



**Annual Information Form  
For the Year Ended December 31, 2019**

**March 3, 2020**

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## DEFINITIONS

In this annual information form, capitalized terms have the following meanings:

"6-18 Facility" means the natural gas facility at Karr as described under "*Narrative Description of the Business – Oil and Gas Properties – Grande Prairie Region - Karr*";

"Apache Canada" means Apache Canada Ltd.;

"Cavalier Energy" means Paramount's wholly-owned subsidiary, Cavalier Energy Inc. and, unless otherwise specified or the context otherwise requires, its subsidiaries and partnerships;

"COGE Handbook" means the Canadian Oil and Gas Evaluation Handbook;

"Common Shares" means class A common shares in the capital of the Company;

"Credit Facility" means Paramount's senior secured revolving bank credit facility;

"Fox Drilling" means Paramount's wholly-owned limited partnership, Fox Drilling Limited Partnership;

"GHG" means greenhouse gases;

"IFRS" means International Financial Reporting Standards;

"McDaniel" means McDaniel & Associates Consultants Ltd.;

"McDaniel Report" means the report of McDaniel on Paramount's oil and gas reserves effective as of December 31, 2019 and dated and prepared as of March 3, 2020;

"Paramount" or the "Company" means Paramount Resources Ltd. and, unless otherwise specified or the context otherwise requires, its subsidiaries and partnerships;

"Trilogy" means Trilogy Energy Corp.; and

"TSX" means the Toronto Stock Exchange.

Information herein is presented as at December 31, 2019 unless otherwise noted.

## OIL AND NATURAL GAS MEASURES, ABBREVIATIONS AND TERMS

Oil and natural gas measures, abbreviations and terms used in this annual information form have the meanings set forth below.

| <b>Liquids</b>                |   | <b>Natural Gas</b> |                                   |
|-------------------------------|---|--------------------|-----------------------------------|
| Bbl                           | barrels   | Mcf                | thousands of cubic feet           |
| Bbl/d                         | barrels per day                                   | MMcf               | millions of cubic feet            |
| MBbl                          | thousands of barrels                              | MMcf/d             | millions of cubic feet per day    |
| MMBbl                         | millions of barrels                               | Bcf                | billions of cubic feet            |
|                               |   | Btu                | British thermal units             |
|                               |   | MMBtu              | millions of British thermal units |
|                               |   | GJ                 | gigajoule                         |
| <b>Oil and Gas Equivalent</b> |   |                    |                                   |
| Boe                           | barrels of oil equivalent                         |                    |                                   |
| Boe/d                         | barrels of oil equivalent per day                 |                    |                                   |
| MBoe                          | thousands of barrels of oil equivalent            |                    |                                   |
| MMBoe                         | millions of barrels of oil equivalent             |                    |                                   |
| Mcfe                          | thousands of cubic feet of natural gas equivalent |                    |                                   |

"Abandonment and Reclamation Costs" mean the costs associated with restoring properties disturbed by oil and gas activities to the standard imposed by applicable government and regulatory authorities. Such costs are incurred in connection with abandoning, decommissioning, remediating and reclaiming wells, facilities, pipelines and associated surface leases.

"Gross" means:

- (i) in relation to wells, the total number of wells in which Paramount has an interest;
- (ii) in relation to properties, the total area of properties in which Paramount has an interest; and
- (iii) in relation to Paramount's interest in production or reserves, Paramount's working interest share before deduction of any royalties and without including Paramount's royalty interests.

"Net" means:

- (i) in relation to wells, the number of wells obtained by aggregating Paramount's working interest in each of its gross wells;
- (ii) in relation to Paramount's interest in a property, the total area in which Paramount has an interest multiplied by the working interest it owns; and
- (iii) in relation to Paramount's interest in production or reserves, Paramount's working interest share after deduction of royalty obligations, plus Paramount's royalty interests.

"NGLs" means natural gas liquids, including pentanes-plus (or condensate) (C5<sup>+</sup>), ethane (C2), propane (C3) and butane (C4).

"Liquids" means oil and NGLs.

All crude oil and natural gas information includes tight oil and shale gas, respectively, unless such product type is presented on a separate basis.

A ratio of six thousand cubic feet of natural gas to one barrel (6:1) is used when converting natural gas to Boe and a ratio of one barrel to six thousand cubic feet of natural gas (1:6) is used when converting NGLs to Mcfe. Equivalency measures such as Boe and Mcfe may be misleading, particularly if used in isolation. A conversion ratio of 6:1 for Boe or 1:6 for Mcfe is based on an energy equivalency conversion method primarily applicable at the burner tip and does not represent a value equivalency at the wellhead. During the year ended December 31, 2019, the value ratio between six thousand cubic feet of natural gas and one barrel of crude oil was approximately 45:1. This value ratio is significantly different from the energy equivalency ratio of 6:1 for Boe and using such a ratio would be misleading as an indication of value.

## **RESERVES CATEGORIES AND DEFINITIONS**

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: (i) analysis of drilling, geological, geophysical and engineering data; (ii) use of established technology; and (iii) specified economic conditions, which are generally accepted as being reasonable. The following definitions and assumptions form the basis of classification for reserves presented in the McDaniel Report:

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

**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.

**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.

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

**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 as follows:

**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.

**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.

**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 classification (proved or probable) to which they are assigned.

In multi-well pools it may be appropriate to allocate total pool reserves between the developed and undeveloped categories or to subdivide the developed reserves for the pool between developed producing and developed non-producing. This allocation should be based on the estimator's assessment as to the reserves that will be recovered from specific wells, facilities and completion intervals in the pool and their respective development and production status.

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: (i) at least a 90 per cent probability that the quantities actually recovered will equal or exceed the estimated proved reserves; and (ii) at least a 50 per cent 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.

Additional clarification of certainty levels associated with reserves estimates and the effect of aggregation is provided in the COGE Handbook.

## **FINANCIAL INFORMATION AND NON-GAAP MEASURE**

Unless otherwise specified, all dollar amounts are expressed in Canadian dollars and all references to "dollars" or "\$" are to Canadian dollars and all references to "US\$" are to United States dollars.

Unless otherwise indicated, all financial information included in this annual information form has been prepared in accordance with IFRS. Paramount's audited consolidated financial statements as at and for the year ended December 31, 2019 and the accompanying Management's Discussion and Analysis can be found under the Company's profile on the SEDAR website at [www.sedar.com](http://www.sedar.com).

In this document, the term "netback" (the "Non-GAAP measure") is used and does not have any standardized meaning as prescribed by IFRS. Netback equals petroleum and natural gas sales less royalties, operating costs and transportation and NGLs processing costs. Netback is commonly used by management and investors to compare the results of the Company's oil and gas operations between periods. Non-GAAP measures such as netback should not be considered in isolation or construed as alternatives to their most directly comparable measure calculated in accordance with IFRS, or other measures of financial performance calculated in accordance with IFRS. Non-GAAP measures are unlikely to be comparable to similar measures presented by other issuers.

## **NOTE REGARDING FORWARD-LOOKING STATEMENTS**

Certain statements in this document constitute forward-looking information under applicable securities legislation. Forward-looking information typically contains statements with words such as "anticipate", "believe", "estimate", "will", "expect", "plan", "schedule", "intend", "propose", or similar words suggesting future outcomes or an outlook. Forward looking information in this document includes, but is not limited to:

- exploration, development and associated operational plans and strategies;
- the expected sources of funding of future development costs and the expectation that the costs of funding such will not make the development of any material properties uneconomic;
- estimated reserves and the undiscounted and discounted present value of future net revenues therefrom;
- future taxes payable or owing and the Company's tax horizon;
- expected reductions in operating costs at Karr in connection with new water disposal wells;
- plans for the development of undeveloped reserves;
- the potential outcome and timing of any legal claims, audits, assessments or other regulatory matters or proceedings;
- the potential expiry of leases;
- the timing and amount of future Abandonment and Reclamation Costs;
- the potential for the imposition of additional regulatory requirements;
- the expected availability and capacity of facilities, including the scheduled completion of the expansion of the 6-18 Facility; and
- general business strategies and objectives.

Such forward-looking information is based on a number of assumptions which may prove to be incorrect. Assumptions have been made with respect to the following matters, in addition to any other assumptions identified in this document:

- future natural gas, NGLs (including condensate) and oil prices;
- royalty rates, taxes and capital, operating, general & administrative and other costs;
- foreign currency exchange rates and interest rates;
- general business, economic and market conditions;
- the ability of Paramount to obtain the required capital to finance its exploration, development and other operations and meet its commitments and financial obligations;
- the ability of Paramount to obtain equipment, services, supplies and personnel in a timely manner and at an acceptable cost to carry out its activities;
- the ability of Paramount to secure adequate product processing, transportation, fractionation and storage capacity on acceptable terms;
- the ability of Paramount to market its natural gas, NGLs (including condensate) and oil production to current and new customers;
- the ability of Paramount and its industry partners to obtain drilling success (including in respect of anticipated production volumes, reserves additions, Liquids yields and resource recoveries) and operational improvements, efficiencies and results consistent with expectations;
- the provisions and application of laws and regulations;
- the timely receipt of required governmental and regulatory approvals; and
- anticipated timelines and budgets being met in respect of drilling programs and other operations (including well completions and tie-ins and the construction, commissioning and start-up of new and expanded facilities).

Although Paramount believes that the expectations reflected in such forward-looking information are reasonable, undue reliance should not be placed on them as Paramount can give no assurance that such expectations will prove to be correct. Forward-looking information is based on expectations, estimates and projections that involve a number of risks and uncertainties which could cause actual results to differ materially from those anticipated by Paramount and described in the forward-looking information. The material risks and uncertainties include, but are not limited to:

- fluctuations in natural gas, NGLs (including condensate) and oil prices;
- changes in foreign currency exchange rates and interest rates;
- changes in capital spending plans and planned exploration and development activities;
- the uncertainty of estimates and projections relating to future revenue, production, reserves additions, Liquids yields (including condensate to natural gas ratios), recovery of reserves and resources, royalty rates, taxes and costs and expenses;
- the ability to secure adequate product processing, transportation, fractionation and storage capacity on acceptable terms;
- operational risks in exploring for, developing and producing natural gas, NGLs (including condensate) and oil;
- the ability to obtain equipment, services, supplies and personnel in a timely manner and at an acceptable cost;
- potential disruptions, delays or unexpected technical or other difficulties in designing, developing, expanding or operating new, expanded or existing facilities (including third-party facilities);
- processing, transportation and fractionation outages, disruptions and constraints;
- risks and uncertainties involving the geology of oil and gas deposits;
- the uncertainty of reserves estimates;
- general business, economic and market conditions;
- the ability to generate sufficient cash flow from operations and obtain financing to fund planned exploration, development and operational activities and meet current and future commitments and obligations (including asset retirement obligations and product processing, transportation, fractionation and similar commitments and obligations);
- changes in, or in the interpretation of, laws, regulations or policies (including environmental laws);
- the ability to obtain required governmental or regulatory approvals in a timely manner, and to obtain and maintain leases and licenses;
- the effects of weather and other factors, including wildlife and environmental restrictions which affect field operations and access;
- uncertainties as to the timing and amount of future Abandonment and Reclamation costs and potential liabilities for environmental damage and contamination;
- uncertainties regarding aboriginal claims and in maintaining relationships with local populations and other stakeholders;
- the outcome of existing and potential lawsuits, regulatory actions, audits and assessments; and
- other risks and uncertainties described elsewhere in this document and in Paramount's other filings with Canadian securities authorities.

The foregoing list of risks is not exhaustive. For more information relating to risks, see the section titled "Risk Factors" in this annual information form. The forward-looking information contained in this annual information form is made as of the date hereof and, except as required by applicable securities law, Paramount undertakes no obligation to update publicly or revise any forward-looking statements or information, whether as a result of new information, future events or otherwise.



## THE COMPANY

Paramount Resources Ltd. is incorporated under the *Business Corporations Act* (Alberta). The Company's corporate and registered office is located at Suite 2800, 421 – 7<sup>th</sup> Avenue SW, Calgary, Alberta T2P 4K9. The Common Shares are listed on the TSX under the symbol "POU".

The Company has various subsidiaries and partnerships, including Cavalier Energy and Fox Drilling. The Company's subsidiaries and partnerships each accounted for: (i) less than 10 percent of the Company's consolidated assets as at December 31, 2019; and (ii) less than 10 percent of the Company's consolidated revenues for the year ended December 31, 2019. In aggregate, the Company's subsidiaries and partnerships did not exceed 20 percent of the Company's total consolidated assets or total consolidated revenues as at and for the year ended December 31, 2019.

## GENERAL DEVELOPMENT OF THE BUSINESS

Paramount is an independent, publicly traded, Liquids-focused Canadian energy company that explores for and develops both conventional and unconventional petroleum and natural gas reserves and resources. The Company also pursues longer-term strategic exploration and pre-development plays and holds a portfolio of investments in other entities. Paramount commenced operations as a public company in 1978 and has adapted to a multitude of operating climates over the years.

Paramount's operations have been organized into the following three regions:

- the Grande Prairie Region, located in the Peace River Arch area of Alberta, which is focused on Montney developments at Karr and Wapiti;
- the Kaybob Region, located in west-central Alberta, which is focused on Montney and Duvernay developments at Kaybob, Smoky River, Pine Creek and Ante Creek; and
- the Central Alberta and Other Region, which includes Duvernay development plays in central Alberta at Willesden Green and the East Shale Basin, lands and production in British Columbia and approximately 180,000 acres of fee simple land and various associated royalty interests.

The Company's investments include: (i) investments in other entities (ii) investments in exploration and development stage assets, including oil sands and carbonate bitumen interests held by Cavalier Energy and prospective shale gas acreage in the Liard and Horn River Basins; and (iii) drilling rigs owned by Fox Drilling.

Set forth below is a brief description of the events that have influenced the general development of Paramount's business over the past three fiscal years.

## 2017

After having sold its Musreau/Kakwa assets in west central Alberta in 2016 for aggregate gross consideration of approximately \$2.7 billion, Paramount entered 2017 with no debt outstanding and cash and cash equivalents of approximately \$622 million. Paramount's focus during the latter part of 2016 and the first half of 2017 was the completion of a 27 (27.0 net) well horizontal Montney drilling and completion program at its key Karr property in the Grande Prairie Region. Through this program, the Company grew its sales volumes at Karr to average approximately 26,600 Boe/d in October 2017. This contributed to the growth of the Company's total sales volumes from approximately 11,000 Boe/d immediately following the Musreau/Kakwa disposition to approximately 37,000 Boe/d by October 2017 (excluding the results of the Apache Canada acquisition and Trilogy merger described below), effectively returning the Company's production to the level it was at prior to the Musreau/Kakwa disposition.

In May 2017, Paramount sold non-core assets at Valhalla for cash consideration of approximately \$150 million.

In July 2017, Paramount's then existing credit facility was increased from \$100 million to \$300 million following completion of the lender's annual review.

In August 2017, Paramount acquired all of the shares of Apache Canada, an indirect, wholly-owned subsidiary of Apache Corporation, a publicly traded U.S. based international oil and gas company, for cash consideration of \$486.9 million. Through the Apache Canada acquisition, the Company acquired high quality Montney and Duvernay resource play opportunities in the Alberta Deep Basin, including a Montney resource play at Wapiti, immediately northwest of the Company's Karr lands, and Duvernay rights at Kaybob. In addition, the Apache Canada acquisition provided Paramount with exposure to the East Shale Basin Duvernay play.

In September 2017, Paramount merged with Trilogy, a Canadian publicly traded oil and gas company in which Paramount owned approximately 15% of the outstanding shares, through an arrangement under the *Business Corporations Act* (Alberta). On completion of this merger, the Company issued approximately 28.5 million Common Shares to acquire all of the outstanding Trilogy shares not owned by it. Through the Trilogy merger, the Company acquired additional Montney and Duvernay resource plays in the Alberta Deep Basin at Kaybob. Trilogy's Duvernay development at Smoky was near a significant portion of the Duvernay rights Paramount acquired through the Apache Canada acquisition.

In November 2017, Paramount entered into the Credit Facility, which changed the previous facility from a reserves-based structure to a financial covenant-based structure and increased the borrowing limit from \$300 million to \$700 million.

## 2018

On January 1, 2018, Paramount amalgamated under the *Business Corporations Act* (Alberta) with Apache Canada and Trilogy, with the amalgamated corporation continuing as Paramount Resources Ltd.

In April 2018, Paramount redeemed all \$300 million principal amount of outstanding 7¼ percent senior unsecured notes of Trilogy due in 2019, which had become the Company's obligation when it amalgamated with Trilogy on January 1, 2018, at a redemption price of 101.2 percent of the principal amount of such notes.

In July 2018, the Company sold its Resthaven / Jayar property in the Grande Prairie Region to Strath Resources Ltd. for gross proceeds of \$340 million, consisting of \$170 million in cash, 85 million common shares of that company and 10-year warrants to acquire 8.5 million common shares of that company. The cash consideration received was used to reduce outstanding indebtedness under the Credit Facility.

Amendments to the Credit Facility in 2018 increased the facility to \$1.5 billion and extended the maturity date to November 2022. Additional information concerning the Credit Facility is included in the Company's audited consolidated financial statements and Management's Discussion and Analysis for the year ended December 31, 2019, which can be found under the Company's profile on the SEDAR website at [www.sedar.com](http://www.sedar.com).

## 2019

On August 1, 2019, Paramount completed the sale of the 6-18 Facility at Karr to a subsidiary of CSV Midstream Solutions Corp. for gross cash proceeds of \$331.6 million plus a commitment by the purchaser to fund and complete the associated expansion of the facility. In conjunction with the completion of the transaction, Paramount entered into a long-term, firm-service arrangement with the purchaser of the 6-18 Facility. The cash consideration received was used to reduce outstanding indebtedness under the Credit Facility. See "*Narrative Description of the Business – Oil and Gas Properties – Grande Prairie Region – Karr*".

In November 2019, Paramount completed a non-brokered private placement of approximately 5.9 million Common Shares at a price of \$6.65 per share for total proceeds of \$39.2 million. The Common Shares were issued on a "flow through" basis in respect of Canadian development expenses.

On December 4, 2019, Paramount completed the disposition of certain non-core natural gas weighted properties in the Central Alberta and Other Region for gross cash proceeds of \$52.4 million. The sale significantly reduced the complexity of Paramount's operations, with the Company disposing of approximately 320,000 net acres of land and associated wells and facilities south of township 53 in Alberta while retaining both its Duvernay assets at Willesden Green and in the East Shale Basin and its fee title and royalty lands in the area. The consideration received was used to reduce outstanding indebtedness under the Credit Facility.

Paramount implemented a normal course issuer bid that commenced on January 4, 2019 and expired on January 3, 2020. Under this normal course issuer bid, Paramount acquired approximately 2.6 million Common Shares at an average price of \$5.47 per share. Paramount implemented a renewed normal course issuer bid on January 6, 2020. See "*Description of Share Capital – Normal Course Issuer Bid*".

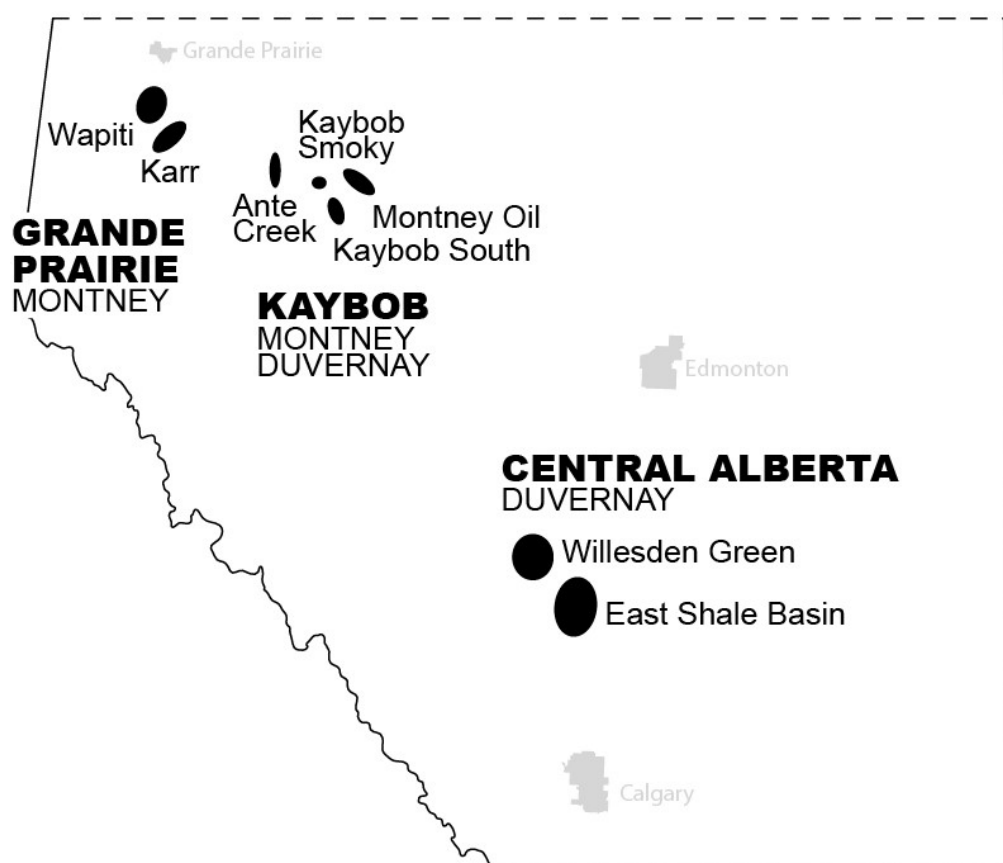
For reserves and related information as at December 31, 2019, see "*Reserves and Other Oil and Gas Information*".

## NARRATIVE DESCRIPTION OF THE BUSINESS

### OVERVIEW

Paramount's oil and gas properties are located primarily in Alberta and British Columbia. The Company's ongoing exploration, development and production activities are intended to discover new reserves, increase the productive capacity of existing fields and extract, process and sell the Company's natural gas, NGLs and oil economically and safely. From time-to-time, Paramount furthers its exploration, development and production activities through acquisitions of petroleum and natural gas assets and companies, farm-ins, farm-outs, joint ventures and dispositions.

Paramount's operations are organized into the Grande Prairie Region, the Kaybob Region and the Central Alberta and Other Region. The map below depicts the location of the Company's principle properties in these Regions.



The Company's reserves, properties, production and material development plans and facilities are discussed in more detail below.

## OIL AND GAS PROPERTIES

Paramount retained McDaniel, an independent qualified reserves evaluator, to prepare a report on the Company's natural gas, NGLs and crude oil reserves for 2019. McDaniel evaluated 100 percent of the proved plus probable reserves of the Company and its subsidiaries, other than Cavalier Energy, as at December 31, 2019 and reported on them in the McDaniel Report. At December 31, 2019, approximately 97 percent of Paramount's proved plus probable reserves were located in Alberta.

The Company's gross reserves volumes, production and petroleum and natural gas sales for the years ended December 31, 2019 and 2018 are summarized below.

|  | 2019          | 2018    |
|--|---------------|---------|
| <b>Oil, NGLs and Natural Gas Reserves</b>            |               |         |
| <b>Proved</b>  |               |         |
| Shale Gas (Bcf)                                      | 888.4         | 1,078.3 |
| Conventional Natural Gas (Bcf)                       | 171.1         | 288.3   |
| NGLs (MMBbl)   | 141.2         | 146.8   |
| Tight Oil (MMBbl)                                    | 6.1           | 0.9     |
| Light & Medium Crude Oil (MMBbl)                     | 10.9          | 15.2    |
| <b>Total (MMBoe)</b>                                 | <b>334.8</b>  | 390.7   |
| <b>Proved plus Probable</b>                          |               |         |
| Shale Gas (Bcf)                                      | 1,752.2       | 1,765.3 |
| Conventional Natural Gas (Bcf)                       | 241.6         | 403.9   |
| NGLs (MMBbl)   | 264.9         | 238.3   |
| Tight Oil (MMBbl)                                    | 18.3          | 10.2    |
| Light & Medium Crude Oil (MMBbl)                     | 16.6          | 24.3    |
| <b>Total (MMBoe)</b>                                 | <b>632.1</b>  | 634.4   |
| <b>Production <sup>(1)</sup></b>                     |               |         |
| Shale Gas (MMcf/d)                                   | 166.0         | 165.9   |
| Conventional Natural Gas (MMcf/d)                    | 137.3         | 160.0   |
| NGLs (Bbl/d)   | 26,513        | 23,770  |
| Light & Medium Crude Oil and Tight Oil (Bbl/d)       | 5,334         | 7,854   |
| <b>Total Production (Boe/d)</b>                      | <b>82,394</b> | 85,941  |
| <b>Petroleum and natural gas sales (\$ millions)</b> |               |         |
| Shale gas revenue                                    | 129.0         | 119.3   |
| Conventional natural gas revenue                     | 132.0         | 147.8   |
| NGLs revenue   | 520.4         | 498.4   |
| Oil revenue  | 127.5         | 184.2   |
| Royalty and sulphur revenue                          | 6.0           | 15.8    |
| <b>Total Sales</b>                                   | <b>914.9</b>  | 965.5   |
| <b>Wells Drilled</b>                                 |               |         |
| Gross  | 29            | 70      |
| Net  | 27.1          | 51.5    |

(1) Sales volumes measured in marketable quantities, after processing and shrinkage.

## ***Grande Prairie Region***

As at December 31, 2019, Paramount had approximately 261,000 gross (173,000 net) acres of land in the Grande Prairie Region, including approximately 98,000 net acres of Montney rights and approximately 66,000 net acres of Deep Basin Cretaceous rights, which partially overlap the Montney rights. Approximately 98,000 net acres of the Company's land in this Region had no attributed reserves as at December 31, 2019.

The primary focus in the Grande Prairie Region is the Karr and Wapiti Montney properties, located southeast of Grande Prairie, Alberta, in the over-pressured, Liquids-rich Deep Basin Montney trend. Sales volumes for this Region averaged 29,040 Boe/d in 2019 (comprised of 78.0 MMcf/d of shale gas, 1.5 MMcf/d of conventional natural gas, 15,734 Bbl/d of NGLs and 53 Bbl/d of light and medium crude oil and tight oil) and 26,059 Boe/d in 2018 (comprised of 65.4 MMcf/d of shale gas, 10.8 MMcf/d of conventional natural gas, 13,288 Bbl/d of NGLs and 75 Bbl/d of light and medium crude oil and tight oil). Capital expenditures for the Grande Prairie Region, excluding those associated with the expansion of the 6-18 Facility, were \$256.7 in 2019 and \$265.7 million in 2018.

### ***Karr***

Paramount is developing its Liquids-rich Montney property at Karr, producing natural gas and Liquids from horizontal wells drilled on multi-well pads.

Karr production volumes are compressed and dehydrated at the third-party 6-18 Facility under a long-term, firm-service processing arrangement. Gas volumes are then shipped via pipeline to a third-party natural gas processing facility under a long-term, firm-service arrangement to provide sales specification natural gas and NGLs. Paramount has the flexibility to pipeline or truck Liquids volumes to various sales points.

The third-party owner of the 6-18 Facility is undertaking and funding an expansion of the 6-18 Facility to increase the raw gas handling capacity from 100 MMcf/d to 150 MMcf/d (to be comprised of 80 MMcf/d of sour gas compression and dehydration and 70 MMcf/d of sour gas processing) and the raw liquids handling capacity from 15,000 Bbl/d to 30,000 Bbl/d. The expansion of the 6-18 Facility is scheduled to be completed in the second half of 2020.

In 2019, Paramount completed the drilling of 8 (8.0 net) Montney wells, commenced the drilling of another 5 (5.0 net) Montney wells and completed and brought on production 8 (8.0 net) Montney wells, 5 (5.0 net) of which had been drilled in 2018 and 3 (3.0 net) of which had been drilled in 2019. Paramount also commenced the drilling of a water disposal well.

In 2020, Paramount plans to complete the drilling of 10 (10.0 net) Montney wells and complete and bring on production 15 (15.0 net) Montney wells, including 5 (5.0 net) wells drilled in 2019. Paramount has contingent plans to drill, complete and bring on production an additional 4 (4.0 net) Montney wells. Paramount also plans to bring into service 2 (2.0 net) new water disposal wells, including the well that commenced drilling in 2019, and 1 (1.0 net) water disposal well that was recompleted in the first quarter of 2020. These water disposal wells are expected to reduce operating costs.

## *Wapiti*

Paramount is also developing its Liquids-rich Montney property at Wapiti, which is located to the northwest of the Karr development. The Company is applying the same multi-well pad drilling and completion techniques at Wapiti that are being utilized at Karr.

Wapiti production volumes are processed at a third-party natural gas processing facility under a long-term, firm-service processing arrangement. Sales specification volumes of natural gas and NGLs are then shipped via pipeline under long-term, firm-service arrangements. The facility, which commenced operations in 2019, has been designed to have capacity to process production from Liquids-rich Montney wells and includes water management facilities.

In 2019, the Company brought on production 11 (11.0 net) Montney wells from an eleven well pad that were drilled and completed in 2018. The Company also drilled and completed 12 (12.0 net) Montney wells on a twelve well pad, two of which were brought on production.

In 2020, Paramount plans to bring on production the remaining 10 (10.0 net) Montney wells on the twelve well pad drilled and completed in 2019 and 1 (1.0 net) Montney well that was drilled and completed in 2015. The Company also plans to drill 13 (13.0 net) new Montney wells on two pads and complete and bring on production 5 (5.0 net) of these wells. The Company has contingent plans to complete and bring on production the remaining 8 (8.0 net) wells and commence the drilling of an additional 6 (6.0 net) new Montney wells.

## **Kaybob Region**

As at December 31, 2019, Paramount had approximately 1.198 million gross (888,000 net) acres of land in the Kaybob Region, including approximately 275,000 net acres of Montney rights and approximately 202,000 net acres of Duvernay rights. Approximately 474,000 net acres of the Company's land in this Region had no attributed reserves as at December 31, 2019.

The primary development focus in the Kaybob Region is the Kaybob Montney Oil development and new developments targeting the Duvernay formation at Kaybob Smoky and Kaybob South. Sales volumes for the Kaybob Region averaged 35,500 Boe/d in 2019 (comprised of 50.4 MMcf/d of shale gas, 95.9 MMcf/d of conventional natural gas, 6,837 Bbl/d of NGLs and 4,289 Bbl/d of light and medium crude oil and tight oil) and 39,004 Boe/d in 2018 (comprised of 59.6 MMcf/d of shale gas, 102.6 MMcf/d of conventional natural gas, 5,969 Bbl/d of NGLs and 6,004 Bbl/d of light and medium crude oil and tight oil). Capital expenditures for this region were \$80.7 in 2019 and \$215.7 million in 2018.

## *Kaybob Montney Oil*

Kaybob Montney Oil production is processed through Paramount's 12-10 oil battery, which has sour fluid handling capacity of 20,000 Bbl/d. Natural gas production is processed at Paramount's Kaybob 8-9 natural gas processing plant.

In 2019, Paramount drilled 3 (3.0 net) new wells at the Kaybob Montney Oil development. Two of these wells, plus two wells drilled in 2018, were brought on production in 2019. In 2020, Paramount plans to drill and complete 1 (1.0 net) Montney oil well on an existing multi-well pad.



### *Kaybob Smoky Duvernay*

Paramount's initial multi-well pad at the Kaybob Smoky Duvernay development was drilled in 2018. Natural gas volumes are processed through Paramount's Smoky 6-16 natural gas processing plant. Liquids volumes are trucked to the Company's 12-10 oil battery, which is located about 24 kilometers to the east.

### *Kaybob South Duvernay*

Paramount's working interest in the Kaybob South Duvernay development is approximately 51 percent. The Kaybob South Duvernay wells produce through third-party processing facilities under long-term, firm-service processing arrangements.

In 2019, 5 (2.5 net) Kaybob South Duvernay wells that were drilled in 2018 and early 2019 were completed and brought on production.

### *Ante Creek*

In 2019, the Company drilled, completed and brought on production 1 (1.0 net) Montney oil well at Ante Creek. The Company plans to drill 2 (2.0 net) Montney oil wells at Ante Creek in 2020.

### **Central Alberta and Other Region**

On December 4, 2019, Paramount completed the disposition of certain non-core natural gas weighted properties in the Central Alberta and Other Region, disposing of approximately 320,000 net acres of land and associated wells and facilities south of township 53 in Alberta.

As at December 31, 2019, and not including lands held by Cavalier Energy, Paramount had approximately 2.4 million gross (1.17 million net) acres of land in the Central Alberta and Other Region, including approximately 68,000 net acres of Duvernay rights at Willesden Green and additional Duvernay rights in the East Shale Basin. In addition, Paramount holds approximately 180,000 acres of fee simple land and various associated royalty interests. Approximately 1,090,000 net acres of Paramount's total land in the region, not including lands held by Cavalier Energy, had no attributed reserves as at December 31, 2019.

Sales volumes for the Central Alberta and Other Region averaged 17,854 Boe/d in 2019 (comprised of 37.6 MMcf/d of shale gas, 39.9 MMcf/d of conventional natural gas, 3,941 Bbl/d of NGLs and 992 Bbl/d of light and medium crude oil and tight oil) and 20,878 Boe/d in 2018 (comprised of 41.0 MMcf/d of shale gas, 46.6 MMcf/d of conventional natural gas, 4,513 Bbl/d of NGLs and 1,775 Bbl/d of light and medium crude oil and tight oil). Capital expenditures for the region were \$7.6 million in 2019 and \$40.9 million in 2018.

Development activities in the Central and Other Region are currently focused on a Duvernay development at Willesden Green. The Company has drilled and completed 5 (5.0 net) horizontal wells at Willesden Green to date to delineate the Duvernay resource potential of this property.

In 2020, Paramount plans to drill, complete and bring on production 1 (1.0 net) Duvernay well at Willesden Green and complete 1 (0.5 net) well at its Birch property in British Columbia.



## BUSINESS STRATEGIES AND OBJECTIVES

The Company's business strategy is to maximize risk-adjusted returns through the responsible development of liquids-rich resource plays in the Western Canadian Sedimentary Basin. Paramount's immediate growth plans are primarily focused on liquids-rich Montney developments at both its Karr and Wapiti properties in the Grand Prairie Region. Paramount continues to actively evaluate, de-risk and optimize full field development plans for several other core assets that will compete for capital in the medium term, including Kaybob Smoky Duvernay, Kaybob North Duvernay, Ante Creek Montney oil and Willesden Green Duvernay.

Paramount's objective is to provide long-term value creation for its stakeholders by capturing and controlling the best opportunities available to it and leveraging the Company's technical and managerial expertise to seek to maximize the economic returns from the production and development of its resources.

The Company's land acquisition strategy is to identify new opportunities at an early stage and capture large holdings at a low cost. Paramount targets contiguous acreage blocks that are prospective for multi-zone development and have high working interests to preserve operational control.

Paramount employs multi-well pad developments to realize the benefits of commercial economies of scale and control capital and operating costs. The Company endeavours to enhance its horizontal wellbore economics by refining drilling techniques and completion designs. Paramount also invests in processing facilities and gathering infrastructure and enters into firm-service arrangements to secure processing and transportation capacity for its production.

In addition, the Company has, as part of its portfolio, emerging longer-term conventional and unconventional assets, including oil sands and carbonate bitumen interests and prospective shale gas acreage. These assets are discussed further below and are viewed by Paramount as longer-term prospects with potential for future revenue generation, spin-outs or dispositions.

The Company maintains capital discipline, directing investments towards the plays that exceed its economic hurdles, while balancing risks. Paramount manages liquidity in its capital structure to support growth initiatives and provide financial flexibility.

## OTHER ASSETS

### *Investments in Securities*

Paramount holds equity investments in a number of publicly-traded and private corporations as part of its portfolio of investments. Additional information respecting the Company's investments is included in the Company's audited consolidated financial statements and Management's Discussion and Analysis for the year ended December 31, 2019, which can be found under the Company's profile on the SEDAR website at [www.sedar.com](http://www.sedar.com).

### *Cavalier Energy*

Cavalier Energy is a wholly-owned subsidiary of Paramount that was created in 2011 to develop the Company's oil sands assets. As at December 31, 2019, Cavalier Energy owned approximately 1.345 million gross (1.306 million net) acres of land located primarily in the Athabasca and Peace River oil sands regions of Alberta. Cavalier Energy's landholdings consist primarily of undeveloped oil sands and carbonate bitumen interests, with some minor interests in lands producing or prospective for conventional natural gas and crude oil. Cavalier's oil sands and carbonate bitumen lands are prospective for in-situ bitumen recovery but are at the early stages of their evaluation and development. The oil sands and carbonate bitumen lands

currently have no production and there are no assurances that Cavalier Energy will develop the lands, generate earnings, operate profitably or provide a return on investment in the future.

### ***Fox Drilling***

Fox Drilling owns seven triple-sized rigs, including four walking rigs, that are used to drill Company wells. The walking rigs have the capability of moving across a lease with the derrick and drill pipe remaining vertical, significantly increasing efficiencies when drilling multi-well pads.

### ***Shale Gas***

Paramount's shale gas holdings in the Liard and Horn River Basins in northeast British Columbia and the Northwest Territories include approximately 135 net sections of land as at December 31, 2019, with potential for natural gas production from the Besa River shale formation.

## **RESERVES AND OTHER OIL AND GAS INFORMATION**

The reserves information provided below is derived from the McDaniel Report. The McDaniel Report is effective as of December 31, 2019 and dated and prepared as of March 3, 2020. The evaluation by McDaniel was prepared in accordance with the standards included in the COGE Handbook and National Instrument 51-101 – Standards of Disclosure for Oil and Gas Activities.

The following tables summarize, as at December 31, 2019, Paramount's estimated crude oil, natural gas and NGLs reserves and the net present values of future net revenues for these reserves, using forecast prices and costs prior to provision for interest, general and administrative expenses and certain other corporate costs, the impact of any hedging activities and Abandonment and Reclamation Costs associated with properties not evaluated in the McDaniel Report. Estimated future net revenues have been presented on a before-tax and after-tax basis. Columns and rows may not add due to rounding.

**The estimates of future net revenues presented in the tables below do not represent the fair market value of the reserves. There is no assurance that the forecast prices and costs assumptions will be attained, and variances could be material. The recovery and reserves estimates of crude oil, natural gas and NGLs reserves provided herein are estimates only and there is no guarantee that the estimated reserves will be recovered. Actual crude oil, natural gas and NGLs reserves may be greater than or less than the estimates provided herein. See "Risk Factors – Reserves Estimates".**

Readers should review the definitions and information under the headings "*Oil and Natural Gas Measures Abbreviations and Terms*" and "*Reserves Categories and Definitions*" in conjunction with the following tables and notes.

Paramount's Reserves Committee, comprised of independent board members, reviews the qualifications and appointment of McDaniel, Paramount's independent qualified reserves evaluator. The Reserves Committee also reviews the procedures for providing information to the evaluator. The Report on Reserves Data by McDaniel on Form 51-101F2 and the Report of Management and Directors on Reserves Data and Other Information on Form 51-101F3 are attached as Appendices A and B, respectively, to this annual information form.

## RESERVES INFORMATION

### Reserves Data

The following table summarizes Paramount's reserves at December 31, 2019. Numbers may not add due to rounding.

| Reserves Category                  | Light & Medium Oil |               | Tight Oil     |               | NGLs           |                |
|------------------------------------|--------------------|---------------|---------------|---------------|----------------|----------------|
|                                    | Gross (MBbl)       | Net (MBbl)    | Gross (MBbl)  | Net (MBbl)    | Gross (MBbl)   | Net (MBbl)     |
| Proved                             |                    |               |               |               |                |                |
| Developed Producing                | 4,525              | 3,956         | 644           | 566           | 36,824         | 29,319         |
| Developed Non-Producing            | -                  | -             | -             | -             | 2              | 1              |
| Undeveloped                        | 6,410              | 5,535         | 5,417         | 4,846         | 104,412        | 85,879         |
| <b>Total Proved</b>                | <b>10,936</b>      | <b>9,491</b>  | <b>6,061</b>  | <b>5,412</b>  | <b>141,238</b> | <b>115,200</b> |
| <b>Total Probable</b>              | <b>5,686</b>       | <b>4,642</b>  | <b>12,192</b> | <b>10,364</b> | <b>123,679</b> | <b>93,452</b>  |
| <b>Total Proved &amp; Probable</b> | <b>16,622</b>      | <b>14,133</b> | <b>18,253</b> | <b>15,776</b> | <b>264,917</b> | <b>208,652</b> |

| Reserves Category                  | Conventional Natural Gas |                | Shale Gas        |                  | Total Company  |                |
|------------------------------------|--------------------------|----------------|------------------|------------------|----------------|----------------|
|                                    | Gross (MMcf)             | Net (MMcf)     | Gross (MMcf)     | Net (MMcf)       | Gross (MBoe)   | Net (MBoe)     |
| Proved                             |                          |                |                  |                  |                |                |
| Developed Producing                | 151,061                  | 147,507        | 265,769          | 246,706          | 111,465        | 99,543         |
| Developed Non-Producing            | 210                      | 200            | -                | -                | 37             | 35             |
| Undeveloped                        | 19,824                   | 18,789         | 622,628          | 576,777          | 223,315        | 195,522        |
| <b>Total Proved</b>                | <b>171,094</b>           | <b>166,496</b> | <b>888,397</b>   | <b>823,484</b>   | <b>334,817</b> | <b>295,100</b> |
| <b>Total Probable</b>              | <b>70,517</b>            | <b>67,730</b>  | <b>863,822</b>   | <b>787,313</b>   | <b>297,280</b> | <b>250,966</b> |
| <b>Total Proved &amp; Probable</b> | <b>241,612</b>           | <b>234,226</b> | <b>1,752,218</b> | <b>1,610,797</b> | <b>632,097</b> | <b>546,066</b> |

### Net Present Value of Future Net Revenue

The following table summarizes the net present values of future net revenue attributable to Paramount's reserves as at December 31, 2019 using forecast prices and costs. The net present values are reported before income tax and after income tax and have been discounted using rates of 0 percent, 5 percent, 10 percent, 15 percent and 20 percent. Future Net Revenue does not represent fair market value. Numbers may not add due to rounding.

| Reserves Category                  | Net Present Values of Future Net Revenue   |                 |                  |                  |                  |   |                 |                  |                  |                  |
|------------------------------------|--|-----------------|------------------|------------------|------------------|---|-----------------|------------------|------------------|------------------|
|                                    | Before Income Taxes Discounted at (%/year) |                 |                  |                  |                  | After Income Taxes Discounted at (%/year) |                 |                  |                  |                  |
|                                    | @0.0%<br>(MM\$)                            | @5.0%<br>(MM\$) | @10.0%<br>(MM\$) | @15.0%<br>(MM\$) | @20.0%<br>(MM\$) | @0.0%<br>(MM\$)                           | @5.0%<br>(MM\$) | @10.0%<br>(MM\$) | @15.0%<br>(MM\$) | @20.0%<br>(MM\$) |
| Proved                             |  |                 |                  |                  |                  |   |                 |                  |                  |                  |
| Developed Producing                | 198  | 864             | 912              | 860              | 798              | 198                                       | 864             | 912              | 860              | 798              |
| Developed Non-Producing            | -  | -               | -                | -                | -                | -   | -               | -                | -                | -                |
| Undeveloped                        | 3,536                                      | 2,272           | 1,514            | 1,030            | 702              | 3,506                                     | 2,204           | 1,421            | 929              | 603              |
| <b>Total Proved</b>                | <b>3,733</b>                               | <b>3,136</b>    | <b>2,427</b>     | <b>1,890</b>     | <b>1,500</b>     | <b>3,703</b>                              | <b>3,069</b>    | <b>2,334</b>     | <b>1,789</b>     | <b>1,401</b>     |
| Probable                           |  |                 |                  |                  |                  |   |                 |                  |                  |                  |
| Developed Producing                | 719  | 459             | 337              | 269              | 225              | 719                                       | 459             | 337              | 269              | 225              |
| Developed Non-Producing            | -  | -               | -                | -                | -                | -   | -               | -                | -                | -                |
| Undeveloped                        | 5,232                                      | 2,833           | 1,714            | 1,128            | 791              | 3,915                                     | 2,081           | 1,239            | 804              | 557              |
| <b>Total Probable</b>              | <b>5,951</b>                               | <b>3,293</b>    | <b>2,052</b>     | <b>1,396</b>     | <b>1,015</b>     | <b>4,635</b>                              | <b>2,541</b>    | <b>1,576</b>     | <b>1,072</b>     | <b>782</b>       |
| <b>Total Proved &amp; Probable</b> | <b>9,684</b>                               | <b>6,429</b>    | <b>4,478</b>     | <b>3,286</b>     | <b>2,516</b>     | <b>8,338</b>                              | <b>5,610</b>    | <b>3,910</b>     | <b>2,861</b>     | <b>2,183</b>     |

### Future Net Revenue

The following table summarizes the total undiscounted future net revenue attributable to Paramount's reserves as at December 31, 2019.

| Reserves Category                | Revenue <sup>(1)</sup><br>MM\$ | Royalties <sup>(2)</sup><br>MM\$ | Operating Costs<br>MM\$ | Development Costs<br>MM\$ | Abandonment & Reclamation Costs <sup>(3)</sup><br>MM\$ | Future Net Revenue Before Income Taxes<br>MM\$ | Income Taxes <sup>(4)</sup><br>MM\$ | Future Net Revenue After Income Taxes<br>MM\$ |
|----------------------------------|--------------------------------|----------------------------------|-------------------------|---------------------------|--|--|-------------------------------------|---|
| Total Proved Reserves            | 15,183                         | 2,333                            | 4,484                   | 3,165                     | 1,467  | 3,733  | 30                                  | 3,703   |
| Total Proved & Probable Reserves | 30,611                         | 5,427                            | 8,416                   | 5,494                     | 1,591  | 9,684  | 1,347                               | 8,338   |

(1) Includes all product revenues and other revenues as forecast.

(2) Royalties includes any net profits interests paid.

(3) See "Reserves and Other Oil and Gas Information – Other Oil and Gas Information" for further information regarding Abandonment and Reclamation Costs.

(4) 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 Paramount's tax pools and the sequences of claims and rates of claim thereon.

### Future Net Revenue by Product Type

The following table summarizes the net present value of future net revenue by product type and on a unit value basis, before income tax, attributable to Paramount's net reserves evaluated at December 31, 2019. Amounts have been discounted at 10 percent.

| Reserves Category                | Product Type <sup>(1)</sup> | Future Net Revenue<br>Before Income Taxes<br>(discounted @ 10%)<br>MM\$ | Unit Value <sup>(2)</sup><br>\$/Mcf<br>\$/Bbl |
|----------------------------------|-----------------------------|---|---|
| Total Proved Reserves            | Light and Medium Oil        | 160   | 16.87   |
|                                  | Tight Oil                   | 66  | 12.22   |
|                                  | Conventional Natural Gas    | 41  | 0.33  |
|                                  | Shale Gas                   | 2,159   | 2.68  |
|                                  | <b>Total</b>                | <b>2,427</b>  |   |
| Total Proved & Probable Reserves | Light and Medium Oil        | 292   | 20.65   |
|                                  | Tight Oil                   | 209   | 13.26   |
|                                  | Conventional Natural Gas    | 84  | 0.48  |
|                                  | Shale Gas                   | 3,894   | 2.51  |
|                                  | <b>Total</b>                | <b>4,478</b>  |   |

(1) Including solution gas and by-products in the case of Light and Medium Oil and Tight Oil and by-products in the case of Conventional Natural Gas and Shale Gas.

(2) Unit values are calculated by dividing net present value of future net revenue by product type by net reserves for that product type.

### Summary of Pricing and Inflation Rate Assumptions

Pricing and inflation rate assumptions used in the McDaniel Report in calculating the net present value of future net revenue attributable to Paramount's reserves as of December 31, 2019 are set out in the table below and were an average of forecast prices and costs published by Sproule Associates Ltd. as at December 31, 2019 and GLJ Petroleum Consultants Ltd. and McDaniel as at January 1, 2020 (each of which is available on their respective websites at [www.sproule.com](http://www.sproule.com), [www.gljpc.com](http://www.gljpc.com) and [www.mcdan.com](http://www.mcdan.com)). An inflation rate for forecasting costs of 0% was used in 2020, 1.7% in 2021 and 2.0% for each year thereafter.

| Year | U.S. Henry<br>Hub Gas<br>\$US/MMBtu | AECO Spot<br>\$Cdn/MMBtu | WTI<br>Crude Oil<br>\$US/Bbl | Edmonton<br>Light<br>Crude Oil<br>\$Cdn/Bbl | Edmonton<br>Cond. &<br>Natural<br>Gasolines<br>\$Cdn/Bbl | Edmonton<br>Ethane<br>\$Cdn/Bbl | Edmonton<br>Propane<br>\$Cdn/Bbl | Edmonton<br>Butane<br>\$Cdn/Bbl | Exchange<br>Rate<br>\$US/\$Cdn |
|------|-------------------------------------|--------------------------|------------------------------|---|--|---------------------------------|----------------------------------|---------------------------------|--------------------------------|
| 2020 | 2.62                                | 2.04                     | 61.00                        | 72.64                                       | 76.83  | 6.42                            | 26.36                            | 42.10                           | 0.760                          |
| 2021 | 2.87                                | 2.32                     | 63.75                        | 76.06                                       | 79.82  | 7.41                            | 29.80                            | 47.03                           | 0.770                          |
| 2022 | 3.06                                | 2.62                     | 66.18                        | 78.35                                       | 82.30  | 8.33                            | 32.94                            | 50.66                           | 0.785                          |
| 2023 | 3.17                                | 2.71                     | 67.91                        | 80.71                                       | 84.72  | 8.65                            | 34.00                            | 52.21                           | 0.785                          |
| 2024 | 3.24                                | 2.81                     | 69.48                        | 82.64                                       | 86.71  | 8.98                            | 34.88                            | 53.48                           | 0.785                          |
| 2025 | 3.32                                | 2.89                     | 71.07                        | 84.60                                       | 88.73  | 9.24                            | 35.78                            | 54.77                           | 0.785                          |
| 2026 | 3.39                                | 2.96                     | 72.68                        | 86.57                                       | 90.77  | 9.46                            | 36.69                            | 56.07                           | 0.785                          |
| 2027 | 3.45                                | 3.03                     | 74.24                        | 88.49                                       | 92.76  | 9.67                            | 37.57                            | 57.32                           | 0.785                          |
| 2028 | 3.53                                | 3.09                     | 75.73                        | 90.31                                       | 94.65  | 9.89                            | 38.41                            | 58.50                           | 0.785                          |
| 2029 | 3.60                                | 3.16                     | 77.24                        | 92.17                                       | 96.57  | 10.12                           | 39.26                            | 59.71                           | 0.785                          |

Thereafter prices escalated at 2.0% per year and exchange rate of 0.785 applied.

The price of natural gas, NGLs and oil are determined by negotiations between buyers and sellers. See *"Industry Conditions – Pricing and Marketing"* and *"Industry Conditions – Export, Transportation and Curtailment"*.

Paramount's 2019 weighted average realized prices, before the settlement of financially settled commodity contracts, were \$2.36/Mcf for natural gas, \$65.51/Bbl for oil and \$53.77/Bbl for NGLs. Additional information respecting financial commodity contracts is included in the Company's audited consolidated financial statements and Management's Discussion and Analysis for the year ended December 31, 2019, which can be found under the Company's profile on the SEDAR website at [www.sedar.com](http://www.sedar.com).

Paramount's natural gas portfolio primarily consists of sales at Alberta, California, Chicago, Ventura and Eastern Canada markets, sold in a combination of daily and monthly contracts.

Paramount ships a portion of its crude oil and condensate production on third-party pipelines for sale in Edmonton, Alberta, where volumes sold generally receive higher prices due to the greater diversity of potential purchasers. A portion of the Company's production continues to be sold at truck terminals or at the lease when warranted by economic or operational factors. Sales prices for condensate and oil are based on West Texas Intermediate reference prices, adjusted for transportation, quality and density differentials.

Paramount's NGLs production is sold under a variety of contracts with prices based on the Edmonton market or based on weighted-average sales prices received by the purchaser, adjusted for transportation and fractionation.

In addition, the Company may purchase and sell third-party products to provide operational flexibility in transportation, processing or fractionation commitments.

## Reserves Reconciliation

The following table reconciles Paramount's gross reserves by principal product type for the year ended December 31, 2019 based on forecast prices and costs. Numbers may not add due to rounding.

|                               | Shale Gas<br>(Bcf) | Conventional<br>Natural Gas<br>(Bcf) | Light &<br>Medium Oil<br>(MBbl) | Tight Oil<br>(MBbl) | NGLs<br>(MBbl) | Total<br>Reserves<br>(MBoe) |
|-------------------------------|--------------------|--------------------------------------|---------------------------------|---------------------|----------------|-----------------------------|
| <b>PROVED</b>                 |                    |                                      |                                 |                     |                |                             |
| <b>December 31, 2018</b>      | <b>1,078.3</b>     | <b>288.3</b>                         | <b>15,229</b>                   | <b>901</b>          | <b>146,791</b> | <b>390,688</b>              |
| Technical Revisions           | (205.3)            | (11.9)                               | (1,553)                         | (149)               | (1,966)        | (39,858)                    |
| Acquisition                   | -                  | -                                    | -                               | -                   | -              | -                           |
| Disposition                   | -                  | (50.4)                               | (838)                           | -                   | (4,782)        | (14,024)                    |
| Economic Factors              | (11.8)             | (4.8)                                | (186)                           | (5)                 | (238)          | (3,199)                     |
| Extension / Improved Recovery | 87.8               | -                                    | -                               | 5,544               | 11,110         | 31,284                      |
| Production                    | (60.6)             | (50.1)                               | (1,717)                         | (230)               | (9,677)        | (30,074)                    |
| <b>December 31, 2019</b>      | <b>888.4</b>       | <b>171.1</b>                         | <b>10,936</b>                   | <b>6,061</b>        | <b>141,238</b> | <b>334,817</b>              |
| <b>PROBABLE</b>               |                    |                                      |                                 |                     |                |                             |
| <b>December 31, 2018</b>      | <b>687.0</b>       | <b>115.6</b>                         | <b>9,106</b>                    | <b>9,314</b>        | <b>91,534</b>  | <b>243,716</b>              |
| Technical Revisions           | (59.0)             | (28.3)                               | (3,107)                         | 938                 | (2,371)        | (19,080)                    |
| Acquisition                   | -                  | -                                    | -                               | -                   | -              | -                           |
| Disposition                   | -                  | (15.4)                               | (261)                           | -                   | (1,454)        | (4,289)                     |
| Economic Factors              | (4.2)              | (1.3)                                | (52)                            | (37)                | (182)          | (1,197)                     |
| Extension / Improved Recovery | 240.0              | -                                    | -                               | 1,976               | 36,152         | 78,130                      |
| <b>December 31, 2019</b>      | <b>863.8</b>       | <b>70.5</b>                          | <b>5,686</b>                    | <b>12,192</b>       | <b>123,679</b> | <b>297,280</b>              |
| <b>PROVED PLUS PROBABLE</b>   |                    |                                      |                                 |                     |                |                             |
| <b>December 31, 2018</b>      | <b>1,765.3</b>     | <b>403.9</b>                         | <b>24,335</b>                   | <b>10,215</b>       | <b>238,325</b> | <b>634,403</b>              |
| Technical Revisions           | (264.2)            | (40.1)                               | (4,660)                         | 789                 | (4,337)        | (58,937)                    |
| Acquisition                   | -                  | -                                    | -                               | -                   | -              | -                           |
| Disposition                   | -                  | (65.9)                               | (1,099)                         | -                   | (6,236)        | (18,313)                    |
| Economic Factors              | (16.0)             | (6.2)                                | (238)                           | (42)                | (420)          | (4,397)                     |
| Extension / Improved Recovery | 327.8              | -                                    | -                               | 7,521               | 47,262         | 109,414                     |
| Production                    | (60.6)             | (50.1)                               | (1,717)                         | (230)               | (9,677)        | (30,074)                    |
| <b>December 31, 2019</b>      | <b>1,752.2</b>     | <b>241.6</b>                         | <b>16,622</b>                   | <b>18,253</b>       | <b>264,917</b> | <b>632,097</b>              |

Negative technical revisions to shale gas were primarily attributable to capital plan changes in the Kaybob Region along with lower per well gas production performance at Wapiti in the Grand Prairie Region.

Negative technical revisions to conventional natural gas were primarily attributable to lower forecasted production in the Kaybob Region, changes to the anticipated future development of the Kaybob Montney Oil property and changes to the anticipated economic life of the Kaybob Montney Oil property based on changes to forecasted operating costs.

Negative technical revisions to light and medium oil were primarily attributable to changes to the anticipated future development of the Kaybob Montney Oil property and changes to the anticipated economic life of the Kaybob Montney Oil property based on changes to forecasted operating costs.

Dispositions were primarily attributable to the December 4, 2019 disposition of certain non-core natural gas weighted properties in the Central Alberta and Other Region.

Extensions and improved recovery for shale gas and NGLs were primarily attributable to new extensions due to delineation at Wapiti and Karr in the Grand Prairie Region and to the extension of the timing of the development of probable undeveloped reserves from 7 years to 10 years.

Extensions and improved recovery for tight oil was primarily attributable to new undeveloped reserves bookings at the Duvernay properties at Willesden Green in the Central Alberta and Other Region.

### ***Additional Information Relating to Reserves Data***

#### ***Developed and Undeveloped Reserves***

The following table summarizes the Company's gross proved and proved plus probable developed reserves and undeveloped reserves as at December 31, 2019 and the net present value of future net revenue of such reserves before income taxes, undiscounted and discounted at 10%.

| <b>Category</b> | <b>Proved</b>                |                         |                          | <b>Proved plus Probable</b>  |                         |                          |
|-----------------|------------------------------|-------------------------|--------------------------|------------------------------|-------------------------|--------------------------|
|                 | <b>Gross Reserves (MBoe)</b> | <b>NPV @0.0% (MM\$)</b> | <b>NPV @10.0% (MM\$)</b> | <b>Gross Reserves (MBoe)</b> | <b>NPV @0.0% (MM\$)</b> | <b>NPV @10.0% (MM\$)</b> |
| Developed       | 111,502                      | 198                     | 912                      | 151,474                      | 917                     | 1,250                    |
| Undeveloped     | 223,315                      | 3,536                   | 1,514                    | 480,623                      | 8,768                   | 3,229                    |
| <b>Total</b>    | <b>334,817</b>               | <b>3,733</b>            | <b>2,427</b>             | <b>632,097</b>               | <b>9,684</b>            | <b>4,478</b>             |

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

The following table summarizes the Company's gross proved undeveloped reserves that were first attributed in each of the three most recent financial years.

| <b>Product Type</b>               | <b>2017</b>             |                          | <b>2018</b>             |                          | <b>2019</b>             |                          |
|-----------------------------------|-------------------------|--------------------------|-------------------------|--------------------------|-------------------------|--------------------------|
|                                   | <b>First Attributed</b> | <b>Total at Year End</b> | <b>First Attributed</b> | <b>Total at Year End</b> | <b>First Attributed</b> | <b>Total at Year End</b> |
| Shale Gas (Bcf)                   | 562.9                   | 706.1                    | 169.2                   | 795.7                    | 87.0                    | 622.6                    |
| Conventional Natural Gas (Bcf)    | 42.3                    | 42.3                     | -                       | 25.5                     | -                       | 19.8                     |
| Light and Medium Crude Oil (MBbl) | 10,669                  | 10,669                   | -                       | 6,826                    | -                       | 6,411                    |
| Tight Oil (MBbl)                  | -                       | -                        | -                       | -                        | 5,417                   | 5,417                    |
| NGLs (MBbl)                       | 71,224                  | 87,479                   | 28,111                  | 113,443                  | 11,102                  | 104,412                  |

Reserves are classified as proved undeveloped if they meet the requirements prescribed by the COGE Handbook, and if they are expected to be recovered from known accumulations on previously undrilled acreage or they are reserves from existing wells where significant expenditure is required to render them capable of production.



### *Probable Undeveloped Reserves*

The following table summarizes the Company's gross probable undeveloped reserves that were first attributed in each of the three most recent financial years.

| Product Type                      | 2017             |                   | 2018             |                   | 2019             |                   |
|-----------------------------------|------------------|-------------------|------------------|-------------------|------------------|-------------------|
|                                   | First Attributed | Total at Year End | First Attributed | Total at Year End | First Attributed | Total at Year End |
| Shale Gas (Bcf)                   | 458.5            | 540.9             | 138.0            | 593.8             | 239.8            | 769.4             |
| Conventional Natural Gas (Bcf)    | 33.6             | 33.6              | -                | 29.2              | -                | 11.6              |
| Light and Medium Crude Oil (MBbl) | 7,006            | 7,006             | -                | 6,420             | -                | 4,126             |
| Tight Oil (MBbl)                  | -                | -                 | 9,026            | 9,026             | 1,943            | 11,963            |
| NGLs (MBbl)                       | 60,168           | 67,914            | 17,121           | 80,401            | 36,150           | 111,050           |

Reserves are classified as probable undeveloped when they are less certain to be recovered than proved undeveloped reserves as prescribed by the COGE Handbook.

### *Plans for Developing Proved and Probable Undeveloped Reserves*

Paramount's development plans for its properties take into account a number of factors, including estimated capital expenditures, the timing for access to required processing, transportation and fractionation capacity and the course of development necessary to optimize production, cost efficiency, safety and the environment over the life of the property.

95% of the Company's proved undeveloped reserves and 95% of its probable undeveloped reserves are related to its unconventional resource play Montney and Duvernay properties. Paramount's development plans for these properties are focused on the cost efficient and orderly development of the Montney and Duvernay unconventional resource plays over time within the context of available processing and transportation capacity and allocated drilling and development capital. The scheduled timing of the development of the Company's proved undeveloped and probable undeveloped Montney and Duvernay reserves extends past two years due to the extent of the drilling inventory associated with the resource plays, the significant levels of capital required for development and anticipated processing and transportation capacity. Proved undeveloped unconventional resource play Montney and Duvernay reserves are scheduled for development within 5 years and probable undeveloped reserves are scheduled for development within 10 years.

The remainder of the Company's proved undeveloped and probable undeveloped reserves are scheduled for development within 5 years. The scheduled timing of the development of these reserves extends past two years due to the anticipated allocation of available drilling and development capital.

The ultimate timing of the Company's undeveloped reserves development will be dependent on a number of factors, including prevailing commodity prices, capital expenditure levels and priorities, royalties and economic conditions, applicable regulations, costs, the evolution of development programs for key fields, changing technical conditions and the availability of transportation, processing and fractionation capacity.

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

Estimating reserves is a complex process requiring significant judgments based on available geological, geophysical, engineering and economic data. As additional data from development activities, including production results, becomes available and as internal or external economic conditions change, reserves estimates may change substantially. Paramount's reserves can be materially affected by changes in internal and external factors, including, without limitation: commodity prices; access to processing, fractionation and transportation capacity; well performance; royalties; capital, operating, transportation and other costs; regulatory approvals and requirements; and available capital.

Paramount has a significant amount of proved undeveloped and probable undeveloped reserves assigned to unconventional resource plays, primarily its Montney and Duvernay properties in the Grand Prairie and Kaybob Regions. Large capital expenditures are required to convert these undeveloped reserves into developed producing reserves. Changes to future commodity price forecasts relative to the forecast in the McDaniel Report would also have an impact on the economics and timing of the development of undeveloped reserves.

Abandonment and Reclamation Costs affecting the reserves data are discussed under "*Other Oil and Gas Information - Abandonment and Reclamation Costs*" below.

See "*Risk Factors – Reserves Estimates*", in particular, as well as the other risk factors herein.

### *Future Development Costs*

The following table provides the undiscounted estimated future development costs deducted in the estimation of future net revenue.

| <b>Development Cost Forecast (MM\$)</b>            | <b>2020</b> | <b>2021</b> | <b>2022</b> | <b>2023</b> | <b>2024</b> | <b>Remaining</b> | <b>Total</b> |
|--|-------------|-------------|-------------|-------------|-------------|------------------|--------------|
| <b>Total Proved</b><br>Undiscounted                | 506         | 961         | 577         | 629         | 417         | 76               | 3,165        |
| <b>Total Proved &amp; Probable</b><br>Undiscounted | 506         | 972         | 645         | 720         | 679         | 1,972            | 5,494        |

Paramount expects that future development costs will primarily be funded from cash from operating activities and borrowings under the Credit Facility, as such may be extended or amended from time to time. Depending on prevailing capital requirements and market conditions, Paramount may fund portions of the future development costs from the sale of non-core assets and capital market transactions. Additional information concerning the Credit Facility and Paramount's costs of borrowing thereunder is included in the Company's audited consolidated financial statements and Management's Discussion and Analysis for the year ended December 31, 2019, which can be found under the Company's profile on the SEDAR website at [www.sedar.com](http://www.sedar.com). Based on the commodity prices assumed in the McDaniel Report and current interest rates, Paramount does not expect that the costs of partially funding future development costs through borrowings under the Credit Facility will make the development of any of its material properties uneconomic.

## OTHER OIL AND GAS INFORMATION

### *Oil and Gas Wells*

The table below sets out the producing and non-producing oil and natural gas wells in which Paramount had a working interest as at December 31, 2019. Non-producing wells are wells that have previously produced oil or natural gas or are expected to produce oil or natural gas in the future but exclude previously producing wells that have been abandoned or converted to water disposal, water injection or service wells.

|                          | Producing    |                | Non-producing |                |
|--------------------------|--------------|----------------|---------------|----------------|
|                          | Gross        | Net            | Gross         | Net            |
| <b>Crude oil wells</b>   |              |                |               |                |
| Alberta                  | 283          | 263.8          | 535           | 486.7          |
| Saskatchewan             | -            | -              | 1             | 1.0            |
| Northwest Territories    | -            | -              | 2             | 1.2            |
| Subtotal                 | 283          | 263.8          | 538           | 488.9          |
| <b>Natural gas wells</b> |              |                |               |                |
| Alberta                  | 1,257        | 940.7          | 1,162         | 919.4          |
| British Columbia         | 85           | 41.0           | 59            | 35.1           |
| Saskatchewan             | -            | -              | 3             | 3.0            |
| Northwest Territories    | -            | -              | 27            | 18.3           |
| Subtotal                 | 1,342        | 981.7          | 1,251         | 975.8          |
| <b>Total</b>             | <b>1,625</b> | <b>1,245.5</b> | <b>1,789</b>  | <b>1,464.7</b> |

### *Properties Without Attributed Reserves and Expiries*

As at December 31, 2019, Paramount's land base, not including lands held by Cavalier Energy, encompassed approximately 3.86 million gross (2.23 million net) acres in Western Canada, plus approximately 180,000 acres of fee simple land. Approximately 3.1 million gross (1.84 million net) acres of this land had no attributed reserves as at December 31, 2019.

As at December 31, 2019, Paramount held approximately 149,000 gross (102,000 net) acres of land due to expire in 2020. An additional 3,200 gross (640 net) acres held by Cavalier Energy is due to expire in 2020. The actual acreage that will expire in 2020 may be less than these amounts to the extent leases are continued through drilling, farm outs or other activities prior to their expiry.

In this annual information form, gross acreage is calculated only once per lease or license of petroleum and natural gas rights regardless of whether Paramount holds a working and/or royalty interest and whether or not the lease or license includes multiple prospective formations. If Paramount holds interests in different formations under the same surface area pursuant to separate leases or licenses, the acreage set out in each lease or license is counted.

### ***Significant Factors or Uncertainties Relevant to Properties with No Attributed Reserves***

Paramount's acreage with no attributed reserves in the Northwest Territories and shale gas acreage in the Liard and Horn River Basins, representing approximately 102,000 (86,000 net) acres, will require significant capital to develop. In addition, the Company may experience operational challenges and higher costs due to the geographic location, weather conditions, formation depths and limited infrastructure in this region. There are no assurances that this acreage will ever be developed and, if it is, whether it will operate profitably or provide a return on investment. For additional information on the Company's shale gas holdings, see *"Narrative Description of the Business – Other Assets"*.

Cavalier Energy's oil sands and carbonate bitumen acreage with no attributed reserves will also require significant capital to develop. These assets are subject to similar risks as those described under *"Risk Factors – Cavalier Energy's Oil Sands and Carbonate Bitumen Properties"*, plus additional risks associated with exploration, delineation, establishing technological and commercial feasibility and other steps that would be required to advance these assets to a stage ready for regulatory approvals to be sought and efforts made to secure necessary financing.

### ***Abandonment and Reclamation Costs***

Abandonment and Reclamation Costs are estimated by incorporating assumptions respecting the expected costs of particular activities and the expected timing thereof. Costs are estimated for individual assets and then aggregated to determine total estimated Abandonment and Reclamation Costs. In making such estimates, reference is made to historical costs and values, internal estimates, third-party environmental reports and assessments and information provided by provincial regulatory authorities, industry organizations and third-party engineering firms.

Paramount estimates, as at the end of each fiscal quarter, the Abandonment and Reclamation Costs related to its working interest in all wells, facilities, pipelines and associated surface leases. These estimates are inflated at the long-term inflation rate, discounted at the weighted average credit-adjusted risk free discount rate and recorded as asset retirement obligations in the financial statements of the Company. Paramount has recorded in its audited consolidated financial statements for the year ended December 31, 2019 asset retirement obligations of \$569.9 million (using a credit-adjusted risk free discount rate of 8.0 percent and an inflation rate of 2.0 percent). Estimated asset retirement obligations as at December 31, 2019 calculated on an undiscounted and uninflated basis were \$1,381.5 million. Additional information concerning asset retirement obligations and the calculation thereof is included in the Company's audited consolidated financial statements and Management's Discussion and Analysis for the year ended December 31, 2019, which can be found under the Company's profile on the SEDAR website at [www.sedar.com](http://www.sedar.com).

In estimating the future net revenue of the Company's reserves disclosed in this annual information form, the McDaniel Report deducts the estimated Abandonment and Reclamation Costs for Paramount's working interest in all wells (active and inactive), undeveloped reserve locations, facilities, pipelines and associated surface leases related to all properties evaluated in the McDaniel Report. Estimated Abandonment and Reclamation Costs of \$1,590.6 million (undiscounted, but inflated at rates of between 1.7% and 2.0% per annum) were deducted in the McDaniel Report in estimating the future net revenue of the Company's proved plus probable reserves as at December 31, 2019. Estimated Abandonment and Reclamation Costs as at December 31, 2019 calculated on an undiscounted and uninflated basis were \$921.0 million.

The Abandonment and Reclamation Costs deducted in estimating the future net revenue of the Company's reserves in the McDaniel Report differ from the estimates of asset retirement obligations recorded in the Company's financial statements in the following ways: (i) the McDaniel Report deducts estimated costs associated with undeveloped wells, facilities, pipelines and associated surface leases that will be required

for future development of undeveloped reserves, whereas the estimated asset retirement obligations recorded in the Company's financial statements include costs only with respect to existing wells, facilities, pipelines and associated surface leases; (ii) the McDaniel Report does not include estimated costs with respect to the Company's inactive properties, whereas the estimated asset retirement obligations recorded in the Company's financial statements include costs with respect to all of the Company's properties, whether active or inactive, and (iii) different discount and inflation rates are used in each case.

For illustrative comparison purposes, the table below sets out the composition of the estimated asset retirement obligations (calculated on an uninflated and undiscounted basis) recorded in the Company's audited consolidated financial statements as at December 31, 2019 compared to the composition of the estimated Abandonment and Reclamation Costs (calculated on an uninflated and undiscounted basis) deducted in estimating the future net revenue of the Company's proved plus probable reserves in the McDaniel Report. Numbers may not add due to rounding.

|   | Existing Wells, Facilities,<br>Pipelines and Surface Leases<br>(MM\$) | Estimated Future Wells,<br>Facilities, Pipelines and<br>Surface Leases Required to<br>Develop Undeveloped<br>Reserves<br>(MM\$) | Total Undiscounted<br>and Uninflated<br>Abandonment and<br>Reclamation Costs in<br>the McDaniel Report<br>(MM\$) |
|---|---|---|--|
| Costs associated with active properties   | 793.6   | 127.3   | 921.0  |
| Costs associated with inactive properties   | 587.9   | -   |  |
| <b>Total Undiscounted and Uninflated<br/>Asset Retirement Obligations in the<br/>Company's Financial Statements as at<br/>December 31, 2019</b> | <b>1,381.5</b>  |   |  |

### ***Forward Contracts***

The nature of Paramount's operations results in exposure to fluctuations in commodity prices, foreign exchange rates and interest rates. Paramount monitors and, from time-to-time, utilizes derivative financial instruments and/or physical forward delivery contracts to hedge its exposure to these risks. Paramount's derivative contracts and/or future commitments are disclosed in its audited consolidated financial statements as at and for the year ended December 31, 2019, which can be found under the Company's profile on the SEDAR website at [www.sedar.com](http://www.sedar.com).

### ***Pipeline Transportation and Production Processing Commitments***

As part of normal business operations, the Company has entered into firm-service agreements for the processing and transportation of natural gas, NGLs and oil. The Company renews or amends existing agreements and enters into new agreements from time-to-time based on forecast capacity requirements.

The Company's processing and transportation commitments exceed forecast production volumes of proved reserves in the McDaniel Report by an average of approximately 4,600 Boe/d for processing and 28,500 Boe/d for transportation over the next 5 years. If the Company's actual sales volumes are equivalent to the forecast production of proved reserves, the aggregate fees that would be paid by the Company in respect of unused capacity would average approximately \$12 million for processing and \$14 million for transportation per year over the next 5 years. If the Company's actual sales volumes are equivalent to the forecast production of proved plus probable reserves in the McDaniel Report, which is approximately 21% percent higher than forecast production from proved reserves, the aggregate fees that would be paid by

the Company in respect of unused capacity would average approximately \$4.4 million for processing and \$9.3 million for transportation per year over the next 5 years.

The production, processing and transportation of natural gas, NGLs and oil are interdependent and the Company's ability to fulfill each commitment could be impacted by well performance and disruptions and constraints at the Company's and/or at third-party facilities and pipelines. The Company could experience a financial loss and its operations could be adversely affected if Paramount is unable to fulfill its commitments through its operations or, where necessary, amend its commitments or assign any excess capacity to one or more third-parties. Additional disclosure related to such commitments can be found in the Company's audited consolidated financial statements and Management's Discussion and Analysis for the year ended December 31, 2019, which can be found under the Company's profile on the SEDAR website at [www.sedar.com](http://www.sedar.com).

### ***Tax Horizon***

Based on the current tax regime, current commodity prices, the Company's available tax pools, assumptions of production and anticipated future net revenue from such production and capital expenditures, Paramount does not expect to pay any material Canadian income taxes for at least the next 5 years. Taxable income varies depending on total income and expenses and Paramount's estimate is sensitive to assumptions regarding commodity prices, production, cash from operating activities, capital spending levels and acquisition and disposition transactions. Changes in these factors from estimates used by Paramount could result in the Company paying income taxes earlier than expected.

Additional information concerning Paramount's tax pools is included in the Company's audited consolidated financial statements and Management's Discussion and Analysis for the year ended December 31, 2019 which can be found under the Company's profile on the SEDAR website at [www.sedar.com](http://www.sedar.com). Also, see "*Risk Factors – Government Regulation*".

### ***Costs Incurred***

The following table summarizes the costs incurred by Paramount for property acquisitions and exploration and development activities in 2019.

| <b>Cost Type (\$ millions)</b>     | <b>2019</b>  |
|------------------------------------|--------------|
| Acquisitions                       |              |
| Proved properties                  | -            |
| Unproved properties                | 7.6          |
| Exploration                        | 11.3         |
| Development (including facilities) | 391.1        |
| <b>Total</b>                       | <b>410.0</b> |

## Exploration and Development Activities

The following table summarizes the results of Paramount's drilling activity for the year ended December 31, 2019. All wells drilled were development wells, meaning wells drilled within or in close proximity to a discovered pool of petroleum or natural gas.

|              | Gross     | Net         |
|--------------|-----------|-------------|
| Natural Gas  | 25        | 23.1        |
| Oil          | 4         | 4.0         |
| <b>Total</b> | <b>29</b> | <b>27.1</b> |

For a description of the Company's current and likely exploration and development activities, see "Narrative Description of the Business – Oil and Gas Properties".

## Production Estimates

The following table summarizes the total estimated gross production for 2020 from the McDaniel Report.

|                                 | Estimated Production<br>(Gross) |              |
|---------------------------------|---------------------------------|--------------|
|                                 | Proved                          | Probable     |
| Shale Gas (MMcf)                | 69,518                          | 5,771        |
| Conventional Natural Gas (MMcf) | 36,570                          | 1,588        |
| Oil (MBbl)                      | 1,520                           | 99           |
| NGLs (MBbl)                     | 12,441                          | 1,486        |
| <b>Total Production (MBoe)</b>  | <b>31,642</b>                   | <b>2,812</b> |

In the McDaniel Report, McDaniel estimated gross production in 2020 from the Karr field of 9,539 MBoe (Proved) and 1,272 MBoe (Probable) and from the Wapiti field of 6,366 Mboe (Proved) and 769 Mboe (Probable).

## Production History

The following table summarizes daily sales volumes for Paramount before the deduction of royalties on a quarterly and annual basis for 2019.

| Sales <sup>(1)</sup>              | 2019          | Q4            | Q3            | Q2            | Q1            |
|-----------------------------------|---------------|---------------|---------------|---------------|---------------|
| Shale Gas (MMcf/d)                | 166.0         | 176.6         | 159.3         | 164.1         | 163.9         |
| Conventional Natural Gas (MMcf/d) | 137.3         | 122.4         | 137.3         | 145.6         | 144.1         |
| Oil (Bbl/d)                       | 5,334         | 4,560         | 4,531         | 5,531         | 6,746         |
| NGLs (Bbl/d)                      | 26,512        | 31,020        | 27,081        | 24,640        | 23,217        |
| <b>Total (Boe/d)</b>              | <b>82,394</b> | <b>85,411</b> | <b>81,046</b> | <b>81,793</b> | <b>81,296</b> |

(1) Sales volumes measured in marketable quantities, after processing and shrinkage.

The following table summarizes Paramount's average per-unit netbacks, by principal product, on a quarterly and annual basis for 2019.

|   | Netback – 2019 <sup>(1)</sup> |              |              |              |              |
|---|-------------------------------|--------------|--------------|--------------|--------------|
|   | 2019                          | Q4           | Q3           | Q2           | Q1           |
| <b>Shale gas (including by-products) <sup>(2)</sup> (\$/Mcf)</b>                              |                               |              |              |              |              |
| Revenue   | 5.39                          | 5.89         | 4.97         | 4.94         | 5.72         |
| Royalties   | (0.37)                        | (0.35)       | (0.30)       | (0.47)       | (0.37)       |
| Operating costs <sup>(3)</sup>  | (1.98)                        | (2.12)       | (2.39)       | (1.63)       | (1.70)       |
| Transportation and NGLs processing costs  | (0.49)                        | (0.45)       | (0.58)       | (0.42)       | (0.54)       |
| <b>Netback</b>  | <b>2.55</b>                   | <b>2.96</b>  | <b>1.70</b>  | <b>2.42</b>  | <b>3.11</b>  |
| <b>Conventional natural gas <sup>(2)</sup> (including by-products) (\$/Mcf)</b>               |                               |              |              |              |              |
| Revenue   | 3.79                          | 4.18         | 2.95         | 3.43         | 4.64         |
| Royalties   | (0.25)                        | (0.35)       | (0.14)       | (0.24)       | (0.26)       |
| Operating costs <sup>(3)</sup>  | (1.93)                        | (1.96)       | (1.49)       | (2.21)       | (2.06)       |
| Transportation and NGLs processing costs  | (0.59)                        | (0.59)       | (0.58)       | (0.60)       | (0.59)       |
| <b>Netback</b>  | <b>1.02</b>                   | <b>1.28</b>  | <b>0.74</b>  | <b>0.37</b>  | <b>1.73</b>  |
| <b>Light and Medium Crude &amp; Tight Oil <sup>(2)</sup> (including by-products) (\$/Boe)</b> |                               |              |              |              |              |
| Revenue   | 43.45                         | 43.66        | 40.61        | 42.30        | 46.48        |
| Royalties   | (3.48)                        | (3.30)       | (3.28)       | (4.07)       | (3.20)       |
| Operating costs <sup>(3)</sup>  | (19.51)                       | (25.47)      | (13.78)      | (16.60)      | (22.42)      |
| Transportation and NGLs processing costs  | (2.97)                        | (1.98)       | (3.33)       | (2.95)       | (3.51)       |
| <b>Netback</b>  | <b>17.49</b>                  | <b>12.90</b> | <b>20.21</b> | <b>18.68</b> | <b>17.35</b> |

(1) The Company's production volumes are generally gathered and processed through common gathering systems, processing facilities and transportation pipelines. As a result, by-product sales volumes, royalties and operating and other costs have been allocated to each product type based on volume equivalencies and other reasonable methods of allocation.

(2) Based on sales volumes measured in marketable quantities, after processing and shrinkage.

(3) Operating costs include all costs related to the operation of wells and Paramount's facilities and gathering systems. Processing revenue earned from Company facilities has been deducted from these costs.

The Company realized a gain of \$13.2 million from the settlement of commodity contracts in 2019. This gain has not been reflected in the netback amounts above.

The following table summarizes the Company's total sales volumes for the year ended December 31, 2019, as well as for its Karr field separately.

|               | Shale Gas<br>MMcf | Conventional<br>Natural Gas<br>MMcf | Natural Gas<br>Liquids<br>MBbl | Light &<br>Medium Oil<br>MBbl | Tight Oil<br>MBbl | Total<br>Company<br>MBoe |
|---------------|-------------------|-------------------------------------|--------------------------------|-------------------------------|-------------------|--------------------------|
| <b>Total:</b> | <b>60,591</b>     | <b>50,108</b>                       | <b>9,677</b>                   | <b>1,717</b>                  | <b>230</b>        | <b>30,074</b>            |
| Karr          | 24,527            | 172                                 | 4,189                          | -                             | -                 | 8,305                    |



## **INDUSTRY CONDITIONS**

### **COMPETITIVE CONDITIONS, SEASONALITY AND TRENDS**

Competitive conditions affecting Paramount are described under "*Risk Factors – Industry Competition*".

The development and exploration of oil and natural gas reserves, including the drilling, completion and tie-in of wells, and road, lease, facility and pipeline construction, is dependent on access to areas where operations are to be conducted. Winter-access areas, seasonal weather variations, including freeze-up, break-up and wet ground conditions, and other restrictions can affect access. In addition, the seasonal accessibility of certain locations increases competition for equipment and personnel during those periods.

The oil and gas industry continues to develop new technologies that increase the recoverability of natural gas, NGLs, oil and bitumen and/or improve returns, particularly longer multi-stage hydraulically-fractured horizontal wells incorporating higher intensities of proppant per stage and more fracs per well. Reservoir floods, polymer injection, water or oil based fractionation fluids, and carbon dioxide injection techniques have also been used to increase recoveries.

### **PRICING AND MARKETING**

Negotiations between buyers and sellers determine the price of crude oil. As a result, macroeconomic and microeconomic market forces determine the price of crude oil. Worldwide supply and demand factors are the primary determinant of crude oil prices; however, regional market and transportation issues also influence prices. The specific price depends, in part, on crude oil quality, prices of competing fuels, distance to market, availability of transportation, value of refined products, supply/demand balance and contractual terms of sale.

Negotiations between buyers and sellers determine the price of natural gas sold in intra-provincial, interprovincial and international trade. The price received by a natural gas producer depends, in part, on the price of competing natural gas supplies and other fuels, natural gas quality, distance to market, availability of transportation, length of contract term, weather conditions, supply/demand balance within local, regional and larger interconnected markets and other contractual terms. Spot and future prices can also be influenced by supply and demand fundamentals with respect to specific delivery points on various trading platforms.

The pricing of condensate and other NGLs sold in intra-provincial, interprovincial and international trade is determined by negotiation between buyers and sellers. Such prices depend, in part, on the quality of the NGLs, price of competing chemical stock, distance to market, access to downstream transportation, length of contract term, supply/demand balance within local, regional and larger interconnected markets and other contractual terms.

## EXPORT, TRANSPORTATION AND CURTAILMENT

Crude oil, natural gas and NGLs exports from Canada are subject to the *Canadian Energy Regulator Act* (Canada) and its associated regulations. Crude oil, natural gas and NGLs exports are authorized by short term orders or long term licences granted under such legislation by the Canadian Energy Regulator. Crude oil, natural gas and NGLs exports from Canada are subject to international trade agreements and treaties that have been entered into by Canada.

Producers negotiate with pipeline operators (or other transport providers) to transport their products to market on a firm or interruptible basis. Transportation availability is highly variable across different areas and regions. This variability can determine the nature of transportation commitments available, the number of potential customers that can be reached in a cost-effective manner and the price received. Due to growing production and a lack of new and expanded pipeline and rail infrastructure capacity, producers in Western Canada have experienced low commodity pricing relative to other markets in the last several years. Although certain pipeline and other transportation projects are underway, many contemplated projects have been cancelled or delayed due to regulatory hurdles, court challenges and economic and other socio-political factors. Major pipeline and other transportation infrastructure projects typically require a significant length of time to complete once all regulatory and other hurdles have been cleared. The timing of completion of major pipeline and other transportation projects currently underway is uncertain.

Governments may order the curtailment or restriction of production of oil, NGLs or natural gas. On December 2, 2018, the Government of Alberta announced that, commencing January 1, 2019, it would mandate a short-term reduction in provincial crude oil and crude bitumen production. Under the Curtailment Rules (Alberta), the Government of Alberta, on a monthly basis, directs crude oil producers producing more than 20,000 Bbl/d to curtail their production according to a pre-determined formula that apportions production limits proportionately amongst those operators subject to a curtailment order. The curtailment order in effect for February 2020 limited production of crude oil and crude bitumen to a total of 3.81 million barrels per day. The Government of Alberta has indicated that, due to continuing pipeline delays, production limits remain necessary through 2020. Paramount is not subject to the curtailment order as condensate and natural gas are exempt from curtailment and the Company does not produce more than 20,000 Bbl/d of crude oil.

## ROYALTIES

On January 1, 2017, the Government of Alberta implemented a modernized royalty framework (the "**Modernized Framework**") based on recommendations of the Royalty Review Advisory Panel. The Modernized Framework applies to all conventional wells spud on or after January 1, 2017. The Modernized Framework does not apply to oil sands production, which has its own separate royalty framework. Wells spud prior to July 13, 2016 continue to be subject to the previous royalty framework (the "**Old Framework**"). An election was available for wells spud between July 13, 2016 and December 31, 2016 to opt-in to the Modernized Framework if certain criteria were met. After December 31, 2026, all wells will be subject to the Modernized Framework.

Under the Modernized Framework, royalties are determined on a "revenue-minus-costs" basis, with the cost component based on a drilling and completion cost allowance formula for each well, which is dependent on the vertical depth and horizontal length of the well and proppant placed. The formula is based on the industry's average drilling and completion costs as determined by the Alberta Department of Energy ("**ADOE**") on an annual basis. The cost component attempts to incentivize innovation to reduce costs by allowing wells with below average costs to remain at a lower rate of royalty even after recovering actual costs. Producers pay a flat royalty rate of five percent of gross revenue from each well that is subject to the Modernized Framework until the well reaches payout. Payout for a well is the point at which cumulative

revenues from the well equals the drilling and completion cost allowance for the well set by the ADOE. After payout, producers pay an increased post-payout royalty on revenues determined by reference to the then current commodity prices of the various hydrocarbons and rates of production from the well. Similar to the Old Framework, the post-payout royalty rate under the Modernized Framework varies with commodity prices. Once production in a mature well drops below a threshold level where the rate of production is too low to sustain the full royalty burden, its royalty rate is adjusted downward as the mature well's production declines, to a minimum of five percent. The drilling and completion cost allowance formula, post-payout royalty rates and production thresholds for mature wells came into effect on January 1, 2017.

As part of the Modernized Framework, the Alberta government announced two new strategic royalty programs to encourage oil and gas producers to increase production and explore resources in new areas: the Enhanced Hydrocarbon Recovery Program and the Emerging Resources Program. These programs take into account the higher costs associated with development of emerging resources and enhanced recovery methods when calculating royalty rates.

The *Royalty Guarantee Act* (Alberta) went into effect on July 18, 2019. The legislation provides that no fundamental restructuring of the legislative framework generally applicable to Crown royalties in Alberta shall be implemented for a period of 10 years and, when a well starts producing, it will be under the same royalty structure for a period of 10 years.

## **LAND TENURE**

The provincial governments (i.e. the Crown) in Alberta and British Columbia predominantly own the mineral rights to crude oil and natural gas located in those provinces. The provincial governments grant rights to explore for and produce crude oil and natural gas pursuant to leases, licences and permits for varying terms, and on conditions set forth in provincial legislation, including requirements to perform specific work or make payments. The provincial governments conduct regular land sales where crude oil and natural gas companies bid for leases and licences to explore for and produce crude oil and natural gas pursuant to mineral rights owned by the respective provincial governments. The leases and licences generally have a fixed term; however, they may generally be continued after the initial term where certain minimum thresholds of production have been reached, all rental payments have been paid on time and other conditions are satisfied. To develop crude oil and natural gas resources, it is necessary for the mineral estate owner to have access to the surface lands as well. Each province has developed its own process for obtaining surface access to conduct operations that operators must follow throughout the lifespan of a well, including notification requirements and providing compensation for affected persons for lost land use and surface damage. Alberta has implemented legislation providing for the reversion to the Crown of mineral rights to deep, non-productive geological formations at the conclusion of the primary term of a lease or licence. Additionally, the provinces of Alberta and British Columbia have shallow rights reversion for shallow, non-productive geological formations for new leases and licences.

In addition to Crown ownership of the rights to crude oil and natural gas, private ownership of crude oil and natural gas (i.e. freehold mineral lands) also exists in the province of Alberta. Rights to explore for and produce such crude oil and natural gas are granted by a lease or other contract on such terms and conditions as may be negotiated between the owner of such mineral rights and crude oil and natural gas explorers and producers.

## GREENHOUSE GAS COMPLIANCE AND REPORTING OBLIGATIONS

### *Industrial Emissions*

The *Technology Innovation and Emissions Reduction Implementation Act* (Alberta) as well as the *Technology Innovation and Emission Reduction Regulation* (the "**TIER Regulations**") came into force on January 1, 2020. The TIER Regulations replaced the Carbon Competitiveness Incentive Regulation that had been in effect since January 1, 2018. The TIER Regulations apply to any facility that has emitted more than 100,000 tonnes of carbon dioxide equivalent ("**tCO<sub>2e</sub>**") in 2016 and any subsequent year. The owner of two or more conventional oil and gas facilities may apply to have those facilities form an aggregate facility regulated under the TIER Regulations. Paramount has received approval for its facilities to be regulated under the TIER Regulations as an aggregate facility.

Under the TIER Regulations, an aggregate facility is required to reduce the GHG emission intensity of stationary fuel combustion emissions in 2020 by 10% relative to the aggregate facility's historical baseline emissions in 2019. An aggregate facility's reduction target will stay at 10% and not increase over time, however the calculation of historical baseline emissions in 2021 will be based on an average of 2019 and 2020 emissions and in 2022 onwards will be based on an average of 2019, 2020 and 2021 emissions.

If an aggregate facility exceeds its annual allowable GHG emissions, the operator must pay \$30 per tCO<sub>2e</sub> of excess emissions into the TIER Fund or, subject to applicable limits, use offset emission performance credits generated by facilities which exceeded their emission reduction targets in the current or previous compliance years or use offset emissions credits generated by facilities that are not regulated by the TIER Regulations.

On December 6, 2019, the Government of Canada announced that the TIER Regulations meet the federal government's criteria for carbon-pollution pricing systems for 2020 for the emission sources they cover. As a result, facilities governed by the TIER Regulations, including Paramount's aggregate facility, are not subject to the federal output-based carbon pricing system for large industry implemented under the federal *Greenhouse Gas Pollution Pricing Act* (Canada). The TIER Regulations will be subject to annual reviews to ensure they remain in compliance with the federal criteria, which include carbon prices that rise to \$40 per tCO<sub>2e</sub> in 2021 and \$50 per tCO<sub>2e</sub> in 2022. The Government of Alberta has not announced any increase in future years in the \$30 per tCO<sub>2e</sub> price imposed under the TIER Regulations and there is no guarantee that the TIER Regulations will remain in compliance with the federal criteria in future years.

### *Federal Regulatory Fuel Charge*

The *Greenhouse Gas Pollution Pricing Act* (Canada) came into effect on January 1, 2019. That Act, in the absence of equivalent provincial requirements, imposes a federal carbon pollution pricing system with two components: a charge on fuel of \$20 per tCO<sub>2e</sub> in 2019, rising by \$10 per tCO<sub>2e</sub> annually to \$50 per tCO<sub>2e</sub> in 2022, and an emission reduction for large industry called the output-based pricing system.

In 2016, the Alberta government passed the *Carbon Leadership Act* (Alberta) and enacted the associated *Carbon Leadership Regulation*, pursuant to which an economy-wide carbon tax on emissions from transportation and heating fuels was imposed effective January 1, 2017. The *Climate Leadership Act* (Alberta) was repealed on May 30, 2019. On June 13, 2019, the Government of Canada announced its intent to apply the federal fuel charge under the *Greenhouse Gas Pollution Pricing Act* (Canada) in Alberta effective January 1, 2020 as a result of Alberta's repeal of the *Climate Leadership Act*. The federal fuel charge applies to fossil fuels consumed as part of exploration, development and production operations in Alberta to the extent the operations are not from a facility subject to the TIER Regulations to which an exemption certificate applies. Paramount has received an exemption certificate effective January 1, 2020 in respect of all of its Alberta licensed facilities which it operates.

The Government of Alberta has challenged the application of the *Greenhouse Gas Pollution Pricing Act* (Canada) in court on constitutional grounds and the Alberta Court of Appeal has issued a decision ruling the legislation to be unconstitutional. The Supreme Court of Canada is scheduled to hear appeals concerning the constitutionality of the *Greenhouse Gas Pollution Pricing Act* (Canada) and the outcome of such appeals is uncertain.

### *Methane Emissions*

Methane emission reduction in the oil and gas industry is also a key element of Alberta's GHG reduction plan. The Alberta government has set a target of reducing methane emissions from the oil and gas industry by 45 percent from 2014 levels by 2025. Under Directive 60 released by the Alberta Energy Regulator on December 13, 2018 and effective January 1, 2020, oil and gas companies are required to address the primary sources of methane emissions from Alberta's upstream oil and gas industry: fugitive emissions and venting, which includes emissions from compressors, pneumatic devices and glycol dehydrators. The requirements also focus on improved measurement, monitoring and reporting of methane emissions.

On June 29, 2016, Canada announced that it had agreed with the United States and Mexico to reduce methane emissions from the oil and gas sector by up to 45 percent by 2025 by developing and implementing federal regulations for both existing and new sources of vented and fugitive methane emissions. The final regulations were published on April 26, 2018. The *Canadian Environmental Protection Act, 1999* (Canada) ("CEPA") allows for flexibility via equivalency and other collaborative agreements to be negotiated with individual provinces and territories, if CEPA minimum requirements are met by the provincial regulations. The Government of Alberta is working towards a negotiated equivalency agreement on methane emissions with the federal government; however, no equivalency agreement has been made to date.

### *Reporting*

Under the *Specified Gas Reporting Regulation*, companies are required to report the annual GHG emissions from facilities emitting more than 10,000 tCO<sub>2e</sub> per year. In 2019, Paramount reported with respect to 12 facilities under the regulation based on 2018 emission levels.

Similar to Alberta, the federal government has lowered the threshold for reporting GHG emissions from facilities under its Greenhouse Gas Reporting Program from 50,000 tCO<sub>2e</sub> to 10,000 tCO<sub>2e</sub> per year.

## **ENVIRONMENT, HEALTH AND SAFETY**

### **REGULATION**

Paramount's oil and gas operations are governed by environmental requirements under Canadian federal, provincial, territorial and municipal laws and regulations that, among other things, restrict and/or prohibit the release of emissions or pollutants, regulate the storage, handling, transportation and disposal of various substances produced or utilized in association with oil and gas industry operations, and require Paramount to remedy the effect of its activities on the environment at current and former operating sites (including through the proper abandonment and decommissioning of wells, pipelines and facilities and the remediation and reclamation of associated lands). Paramount is also required to comply with a wide range of regulatory requirements designed to ensure the health and safety of its workers and other stakeholders who may be impacted by its operations. See "*Risk Factors – Environmental, Health and Safety Laws and Regulations*".

### **GOVERNANCE**

Paramount's environmental, health and safety policies and programs are overseen by the Environmental, Health and Safety Committee of the Board of Directors. The members of the Environmental, Health and Safety Committee are Dirk Junge (Chairman), Keith MacLeod and James Riddell. The duties and responsibilities of the Environmental, Health and Safety Committee are to:

- review and monitor the environmental, health and safety policies and activities of Paramount on behalf of the Board of Directors;
- recommend actions for developing policies, programs and procedures to ensure that the principles contained in the HSE Policy are being adhered to and achieved;
- review with management any material environmental, health and safety issues that have arisen in the course of the Company's operations to determine, on behalf of the Board of Directors, that Paramount is taking all necessary steps and exercising all necessary due diligence both in respect of these specific issues and in carrying out its environmental, health and safety responsibilities generally; and
- review and report to the Board of Directors on the sufficiency of the resources available to fulfill the environmental, health and safety responsibilities of the Company.

The Environmental, Health and Safety Committee meets at least semi-annually in May and November of each year and receives reports from management with respect to the above matters and, in particular, relative to Paramount's compliance with health, safety and environmental laws and regulations and the Company's management of its ongoing abandonment, reclamation, remediation and similar obligations. The written charter of the Environmental, Health and Safety Committee is available on the Company's website at [www.paramountres.com](http://www.paramountres.com).

## **POLICIES AND PROCEDURES**

### ***Corporate***

Paramount has a Health, Safety and Environment Policy (the "**HSE Policy**") which forms an integral part of the business operations of the Company. The HSE Policy together with the Paramount Operations Excellence Management System ("**POEMS**") provide the framework pursuant to which the Company has developed a comprehensive operations management system. One component of POEMS is the health, safety and environmental management system (the "**HSE Management System**") which contains specific policies and procedures to address environmental, health and safety matters associated with Paramount's operations. The Company is committed to the prevention of incidents in all phases of its operations that could cause harm to people, property loss or an adverse impact on the environment.

Paramount's HSE Policy and HSE Management System emphasize the Company's responsibility to make environmental, health and safety protection a consistent component of its decision-making processes and requires its management, employees, contractors, consultants and other parties performing work on behalf of Paramount to act in accordance with the HSE Policy and HSE Management System. Paramount's managers and supervisors are required to assess the potential effects of their projects and to integrate protective measures to prevent environmental, health or safety incidents from occurring as a result of Paramount's business activities. Managers and supervisors also are expected to provide training and to be prepared to respond safely and effectively to environmental, health or safety incidents. An HSE Steering Committee, comprised of Paramount operations management and reporting to the Executive Vice President of Operations, has been established to ensure the proper implementation and functioning of the HSE Management System, and to endeavor to achieve continuous improvement on environmental, health and safety matters.

### ***Safe Work Practices***

Paramount has adopted comprehensive written safe work practices applicable to all employees, contractors and visiting personnel working on Paramount premises and work sites, including practices respecting training and orientation, sour gas handling, the use of personal protective equipment, hazard assessment, elimination and control, noise exposure, wildlife awareness, handling of hazardous materials, fire prevention and control and vehicle operation. In addition, Paramount maintains a written safe work practice that establishes the authority and obligation of any individual to suspend a work task or group operation when the control of health, safety and environmental risk is not clearly established or understood.

### ***Emergency Response***

Paramount maintains corporate and property specific emergency response plans. In addition, all new drilling and construction projects are accompanied by site specific emergency response plans. The Company maintains a designated emergency support team and conducts regular field and tabletop emergency response exercises. After-action reviews are conducted following incidents and exercises to determine any required improvements or modifications to emergency response plans and preparedness.



### ***Spill Management and Control***

Paramount has adopted written spill management and control practices applicable to all employees, contractors and visiting personnel working on Paramount premises and work sites. The purpose of the practices is to reduce the number and potential impacts of spills on the environment with proper spill management through the implementation of spill prevention, initial spill reporting, timely response and long-term management.

### ***Incident Response***

Paramount maintains policies, practices and procedures respecting environmental and safety incidents designed to ensure that: (i) incidents and near misses are registered in a standardized format and centralized location and are tracked from investigation until closure; (ii) standard incident investigation practices are in place and followed; (iii) the level of leadership involved in incident investigations, including external representation where appropriate, is assigned based on defined expectations for the actual and potential severity of the incident; (iv) incident investigation data is periodically reviewed to identify and address emerging trends and potential system weaknesses; and (v) required preventive and corrective actions are implemented and lessons learned are communicated throughout the organization.

### ***Management of Contractors and Visiting Personnel***

Paramount's safe work practices and other relevant environmental, health and safety policies are expressly applicable to third-party contractors and visiting personnel working on Paramount premises and work sites. Paramount's safe work practice respecting orientation is designed to ensure that: (i) contractor staff at supervisory and management levels fully understand Paramount's policies, expectations and guidelines and individual responsibilities when on Paramount premises and work sites, (ii) contractors at all levels are orientated to site specific requirements prior to conducting work at a site, (iii) all workers and visitors are given a safety orientation and (iv) the environmental, health and safety performance of contractors is monitored during the execution of their work. Paramount utilizes a third-party portal to register third-party contractors, confirm their regulatory status and ensure such contractors are compliant with permitting and insurance requirements. Paramount undertakes selective evaluations and audits of the environmental, health and safety management systems of contractors.

### ***Asset Integrity***

Paramount utilizes its Paramount Enterprise Asset Management system to monitor, maintain and track assets and ensure that preventive and predictive maintenance is properly performed. It also ensures safety critical equipment is prioritized and maintained as part of the overall risk management of the portfolio. Paramount's Pipeline Integrity Management Program is designed to ensure safe, environmentally responsible and reliable service of Paramount's pipelines, in compliance with the requirements of provincial and federal regulations. Paramount's Pressure Equipment Integrity Management Program has been implemented for the continuous integrity management of pressure equipment and facilities owned and operated by Paramount.



## **Greenhouse Gases and Air Quality**

Paramount tracks direct and indirect GHG emissions, flared and vented gas volumes and fugitive emissions and reports the data to the Environmental, Health and Safety Committee.

Paramount has a written environmental work practice respecting flaring, incinerating and venting designed to ensure compliance with Directive 060 of the Alberta Energy Regulator and the Alberta Ambient Air Quality Objectives and Guidelines developed under the *Environmental Protection and Enhancement Act* (Alberta).

Paramount has adopted a Fugitive Emissions Management Plan designed to systematically detect and manage fugitive emissions.

Paramount maintains a Methane Reduction Retrofit Compliance Plan designed to ensure that it achieves compliance with the equipment specific vent gas limits set out in Directive 060 of the Alberta Energy Regulator. The plan includes a schedule to reduce methane emissions by replacing, retrofitting or modifying high-vent pneumatic devices, compressor seals, glycol dehydrators and other equipment.

Paramount is currently implementing an emission management database to aid in tracking and reporting air emissions to provincial and federal governments.

## **Water Management**

Paramount's Water Management department is responsible for developing short-term water management plans and long-term strategies that are environmentally sustainable and compliant with regulations to support Paramount's unconventional resource development plans. This includes identifying water sources and opportunities for reduced usage, acquiring necessary regulatory approvals, determining storage requirements, organizing and overseeing transportation and logistics and interacting with stakeholders. Paramount tracks water usage and reports usage data to the Environmental, Health and Safety Committee.

## **Waste Management**

Paramount has a written environmental work practice respecting waste management and control that applies to all Paramount employees, contractors and visiting personnel working on Paramount premises and work sites. The purpose of the practice is to ensure that Paramount is compliant with applicable regulations respecting the tracking and handling of wastes, including ensuring that: (i) correct waste classification is completed; (ii) the capabilities and limitations of possible waste treatment and/or disposal facilities are known; (iii) accurate and complete waste documentation and manifesting is maintained; (iv) waste carriers and receivers are informed of the waste properties; and (v) requisite approvals and operations are in place for any on-site handling, treatment and disposal method.

## **RISKS**

Paramount is subject to numerous risks associated with environment, health and safety matters, including those described under "*Risk Factors – Operating Risks and Insurance*", "*Risk Factors – Environmental, Health and Safety Laws and Regulations*" and "*Risk Factors – Hydraulic Fracturing*".

## **ABANDONMENT AND RECLAMATION STRATEGY AND ACTIVITIES**

As described under "*Reserves and Other Oil and Gas Information – Other Oil and Gas Information – Abandonment and Reclamation Costs*", Paramount has recorded in its audited consolidated financial statements for the year ended December 31, 2019 asset retirement obligations of \$569.9 million (using a credit-adjusted risk free discount rate of 8.0 percent and an inflation rate of 2.0 percent). Additional information concerning asset retirement obligations is included in the Company's audited consolidated financial statements and Management's Discussion and Analysis for the year ended December 31, 2019, which can be found under the Company's profile on the SEDAR website at [www.sedar.com](http://www.sedar.com).

The Area Based Closure program introduced by the Alberta Energy Regulator in September 2018 allows companies to approach abandonment and reclamation activities in an efficient and cost-effective manner by targeting efforts in a concentrated area. Paramount's strategy is to utilize the advantages of the Area Based Closure program by focusing its abandonment and reclamation activities on the Hawkeye field, which was shut-in in 2018, and the Zama field, which was shut-in in 2019.

In 2019, Paramount spent approximately \$29.4 million on abandonment and reclamation activities, abandoned 104 inactive wells, decommissioned 54 pipelines and received reclamation certificates from the Alberta Energy Regulator respecting 90 wells.

## **EMPLOYEES**

At December 31, 2019, Paramount had 301 full-time head office employees and 197 full-time field employees. In addition, Fox Drilling had 51 employees and Cavalier Energy had 10 employees at December 31, 2019.

## DIRECTORS AND EXECUTIVE OFFICERS

The following information is provided for each director and executive officer of Paramount as at the date of this annual information form. Each director will serve until the next annual meeting of shareholders or until his or her respective successor is elected or appointed.

### DIRECTORS

| Name and Municipality of Residence   | Director Since | Principal Occupation for Past Five Years  |
|--|----------------|---|
| <b>James H.T. Riddell</b> <sup>(4) (6)</sup><br>Calgary, Alberta, Canada             | 2000           | President and Chief Executive Officer and Chairman of the Board of Directors of Paramount; previously President and Chief Operating Officer   |
| <b>James G.M. Bell</b> <sup>(1) (2) (3)</sup><br>Calgary, Alberta, Canada            | 2011           | President and Chief Executive Officer, Founders Advantage Capital Corp. (a TSX Venture Exchange listed company); previously General Counsel, Olympia Financial Group Inc. (a TSX listed company) and Olympia Trust Company (a non-deposit taking trust company) |
| <b>Wilfred A. Gobert</b> <sup>(1) (3) (5)</sup><br>Calgary, Alberta, Canada          | 2017           | Independent Businessman   |
| <b>John C. Gorman</b> <sup>(2) (3) (5)</sup><br>Calgary, Alberta, Canada             | 2002           | Independent Businessman   |
| <b>Dirk Jungé, CFA</b> <sup>(3) (4)</sup><br>Bryn Athyn, Pennsylvania, United States | 2000           | Independent Businessman   |
| <b>Robert M. Macdonald</b> <sup>(2) (3)</sup><br>Oakville, Ontario, Canada           | 2017           | Independent Businessman   |
| <b>R. Keith MacLeod</b> <sup>(3) (4) (5) (7)</sup><br>Calgary, Alberta, Canada       | 2017           | Independent Businessman   |
| <b>Susan L. Riddell Rose</b><br>Calgary, Alberta, Canada                             | 2000           | President and Chief Executive Officer, Perpetual Energy Inc. (a TSX listed company)   |
| <b>John B. Roy</b> <sup>(1) (2) (3)</sup><br>Calgary, Alberta, Canada                | 1981           | Independent Businessman   |

(1) Member of the Compensation Committee.

(2) Member of the Audit Committee.

(3) Member of the Corporate Governance Committee.

(4) Member of the Environmental, Health and Safety Committee.

(5) Member of the Reserves Committee.

(6) Mr. Riddell was a director of Sonde Resources Corp. ("Sonde") and Great Prairie Energy Services Inc. ("Great Prairie"), both public oil and gas companies, within one year of Sonde becoming bankrupt and Great Prairie having a receiver-manager appointed to manage its assets, undertakings and properties. Mr. Riddell was a director of Strategic Oil & Gas Ltd., a public oil and gas company, when it filed for creditor protection under the *Companies' Creditors Arrangement Act* (Canada) and when it became subject to a cease trade order for failing to file its annual financial statements and management's discussion and analysis, which order remains in effect.

(7) Mr. MacLeod was a Director of Manito Energy Inc. ("Manitok"), a public oil and gas exploration and production company, within one year of Manito Energy filing a Notice of Intention to Make a Proposal under the Bankruptcy and Insolvency Act.

## EXECUTIVE OFFICERS

| Name and Municipality of Residence                    | Office   | Principal Occupation for Past Five Years  |
|---|--|---|
| <b>James H.T. Riddell</b><br>Calgary, Alberta, Canada | President and Chief Executive Officer and Chairman           | Executive officer of Paramount  |
| <b>Bernard K. Lee</b><br>Calgary, Alberta, Canada     | Executive Vice President, Finance                            | Executive officer of Paramount  |
| <b>D. Blake Reid</b><br>Calgary, Alberta, Canada      | Executive Vice President, Operations                         | Executive officer of Paramount since June 2017; previously Managing Director of Energy Engineering Inc.                           |
| <b>Rodrigo R. Sousa</b><br>Calgary, Alberta, Canada   | Executive Vice President, Corporate Development and Planning | Executive officer of Paramount since December 2017; previously Vice President, Corporate Development of Athabasca Oil Corporation |
| <b>John B. Williams</b><br>Calgary, Alberta, Canada   | Executive Vice President, Kaybob Region                      | Executive officer of Paramount since September 2017; previously President and Chief Operating Officer of Trilogy Energy Corp.     |
| <b>E. Mitchell Shier</b><br>Calgary, Alberta, Canada  | General Counsel, Corporate Secretary and Vice President Land | Executive officer of Paramount  |
| <b>Paul R. Kinvig</b><br>Calgary, Alberta, Canada     | Chief Financial Officer                                      | Executive officer of Paramount  |

As at December 31, 2019, the directors and executive officers of the Company as a group beneficially owned, controlled or directed, directly or indirectly, 49,281,433 Common Shares, representing approximately 36.72 percent of the 134,196,717 Common Shares outstanding at such date.

Certain directors and officers of Paramount are also directors and/or officers and/or significant shareholders of other companies or entities engaged in the oil and gas business generally and which, in certain cases, own interests in oil and gas properties in which Paramount holds, or may in the future, hold an interest. As a result, situations may arise where such individuals have a conflict of interest. Such conflicts of interest will be resolved in accordance with Paramount's governing corporate statute, the *Business Corporations Act* (Alberta), and Paramount's internal policies respecting conflicts of interest. The *Business Corporations Act* (Alberta) requires that a director or officer of a corporation who is party to a material contract or proposed material contract with the corporation, 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 the corporation, disclose in writing to the corporation or request to have entered into the minutes of meetings of directors the nature and extent of the director's or officer's interest; and, if a director, that he or she not vote on any resolution to approve the contract, except in certain circumstances. The *Business Corporations Act* (Alberta) also requires that a corporation's directors and officers act honestly and in good faith with a view to the best interest of the corporation. Paramount's internal policies respecting conflicts of interest require that directors and officers of Paramount avoid putting themselves in a conflict of interest position and, if such a position arises, that disclosure of such position be made so that Paramount can approve or disapprove such position, with disapproved conflict of interest positions requiring immediate cessation by the director or officer.

## **AUDIT COMMITTEE INFORMATION**

### **AUDIT COMMITTEE CHARTER**

The full text of the audit committee's charter is included in Appendix C of this annual information form.

### **COMPOSITION OF THE AUDIT COMMITTEE**

The audit committee consists of four members, all of whom are independent and financially literate. The relevant education and experience of each audit committee member is outlined below:

#### ***John C. Gorman***

Mr. Gorman has been a director of the Company since 2002. He is an independent businessman. Mr. Gorman was the President and CEO of an energy trading, marketing and financial services company from 1996 to 2000 and a corporate banker with the Bank of Montreal (a Canadian chartered bank) from 1972 to 1996, retiring as Senior Vice President, Natural Resources Group. Mr. Gorman obtained a Bachelor of Arts degree from the University of Ottawa and a Master of Business Administration degree from the University of Western Ontario.

#### ***James G. M. Bell***

Mr. Bell has been a director of the Company since 2011. Mr. Bell is currently President and Chief Executive Officer of Founders Advantage Capital Corp., a public investment company listed on the TSX Venture Exchange. From 2010 to 2016, Mr. Bell was General Counsel for Olympia Financial Group Inc. (a TSX listed company) and its wholly-owned subsidiary Olympia Trust Company (a non-deposit taking trust company). Prior thereto, Mr. Bell practiced securities and corporate commercial law as Partner at an international law firm until December 31, 2009. Mr. Bell has acted as legal counsel in connection with private placements, prospectus offerings, take-over bids, plans of arrangement and general securities and corporate finance matters. Mr. Bell graduated from the University of Saskatchewan with a Bachelor of Laws degree in 1999.

#### ***Robert M. MacDonald***

Mr. MacDonald is an oil and gas banking professional with 16 years of experience as a corporate director and 27 years of experience as a senior officer of several Canadian chartered banks, including 18 years in Alberta and 9 years in the United States. He has expertise in oil and gas banking/financing, having handled and provided advisory services on strategic alternatives for senior and bridge debt structuring, project financing, mezzanine debt structuring, portfolio management, financial analysis and loan re-structuring. From 1998 to 2003, he was a Director, Oil & Gas, Commercial Banking, with CIBC World Markets Inc. From 1993 to 1998, Mr. MacDonald was Vice President, Oil & Gas Group with CIBC. Mr. MacDonald graduated from the University of Saskatchewan (Regina Campus) with a Bachelor of Business Administration degree (major in Economics and Finance and minor in Accounting). He is a Fellow of the Institute of Canadian Bankers and has completed the academic requirements for the Director Education Program of the Institute of Corporate Directors.

## **John B. Roy**

Mr. Roy has been a director of the Company since 1981. He is an independent businessman. Prior to December 1, 2003, he served as the Vice-President and Director, Investment Banking of Jennings Capital Inc. (a private investment banking firm). From 1970 to 1996, he held various positions at Greenshields Incorporated and its successor, Richardson Greenshields of Canada Ltd. (a private investment banking firm). Mr. Roy graduated from Queen's University with a Bachelor of Science degree in Mechanical Engineering and received a Diploma in Management from McGill University. He is a member of the Association of Professional Engineers and Geoscientists of Alberta.

## **PRE-APPROVAL POLICIES AND PROCEDURES**

The Company's audit committee has adopted a policy with respect to the pre-approval of audit and permitted non-audit services to be provided by its independent auditor. Pursuant to the policy, the audit committee has identified certain services that have been granted pre-approval and which the independent auditors may provide. The policy also establishes procedures by which permitted audit and permitted non-audit services proposed to be performed by the Company's independent auditors may be pre-approved.

The audit committee has delegated authority to the Chairman of the audit committee to pre-approve permitted audit and permitted non-audit services to be provided by the independent auditor that have not otherwise been pre-approved by the full audit committee, including the fees and terms of the proposed services. All pre-approvals granted pursuant to this delegated authority must be presented by the Chairman of the audit committee to the full audit committee at its next meeting.

All fees payable in connection with services provided by the independent auditor must be pre-approved by either the full audit committee or the Chairman of the audit committee pursuant to his delegated authority.

## **EXTERNAL AUDITOR SERVICE FEES**

The following table provides information about the fees billed to the Company for professional services rendered by Ernst & Young LLP in respect of the financial years ended December 31, 2019 and December 31, 2018:

| <b>(\$ thousands)</b>             | <b>2019</b> | <b>2018</b> |
|-----------------------------------|-------------|-------------|
| Audit Fees <sup>(1)</sup>         | 369         | 325         |
| Audit-Related Fees <sup>(2)</sup> | 30          | 30          |
| Tax Fees <sup>(3)</sup>           | -           | -           |
| All Other Fees <sup>(4)</sup>     | 8           | 8           |
| <b>Total</b>                      | <b>407</b>  | <b>363</b>  |

(1) Represents the aggregate fees of the Company's auditors for audit services in respect of the financial year.

(2) Represents the aggregate fees billed for assurance and related services by the Company's auditors that are reasonably related to the performance of the audit or review of the Company's financial statements and are not included under "Audit Fees". Fees primarily related to the audit of a subsidiary.

(3) Represents the aggregate fees billed in each of the last two fiscal years for professional services rendered by the Company's auditors for tax compliance, tax advice and tax planning.

(4) Represents the aggregate fees billed for products and services provided by the Company's auditors other than those services reported under "Audit Fees" and "Audit Related Fees".

## **DESCRIPTION OF SHARE CAPITAL**

The Company's authorized share capital as of the date hereof consists of an unlimited number of Common Shares and an unlimited number of preferred shares, issuable in series. As of December 31, 2019, 134,196,717 Common Shares were issued and outstanding and no preferred shares were issued and outstanding.

### **COMMON SHARES**

The holders of Common Shares are entitled to receive dividends if, as and when declared by the board of directors of the Company. The holders of Common Shares are entitled to receive notice of and to attend all meetings of the shareholders of the Company. Holders of Common Shares are entitled to one (1) vote in respect of each Common Share held at all meetings of the shareholders of the Company (except meetings at which only holders of another specified class or series of shares of the Company are entitled to vote separately as a class or series at such meeting) provided that if the Company fails to pay the full amount of any dividend declared by the board of directors of the Company on the Common Shares on the date specified for payment of such dividend, then, for so long as any dividends remain in arrears on the Common Shares, the holders of Common Shares shall be entitled to two (2) votes in respect of each Common Share held at all meetings of the shareholders of the Company. In the event of liquidation, dissolution or winding up of the Company or other distributions of assets of the Company among its shareholders for the purpose of winding up its affairs, the holders of Common Shares will be entitled, subject to preferences accorded to holders of any class or series of preferred shares, to participate ratably in any distribution of the assets of the Company.

### **PREFERRED SHARES, ISSUABLE IN SERIES**

Preferred shares are non-voting and may be issued in one or more series. The board of directors may determine the designation, rights, privileges, restrictions and conditions attached to each series of preferred shares before the issue of such series. As of December 31, 2019, no preferred shares were issued and outstanding.

### **NORMAL COURSE ISSUER BID**

Paramount implemented a normal course issuer bid in January 2020. The normal course issuer bid will terminate on the earlier of: (i) January 5, 2021; and (ii) the date on which the maximum number of Common Shares that can be acquired pursuant to the normal course issuer bid are purchased. Purchases of Common Shares under the normal course issuer bid will be effected through the facilities of the TSX or alternative Canadian trading systems at the market price at the time of purchase. Paramount may purchase up to 7,044,289 Common Shares under the normal course issuer bid. Pursuant to the rules of the TSX, the maximum number of Common Shares that the Company may purchase under the normal course issuer bid in any one day is 84,660 Common Shares. Paramount may also make one block purchase per calendar week which exceeds such daily purchase restriction, subject to the rules of the TSX. Any Common Shares purchased pursuant to the normal course issuer bid will be cancelled by the Company. Any shareholder may obtain, for no charge, a copy of the notice in respect of the normal course issuer bid filed with the TSX by contacting the Company at 403-290-3600.

Under Paramount's previous normal course issuer bid, which expired on January 3, 2020, Paramount acquired an aggregate of 2,622,200 Common Shares at an average price of \$5.47 per share.

## CREDIT RATINGS

The following table outlines the credit rating for the Company as of the date of this annual information form:

|                         | Standard & Poor's<br>Rating Services |
|-------------------------|--------------------------------------|
| Corporate Credit Rating | B+                                   |
| Outlook                 | Negative                             |

Credit ratings are intended to provide investors an independent assessment of the credit quality of the issuer of securities or issue, and do not address the suitability of securities for any particular issuer.

The long-term credit ratings of Standard & Poor's Rating Services ("**S&P**") are on a scale that ranges from "AAA" to "D", which represents the range from highest to lowest opinions of creditworthiness. According to the S&P rating system, obligations rated "BB", "B", "CCC", "CC" and "C" are regarded as having significant speculative characteristics. While such obligations will likely have some quality and protective characteristics, these may be outweighed by large uncertainties or major exposure to adverse conditions. An obligation rated 'B' is more vulnerable to nonpayment than obligations rated 'BB', but the obligor currently has the capacity to meet its financial commitments on the obligation. Adverse business, financial, or economic conditions will likely impair the obligor's capacity or willingness to meet its financial commitments on the obligation. The ratings from "AA" to "CCC" may be modified by the addition of a plus (+) or a minus (–) sign to show relative standing within the rating categories. In addition, S&P may add a rating outlook of "positive", "negative", "stable", "developing" or "not meaningful" which assesses the potential direction of a long-term credit rating over the intermediate term (typically six months to two years). In determining a rating outlook, consideration is given to any changes in economic and/or fundamental business conditions. An outlook is not necessarily a precursor of a rating change.

The credit ratings accorded by S&P are not recommendations to purchase, hold or sell securities and such ratings do not comment as to market price or suitability for a particular investor. There is no assurance that any rating will remain in effect for any given period of time or that any rating will not be revised or withdrawn entirely by a rating agency in the future, if in its judgment, circumstances so warrant.

In 2019 and 2018, the Company made payments to S&P in connection with annual monitoring and surveillance fees.



## **MARKET FOR SECURITIES**

Paramount's Common Shares are listed on the TSX under the trading symbol "POU". The following table outlines the trading price range and volume of the Common Shares traded by month in 2019.

| 2019      | Price Range<br>(\$ per share) |      | Trading Volume |
|-----------|-------------------------------|------|----------------|
|           | High                          | Low  |                |
| January   | 9.17                          | 6.88 | 9,209,007      |
| February  | 9.97                          | 7.35 | 6,848,743      |
| March     | 9.40                          | 6.97 | 8,844,881      |
| April     | 9.52                          | 7.20 | 6,704,307      |
| May       | 9.48                          | 7.28 | 8,732,272      |
| June      | 7.73                          | 5.81 | 8,473,576      |
| July      | 8.15                          | 6.12 | 7,852,844      |
| August    | 7.86                          | 5.26 | 7,663,886      |
| September | 8.13                          | 5.48 | 5,442,906      |
| October   | 6.53                          | 4.91 | 8,664,738      |
| November  | 6.56                          | 5.09 | 7,284,107      |
| December  | 7.90                          | 5.69 | 11,350,738     |

## **DIVIDENDS**

Paramount has not declared a dividend in the last three fiscal years. Paramount currently has no plans to pay a dividend in the future. Any future dividends will be dependent upon the financial requirements of the Company to reinvest earnings, the financial condition of the Company and other factors which the board of directors of the Company may consider appropriate.

## **LEGAL PROCEEDINGS**

The Company is involved in various claims and litigation arising in the normal course of business both as a plaintiff and defendant. The Company does not currently believe that the outcome of any pending or threatened proceedings, individually or collectively, or the amounts which the Company may be required to pay by reason thereof, would be material to the Company.

## **RISK FACTORS**

**Investors should carefully consider the risk factors set out below and consider all other information contained herein and in Paramount's 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 Paramount's business and the oil and natural gas business generally.**

### **VOLATILITY OF OIL, NGLS AND NATURAL GAS PRICES AND PRICE DIFFERENTIALS**

Paramount's financial performance and condition are dependent on the prices received by it for oil, NGLs and natural gas and declines in such prices may have a material adverse effect on the Company's business, financial condition, results of operations and prospects. Any substantial and extended decline in the price of oil, NGLs or natural gas would have an adverse effect on the Company's revenues, profitability, cash flows from operations and borrowing capacity. The economics of producing from some wells may change because of lower prices, which could result in reduced production of oil, NGLs or natural gas and a reduction in the volumes and the value of the Company's reserves, which in turn could require a write down of the carrying value of the Company's oil and gas assets on its balance sheet and the recognition of an impairment charge in its income statement.

Prices for oil, NGLs and natural gas are volatile and affected by factors outside of Paramount's control. In the case of oil and NGLs, such factors include, but are not limited to, international and domestic supply and demand, the actions of the Organization of Petroleum Exporting Countries and other major exporters, world economic conditions (including conditions resulting from the impact of the COVID-19 (Coronavirus) outbreak), government regulation (including government ordered production curtailments), geopolitical tension, speculative positioning, the price of foreign imports, the availability and pricing of alternate fuel sources, transportation and infrastructure constraints and weather conditions. In the case of natural gas, such factors include, but are not limited to, North American supply and demand, government regulation (including government ordered production curtailments), the availability and pricing of alternate fuel sources, transportation and infrastructure constraints and weather conditions. In the longer term, prices for fossil fuels could be impacted by global climate change initiatives that have the stated goal of transitioning the world to a low carbon energy system.

Canadian producers of oil, NGLs and natural gas currently receive discounted prices for their production relative to certain international prices due to constraints on their ability to transport and sell such production in international markets. The magnitude of these discounts is highly variable. A failure to alleviate these constraints will result in Canadian producers continuing to be subject to discounted commodity prices. In addition, the prices individual producers, including Paramount, receive could be subject to additional discounts as a result of various factors including regional supply and demand issues, regional infrastructure capacity and transportation constraints, location and quality.

Oil, NGLs and natural gas prices, and the discounts against international prices received by Canadian producers, may remain volatile due to a number of factors, including market uncertainty over supply and demand, economic, regulatory and political uncertainty, increased growth of production in the United States, the actions of the Organization of Petroleum Exporting Countries and other major exporters, sanctions imposed on certain oil producing nations by other countries and uncertainty respecting the progress of major pipeline and infrastructure projects. Volatile oil, NGLs 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, NGLs and natural gas producing properties, as buyers and sellers have difficulty agreeing on price. Price volatility also makes it difficult to budget for, and project the return on, acquisitions and development and exploitation projects.

## EXPLORATION FOR AND DEVELOPMENT OF RESERVES

Paramount's future success depends upon its ability to successfully find and develop oil, NGLs and natural gas reserves that are economically recoverable. If Paramount is unable to increase its reserves, the Company's business will be adversely affected because it will eventually deplete its current reserves.

The cost of drilling, completing and operating wells is often uncertain. The Company may experience unexpected cost increases, overruns, delays or cancellations of projects as a result of numerous factors, many of which are beyond its control, including, but not limited to, increased labour costs, higher costs of inputs, technical complexities, weather conditions, required compliance with laws and regulations, the ability to obtain stakeholder support and approvals, and shortages or delays in the delivery of equipment and services.

The North American oil and gas industry has achieved significant reductions in its cost structure in response to the material and sustained decline in commodity prices that has been experienced in recent years. If third-party service and other costs materially increase, this could adversely affect the Company. There is the risk that Paramount's exploration activities will not encounter commercially productive reservoirs, that Paramount will not recover all or any portion of its investment, and that Paramount's reserves, revenues and cash flow will decline. Paramount cannot provide any assurances that it will be able to find and develop additional reserves at an acceptable cost or at all.

The successful development of oil and natural gas properties requires an assessment of recoverable reserves, future oil, NGLs and natural gas prices, operating and capital costs, potential environmental and other liabilities and the expected productivity of future wells. These assessments are inexact and, if actual results differ materially from these assessments, the Company may not recover the purchase price or development costs of a property.

## ACCESS TO NECESSARY INFRASTRUCTURE AND INFRASTRUCTURE COMMITMENTS

Paramount's ability to produce and sell its oil, NGLs and natural gas requires it to have access to both Company constructed and owned, as well as third-party, infrastructure, including gathering systems, compression and dehydration facilities, processing facilities, pipelines and NGLs fractionation facilities.

Paramount relies on certain key facilities to be able to process its production, including those described under "*Narrative Description of the Business – Oil and Gas Properties*". Unexpected outages at such facilities will adversely impact Paramount's production and cash flow and may, depending on duration and severity, have a material adverse effect on Paramount's financial condition or results of operations.

The costs and timing of constructing, expanding and maintaining infrastructure (including infrastructure owned by third-parties), is often uncertain. Construction projects may experience unexpected cost increases, overruns and delays as a result of numerous factors, including, but not limited to, labour shortages, increased labour costs, higher cost of inputs, weather conditions, required compliance with laws and regulations, the ability to obtain stakeholder support and approvals, and shortages or delays in the delivery of equipment and services.

There is also the risk that infrastructure may not operate as designed or at expected capacity levels and that actual operating and other costs are materially higher than estimated due to maintenance issues or for other reasons. In addition, there is a risk that commodities delivered to processing facilities may not meet the specifications of the facility, that processing facilities may be unable to produce products that meet the specification requirements of pipelines or interconnected facilities or that there is a limited or no market for products produced. Maintenance of, or repairs to, Company and third-party infrastructure (as well as

apportionments and other capacity constraints) may result in unbudgeted or unexpected costs and lower production and cash flow.

Paramount has entered into firm-service processing, transportation and NGLs fractionation commitments covering a substantial portion of its production. If Paramount is unable to meet its obligations under these firm-service agreements, it will be required to pay for the unutilized capacity thereunder, and may be exposed to other liabilities. To the extent Paramount does not either currently, or in the future, have sufficient Company-owned or firm-service capacity in place, it will have to utilize interruptible capacity on third-party infrastructure (and/or in the case of insufficient Liquids transportation capacity, trucking or rail options). There is no guarantee that such interruptible capacity, or other Liquids transportation options, will be available, or if they are, that they can be obtained or utilized at a reasonable cost. For additional information, see *"Reserves and Other Oil and Gas Information"*.

## **OPERATING RISKS AND INSURANCE**

There are many operating hazards in exploring for, developing and producing oil, NGLs and natural gas, including, but not limited to, unexpected formations, blowouts, accidents, equipment failures (including computer hardware and software systems), spills, releases, pipeline failures, environmental damage or other unexpected or dangerous conditions that could result in damage to Paramount, injury or death (including employees or contractors), damage to equipment and facilities, suspension or revocation of regulatory approvals, environmental contamination and potential liability to third-parties (including government bodies). Also, a significant event may result in lost revenue and/or profit.

The Company cannot fully protect against all of these potential risks. Some of them cannot be insured against, and the coverage that can be obtained with respect to those that are insurable will be subject to exclusions, deductibles and coverage limits. Accordingly, Paramount may be exposed to liabilities that are outside the scope of its insurance, are only partially covered by it, or that Paramount could not insure against (either at all or because of high premium costs or for other reasons). In addition, the costs of maintaining insurance have increased in recent years and may continue to increase, which may adversely affect Paramount's financial position.

The occurrence of a significant event against which Paramount is not fully insured could have a material adverse effect on the Company.

## **CREDIT FACILITY AND INDEBTEDNESS**

The Credit Facility, or any replacement credit arrangements, may not provide sufficient liquidity. The amounts available under the Credit Facility may not be sufficient for future operations and the Company may not be able to obtain additional financing on favourable terms or at all. There is a risk that the Credit Facility, on maturity, will not be renewed for the same amount, on the same terms or at all and this may restrict the Company's liquidity.

The Credit Facility is a covenant-based facility that includes certain financial ratio tests. These financial ratio tests may, from time to time, either affect the availability, or price, of additional funding and in the event that the Company does not comply with these ratio tests, the Company's access to capital could be restricted or repayment could be required.

Events beyond the Company's control may contribute to the failure of the Company to comply with the covenants under the Credit Facility. A failure to comply with any covenants under the Credit Facility could result in default under the Credit Facility, which could result in the Company being required to repay amounts owing thereunder.

The acceleration of the Company's indebtedness under one agreement may permit acceleration of indebtedness under other agreements, including the Credit Facility, that contain cross default or cross-acceleration provisions.

The Credit Facility may impose operating and financial restrictions on the Company, including restrictions on the payment of dividends or other distributions, the repurchase of the Company's securities, the incurring of additional indebtedness, the provision of guarantees, the assumption of loans or the entering into of amalgamations, mergers, take-over bids or asset dispositions.

If the Company's lenders require repayment of all or a portion of the amounts outstanding under the Credit Facility for any reason, including for a covenant default, there is no certainty that the Company would be in a position to make such repayment. Even if the Company was able to obtain new financing in order to make any required repayment under the Credit Facility, it may not be on commercially reasonable terms or terms that are acceptable to the Company. If the Company was unable to repay amounts owing under the Credit Facility, the lenders under the Credit Facility could proceed to foreclose or otherwise realize upon the collateral granted to them to secure the indebtedness.

The decision of the Supreme Court of Canada in *Orphan Well Association v. Grant Thornton Ltd.* (known as the Redwater decision) may adversely impact the amounts, and terms on which, lenders are willing to lend to Canadian exploration and production companies, including Paramount.

Paramount's level of indebtedness from time to time under the Credit Facility, or any other credit arrangement that may be entered into, may adversely affect the Company's operations by increasing the amount of its cash flow that is required to service its indebtedness, reducing the Company's competitiveness compared to similar companies with less debt, limiting its ability to obtain future financing and increasing its vulnerability to general adverse economic and industry conditions.

## **ACCESS TO CAPITAL AND FUNDING OF EXPENDITURES**

Paramount may not be able to obtain, through its operations or through financings, credit facilities, asset dispositions or other means, on terms acceptable to Paramount or at all, the necessary capital to fund future exploration and development activities and other operations. The adverse conditions affecting the oil and natural gas industry in recent years have negatively impacted the ability of oil and natural gas companies, including Paramount, to access additional financing and the cost thereof. Any future equity financing may be on terms that are dilutive to existing shareholders. If Paramount was unable to access sufficient capital, it could have a material adverse effect on the Company's business, financial condition, results of operations and prospects.

## **MARKET PRICE OF COMMON SHARES**

The trading price of Paramount's Common Shares, and other securities of the Company outstanding from time to time, have experienced significant historical volatility and the prices of such securities could be subject to significant volatility in the future. Market price fluctuations in Paramount's securities may occur due to factors both related and unrelated to the Company, including but not limited to the Company's operating and financial results, the Company's financial condition, the Company's business prospects, the Company's results failing to meet forecasts or the expectations of analysts or investors, downward revisions in analysts' estimates, governmental regulatory action, adverse changes in general market conditions or economic trends, acquisitions, dispositions or other material public announcements by the Company or its competitors, macroeconomic developments, domestic and global commodity prices, current perceptions of the oil and gas industry and other factors.

## INDUSTRY COMPETITION

The oil and gas industry is highly competitive. Paramount competes with other industry participants in searching for, acquiring and developing reserves and prospective properties, processing, transporting and marketing products and accessing sources of capital. Producers compete to develop technological advancements to enhance well productivity and reduce costs. Other oil and natural gas companies may have greater financial, technical and human resources than Paramount that give them a competitive advantage over the Company in these areas.

## GOVERNMENT REGULATION

Paramount's operations are governed by numerous laws and regulations at the municipal, provincial, territorial and federal levels. These laws and regulations cover a wide range of issues including, without limitation, royalties, taxes (including income taxes), land tenure, drilling practices and obligations, production rates, the development and abandonment of oil and gas fields, the export of petroleum and natural gas and environmental protection. Governments may order the curtailment or restriction of production of oil, NGLs or natural gas and any such curtailments or restrictions may limit the Company's production of such commodities or the demand for certain of its products, including condensate for use as diluent for bitumen. See "*Industry Conditions – Export, Transportation and Curtailment*" for a description of the existing oil curtailment ordered by the Government of Alberta.

Regulatory approval processes often involve numerous stakeholders including aboriginal groups (who must be consulted with respect to potential impacts on treaty or other actual or asserted aboriginal rights) and other resource and surface rights holders. Changes to, or the failure to comply with, laws and regulations, potential regulatory and court interventions by stakeholders and delays in obtaining regulatory approvals could have a material adverse effect on the Company.

Challenges and delays to regulatory approvals to build pipelines and other infrastructure to provide additional access to markets for the oil and natural gas industry in Western Canada and uncertainty respecting the application of recently enacted or proposed regulations, have led to additional downward price pressure on oil, NGLs and natural gas produced in Western Canada and uncertainty and reduced confidence in the oil and natural gas industry in Western Canada. A continuation of these conditions could have a material adverse effect on the Company, including on its ability to raise additional capital.

Paramount's income tax and royalty filings are subject to subsequent audit and potential reassessment by government entities. The reassessment of filings could result, among other things, in additional obligations for income tax and royalties and interest and penalties thereon which could have a material adverse effect on the Company.

## ENVIRONMENTAL, HEALTH AND SAFETY LAWS AND REGULATIONS

Paramount's operations are subject to extensive federal, provincial, territorial and municipal laws and regulations that address environmental, health and safety matters relating to the exploration, development and production of oil and gas including the release of emissions or pollutants, the storage, handling, transportation and disposal of hazardous and other substances, the remediation of environmental damage, the protection of environmentally sensitive areas and of endangered and protected species and worker and operational safety. Compliance with these laws and regulations may impose substantial costs on Paramount and may subject Paramount to significant potential liabilities. Future changes in such legislation could result in stricter standards and enforcement, larger fines and increased costs of compliance, all of which could have a material adverse effect on Paramount's financial condition or results of operations.

Environmental laws may require parties to undertake or pay for remedial action or to pay damages regardless of fault. Environmental laws may also impose liability with respect to divested or terminated operations, even if the operations were divested or terminated many years ago.

In Alberta, Paramount is subject to regulations and directives of the Alberta Energy Regulator which require licensees of wells, pipelines and facilities to contribute to the Orphan Well Fund to cover the costs of suspending, abandoning, remediating and reclaiming wells, pipelines or other facilities when the licensees of those facilities become defunct or insolvent. In addition, the Alberta Energy Regulator has implemented requirements respecting the eligibility of prospective transferees of licenses for wells, pipelines and facilities in an effort to ensure that these transferees have the financial wherewithal to carry out their abandonment and reclamation obligations. These eligibility requirements may limit the number of potential buyers of oil and assets in Alberta and, in turn, adversely affect the Company's ability to sell certain assets or the price it is able to obtain for assets it does sell. The Alberta Energy Regulator has indicated that it is developing a risk assessment framework to better identify which companies might be unable to meet their abandonment and reclamation obligations. Regulatory changes to implement this framework are currently anticipated to be released in 2020. It is not possible to know what impact this new framework could have on the Company until further details of it are made public, but it is possible that it could adversely affect the Company in a number of ways, including by requiring the Company to accelerate the pace of its spending on abandonment and reclamation activities, imposing security requirements in respect of (and other restrictions on) the Company's acquisition of properties and the licensing of wells and facilities, increasing the timelines required to obtain or transfer licenses for wells and facilities and/or further restricting the number of potential buyers of assets that the Company may wish to sell.

Paramount's operations may result in spills, pipeline releases, or the discharge of hazardous materials which could result in the Company being subject to remediation and clean-up obligations and being exposed to potential liabilities for personal injuries and property and environmental claims. Environmental laws and standard contractual provisions in agreements for the acquisition of oil and gas properties impose liability on Paramount for environmental damages caused by previous owners. The payment of these environmental obligations and liabilities could have a material adverse effect on Paramount's financial condition and results of operations. In addition, the release of harmful substances in the environment or other environmental damage caused by Paramount's activities could result in the suspension or revocation of operating and environmental permits.

## **CLIMATE CHANGE AND GHG EMISSIONS**

Paramount faces direct and indirect risks from climate change that may have a material adverse effect on the Company's business, financial condition, results of operations and prospects. These risks include carbon taxes and the cost of complying with regulations aimed at reducing the emission of GHGs, the potential for reduced future demand for oil and natural gas, the potential for a shift of investment capital away from oil and natural gas producers, physical risks to Paramount's assets and operations from extreme weather events, litigation and reduced public support for pipelines and other oil and gas infrastructure projects.



As discussed under "*Greenhouse Gas Compliance and Reporting Obligations*", the Company is subject to provincial and federal regulations aimed at taxing or reducing emissions of GHGs. These regulations, together with any further regulations governments make in this area, could materially impact the oil and gas industry, including Paramount. Further, the imposition of such regulations could put the Company at a competitive disadvantage with oil and gas producers operating in jurisdictions where there are no, or less stringent, regulations. In addition, the ability of Cavalier Energy to develop its oil sands properties could be impacted by a CO<sub>2</sub> emissions limit of 100 megatonnes that the Alberta government has collectively imposed on the oil sands sector.

Global efforts to reduce GHG emissions through the adoption of energy sources that are alternatives to oil and natural gas or through the imposition of restrictions or standards designed to curb the consumption of oil and natural gas may reduce the demand for such products and adversely impact the prices received by producers, including Paramount.

Uncertainty among investors as to the impact of climate change and efforts to reduce emissions of GHGs on the regulatory, financial and operating conditions applicable to oil and natural gas producers, combined with the decision of some institutional investors to limit or divest investments in carbon intensive industries, may shift investment capital away from oil and natural gas producers and adversely impact the price of the Common Shares and the ability of Paramount to raise additional capital to fund future exploration and development activities and other operations.

Weather events pose a physical risk to Paramount's assets and operations and those of third-party processors and transporters upon which it relies. Depending on location, wells, facilities and pipelines may be susceptible to damage, loss or prolonged service interruption due to wildfires or flooding. Extreme cold may adversely impact drilling, service and maintenance operations necessary to grow and sustain production and avoid facility downtime. Paramount also requires reliable sources of water for many of its operations, which sources could be adversely affected by drought. To the extent that climate change may contribute to an increase in the frequency or severity of extreme weather events in the areas in which Paramount operates, the Company will face additional risk.

Certain municipalities and advocacy groups are pursuing class actions against oil and natural gas producers seeking to make such producers liable for climate change related harms. See "*Risk Factors – Litigation*".

A negative perception of the oil and natural gas industry due to climate change could reduce public support for major infrastructure projects, including pipelines that are necessary to relieve existing transportation constraints and enable future growth. Such lack of public support could influence governments to adopt policies and regulations that would make it more difficult to pursue or obtain approval for these projects.

## **DEPENDENCE ON SENIOR OFFICERS**

Paramount is highly dependent on its Chairman and President and Chief Executive Officer. The loss of this officer, or other senior officers, could impede the achievement of Paramount's objectives and could adversely affect Paramount's business and results of operations.



## HYDRAULIC FRACTURING

The Company utilizes horizontal, multi-stage hydraulic fracturing, and other technologies in its drilling and completion activities. Public concern over the hydraulic fracturing process has focused on a number of issues, including the completion fluids used in the fracturing process and their potential effect on fresh water aquifers, the rate of fresh water usage, the disposal of completion fluids and produced water and the potential for fracturing operations to contribute to low level seismic events (particularly in proximity to existing faults).

Hydraulic fracturing in Western Canada is subject to extensive regulations, including with respect to water usage, the safe disposal of completion fluids and produced water and the assessment, monitoring and reporting of induced seismicity. The Alberta Energy Regulation issued Subsurface Order No. 7 on December 9, 2019 which prohibits hydraulic fracturing operations within a defined area around Gleniffer Lake and Dickson Dam due to concerns about induced seismicity, which order impacts some of Paramount's East Shale Basin acreage. Additional regulatory requirements and restrictions may be imposed by federal and provincial governments in the future, including restrictions such as moratoriums on hydraulic fracturing within specified areas or requirements mandating the use of recycled water, that may limit Paramount's ability to conduct, or increase the cost of, hydraulic fracturing operations. This may have a material adverse effect on Paramount's assets, operations and prospects.

## RESERVES ESTIMATES

The reserves information contained herein and in the McDaniel Report are only estimates and the actual production and ultimate recovery of oil, NGLs and natural gas from the Company's properties may be greater or less than such estimates prepared by McDaniel.

Estimates of oil, NGLs and natural gas reserves require numerous assumptions including, but not limited to, the price at which such commodities can be sold, the costs of recovering, processing, transporting and selling such commodities, the availability of enhanced recovery techniques and governmental and other regulatory factors, such as royalty rates, taxes and environmental laws. A change in one or more of these factors, or other factors, could result in quantities of natural gas, NGLs, and oil previously estimated as reserves becoming unrecoverable.

The McDaniel Report has been prepared using certain forecast commodity price assumptions as set out under *"Reserves and Other Oil and Gas Information - Reserves Information - Summary of Pricing and Inflation Rate Assumptions"*. If Paramount realizes lower prices for crude oil, NGLs and natural gas and they are substituted for the price assumptions utilized in the McDaniel Report, the present value of estimated future net revenues for the Company's reserves would be reduced and the reduction could be significant. A decline in the market price of oil, NGLs and natural gas to an amount that is less than the cost of recovering them at a particular location would make the production of the affected oil, NGLs and natural gas reserves commercially uneconomic.

The estimates contained herein and in the McDaniel Report are based in part on the timing and success of activities the Company intends to undertake in future years. The reserves and estimated future net revenues contained herein and in the McDaniel Report will be reduced in future years to the extent that such activities do not achieve the production performance set forth herein and in the McDaniel Report, do not occur or, other than in the case of abandonment and reclamation activities, occur later than assumed in the McDaniel Report.

In addition, if estimates of reserves and the anticipated future net revenues associated with them are prepared by different independent engineers, or by the same engineers at different times, the results may vary substantially.

Furthermore, under IFRS, Paramount could be required to write-down the carrying value of its oil and natural gas properties if future oil, NGLs and natural gas prices become depressed, if cost estimates increase or if there are substantial downward revisions to Paramount's quantities of reserves. A write-down would result in a charge to net income and a reduction of shareholders' equity. Write-downs may also be required to be reversed if there is an increase in future oil, NGLs and natural gas oil prices, if cost estimates decrease or if there are substantial upward revisions to Paramount's quantities of reserves. Additional information on write-downs is included in the Company's audited consolidated financial statements and Management Discussion and Analysis for the year ended December 31, 2019, which can be found under the Company's profile on the SEDAR website at [www.sedar.com](http://www.sedar.com).

## **CREDIT RATINGS**

Paramount, and any debt it may issue, may be rated from time to time by various credit rating agencies and there is a risk that credit ratings may be downgraded. There is no assurance that the Company will continue to maintain any credit rating. Credit ratings may affect the Company's ability to gain access to debt financing and the price of such financing. In addition, Paramount's credit ratings may be important to customers or counterparties when Paramount seeks to engage in certain transactions.

## **SURFACE ACCESS**

The exploration for and development of natural gas, NGLs and oil reserves requires ongoing access to sites where wells are to be drilled and produced, and where gathering systems, pipelines and other facilities and infrastructure are to be constructed and operated. In recent years, the regulatory process for obtaining surface access rights for Crown land has become increasingly complex and time consuming, particularly in environmentally sensitive areas and where stakeholder consultation (including with aboriginal groups) is required. In addition, surface access rights may be granted subject to conditions that restrict operations to prescribed areas or times of year for various environmental reasons (including the protection of wildlife and wildlife habitat). There is a risk that certain areas may be completely closed to oil and gas activity due to environmental concerns. Road bans are frequently imposed during the spring breakup period and at other times because of wet conditions, snow, mud and rock slides, wildfires, wildlife migrations and other events, which can result in the Company being temporarily unable to access well sites and production facilities. If Paramount is unable to obtain required surface access rights on a timely basis, and on acceptable terms, or such access is restricted, interrupted or terminated, this could have a material adverse effect on the Company.

## **CONTROL OF OPERATIONS**

Paramount does not operate all of its properties, and to the extent a third-party operator fails to conduct operations in a timely or proper manner, Paramount could be adversely affected.

## **ESSENTIAL EQUIPMENT AND PERSONNEL**

Oil and natural gas exploration and development activities depend upon the availability of qualified personnel and drilling, completion and related equipment. Shortages of qualified personnel or equipment may delay Paramount's exploration and development activities.

### **THIRD-PARTY CREDIT RISK**

Paramount is exposed to third-party credit risk through its contractual arrangements, including with respect to agreements with marketers and purchasers of its oil, NGLs and natural gas production, agreements with current and future joint venture partners, hedging arrangements and of its investments of cash and equivalents. If any of these third-parties fail or are unable to meet their contractual obligations to the Company, this could have a material adverse effect on the Company. In addition, poor credit conditions in the industry may affect a joint venture partner's willingness to participate in the Company's capital programs, potentially delaying such programs and impacting the results thereof.

### **INVESTMENT RISK**

Paramount holds investments in the shares of both public and private entities. Any adverse change in the financial position, business or operations of the entities in which Paramount holds an investment may have a material adverse effect on the value of such investments. There is no assurance as to the ability of Paramount to sell these investments or the price it would receive if and when it chooses to sell such investments. Decreases in the value of Paramount's investments or the inability to sell investments could have a material adverse effect on the Company.

### **HEDGING, INTEREST RATES AND FOREIGN EXCHANGE RATES**

The nature of Paramount's operations and capital structure exposes it to risks from fluctuations in commodity prices, foreign exchange rates and interest rates. Paramount monitors and, from time-to-time, utilizes derivative and/or physical forward delivery contracts to manage its exposure to these risks. Paramount could be required to make cash payments to settle outstanding contracts or lose the cost of derivative premiums paid. In addition, contracts with a fixed or ceiling price or rate could result in Paramount not receiving the full benefit of commodity price increases, changes in the value of the Canadian dollar or changes in interest rates. Paramount may suffer financial loss if it is unable to produce sufficient natural gas, NGLs or oil to fulfill its obligations under commodity hedging arrangements, and may be required to pay royalties based on a market or reference price that is higher than the fixed or ceiling price under such arrangements. Paramount may also be required to pay margin calls under, or amounts to settle, derivative contracts. In addition, Paramount may be exposed to credit related losses in the event of non-performance by a counterparty to a derivative contract.

Changes in commodity prices and changes in the US\$/CDN\$ dollar exchange rate can have a material impact on the Company's revenues. Changes in market interest rates can have a material impact on interest expense related to any floating rate debt and the market value of any fixed rate debt outstanding from time to time. Changes in the US\$/CDN\$ dollar exchange rate may also impact the Company's Canadian dollar equivalent interest costs related to any US\$ denominated debt outstanding from time to time and the principal amount of such debt, which may have a material impact on the Company's debt service costs and the cost of repaying principal amounts.

## **LITIGATION**

In the normal course of Paramount's operations, the Company may become involved in, named as a party to, or be the subject of, various legal proceedings, including regulatory proceedings, tax proceedings and other legal actions. The outcome of outstanding, pending or future proceedings cannot be predicted with certainty and may be determined adversely to the Company and as a result, could have a material adverse effect on the Company. Even if Paramount prevails in any such legal proceedings, they could be costly and time-consuming and divert the attention of management and key personnel from the Company's core business operations.

## **INFORMATION SECURITY**

The Company's information technology systems are subject to cyber security risks. While the Company invests in security systems to prevent and detect inappropriate or illegal access to its key systems and regularly reviews its policies, procedures and protocols for data and system integrity, there can be no assurance that critical systems will not be breached or compromised. Targeted attacks on Paramount's systems (or on systems of third-parties that it relies on), the failure or non-availability of a key information technology system or a breach of security measures designed to protect Paramount's information technology systems could result in the theft, misuse, modification or destruction of information, including trade secrets and confidential business information, and cause disruptions to various systems and equipment (which could potentially include wells, production facilities or pipelines), creating risks of production loss, environmental damage and personal injury.

## **UNFORESEEN TITLE DEFECTS, EXPIRATION OF LICENSES AND LEASES, AND LAND CLAIMS**

Unforeseen title defects may result in the loss of entitlement to production and reserves. The Company conducts title reviews in accordance with industry practice when it acquires oil and natural gas properties, however such reviews do not guarantee that an unforeseen defect in the chain of title will not arise and defeat the Company's title to the assets.

The Company's properties are held in the form of working interests in oil and gas licenses and leases. Failure to meet the rental, drilling and other requirements of such licenses or leases will result in their termination or expiry. To the extent Paramount fails, or is financially unable, to continue prospective oil and gas licenses this could have a material adverse effect on the Company.

Aboriginal groups may have recognized aboriginal rights over portions of Paramount's oil and gas properties. Accordingly, consultation with such groups is required in connection with Paramount's exploration and development activities on such properties, and in certain cases accommodations may be required for infringements of these aboriginal rights. In addition, there are outstanding claims to aboriginal title affecting areas in Northeast British Columbia and the Northwest Territories where Paramount's Liard Basin shale gas properties are located. If these claims are successful, it is possible that Paramount's interests in these properties could be adversely affected.

## **ROYALTY REGULATION**

On several occasions over the past decade, the Governments of Alberta and British Columbia have amended their legislation governing Crown royalties paid by oil and natural gas producers. Any further changes to this legislation that increases royalties would reduce the Company's cash flow and earnings, and could make future capital investments, or the Company's operations and assets, less economic.

## **VANDALISM AND TERRORISM**

Oil and gas industry participants, including Paramount, are a potential target for vandals and terrorists. The possibility that the Company's or third-party facilities or infrastructure may be direct targets of, or indirect casualties of, an act of vandalism or terrorism and the implementation of security measures as a precaution against such attacks may result in increased cost to the Company's business. If any of the Company's properties, wells, facilities or infrastructure or those of third-parties that the Company utilizes are the subject of a serious act of vandalism, or a terrorist attack, it may have a material adverse effect on the Company.

## **CAVALIER ENERGY'S OIL SANDS AND CARBONATE BITUMEN PROPERTIES**

Cavalier Energy's oil sands and carbonate bitumen properties are prospective for in-situ bitumen recovery development but are at the early stages of their evaluation and development. Cavalier Energy's oil sands and carbonate bitumen properties currently have no production and there are no assurances that any of these properties will commence production, generate earnings, operate profitably or provide a return on investment at any time in the future. Any decision to develop any portion of Cavalier Energy's properties will be dependent on prevailing bitumen prices and the availability of capital.

## **TRANSFER AGENT AND REGISTRAR**

The Company's transfer agent and registrar is Computershare Trust Company of Canada at its principal offices in Calgary, Alberta and Toronto, Ontario.

## **INTEREST OF EXPERTS**

The Company's auditors are Ernst & Young LLP, Chartered Professional Accountants, Suite 2200, 215 – 2<sup>nd</sup> Street S.W., Calgary, Alberta, T2P 1M4. Ernst & Young LLP is independent in accordance with the Rules of Professional Conduct of the Chartered Professional Accountants of Alberta.

Information relating to Paramount's reserves in this annual information form was prepared by McDaniel as an independent qualified reserves evaluator. The principals of McDaniel own beneficially, directly or indirectly, less than one percent of any class of Paramount's securities.

## **ADDITIONAL INFORMATION**

Additional information relating to Paramount is available via the System for Electronic Document Analysis and Retrieval (SEDAR) at [www.sedar.com](http://www.sedar.com).

Additional information, including directors' and officers' remuneration, principal holders of Paramount's securities, and options to purchase securities, is included in the information circular for Paramount's most recent annual meeting of shareholders that involves the election of directors. Additional financial information is contained in Paramount's audited consolidated financial statements and Management's Discussion and Analysis for the year ended December 31, 2019.

**APPENDIX A**  
**REPORT ON RESERVES DATA BY INDEPENDENT QUALIFIED RESERVES EVALUATOR**

To the board of directors of Paramount Resources Ltd. (the "Company"):

1. We have evaluated the Company's reserves data as at December 31, 2019. The reserves data are estimates of proved reserves and probable reserves and related future net revenue as at December 31, 2019 estimated using forecast prices and costs.
2. The reserves data are the responsibility of the Company'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 shows the net present value of future net revenue (before deduction of income taxes) attributed to proved + probable reserves, estimated using forecast prices and costs and calculated using a discount rate of 10 percent, included in the reserves data of the Company evaluated for the year ended December 31, 2019, and identifies the respective portions thereof that we have evaluated and reported on to the Company's Management:

| Independent Qualified Reserves Evaluator | Effective Date of Evaluation Report | Location of Reserves | Net Present Value of Future Net Revenue - \$M<br>(before income taxes, 10% discount rate) |           |          |           |
|--|-------------------------------------|----------------------|---|-----------|----------|-----------|
|  |                                     |                      | Audited   | Evaluated | Reviewed | Total     |
| McDaniel                                 | December 31, 2019                   | Canada               | -   | 4,478,385 | -        | 4,478,385 |

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 reserves data that we reviewed but did not audit or evaluate.
7. We have no responsibility to update our report referred to in paragraph 5 for events and circumstances occurring after the effective date of our report.
8. Because the reserves data are based on judgments regarding future events, actual results will vary and the variations may be material.

Executed as to our report referred to above:

**MCDANIEL & ASSOCIATES CONSULTANTS LTD.**

/s/ **Brian R. Hamm, P. Eng**  
President & CEO

Calgary, Alberta, Canada  
March 3, 2020

**APPENDIX B**  
**REPORT OF MANAGEMENT AND DIRECTORS ON RESERVES DATA AND OTHER INFORMATION**

Management of Paramount Resources Ltd. (the "Company") is responsible for the preparation and disclosure of information with respect to the Company's oil and gas activities in accordance with securities regulatory requirements. This information includes reserves data.

An independent qualified reserves evaluator has evaluated the Company's reserves data. The report of the independent qualified reserves evaluator will be filed with securities regulatory authorities concurrently with this report.

The Reserves Committee of the board of directors of the Company has:

- (a) reviewed the Company'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 of the Company has reviewed the Company's procedures for assembling and reporting other information associated with oil and 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 the 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.

/s/ James H.T. Riddell  
President and Chief Executive Officer

/s/ Paul R. Kinvig  
Chief Financial Officer

/s/ R. Keith MacLeod  
Director

/s/ John C. Gorman  
Director

March 3, 2020

**APPENDIX C**  
**AUDIT COMMITTEE CHARTER**

(Adopted by the Board of Directors on May 19, 2005 with revisions to and including September 14, 2017)

**A. PURPOSE**

The overall purpose of the Audit Committee (the “Committee”) is to ensure that management of Paramount Resources Ltd. (the “Corporation”) has designed and implemented an effective system of internal financial controls and disclosure controls and procedures, to review and report on the integrity of the consolidated financial statements of the Corporation and to review the Corporation's compliance with regulatory and statutory requirements as they relate to financial statements, taxation matters and disclosure of material facts.

**B. COMPOSITION, PROCEDURES AND ORGANIZATION**

1. The Committee shall consist of at least three members of the Board of Directors (the “Board”) of the Corporation, all of whom shall be “independent”, as that term is defined in Sections 1.4 and 1.5 of National Instrument 52-110, Audit Committees.
2. All of the members of the Committee shall be “financially literate” (i.e. able to read and understand a set of financial statements that present a breadth and level of complexity of accounting issues that are generally comparable to the breadth and complexity of those of the Corporation and that can be reasonably expected to be raised by the Corporation's financial statements).
3. The Board shall appoint the members of the Committee. The Board may at any time remove or replace any member of the Committee and may fill any vacancy in the Committee.
4. Unless the Board shall have appointed a chair of the Committee, the members of the Committee shall elect a chair from among their members.
5. The Corporate Secretary of the Corporation shall be the secretary of the Committee, unless otherwise determined by the Committee.
6. The quorum for meetings shall be a majority of the members of the Committee, present in person or by telephone or other telecommunication device that permits all persons participating in the meeting to speak and to hear each other.
7. The Committee shall have access to such officers and employees of the Corporation and to the Corporation's external auditors, and to such information respecting the Corporation, as it considers necessary or advisable in order to perform its duties and responsibilities.
8. Meetings of the Committee shall be conducted as follows:
  - (a) the Committee shall meet at least four times annually at such times and at such locations as may be requested by the chair of the Committee. The external auditors, the Chief Executive Officer or any member of the Committee may request a meeting of the Committee;
  - (b) the external auditors shall receive notice of and have the right to attend all meetings of the Committee;
  - (c) the following management representatives shall be invited to attend all meetings, except executive sessions and private sessions with the external auditors:



President and Chief Executive Officer  
Chief Financial Officer  
Controller  
Corporate Secretary

- (d) other management representatives shall be invited to attend as necessary or desirable
  - (e) as necessary or desirable but in any case at least quarterly, the Committee will meet with members of management and representatives of the external auditors, in separate executive sessions to discuss any matters that the Committee or any of these groups believes should be discussed privately; and
  - (f) the Committee shall meet in camera, without management, during or after any Committee meeting.
9. The external auditors shall report directly to the Committee and the external auditors and internal auditors (if any) shall have a direct line of communication to the Committee through its chair and may bypass management if deemed necessary. The Committee, through its chair, may contact directly any employee of the Corporation as it deems necessary, and any employee may bring before the Committee any matter involving questionable, illegal or improper financial practices or transactions.
10. The Committee may retain, at the Corporation's expense, special legal, accounting or other consultants or experts it deems necessary in the performance of its duties and may set and pay the compensation for any advisor engaged. The Committee will notify the Chairman of the Corporate Governance Committee whenever independent consultants are engaged.

## **C. ROLES AND RESPONSIBILITIES**

1. The overall duties and responsibilities of the Committee shall be as follows:
- (a) to assist the Board in the discharge of its responsibilities relating to the Corporation's accounting principles, reporting practices and internal controls and its approval of the Corporation's annual and quarterly consolidated financial statements and management's discussion and analysis;
  - (b) to establish and maintain a direct line of communication with the Corporation's internal (if any) and external auditors and assess their performance;
  - (c) to ensure that the management of the Corporation has designed, implemented and is maintaining an effective system of internal financial controls and disclosure controls and procedures;
  - (d) to periodically review the audit and non-audit services pre-approval policy and recommend to the Board any changes which the Committee deems appropriate;
  - (e) to periodically consider whether there is a need to outsource internal audit functions or create an internal audit department;
  - (f) to receive and review complaints received pursuant to the Corporation's Whistleblower Policy and oversee and provide direction on the investigation and resolution of such concerns and to periodically review the said policy and recommend to the Board changes which the Committee may deem appropriate;
  - (g) to report regularly to the Board on the fulfillment of its duties and responsibilities;

- (h) to identify and monitor the management of the principal risks that could impact the financial reporting of the Corporation; and
  - (i) review and approve the Corporation's hiring policies regarding partners, employees and former partners and employees of the present and former external auditors of the Corporation.
2. The duties and responsibilities of the Committee as they relate to the external auditors shall be as follows:
- (a) to be directly responsible for overseeing the work of the external auditors engaged for the purpose of preparing or issuing an auditor's report or performing other audit, review or attest services for the Corporation, including the resolution of disagreements between management and the external auditors regarding financial reporting;
  - (b) to recommend to the Board a firm of external auditors to be nominated for appointment by the shareholders of the Corporation, and to monitor and verify the independence of such external auditors;
  - (c) to review and approve the fee, scope and timing of the audit and other related services rendered by the external auditors;
  - (d) review the audit plan of the external auditors prior to the commencement of the audit;
  - (e) to review with the external auditors, upon completion of their audit:
    - (I) contents of their report;
    - (II) scope and quality of the audit work performed;
    - (III) adequacy of the Corporation's financial and auditing personnel;
    - (IV) co-operation received from the Corporation's personnel during the audit;
    - (V) internal resources used;
    - (VI) significant transactions outside of the normal business of the Corporation;
    - (VII) significant proposed adjustments and recommendations for improving internal accounting controls, accounting principles or management systems; and
    - (VIII) the non-audit services provided by the external auditors, as pre-approved pursuant to the audit and non-audit services pre-approval policy;
  - (f) to discuss with the external auditors the quality and not just the acceptability of the Corporation's accounting principles;
  - (g) to review any unresolved issues between management and the external auditors that could affect the financial reporting or internal controls of the Corporation; and
  - (h) to implement structures and procedures to ensure that the Committee meets the external auditors on a regular basis in the absence of management.

3. The duties and responsibilities of the Committee as they relate to the internal control procedures of the Corporation are to:
- (a) review the appropriateness and effectiveness of the Corporation's policies and business practices which impact on the financial integrity of the Corporation, including those relating to insurance, accounting, information services and systems and financial controls, management reporting and risk management;
  - (b) review compliance under the Corporation's Code of Business Conduct Policy with those matters addressed in the policy which affect the financial integrity of the Corporation and to periodically review this policy and recommend to the Board changes which the Committee may deem appropriate; and
  - (c) periodically review the Corporation's financial and auditing procedures and the extent to which recommendations made by the internal accounting staff or by the external auditors have been implemented.
4. The Committee is also charged with the responsibility to:
- (a) review and recommend to the Board for its approval, the Corporation's and its subsidiaries, partnerships and joint venturers, as applicable, annual financial statements, management's discussion and analysis, annual information form and annual earnings press releases before the Corporation publicly discloses this information;
  - (b) review and approve the Corporation's and its subsidiaries, partnerships and joint venturers, as applicable, interim financial statements, interim management's discussion and analysis including the impact of unusual items and changes in accounting principles and estimates and report to the Board in due course with respect thereto and to review and approve the Corporation's interim earnings press releases before the Corporation publicly discloses this information;
  - (c) review and approve the financial sections of:
    - (I) the annual report to shareholders;
    - (II) the annual information form;
    - (III) prospectuses;
    - (IV) other public reports requiring approval by the Board; and
    - (V) press releases related thereto,and report to the Board with respect thereto;
  - (d) review regulatory filings and decisions as they relate to the Corporation's consolidated financial statements;
  - (e) review the appropriateness of the policies and procedures used in the preparation of the Corporation's consolidated financial statements and other required disclosure documents, and consider recommendations for any material change to such policies;
  - (f) review and report on the integrity of the Corporation's consolidated financial statements;
  - (g) review the minutes of any audit committee meeting of any subsidiary of the Corporation;

- (h) review with management, the external auditors and, if necessary, with legal counsel, any litigation, claim or other contingency, including tax assessments that could have a material effect upon the financial position or operating results of the Corporation and the manner in which such matters have been disclosed in the consolidated financial statements;
- (i) review the Corporation's compliance with regulatory and statutory requirements as they relate to financial statements, tax matters and disclosure of material facts; and
- (j) develop a calendar of activities to be undertaken by the Committee for each ensuing year related to the Committee's duties and responsibilities as set forth in this Charter and to submit the calendar in the appropriate format to the Board within a reasonable period of time following each annual general meeting of shareholders.

#### **D. ANNUAL REVIEW AND ASSESSMENT**

The Committee shall conduct an annual review and assessment of its performance, including compliance with this Charter and its role, duties and responsibilities, and submit such report to the Board.