our ability to make capital investments and maintain existing assets may be impaired, and our assets, liabilities, business, financial condition and results of operations may be affected materially and adversely as a result. In addition, the future development of our petroleum properties may require additional financing and there are no assurances that such financing will be available or, if available, will be available upon acceptable terms. Alternatively, any available financing may be highly dilutive to our existing Shareholders. Failure to obtain any financing necessary for our capital expenditure plans may result in a delay in development or production on our properties.

### **Hedging**

From time to time, we may enter into agreements to receive fixed prices on our oil and natural gas production to offset the risk of revenue losses if commodity prices decline. However, to the extent that we engage in price risk management activities to protect us from commodity price declines, we may also be prevented from realizing the full benefits of price increases above the levels of the derivative instruments used to manage price risk. In addition, our hedging arrangements may expose us to the risk of financial loss in certain circumstances, including instances in which:

- production falls short of the hedged volumes or prices fall significantly lower than projected;
- there is a widening of price-basis differentials between delivery points for production and the delivery point assumed in the hedge arrangement;
- the counterparties to the hedging arrangements or other price risk management contracts fail to perform under those arrangements; or
- a sudden unexpected event materially impacts oil and natural gas prices.

Similarly, from time to time we may enter into agreements to fix the exchange rate of Canadian to United States dollars in order to offset the risk of revenue losses if the Canadian dollar increases in value compared to the United States dollar. However, if the Canadian dollar declines in value compared to the United States dollar, we would not benefit from the fluctuating exchange rate if we had entered into such a hedging agreement.

### **Title to Assets**

Although title reviews may be conducted prior to the purchase of oil and natural gas properties or the commencement of drilling wells, such reviews do not guarantee or certify that a defect in the chain of title will not arise. Our actual title to and interest in our properties, and our right to produce and sell the oil and natural gas therefrom, may vary from our records. In addition, there may be valid legal challenges or legislative changes that affect our title to and right to produce from our oil and natural gas properties, which could impair our activities and result in a reduction of the revenue received by us.

If a defect exists in the chain of title or in our right to produce, or a legal challenge or legislative change arises, it is possible that we may lose all, or a portion of, the properties to which the title defect relates and/or our right to produce from such properties. This may have a material adverse effect on our business, financial condition, results of operations and prospects.

### **Reserves Estimates**

There are numerous uncertainties inherent in estimating quantities of oil, natural gas and natural gas liquids reserves and the future cash flows attributed to such reserves. The reserves and associated cash flow information set forth in this Annual Information Form are estimates only. Generally, estimates of economically recoverable oil and natural gas reserves (including the breakdown of reserves by product type) and the future net cash flows from such estimated reserves are based upon a number of variable factors and assumptions, such as:

- historical production from the properties;
- production rates;
- ultimate reserve recovery;
- future commodity prices;
- capital costs associated with future development of proven undeveloped and probable reserves;
- timing and amount of capital expenditures;
- our ability to fund future capital expenditures;
- marketability of oil and natural gas;
- royalty rates; and
- the assumed effects of regulation by governmental agencies and future operating costs (all of which may vary materially from actual results).

For those reasons, estimates of the economically recoverable oil and natural gas reserves attributable to any particular group of properties, classification of such reserves based on risk of recovery and estimates of future net revenues associated with reserves prepared by different engineers, or by the same engineers at different times may vary. Our actual production, revenues, taxes and development and operating expenditures with respect to our reserves will vary from estimates and such variations could be material.

The estimation of proved reserves that may be developed and produced in the future are often based upon volumetric calculations and upon analogy to similar types of reserves rather than actual production history. Recovery factors and drainage areas are often estimated by experience and analogy to similar producing pools. Estimates based on these methods are generally less reliable than those based on actual production history. Subsequent evaluation of the same reserves based upon production history and production practices will result in variations in the estimated reserves and such variations could be material.

In accordance with applicable securities laws, our independent reserves evaluator has used forecast prices and costs in estimating the reserves and future net cash flows as summarized herein. Actual future net cash flows will be affected by other factors, such as actual production levels, supply and demand for oil and natural gas, curtailments or increases

in consumption by oil and natural gas purchasers, changes in governmental regulation or taxation and the impact of inflation on costs.

Actual production and cash flows derived from our oil and natural gas reserves will vary from the estimates contained in the reserve evaluation, and such variations could be material. The reserve evaluation is based in part on the assumed success of activities we intend to undertake in future years. The reserves and estimated cash flows to be derived therefrom and contained in the reserve evaluation will be reduced to the extent that such activities do not achieve the level of success assumed in the reserve evaluation. The reserve evaluation is effective as of a specific effective date and, except as may be specifically stated, has not been updated and therefore does not reflect changes in our reserves since that date.

### **Insurance**

Our involvement in the exploration for and development of oil and natural gas properties may result in us becoming subject to liability for pollution, blowouts, leaks of sour natural gas, property damage, personal injury or other hazards. Although we maintain insurance in accordance with industry standards to address certain of these risks, such insurance has limitations on liability and may not be sufficient to cover the full extent of such liabilities. In addition, certain risks are not, in all circumstances, insurable or, in certain circumstances, we may elect not to obtain insurance to deal with specific risks due to the high premiums associated with such insurance or other reasons. The payment of any uninsured liabilities would reduce the funds available to us. The occurrence of a significant event that we are not fully insured against, or the insolvency of the insurer of such event, may have a material adverse effect on our business, financial condition, results of operations and prospects.

### **Geopolitical Risks**

Political events throughout the world that cause disruptions in the supply of oil that affects the marketability and price of oil and natural gas acquired or discovered by us. Conflicts, or conversely peaceful developments, arising outside of Canada and the United States, including changes in political regimes or parties in power, may have a significant impact on the price of oil and natural gas. Any particular event could result in a material decline in prices and result in a reduction of our net production revenue.

In addition, our oil and natural gas properties, wells and facilities could be the subject of a terrorist attack. If any of our properties, wells or facilities are the subject of terrorist attack it may have a material adverse effect on our business, financial condition, results of operations and prospects. We do not have insurance to protect against the risk from terrorism.

### **Dilution**

We may make future acquisitions or enter into financings or other transactions involving the issuance of our securities which may be dilutive to Shareholders .

### **Management of Growth**

We may be subject to growth related risks including capacity constraints and pressure on our internal systems and controls. Our ability to manage growth effectively will require us to continue to implement and improve our operational and financial systems and to expand, train and manage our employee base. Our inability to deal with this growth may have a material adverse effect on our business, financial condition, results of operations and prospects.

### **Expiration of Licenses and Leases**

Our properties are held in the form of licences and leases and working interests in licences and leases. If we or the holder of the licence or lease fails to meet the specific requirement of a licence or lease, the licence or lease may terminate or expire. There can be no assurance that any of the obligations required to maintain each licence or lease will be met. The termination or expiration of our licences or leases or the working interests relating to a licence or lease may have a material adverse effect on our business, financial condition, results of operations and prospects.

**Dividends**

We have not paid any dividends on our Common Shares since incorporation. Payment of dividends in the future will be dependent on, among other things, the cash flow, results of operations and our financial condition, the need for funds to finance ongoing operations and other considerations, as our Board of Directors considers relevant. In accordance with the terms of the Subsidiary Preferred Shares, the holder(s) of Subsidiary Preferred Shares are entitled to a cumulative quarterly cash dividend at a rate of 9.0% per annum of the "Liquidation Preference" in respect of the Subsidiary Preferred Share, which based on the current aggregate "Liquidation Preference" of US\$ 75 million, results in dividends payments of US\$ 1,687,500 per quarter. PetroShale US may elect to pay certain quarterly dividend amounts "in kind" at a rate of 12.0% per annum in lieu of paying a cash dividend for such quarter, which "in kind" amount will be reflected as an increase to the liquidation preference of the Subsidiary Preferred Shares. The declaration and payment of dividends on the Subsidiary Preferred Shares in any quarter is subject to the discretion of the board of PetroShale US and may vary depending on a variety of factors and conditions existing from time to time, including those set forth above and those set forth under "*Dividend Policy*" herein.

**Litigation**

In the normal course of our operations, we may become involved in, named as a party to, or be the subject of, various legal proceedings, including regulatory proceedings, tax proceedings and legal actions. Potential litigation may develop in relation to personal injuries (including resulting from exposure to hazardous substances, property damage, property, taxes, land and access rights, environmental issues, including claims relating to contamination or natural resource damages and contract disputes). The outcome of outstanding, pending or future proceedings cannot be predicted with certainty and may be determined adversely to us and as a result, could have a material adverse effect on our assets, liabilities, business, financial condition and results of operations. Even if we prevail in such legal proceedings, the proceedings could be costly and time consuming and may divert the attention of management and key personnel from business operations, which could have an adverse effect on our financial condition.

**Breach of Confidentiality**

While discussing potential business relationships or other transactions with third parties, we may disclose confidential information relating to our business, operations or affairs. Although confidentiality agreements are generally signed by third parties prior to the disclosure of any confidential information, a breach could put us at competitive risk and may cause significant damage to our business. The harm to our business from a breach of confidentiality cannot presently be quantified, but may be material and may not be compensable in damages. There is no assurance that, in the event of a breach of confidentiality, we will be able to obtain equitable remedies, such as injunctive relief, from a court of competent jurisdiction in a timely manner, if at all, in order to prevent or mitigate any damage to our business that such a breach of confidentiality may cause.

**Income Taxes**

We file all required income tax returns and believe that we are in full compliance with the provisions of the relevant and all other applicable tax legislation. However, such returns are subject to reassessment by the applicable taxation authority. In the event of a successful reassessment of us, such reassessment may have an impact on current and future taxes payable.

Income tax laws relating to the oil and natural gas industry, such as the treatment of resource taxation or dividends, may in the future be changed or interpreted in a manner that adversely affects us. Furthermore, tax authorities having jurisdiction over us may disagree with how we calculate our income for tax purposes or could change administrative practices to our detriment.

**Seasonality**

The level of activity in the Canadian and United States oil and natural gas industry is influenced by seasonal weather patterns. Wet weather and spring thaw may make the ground unstable. Consequently, municipalities and local transportation departments enforce road bans that restrict the movement of rigs and other heavy equipment, thereby

reducing activity levels. In addition, certain oil and natural gas producing areas are located in areas that are inaccessible other than during the winter months because the ground surrounding the sites in these areas consists of swampy terrain. Severe winter weather in North Dakota where the majority of our operations are carried out may have an impact on our ability to develop new production or maintain existing production. Seasonal factors and unexpected weather patterns may lead to declines in exploration and production activity and corresponding decreases in the demand for our goods and services.

### **Conflicts of Interest**

Certain of our directors or officers may also be directors or officers of other oil and natural gas companies and as such may, in certain circumstances, have a conflict of interest. Conflicts of interest, if any, will be subject to and governed by procedures prescribed by the Act which require a director or officer of a corporation who is a party to, or is a director or an officer of, or has a material interest in any person who is a party to, a material contract or proposed material contract with us to disclose his or her interest and, in the case of directors, to refrain from voting on any matter in respect of such contract unless otherwise permitted under the Act.

### **Significant Shareholders**

Mr. Chernoff holds directly or indirectly 60,955,786 Common Shares, representing approximately 31.8% of our Common Shares (26.4% of all of the currently outstanding voting shares) and First Reserve owns 39,308,176 Special Voting Shares, representing all of the outstanding Special Voting Shares and 2,702,702 Common Shares (approximately 18.2% of all of the currently outstanding voting shares) and all of the outstanding Subsidiary Preferred Shares. In addition to the foregoing, First Reserve has been provided certain rights pursuant to the terms of the Investment Agreement as further described under "*General Development of Our Business – History and Development – Year Ended December 31, 2018*". In addition, based on public filings, Vertex One Asset Management, Inc., owns 24,444,500 Common Shares or 10.6% of the currently outstanding voting shares. As a result, such persons exercise significant control over us, giving them the ability to, among other things affect the voting results with respect to the election of directors, the approval of significant corporate transactions and the ability to delay or prevent a change of control that could be otherwise beneficial to minority shareholders. Such persons will generally have the ability to influence the outcome of any matter submitted for the vote or consent of our Shareholders. In some cases, the interests of such persons may not be the same as those of our other Shareholders. The effect of such persons' rights and influence may impact the price that other investors are willing to pay for our securities. If any of the foregoing persons sells a substantial number of the shares in which they own in the public market, or otherwise, the market price of the Common Shares could fall. The perception among the public that these sales will occur could also contribute to a decline in the market price of the Common Shares.

### **Reliance on Key Personnel**

Our success depends in large measure on certain key personnel. Losing the services of such key personnel could have a material adverse effect on our business, financial condition, results of operations and prospects. We do not have any key personnel insurance in effect. The contributions of the existing management team to our immediate and near term operations are likely to be of central importance. In addition, the competition for qualified personnel in the oil and natural gas industry is intense and there can be no assurance that we will be able to continue to attract and retain all personnel necessary for the development and operation of our business. Investors must rely upon the ability, expertise, judgment, discretion, integrity and good faith of our management.

### **Expansion into New Activities**

Our operations and the expertise of our management are currently focused primarily on oil and gas production and development in the Williston Basin, North Dakota. In the future we may acquire or move into new industry related activities or new geographical areas, may acquire different energy related assets, and as a result may face unexpected risks or alternatively, significantly increase our exposure to one or more existing risk factors, which may in turn result in our future operational and financial conditions being adversely affected.

## **Information Technology Systems and Cyber-Security**

We have become increasingly dependent upon the availability, capacity, reliability and security of our information technology infrastructure and our ability to expand and continually update this infrastructure, to conduct daily operations. We depend on various information technology systems to estimate reserve quantities, process and record financial data, manage our land base, manage financial resources, analyze seismic information, administer our contracts with our operators and lessees and communicate with employees and third-party partners.

Further, we are subject to a variety of information technology and system risks as a part of our normal course operations, including potential breakdown, invasion, virus, cyber-attack, cyber-fraud, security breach, and destruction or interruption of our information technology systems by third parties or insiders. Unauthorized access to these systems by employees or third parties could lead to corruption or exposure of confidential, fiduciary or proprietary information, interruption to communications or operations or disruption to our business activities or our competitive position. In addition, cyber phishing attempts, in which a malicious party attempts to obtain sensitive information such as usernames, passwords, and credit card details (and money) by disguising as a trustworthy entity in an electronic communication, have become more widespread and sophisticated in recent years. If we become a victim to a cyber phishing attack it could result in a loss or theft of our financial resources or critical data and information, or could result in a loss of control of our technological infrastructure or financial resources. Our employees are often the targets of such cyber phishing attacks, as they are and will continue to be targeted by parties using fraudulent "spoof" emails to misappropriate information or to introduce viruses or other malware through "Trojan horse" programs to our computers. These emails appear to be legitimate emails, but direct recipients to fake websites operated by the sender of the email or request recipients to send a password or other confidential information through email or to download malware.

We maintain procedures that address and implement employee protocols with respect to electronic communications and electronic devices and conduct annual cyber-security risk assessments. We also employ encryption protection of its confidential information, all computers and other electronic devices. Despite our efforts to mitigate such cyber phishing attacks through education and training, cyber phishing activities remain a serious problem that may damage its information technology infrastructure. We apply technical and process controls in line with industry-accepted standards to protect its information, assets and systems. However, these controls may not adequately prevent cyber-security breaches. Disruption of critical information technology services, or breaches of information security, could have a negative effect on our performance and earnings, as well as on our reputation, and any damages sustained may not be adequately covered by our current insurance coverage, or at all. The significance of any such event is difficult to quantify, but may in certain circumstances be material and could have a material adverse effect on our business, financial condition and results of operations.

## **Political Uncertainty**

In the last several years, the United States and certain European countries have experienced significant political events that have cast uncertainty on global financial and economic markets. Since the 2016 US presidential election the American administration has begun taking steps to implement certain of its promises made during the campaign. The North American Free Trade Agreement has been renegotiated and on November 30, 2018, Canada, the US and Mexico signed the Canada-United States-Mexico Agreement which will replace NAFTA once ratified by the three signatory countries. The US administration has also taken action with respect to reduction of regulation, which may also affect relative competitiveness of other jurisdictions. It is unclear exactly what other actions the US administration will implement, and if implemented, how these actions may impact North America and in particular the oil and natural gas industry. Any actions taken by the current US administration may have a negative impact on the American economy and on the businesses, financial conditions, results of operations and the valuation of oil and natural gas companies operating in the United States, including the Corporation.

In addition to the political disruption in the United States, the citizens of the United Kingdom voted to withdraw from the European Union and the Government of the United Kingdom has taken steps to implement such withdrawal. The terms of the United Kingdom's exit from the European Union and whether it will occur at all remains to be determined. Some European countries have also experienced the rise of anti-establishment political parties and public protests held against open-door immigration policies, trade and globalization. To the extent that certain political actions taken in North America, Europe and elsewhere in the world result in a marked decrease in free trade, access to personnel and

freedom of movement it could have an adverse effect on our ability to market our products internationally, increase costs for goods and services required for our operations, reduce access to skilled labour and negatively impact our business, operations, financial conditions and the market value of our Common Shares.

### **Alternatives to and Changing Demand for Petroleum Products**

Full conservation measures, alternative fuel requirements, increasing consumer demand for alternatives to oil and natural gas and technological advances in fuel economy and renewable energy generation devices could reduce the demand for oil, natural gas and liquid hydrocarbons. Recently, certain jurisdictions have implemented policies or incentives to decrease the use of fossil fuels and encourage the use of renewable fuel alternatives, which may lessen the demand for petroleum products and put downward pressure on commodity prices. In addition, advancements in energy efficient products have a similar effect on the demand for oil and natural gas products. We cannot predict the impact of changing demand for oil and natural gas products, and any major changes may have a material adverse effect on our business, financial condition, results of operations and cash flow by decreasing our profitability, increasing our costs, limiting our access to capital and decreasing the value of our assets.

### **Reputational Risks**

Our business, operations or financial condition may be negatively impacted as a result of any negative public opinion towards us or as a result of any negative sentiment toward, or in respect of, our reputation with stakeholders, special interest groups, political leadership, the media or other entities. Public opinion may be influenced by certain media and special interest groups' negative portrayal of the industry in which we operate as well as their opposition to certain oil and natural gas projects. Potential impacts of negative public opinion or reputational issues may include delays or interruptions in operations, legal or regulatory actions or challenges, blockades, increased regulatory oversight, reduced support for, delays in, challenges to, or the revocation of regulatory approvals, permits and/or licenses and increased costs and/or cost overruns. Our reputation and public opinion could also be impacted by the actions and activities of other companies operating in the oil and natural gas industry, particularly other producers, over which we have no control. In particular, our reputation could be impacted by negative publicity related to environmental damage, loss of life, injury or damage to property caused by our operations, or due to opposition from special interest groups opposed to oil and natural gas development. In addition, if we develop a reputation of having an unsafe work site it may impact our ability to attract and retain the necessary skilled employees and consultants to operate our business.

Reputational risk cannot be managed in isolation from other forms of risk. Credit, market, operational, insurance, regulatory and legal risks, among others, must all be managed effectively to safeguard our reputation. Damage to our reputation could result in negative investor sentiment towards us, which may result in limiting our access to capital, increasing the cost of capital, and decreasing the price and liquidity of our securities.

### **Changing Investor Sentiment**

A number of factors, including the concerns of the effects of the use of fossil fuels on climate change, the impact of oil and natural gas operations on the environment, environmental damage relating to spills of petroleum products during transportation and indigenous rights, have affected certain investors' sentiments towards investing in the oil and natural gas industry. As a result of these concerns, some institutional, retail and public investors have announced that they no longer are willing to fund or invest in oil and natural gas properties or companies or are reducing the amount thereof over time. In addition, certain institutional investors are requesting that issuers develop and implement more robust social, environmental and governance policies and practices. Developing and implementing such policies and practices can involve significant costs and require a significant time commitment from the Board of Directors, management and employees. Failing to implement the policies and practices as requested by institutional investors may result in such investors reducing their investment in us or not investing in us at all. Any reduction in the investor base interested or willing to invest in the oil and natural gas industry and more specifically, us, may result in limiting our access to capital, increasing the cost of capital, and decreasing the price and liquidity of our securities even if our operating results, underlying asset values or prospects have not changed. Additionally, these factors, as well as other related factors, may cause a decrease in the value of our assets, which may result in an impairment change.

### **Forward-Looking Information May Prove Inaccurate**

Shareholders and prospective investors are cautioned not to place undue reliance on our forward-looking information. By its nature, forward-looking information involves numerous assumptions, known and unknown risks and uncertainties, of both a general and specific nature, that could cause actual results to differ materially from those suggested by the forward-looking information or contribute to the possibility that predictions, forecasts or projections will prove to be materially inaccurate.

Additional information on the risks, assumption and uncertainties are found under the heading "*Forward-Looking Information and Statements*" of this Annual Information Form.

### **Intellectual Property Litigation**

Due to the rapid development of oil and natural gas technology, in the normal course of our operations, we may become involved in, named as a party to, or be the subject of, various legal proceedings in which it is alleged that we have infringed the intellectual property rights of others or which we initiate against others we believe are infringing upon our intellectual property rights. Our involvement in intellectual property litigation could result in significant expense, adversely affecting the development of our assets or intellectual property or diverting the efforts of our technical and management personnel, whether or not such litigation is resolved in our favour. In the event of an adverse outcome as a defendant in any such litigation, we may, among other things, be required to: (a) pay substantial damages and/or cease the development, use, sale or importation of processes that infringe upon other patented intellectual property; (b) expend significant resources to develop or acquire non-infringing intellectual property; (c) discontinue processes incorporating infringing technology; or (d) obtain licences to the infringing intellectual property. However, we may not be successful in such development or acquisition, or such licences may not be available on reasonable terms. Any such development, acquisition or licence could require the expenditure of substantial time and other resources and could have a material adverse effect on our business and financial results.

### **LEGAL PROCEEDINGS AND REGULATORY ACTIONS**

There are no legal proceedings that we are or were a party to, or that any of our property is or was the subject of, during our most recently completed financial year, that were or are material to us, and there are no such material legal proceedings that we are currently aware of that are contemplated.

There were no: (i) penalties or sanctions imposed against us by a court relating to securities legislation or by a security regulatory authority during the most recently completed financial year; (ii) other penalties or sanctions imposed by a court or regulatory body against us that would likely be considered important to a reasonable investor in making an investment decision; or (iii) settlement agreements we entered into before a court relating to securities legislation or with a securities regulatory authority during our most recently completed financial year.

### **TRANSFER AGENT AND REGISTRAR**

The transfer agent and registrar for our Common Shares is TMX Equity Transfer Services, at its principal office in Calgary, Alberta.

### **MATERIAL CONTRACTS**

Except for our credit facilities (including amendments thereto) described under the heading "*Description of Our Capital Structure*" and the Investment Agreement and the purchase and sale agreement dated July 12, 2018 in respect of our asset acquisition completed on August 17, 2018, each as described under the heading "*General Development of Our Business – History and Development – Year Ended December 31, 2018*", we have not entered into any material contracts during the current financial year, the year ended December 31, 2018, or before the most recently completed financial year which are still in effect. Our material contracts have been filed under our profile on SEDAR at [www.sedar.com](http://www.sedar.com).



## **EXPERTS**

### **Interests of Experts**

To our knowledge, no registered or beneficial interests, direct or indirect, in any of our securities or other property: (i) were held by NSAI or by the "designated professionals" (as defined in Form 51-102F2) of NSAI, when NSAI prepared the NSAI Report; (ii) were received by NSAI or the designated professionals of NSAI after NSAI prepared the NSAI Report; or (iii) is to be received by NSAI or the designated professionals of NSAI.

KPMG LLP are our auditors and have confirmed that they are independent with respect to us within the meaning of the relevant rules and related interpretations prescribed by the relevant professional bodies in Canada and any applicable legislation or regulations.

## **ADDITIONAL INFORMATION**

Additional information, including directors' and officers' remuneration and indebtedness, principal holders of the Corporation's securities and options to purchase securities, if applicable, is contained in the Corporation's Information Circular for the most recent annual meeting of Shareholders that involved the election of directors. Additional financial information is provided for in the Corporation's financial statements and the management's discussion and analysis for the year ended December 31, 2018. These documents, along with other documents affecting the rights of securityholders and other information relating to the Corporation, may be found on SEDAR at [www.sedar.com](http://www.sedar.com).

**APPENDIX A**  
**AUDIT COMMITTEE CHARTER**

**POLICY STATEMENT**

It is the policy of PetroShale Inc. (the "**Corporation**") to establish and maintain an Audit Committee (the "**Committee**"), composed of independent directors, to assist the Board of Directors (the "**Board**") in carrying out their oversight responsibility for the Corporation's external audit, internal controls, disclosure, financial reporting and risk management.

The Committee's function is one of oversight only and shall not relieve management of its responsibilities.

The Corporation's external auditor shall report directly to the Committee.

**COMPOSITION OF THE COMMITTEE**

1. The Committee shall consist of at least three (3) directors.
2. Each director appointed to the Committee by the Board shall be independent as such term is defined in Section 1.4 of *Multilateral Instrument 52-110*.
3. Each member of the Committee shall be financially literate as such term is defined in Section 1.6 of *Multilateral Instrument 52-110* and at least one (1) member shall have accounting or related financial management expertise.
4. The Board shall appoint the members of the Committee and may seek the advice and assistance of the Corporate Governance and Compensation Committee in identifying qualified candidates. The Board shall appoint one (1) member of the Committee to be the Chair of the Committee.
5. A director appointed by the Board to the Committee shall be a member of the Committee until replaced by the Board or until his or her resignation. A member shall cease to be a member of the Committee upon ceasing to be a director of the Corporation.
6. The Secretary of the Corporation shall be the Secretary of the Committee.

**MEETINGS OF THE COMMITTEE**

1. The Committee shall convene a minimum of four (4) times each year at such time and places as may be designated by the Chair of the Committee and whenever a meeting is requested by the Board, a member of the Committee, the external auditors, or a senior officer of the Corporation.
2. Notice of each meeting of the Committee shall be given to each member and to the external auditors, who shall be entitled to attend each meeting of the Committee and shall attend whenever requested to do so by a member of the Committee or the Secretary of the Committee.
3. Notice of a meeting of the Committee shall:
  - (a) Be in writing.
  - (b) State the nature of the business to be transacted at the meeting in reasonable detail.
  - (c) To the extent practicable, be accompanied by copies of documentation to be considered at the meeting.
  - (d) Be given at least forty-eight (48) hours' notice preceding the time stipulated for the meeting or such shorter period as the members of the Committee may permit.
4. A quorum for the transaction of business at a meeting of the Committee shall consist of two (2) members of the Committee.
5. A member of the Committee may participate in a meeting of the Committee by means of such telephonic, electronic or other communication facilities, provided it permits all persons participating in the meeting to

communicate adequately with each other. A member participating in such a meeting by any such means is deemed to be present at the meeting.

6. In the absence of the Chair of the Committee, the members of the Committee shall choose one of the members present to be Chair of the meeting and, in the absence of the Secretary of the Committee, the members shall choose one of the persons present to be the Secretary of the meeting.
7. The Committee may invite the Chairman of the Board, other directors, senior management of the Corporation and other parties to attend meetings of the Committee; however, the Committee may meet separately with the external auditors or with invited management.
8. At each regular meeting of the Committee, the agenda shall include an opportunity for the members of the Committee to meet *in-camera*.
9. Minutes shall be kept of all meetings of the Committee and shall be signed by the Chair and the Secretary of the meeting.
10. Minutes of the meetings of the Committee shall be retained by the Secretary of the Corporation and shall be available, on request, to any member of the Board.

#### **DUTIES AND RESPONSIBILITIES OF COMMITTEE MEMBERS**

1. Committee members shall have and maintain a sufficient knowledge of company operations and changes in operations including the principal risks, systems and abilities of key personnel involved in financial reporting and disclosure processes to reasonably discharge their duties.
2. Committee members have an obligation to remain independent of the affairs of the Corporation and shall disclose any circumstances that create a conflict of interest with his or her role as a Committee member or may appear to create a conflict of interest.

#### **DUTIES AND RESPONSIBILITIES OF THE COMMITTEE**

1. The Committee's primary duties and responsibilities are to:
  - (a) Select and recommend the nomination and compensation of the external auditors.
  - (b) Oversee the independence, work and performance of the Corporation's external auditors.
  - (c) Review the principal risks that could impact the financial reporting of the Corporation and monitor how management is dealing with such risks.
  - (d) Monitor the integrity of the Corporation's disclosure and financial reporting process and its system of internal controls regarding financial reporting and accounting compliance.
  - (e) Oversee the resolution of any disagreements among external auditors, management and the internal auditing department, if any.
  - (f) If requested by the Board and permitted by applicable law and policies, review and approve unaudited quarterly financial statements or other public disclosure documents containing financial information.
2. The Committee shall annually select and recommend to the Board the nomination of an external auditor, recommend the replacement of the current external auditor when circumstances warrant it and monitor the independence, work and performance of the external auditors. This shall include:
  - (a) Considering the views of management in respect of the nomination of the external auditors.
  - (b) Reviewing and recommending, for approval by the Board, the terms of the external auditors' engagement and audit plan, including the reasonableness of the proposed audit fees.
  - (c) Pre-approving any engagement for non-audit services to be provided by the external auditors' firm or its affiliates, together with estimated fees. This shall involve considering the potential impact of such services on the independence of the external auditors.

- (d) When there is to be a change of external auditors, reviewing all issues and providing documentation related to the change, including the information to be included in the Notice of Change of Auditors and documentation called for under *National Instrument 51-102* as defined in Section 4.11 and the planned steps for an orderly transition.
  - (e) Reviewing all reportable events, including disagreements, unresolved issues and consultations with external auditors, as defined by applicable securities policies, on a routine basis, whether or not there is to be a change of external auditors.
  - (f) The Committee shall have the opportunity to meet with the external auditors apart from management at each regular meeting to receive assessments relating to audit scope limitations, management cooperation and any issues relating to financial competencies
3. In carrying out its primary duties and responsibilities, the Committee shall:
- (a) Review the annual audit plan with the external auditors and with management.
  - (b) Discuss with management and the external auditors any proposed changes in major accounting policies or principles, the potential impact of significant risks and uncertainties on future operations, and key estimates and judgments of management that may be material to financial reporting.
  - (c) Review with management and with the external auditors significant financial reporting issues arising during the most recent fiscal period and the resolution or proposed resolution of such issues.
  - (d) Review any problems experienced or concerns expressed by the external auditors in performing an audit, including any restrictions imposed by management or significant accounting issues on which there was a disagreement with management.
  - (e) Review periodically with management the Corporation's disclosure controls and procedures as such term is defined in *Multilateral Instrument 52-109* and monitor the certification process set out therein.
  - (f) Review audited annual financial statements and related documents in conjunction with the report of the external auditors.
  - (g) Consider and review with management, the internal control memorandum or management letter containing the recommendations of the external auditors and management's response, if any, including an evaluation of the adequacy and effectiveness of the internal financial controls of the Corporation and subsequent follow-up to any identified weaknesses.
  - (h) Review with management and the external auditors, if engaged to perform such a review, the quarterly unaudited financial statements before release to the public.
  - (i) Before release, review and if appropriate, recommend for approval by the Board, all public disclosure documents containing audited or unaudited financial information including any press release, annual report, annual information form, management discussion and analysis of operations, prospectus (and all documents which may be incorporated by reference into such prospectus) and all other securities offering documents of the Corporation.
  - (j) Review periodically with management the internal procedures implemented to review any other public disclosure of financial information extracted or derived from the Corporation's financial statements.
  - (k) Approve the hiring of any partners, employees or former partners and employees of the Corporation's present and former external auditor.
4. In addition, the Committee shall:
- (a) Oversee the receipt, review and follow-up of questions, concerns or complaints pursuant to the Corporation's Code of Business Conduct and Ethics and the procedures set out in Appendix "A" thereto.
  - (b) The Committee shall periodically review the manner of delegation and limits of authority that management has implemented throughout the Corporation.

- (c) The Committee shall review changes in accounting principles, regulations and emerging issues that may be relevant to the Corporation.
- (d) In conjunction with the Corporate Governance and Compensation Committee, monitor financial and accounting personnel succession planning within the Corporation and review the appointments of the Chief Financial Officer and any key financial managers who are involved in the financial reporting process.
- (e) Inquire into and determine the appropriate resolution of any conflict of interest in respect of audit or financial matters.
- (f) Quarterly, review any legal matter that could have a significant impact on the Corporation's financial statements, and any enquiries received from regulators, or government agencies.
- (g) Report to the Board, at the earliest opportunity after each meeting, the results of its activities and any reviews undertaken and make recommendations to the Board as deemed appropriate. In particular, the Committee shall make recommendations to the Board in connection with: (i) the appointment of external auditors; (ii) approval of financial statements, MD&A and related disclosure documents; and (iii) changes in significant accounting policies.
- (h) Periodically assess the performance of the Committee.

#### **RESOURCES AND AUTHORITY**

1. The Committee will be provided with resources commensurate with the duties and responsibilities assigned to it by the Board including administrative support. If deemed necessary by the Committee, it will have the discretion to institute investigations of improprieties or suspected improprieties, including the standing authority to retain independent counsel or advisors and to set their compensation.
2. The Committee shall have the authority to:
  - (a) Inspect any and all of the books and records of the Corporation, its subsidiaries and affiliates.
  - (b) Discuss with any officer of the Corporation, its subsidiaries and affiliates, the Chief Financial Officer and senior staff of the Corporation, any affected party and the external auditors, such accounts, records and other matters as any member of the Committee considers necessary and appropriate.
  - (c) Communicate directly with the internal and external auditors.
  - (d) Retain independent external advisors.

**APPENDIX B**  
**REPORT ON RESERVES DATA BY INDEPENDENT QUALIFIED RESERVES EVALUATORS FORM**  
**51-101F2**

To the board of directors of PetroShale Inc. (the "**Corporation**"):

1. We have evaluated the Corporation's reserves data as at December 31, 2018. The reserves data are estimates of proved reserves and probable reserves and related future net revenue as at December 31, 2018, estimated using forecast prices and costs.
2. The reserves data are the responsibility of the Corporation's management. Our responsibility is to express an opinion on the reserves data based on our evaluation.
3. We carried out our evaluation in accordance with standards set out in the Canadian Oil and Gas Evaluation Handbook as amended from time to time (the "**COGE Handbook**") maintained by the Society of Petroleum Evaluation Engineers (Calgary Chapter).
4. Those standards require that we plan and perform an evaluation to obtain reasonable assurance as to whether the reserves data are free of material misstatement. An evaluation also includes assessing whether the reserves data are in accordance with principles and definitions presented in the COGE Handbook.
5. The following table sets forth the net present value of future net revenue (before deduction of income taxes) attributed to proved plus probable reserves, estimated using forecast prices and costs and calculated using a discount rate of 10 percent, included in the reserves data of the Corporation evaluated by us for the year ended December 31, 2018, and identifies the respective portions thereof that we have evaluated and reported on to the Corporation's board of directors:

Independent Qualified Reserves Evaluator	Effective Date of Evaluation Report	Location of Reserves (County or Foreign Geographic Area)	Net Present Value of Future Net Revenue (before income taxes, 10% discount rate – US\$ millions)			
			Audited	Evaluated	Reviewed	Total
Netherland, Sewell & Associates, Inc.	December 31, 2018	United States	-	\$850.6	-	\$850.6

6. In our opinion, the reserves data respectively evaluated by us have, in all material respects, been determined and are in accordance with the COGE Handbook, consistently applied. We express no opinion on the reserve data that we reviewed but did not evaluate.
7. We have no responsibility to update our reports referenced in Paragraph 5 for events and circumstances occurring after the effective date of our reports.
8. Because the reserves data are based on judgements regarding future events, actual results will vary and the variations may be material.

Executed as of March 12, 2019.

(signed ) "*C.H. (Scott) Rees III*"  


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 NETHERLAND, SEWELL, & ASSOCIATES, INC.

**APPENDIX C**  
**REPORT OF MANAGEMENT AND DIRECTORS ON OIL AND GAS DISCLOSURE FORM 51-101F3**

Management of PetroShale Inc. ("**PetroShale**") is responsible for the preparation and disclosure of information with respect to PetroShale's oil and natural gas activities in accordance with securities regulatory requirements. This information includes reserves data.

An independent qualified reserves evaluator has evaluated PetroShales's reserves data. The report of the independent qualified reserves evaluator is presented below.

The Reserves Committee of the Board of Directors of PetroShale has:

- (a) reviewed PetroShale's procedures for providing information to the independent qualified reserves evaluator;
- (b) met with the independent qualified reserves evaluator to determine whether any restrictions affected the ability of the independent qualified reserves evaluator to report without reservation; and
- (c) reviewed the reserves data with management and the independent qualified reserves evaluator.

The Reserves Committee of the Board of Directors has reviewed PetroShale's procedures for assembling and reporting other information associated with oil and natural gas activities and has reviewed that information with management. The Board of Directors has, on the recommendation of the Reserves Committee, approved

- (a) the content and filing with securities regulatory authorities of Form 51-101F1 containing reserves data and other oil and gas information;
- (b) the filing of Form 51-101F2 which is the report of the independent qualified reserves evaluator on the reserves data; and
- (c) the content and filing of this report.

Because the reserves data are based on judgments regarding future events, actual results will vary and the variations may be material.

(signed) "*M. Bruce Chernoff*"  
M. Bruce Chernoff  
Executive Chairman and Director

(signed) "*Ken McCagherty*"  
Ken McCagherty  
Director, Chair of the Reserves Committee and Member  
of the Audit Committee

(signed) "*Antonio Izzo*"  
Antonio Izzo  
Vice President, Engineering and Business Development

(signed) "*Jacob Roorda*"  
Jacob Roorda  
Director and Member of the Audit Committee, the  
Reserves Committee and the Corporate Governance  
and Compensation Committee

April 10, 2019