

# BIRCHCLIFF

## ENERGY

**BIRCHCLIFF ENERGY LTD.**

**Year Ended December 31, 2017**

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**REVISED ANNUAL INFORMATION FORM**

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**March 21, 2018**

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#### NOTICE TO READER

This Notice accompanies the Revised Annual Information Form for Birchcliff Energy Ltd. dated March 21, 2018 for the year ended December 31, 2017 (the “**Revised AIF**”). The Revised AIF supersedes and replaces the Annual Information Form dated March 14, 2018 for the year ended December 31, 2017, which was filed on SEDAR on March 14, 2018 (the “**Original AIF**”). The Revised AIF corrects the values in the columns “*Future Net Revenue Before Income Taxes (Discounted at 10%/year) (MM\$)*” and “*Unit Value Before Income Taxes (Discounted at 10%/year) (\$/boe)*” in the table on page 30 of the Original AIF under the heading “*Statement of Reserves Data and Other Oil and Gas Information – Disclosure of Reserves Data – Net Present Value of Future Net Revenue by Product Type*” and added the words “of the product type and associated by-products” to the footnote to the table. Specifically, the Revised AIF corrects the following errors: (A) in the total proved reserves category, (i) for Light Crude Oil and Medium Crude Oil, the amount of future net revenue before income taxes has been revised from 607.6 to 573.3 and the per unit value amount has been revised from 45.19 to 8.20; (ii) for Conventional Natural Gas, the amount of future net revenue before income taxes has been revised from 36.4 to 7.2 and the per unit value amount has been revised from 13.38 to 2.52; (iii) for Shale Gas, the amount of future net revenue before income taxes has been revised from 4,953.7 to 3,152.0 and the per unit value amount has been revised from 10.26 to 6.12; and (iv) for the Total, the amount of future net revenue before income taxes has been revised from 5,597.7 to 3,732.4 and the per unit value amount has been revised from 11.25 to 6.35; and (B) in the total proved plus probable reserves category, (i) for Light Crude Oil and Medium Crude Oil, the amount of future net revenue before income taxes has been revised from 1,018.2 to 1,125.7 and the per unit value amount has been revised from 40.91 to 8.46; (ii) for Conventional Natural Gas, the amount of future net revenue before income taxes has been revised from 57.5 to 15.2 and the per unit value amount has been revised from 12.24 to 3.11; (iii) for Shale Gas, the amount of future net revenue before income taxes has been revised from 6,365.7 to 3,967.3 and the per unit value amount has been revised from 9.72 to 5.59; and (iv) for the Total, the amount of future net revenue before income taxes has been revised from 7,441.5 to 5,108.1 and the per unit value amount has been revised from 10.86 to 6.03. In addition, in Appendix A: (A) in the table “*Summary of Reserves and Resources*” on page A-3 under the heading “*Summary of Discovered and Undiscovered Resources*”, the amount of best estimate contingent resources (development on hold) has been revised from 3,939.3 Bcfe to 3,939.9 Bcfe; and (B) in note 4 to the table on page A-9 under the heading “*Contingent Resources – Birchcliff’s Contingent Resource Projects*”, the amount of \$6.5 million has been changed to \$5.3 million. Other than as expressly set forth above, the Revised AIF does not, and does not purport to, update or restate the information in the Original AIF or reflect any events that occurred after the date of the Original AIF.

## GLOSSARY OF TERMS

In this Annual Information Form, the capitalized terms set forth below have the following meanings:

**"2016 Private Placement"** means the private placement by the Corporation of an aggregate of 3,000,000 Subscription Receipts to The Schulich Foundation at a price of \$6.25 per Subscription Receipt for aggregate gross proceeds of \$18,750,000, which closed on July 13, 2016.

**"2016 Public Offering"** means the bought deal offering by way of short form prospectus of an aggregate of 107,520,000 Subscription Receipts at a price of \$6.25 per Subscription Receipt for aggregate gross proceeds of \$672,000,000, which closed on July 13, 2016.

**"2016 Resource Assessment"** has the meaning set forth in Appendix A.

**"2017 Resource Assessment"** has the meaning set forth in Appendix A.

**"2018 Capital Program"** has the meaning set forth under the heading *"General Development of the Business – Recent Developments"*.

**"ABCA"** means the *Business Corporations Act* (Alberta).

**"AER"** means the Alberta Energy Regulator.

**"Alberta LLR Program"** has the meaning set forth under the heading *"Industry Conditions – Regulatory Authorities and Environmental Regulation – Alberta – Liability Management Rating Program"*.

**"AltaGas Facility"** has the meaning set forth under the heading *"Description of the Business – Principal Properties – The Montney/Doig Resource Play – Key Operating Areas – Gordondale"*.

**"Annual Information Form"** means this revised annual information form of the Corporation dated March 21, 2018 for the year ended December 31, 2017.

**"BIA"** means the *Bankruptcy and Insolvency Act* (Canada).

**"Birchcliff"** or the **"Corporation"** means Birchcliff Energy Ltd.

**"Board"** means the board of directors of the Corporation.

**"CCIR"** means the *Carbon Competitiveness Incentive Regulation* (Alberta).

**"CER"** has the meaning set forth under the heading *"Industry Conditions – Exports from Canada"*.

**"CETA"** has the meaning set forth under the heading *"Industry Conditions – NAFTA and Other Trade Agreements"*.

**"Charlie Lake Light Oil Resource Play"** has the meaning set forth under the heading *"General Development of the Business – Three Year History – 2017"*.

**"CLA"** means the *Climate Leadership Act* (Alberta).

**"CLP"** has the meaning set forth under the heading *"Industry Conditions – Climate Change Regulation – Alberta"*.

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

**"Common Shares"** means the common shares of the Corporation.

**"Consolidated Reserves Report"** has the meaning set forth under the heading *"Statement of Reserves Data and Other Oil and Gas Information – Disclosure of Reserves Data"*.

**"COR"** means a certificate of recognition.

“**CPTPP**” has the meaning set forth under the heading *“Industry Conditions – NAFTA and Other Trade Agreements”*.

“**CRA**” means the Canada Revenue Agency.

“**Credit Facilities**” has the meaning set forth under the heading *“Description of Capital Structure – Credit Facilities”*.

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

“**Current Market Price**” has the meaning set forth under the heading *“Description of Capital Structure – Share Capital – Preferred Shares – Series C Preferred Shares”*.

“**Deloitte**” means Deloitte LLP, independent qualified reserves evaluators of Calgary, Alberta.

“**Deloitte Price Forecast**” means Deloitte’s December 31, 2017 forecast price and cost assumptions set out under the heading *“Statement of Reserves Data and Other Oil and Gas Information – Pricing Assumptions – Forecast Prices Used in Estimates”*.

“**Deloitte Reserves Report**” has the meaning set forth under the heading *“Statement of Reserves Data and Other Oil and Gas Information – Disclosure of Reserves Data”*.

“**Directive 013**” means Directive 013: *Suspension Requirements for Wells* published by the AER.

“**Directive 067**” means Directive 067: *Eligibility Requirements for Acquiring and Holding Energy Licences and Approvals* published by the AER.

“**ESTMA**” means the *Extractive Sector Transparency Measures Act* (Canada).

“**FCA**” has the meaning set forth under the heading *“Legal Proceedings and Regulatory Actions”*.

“**GAAP**” means generally accepted accounting principles for publicly accountable enterprises in Canada which is currently in accordance with International Financial Reporting Standards as issued by the International Accounting Standards Board.

“**GHG**” means greenhouse gas.

“**Gordondale Acquisition**” means the acquisition by the Corporation of certain petroleum and natural gas properties, interests and related assets primarily located in the Gordondale area in the Province of Alberta pursuant to the Gordondale Acquisition Agreement, which acquisition closed on July 28, 2016.

“**Gordondale Acquisition Agreement**” means the asset sale agreement dated June 21, 2016 between the Corporation, Encana Corporation and a wholly-owned subsidiary of Encana Corporation, as amended, providing for the Gordondale Acquisition.

“**IAA**” has the meaning set forth under the heading *“Industry Conditions – Regulatory Authorities and Environmental Regulation – Federal”*.

“**IOGC**” has the meaning set forth under the heading *“Industry Conditions – Land Tenure”*.

“**IWCP**” has the meaning set forth under the heading *“Industry Conditions – Regulatory Authorities and Environmental Regulation – Alberta – Liability Management Rating Program”*.

“**LMR**” means liability management rating.

“**McDaniel**” means McDaniel & Associates Consultants Ltd., independent qualified reserves evaluators of Calgary, Alberta.

“**McDaniel Reserves Report**” has the meaning set forth under the heading *“Statement of Reserves Data and Other Oil and Gas Information – Disclosure of Reserves Data”*.

**“Modernized Framework”** has the meaning set forth under the heading *“Industry Conditions – Royalties and Incentives – The Royalty Framework in Alberta – Crown Royalties”*.

**“Montney/Doig Resource Play”** means Birchcliff’s Montney and Doig formations resource play located northwest of Grande Prairie, Alberta.

**“NAFTA”** means the North American Free Trade Agreement between the Governments of Canada, the United States and Mexico.

**“NCIB”** means the Corporation’s normal course issuer bid.

**“NEB”** means the National Energy Board.

**“NEB Act”** means the *National Energy Board Act* (Canada).

**“NGTL System”** means the pipeline system owned by Nova Gas Transmission Ltd., a subsidiary of TransCanada.

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

**“NI 51-102”** means National Instrument 51-102 – *Continuous Disclosure Obligations*.

**“NI 52-110”** means National Instrument 52-110 – *Audit Committees*.

**“OGCA”** means the *Oil and Gas Conservation Act* (Alberta).

**“OPEC”** means the Organization of the Petroleum Exporting Countries.

**“Options”** means stock options to purchase Common Shares.

**“Order”** has the meaning set forth under the heading *“Directors and Officers – Cease Trade Orders, Bankruptcies, Penalties or Sanctions”*.

**“Orphan Fund”** has the meaning set forth under the heading *“Industry Conditions – Regulatory Authorities and Environmental Regulation – Alberta – Liability Management Rating Program”*.

**“Pan-Canadian Framework”** has the meaning set forth under the heading *“Industry Conditions – Climate Change Regulation – Federal”*.

**“Part VI Regulations”** means the *National Energy Board Act Part VI (Oil and Gas) Regulations*.

**“Pembina Facility”** has the meaning set forth under the heading *“Description of the Business – Principal Properties – The Montney/Doig Resource Play – Key Operating Areas – Gordondale”*.

**“Performance Warrants”** means the performance warrants of the Corporation with each performance warrant providing the right to purchase one Common Share at a price of \$3.00 per Common Share, which expire on January 31, 2020.

**“Pouce Coupe Gas Plant”** means Birchcliff’s 100% owned and operated natural gas processing plant located in the Pouce Coupe area of Alberta.

**“Preferred Shares”** means the preferred shares of the Corporation as a class.

**“Previous Framework”** has the meaning set forth under the heading *“Industry Conditions – Royalties and Incentives – The Royalty Framework in Alberta – Crown Royalties”*.

**“Prior Consolidated Reserves Report”** means the consolidated reserves report prepared by Deloitte with an effective date of December 31, 2016.

**“Progress Disposition”** means the disposition of certain petroleum and natural gas properties, interests and related assets primarily located in the Progress area on the Charlie Lake Light Oil Resource Play pursuant to a purchase and sale agreement dated August 10, 2017, which disposition closed on October 2, 2017.

**“Reassessment”** has the meaning set forth under the heading *“Legal Proceedings and Regulatory Actions”*.

**“Redwater”** has the meaning set forth under the heading *“Industry Conditions – Regulatory Authorities and Environmental Regulation – Alberta – Liability Management Rating Program”*.

**“SEDAR”** means the System for Electronic Document Analysis and Retrieval.

**“Series A Preferred Shares”** means the cumulative redeemable preferred shares, Series A of the Corporation which were issued on August 8, 2012.

**“Series B Preferred Shares”** means the cumulative redeemable preferred shares, Series B of the Corporation which are issuable on the conversion of the Series A Preferred Shares.

**“Series C Preferred Shares”** means the cumulative redeemable preferred shares, Series C of the Corporation which were issued on June 14, 2013.

**“SGER”** has the meaning set forth under the heading *“Industry Conditions – Climate Change Regulation – Alberta”*.

**“Stock Option Plan”** means the Corporation’s stock option plan dated January 18, 2005, as amended and restated on April 21, 2005 and May 15, 2008.

**“Subscription Receipts”** means the 110,520,000 subscription receipts of the Corporation which were issued on July 13, 2016 pursuant to the 2016 Public Offering and the 2016 Private Placement.

**“Syndicated Credit Facility”** has the meaning set forth under the heading *“Description of Capital Structure – Credit Facilities”*.

**“TCC”** has the meaning set forth under the heading *“Legal Proceedings and Regulatory Actions”*.

**“TCC Decision”** has the meaning set forth under the heading *“Legal Proceedings and Regulatory Actions”*.

**“total capital expenditures”** means finding and development capital plus administrative assets.

**“TSX”** means the Toronto Stock Exchange.

**“UNFCCC”** has the meaning set forth under the heading *“Industry Conditions – Climate Change Regulation – Federal”*.

**“Veracel”** means Veracel Inc.

**“Veracel Arrangement”** has the meaning set forth under the heading *“Corporate Structure”*.

**“Western Canadian Sedimentary Basin”** means the vast sedimentary basin underlying Western Canada that is the source of most of Western Canada’s current oil and gas production.

**“Working Capital Facility”** has the meaning set forth under the heading *“Description of Capital Structure – Credit Facilities”*.

**“working interest”** means a percentage of ownership in an oil and gas property, obligating the owner to share in the costs of exploration, development and operations and granting the owner the right to share in production revenues after royalties are paid.

**“Worsley Disposition”** means the disposition of certain petroleum and natural gas properties, interests and related assets primarily located in the Worsley area on the Charlie Lake Light Oil Resource Play pursuant to a purchase and sale agreement dated August 1, 2017, which disposition closed on August 31, 2017.



## ABBREVIATIONS AND CONVERSIONS

### Abbreviations

The abbreviations set forth below have the following meanings:

#### Oil and Natural Gas Liquids

bbl	barrel
bbls	barrels
bbls/d	barrels per day
Mbbls	thousand barrels
MMbbls	million barrels
NGLs	natural gas liquids

#### Natural Gas

Bcf	billion cubic feet
GJ	gigajoule
GJ/d	gigajoules per day
Mcf	thousand cubic feet
Mcf/d	thousand cubic feet per day
MMcf	million cubic feet
MMcf/d	million cubic feet per day

#### Other

AECO	benchmark price for natural gas determined at the AECO 'C' hub in southeast Alberta
Bcfe	billion cubic feet of gas equivalent
boe	barrel of oil equivalent
boe/d	barrel of oil equivalent per day
CO <sub>2</sub> e	carbon dioxide equivalent
km	kilometres
Mboe	thousand barrels of oil equivalent
Mcfe	thousand cubic feet of gas equivalent
MM\$	millions of dollars
NPV	net present value of future net revenue
PIIP	petroleum initially-in-place
WTI	West Texas Intermediate, the reference price paid in U.S. dollars at Cushing, Oklahoma, for crude oil of standard grade

### Conversions

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

<u>From</u>	<u>To</u>	<u>Multiply By</u>
Mcf	cubic metres	28.317
cubic metres	cubic feet	35.315
bbls	cubic metres	0.159
cubic metres	bbls	6.289
feet	metres	0.305
metres	feet	3.281
miles	kilometres	1.609
kilometres	miles	0.621
acres	hectares	0.405
hectares	acres	2.471

## CONVENTIONS

Certain terms used herein are defined in NI 51-101, CSA Staff Notice 51-324 or the COGE Handbook and, unless the context otherwise requires, shall have the same meanings in this Annual Information Form as in NI 51-101, CSA Staff Notice 51-324 or the COGE Handbook, as the case may be.

Unless otherwise indicated, all information contained herein is given at or for the year ended December 31, 2017. Unless otherwise indicated, all dollar amounts are expressed in Canadian dollars and all references to “\$”, “CDN\$” or “dollars” are to Canadian dollars and all references to “US\$” are to United States dollars. All financial information contained in this Annual Information Form has been presented in accordance with GAAP. Words importing the singular number only include the plural, and vice versa, and words importing any gender include all genders.

## PRESENTATION OF OIL AND GAS RESERVES AND RESOURCES

Deloitte prepared the Consolidated Reserves Report, the Deloitte Reserves Report, the Prior Consolidated Reserves Report, the 2017 Resource Assessment and the 2016 Resource Assessment. McDaniel prepared the McDaniel Reserves Report. Such evaluations were prepared in accordance with the standards contained in NI 51-101 and the COGE Handbook that were in effect at the relevant time.

With respect to the disclosure of reserves contained herein relating to portions of Birchcliff’s properties, the estimates of reserves and future net revenue for individual properties may not reflect the same confidence level as estimates of reserves and future net revenue for all properties, due to the effects of aggregation. Estimates of future net revenue, whether calculated without discount or using a discount rate, do not represent fair market value.

With respect to the discovered resources (including contingent resources) disclosed in this Annual Information Form, there is uncertainty that it will be commercially viable to produce any portion of the resources. With respect to the undiscovered resources (including prospective resources) disclosed in this Annual Information Form, there is no certainty that any portion of the resources will be discovered. If discovered, there is no certainty that it will be commercially viable to produce any portion of the resources.

Unless otherwise indicated, all volumes of Birchcliff’s reserves and resources presented herein are on a “gross” basis and all volumes of Birchcliff’s resources presented herein are on an unrisks basis, meaning that they have not been adjusted for the chance of commerciality.

### Reserves Categories

Reserves are estimated remaining quantities of oil and natural gas and related substances anticipated to be recoverable from known accumulations, as of a given date, based on the analysis of drilling, geological, geophysical and engineering data; the use of established technology; and specified economic conditions, which are generally accepted as being reasonable.

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.
- **“Possible reserves”** are those additional reserves that are less certain to be recovered than probable reserves. It is unlikely that the actual remaining quantities recovered will exceed the sum of the estimated

proved plus probable plus possible reserves. There is a 10% probability that the quantities actually recovered will equal or exceed the sum of proved plus probable plus possible reserves.

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

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

- at least a 90% probability that the quantities actually recovered will equal or exceed the estimated proved reserves;
- at least a 50% probability that the quantities actually recovered will equal or exceed the sum of the estimated proved plus probable reserves; and
- at least a 10% probability that the quantities actually recovered will equal or exceed the sum of the estimated proved plus probable plus possible 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 are 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.

### **Development and Production Status of Reserves**

Each of the reserves categories (proved, probable and possible) 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 (e.g., 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.
  - o **“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.
  - o **“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 (e.g., when compared to the cost of drilling a well) is required to render them capable of production. They must fully meet the requirements of the reserves category (proved, probable, possible) 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.

## Resources and Production

Resources encompass all petroleum quantities that originally existed on or within the earth's crust in naturally occurring accumulations, including discovered and undiscovered (recoverable and unrecoverable) plus quantities already produced. Resources are classified as follows:

- Total PIIP is that quantity of petroleum that is estimated to exist originally in naturally occurring accumulations. It includes that quantity of petroleum that is estimated, as of a given date, to be contained in known accumulations, prior to production, plus those estimated quantities in accumulations yet to be discovered. "Total resources" is equivalent to "total PIIP".
- Discovered PIIP is that quantity of petroleum that is estimated, as of a given date, to be contained in known accumulations prior to production. The recoverable portion of discovered PIIP includes production, reserves and contingent resources; the remainder is unrecoverable.
- Contingent resources are those quantities of petroleum estimated, as of a given date, to be potentially recoverable from known accumulations using established technology or technology under development, but which are not currently considered to be commercially recoverable due to one or more contingencies.
- Undiscovered PIIP is that quantity of petroleum that is estimated, on a given date, to be contained in accumulations yet to be discovered. The recoverable portion of undiscovered PIIP is referred to as prospective resources; the remainder is unrecoverable.
- Prospective resources are those quantities of petroleum estimated, as of a given date, to be potentially recoverable from undiscovered accumulations by application of future development projects.
- Unrecoverable is that portion of discovered and undiscovered PIIP quantities which is estimated, as of a given date, not to be recoverable by future development projects. A portion of these quantities may become recoverable in the future as commercial circumstances change or technological developments occur; the remaining portion may never be recovered due to the physical/chemical constraints represented by subsurface interaction of fluids and reservoir rocks.
- Production is the cumulative quantity of petroleum that has been recovered at a given date.

## Uncertainty Ranges for Resources

Estimates of resource volumes can be categorized according to the range of uncertainty associated with the estimates. Uncertainty ranges are described in the COGE Handbook as low, best and high estimates as follows:

- A "low estimate" (1C) is considered to be a conservative estimate of the quantity that will actually be recovered. It is likely that the actual remaining quantities recovered will exceed the low estimate. If probabilistic methods are used, there should be at least a 90% probability (P90) that the quantities actually recovered will equal or exceed the low estimate.
- A "best estimate" (2C) is considered to be the best estimate of the quantity that will actually be recovered. It is equally likely that the actual remaining quantities recovered will be greater or less than the best estimate. If probabilistic methods are used, there should be at least a 50% probability (P50) that the quantities actually recovered will equal or exceed the best estimate.
- A "high estimate" (3C) is considered to be an optimistic estimate of the quantity that will actually be recovered. It is unlikely that the actual remaining quantities recovered will exceed the high estimate. If probabilistic methods are used, there should be at least a 10% probability (P10) that the quantities actually recovered will equal or exceed the high estimate.

## **Interest in Reserves, Resources, Production, Wells and Properties**

**“Gross”** means:

- (a) in relation to Birchcliff’s interest in production, reserves or resources, Birchcliff’s working interest (operating or non-operating) share before deduction of royalties and without including any royalty interests of Birchcliff;
- (b) in relation to wells, the total number of wells in which Birchcliff has an interest; and
- (c) in relation to properties, the total area of properties in which Birchcliff has an interest.

**“Net”** means:

- (a) in relation to Birchcliff’s interest in production, reserves or resources, Birchcliff’s working interest (operating or non-operating) share after deduction of royalty obligations, plus Birchcliff’s royalty interests in production or reserves;
- (b) in relation to Birchcliff’s interest in wells, the number of wells obtained by aggregating Birchcliff’s working interest in each of its gross wells; and
- (c) in relation to Birchcliff’s interest in a property, the total area in which Birchcliff has an interest multiplied by the working interest owned by Birchcliff.

## **Forecast Prices and Costs**

**“Forecast prices and costs”** means future prices and costs that are:

- (a) generally accepted as being a reasonable outlook of the future;
- (b) if, and only to the extent that, there are fixed or presently determinable future prices or costs to which Birchcliff is legally bound by a contractual or other obligation to supply a physical product, including those for an extension period of a contract that is likely to be extended, those prices or costs rather than the prices and costs referred to in paragraph (a).

## **SPECIAL NOTES TO READER**

### **Non-GAAP Measures**

This Annual Information Form uses “netback” which does not have a standardized meaning prescribed by GAAP and therefore may not be comparable to similar measures presented by other companies where similar terminology is used. “Netback” denotes petroleum and natural gas revenue less royalties, less operating expense and less transportation and marketing expense. Unless otherwise indicated, all netbacks are calculated on a per unit basis. Management believes that netback assists management and investors in assessing Birchcliff’s profitability and its operating results on a per unit basis to better analyze its performance against prior periods on a comparable basis. For additional information regarding non-GAAP measures, please see the Corporation’s management’s discussion and analysis for the year ended December 31, 2017.

### **Boe and Bcfe Conversions**

Boe amounts have been calculated by using the conversion ratio of 6 Mcf of natural gas to 1 bbl of oil and Bcfe amounts have been calculated by using the conversion ratio of 1 bbl of oil to 6 Mcf of natural gas. Boe and Bcfe amounts may be misleading, particularly if used in isolation. A boe conversion ratio of 6 Mcf to 1 bbl and a Bcfe conversion ratio of 1 bbl to 6 Mcf is based on an energy equivalency conversion method primarily applicable at the burner tip and does not represent a value equivalency at the wellhead. Given that the value ratio based on the

current price of crude oil as compared to natural gas is significantly different from the energy equivalency of 6:1, utilizing a conversion on a 6:1 basis may be misleading as an indication of value.

### **Resource (Drilling) Locations**

This Annual Information Form discloses a total of 1,755 contingent development pending resource locations on the Montney/Doig Resource Play as disclosed in Appendix A to this Annual Information Form, which represent the number of wells forecast to be drilled under the development plans for Birchcliff's contingent resource development pending projects. Of the 1,755 locations, 518 are proved locations, 241 are probable locations and 996 are unbooked locations. The 1,755 resource locations only pertain to the Montney/Doig Resource Play and do not include resource locations for any of the Corporation's other properties. The proved and probable locations are proposed drilling locations identified in the Consolidated Reserves Report that have proved or probable reserves, as applicable, attributed to them in the Consolidated Reserves Report. The unbooked locations do not have any proved or probable reserves attributed to them in the Consolidated Reserves Report. The unbooked locations were estimated by Deloitte based on Birchcliff's prospective acreage and an assumption as to the number of wells that can be drilled per section based on industry practice and an evaluation of applicable geologic, seismic, engineering, production and reserves information.

Birchcliff's ability to drill and develop these locations and the drilling locations on which Birchcliff actually drills wells depends on a number of uncertainties and factors, including, but not limited to, the availability of capital, equipment and personnel, oil and natural gas prices, capital and operating costs, inclement weather, seasonal restrictions, drilling results, additional geological, geophysical and reservoir information that is obtained, production rate recovery, gathering system and transportation constraints, the net prices received for commodities produced, regulatory approvals and regulatory changes. As a result of these uncertainties, there can be no assurance that the potential future drilling locations that Birchcliff has identified will ever be drilled or if Birchcliff will be able to produce oil, NGLs or natural gas from these or any other potential drilling locations. As such, Birchcliff's actual drilling activities may differ materially from those presently identified, which could adversely affect Birchcliff's business. While certain of the unbooked drilling locations have been derisked by drilling existing wells in relative close proximity to such unbooked drilling locations, some of the other unbooked drilling locations are farther away from existing wells where management has less information about the characteristics of the reservoir and therefore there is more uncertainty whether wells will be drilled in such locations and if drilled there is more uncertainty that such wells will result in additional proved or probable reserves, resources or production.

### **Operating Costs**

References in this Annual Information Form to "operating costs" exclude transportation and marketing costs.

### **Forward-Looking Information**

Certain statements contained in this Annual Information Form constitute forward-looking statements and information (collectively referred to as "**forward-looking information**") within the meaning of applicable Canadian securities laws. Such forward-looking information relates to future events or Birchcliff's future performance. All information other than historical fact may be forward-looking information. Such forward-looking information is often, but not always, identified by the use of words such as "seek", "plan", "expect", "project", "intend", "believe", "anticipate", "estimate", "forecast", "potential", "proposed", "predict", "budget", "continue", "targeting", "may", "will", "could", "might", "should" and other similar words and expressions. This information involves known and unknown risks, uncertainties and other factors that may cause actual results or events to differ materially from those anticipated in such forward-looking information. Birchcliff believes that the expectations reflected in the forward-looking information are reasonable in the current circumstances but no assurance can be given that these expectations will prove to be correct and such forward-looking information included in this Annual Information Form should not be unduly relied upon.

In particular, this Annual Information Form contains forward-looking information relating to the following: Birchcliff's plans and other aspects of its anticipated future financial performance, operations, focus, objectives,

strategies, opportunities, priorities and goals; Birchcliff's guidance regarding its 2018 Capital Program and its proposed exploration and development activities and the timing thereof (including estimates of capital expenditures in 2018, planned capital expenditures and capital allocation, the focus of, the objectives of and the anticipated results from the 2018 Capital Program, the number and types of wells to be drilled and brought on production, the financial and operational flexibility of the 2018 Capital Program, the potential to accelerate or decelerate capital expenditures, Birchcliff's expectation that the commodity price environment and industry conditions will continue to influence the general development of its business in 2018 and that Birchcliff may adjust the 2018 Capital Program to respond to changes in commodity prices and other material changes in the assumptions underlying the 2018 Capital Program); the performance characteristics of the Corporation's oil and natural gas properties and expected results from its assets (including the potential of Birchcliff's Montney/Doig Resource Play and statements that the Montney/Doig Resource Play is large enough to provide Birchcliff with an extensive inventory of repeatable and low-cost drilling opportunities that the Corporation expects will provide production and reserves growth for many years); Birchcliff's future plans for the Elmworth area; the proposed Phase VI expansion of the Pouce Coupe Gas Plant (including the anticipated processing capacity of the Pouce Coupe Gas Plant after the expansion, the anticipated timing of the expansion and the anticipated cost of the expansion); statements regarding the re-configuring of Phases V and VI to provide for shallow-cut capability; statements that additional tranches of service on TCPL's Canadian Mainline will become available later in 2018 and 2019; Birchcliff's competitive position; the treatment under and impact of existing and proposed governmental regulatory regimes (including the impact of climate change and GHG legislation on the Corporation, including the CCIR); estimates of reserves, resources and the net present values of future net revenue associated with Birchcliff's reserves and the best estimate of Birchcliff's development pending contingent resources; price forecasts; future development plans and other proposed exploration and development activities (including those relating to the Corporation's proved and probable undeveloped reserves); abandonment and reclamation costs and decommissioning obligations; future development costs and the anticipated funding thereof; the amount of undeveloped land on which Birchcliff expects the rights to explore, develop and exploit will expire within one year; Birchcliff's income tax horizon; Birchcliff's hedging activities, strategy and use of risk management techniques; estimates of production; projections of commodity prices and costs and supply and demand for crude oil and natural gas; expectations regarding the Corporation's ability to raise capital and to continually add to reserves through acquisitions and development; Birchcliff's dividend policy and the payment of dividends; statements relating to the NCIB (including potential purchases under the NCIB and the cancellation of Common Shares purchased under the NCIB); statements regarding Birchcliff's Credit Facilities (including the timing of semi-annual reviews); and Birchcliff's development pending contingent resource projects (including development plans, estimates of the total costs to achieve commercial production and to develop a project, the timelines of such projects, estimates of the dates of first commercial production and estimates of resource locations). Information relating to reserves is forward-looking as it involves the implied assessment, based on certain estimates and assumptions, that the reserves exist in the quantities predicted or estimated and that the reserves can profitably be produced in the future.

With respect to forward-looking information contained in this Annual Information Form, assumptions have been made regarding, among other things: Birchcliff's ability to continue to develop its assets and obtain the anticipated benefits therefrom; prevailing and future commodity prices and differentials, currency exchange rates, interest rates, inflation rates, royalty rates and tax rates; expected cash flow from operations; Birchcliff's future debt levels; the state of the economy and the exploration and production business; the economic and political environment in which Birchcliff operates; the regulatory framework regarding royalties, taxes and environmental laws; the sources of funding for Birchcliff's capital expenditure programs and other activities; anticipated timing and results of capital expenditures; the sufficiency of budgeted capital expenditures to carry out planned operations; results of future operations; future operating, transportation, marketing and general and administrative costs; the performance of existing and future wells, well production rates and well decline rates; well drainage areas; success rates for future drilling; reserves and resource volumes and Birchcliff's ability to replace and expand oil and gas reserves through acquisition, development or exploration; the impact of competition on Birchcliff; the availability of, demand for and cost of labour, services and materials; Birchcliff's ability to access capital; the ability to obtain financing on acceptable terms; the ability to obtain any necessary regulatory or other approvals in a timely manner; the ability of Birchcliff to secure adequate transportation for its products; Birchcliff's ability to market oil

and gas; and the availability of hedges on terms acceptable to Birchcliff. In addition to the foregoing assumptions, Birchcliff has made the following assumptions with respect to certain forward-looking information contained in this Annual Information Form:

- With respect to statements regarding the 2018 Capital Program (including estimates of capital expenditures), such program is based on the following commodity price assumptions during 2018: (i) an annual average WTI price of US\$61.00/bbl of oil; (ii) an annual average AECO price of CDN\$1.58/MMBtu of natural gas; (iii) an annual average Dawn price of CDN\$3.48/MMBtu; and (iv) an annual average wellhead natural gas price of \$2.32/Mcf. With respect to estimates of capital expenditures, such estimates assume that the 2018 Capital Program will be carried out as currently contemplated. The amount and allocation of capital expenditures for exploration and development activities by area and the number and types of wells to be drilled is dependent upon results achieved and is subject to review and modification by management on an ongoing basis throughout the year. Actual spending may vary due to a variety of factors, including commodity prices, industry conditions, results of operations and costs of labour, services and materials. In addition, any acquisitions and dispositions completed during 2018 could have an impact on Birchcliff's capital expenditures, production and adjusted funds flow for 2018, which impact could be material.
- With respect to statements regarding future wells to be drilled and brought on production and estimates of potential future drilling locations and opportunities, the key assumptions are: the continuing validity of the geological and other technical interpretations performed by Birchcliff's technical staff, which indicate that commercially economic volumes can be recovered from Birchcliff's lands as a result of drilling future wells; and that commodity prices and general industry conditions will warrant proceeding with the drilling of such wells.
- With respect to statements regarding the proposed Phase VI expansion of the Pouce Coupe Gas Plant, including the anticipated processing capacity of the Pouce Coupe Gas Plant after such expansion and the anticipated timing of such expansion, the key assumptions are that: future drilling is successful; there is sufficient labour, services and equipment available; Birchcliff will have access to sufficient capital to fund those projects; the key components of the plant will operate as designed; and commodity prices and general industry conditions will warrant proceeding with the construction of such facilities and the drilling of associated wells.
- With respect to estimates of reserves, resources and the net present values of future net revenue associated with Birchcliff's reserves and its best estimate of development pending contingent resources, the key assumption is the validity of the data used by Deloitte and McDaniel in their independent reserves evaluations.

Birchcliff's actual results, performance or achievements could differ materially from those anticipated in the forward-looking information as a result of both known and unknown risks and uncertainties including, but not limited to: the failure to realize the anticipated benefits of acquisitions and dispositions; general economic, market and business conditions which will, among other things, impact the demand for and market prices of Birchcliff's products and Birchcliff's access to capital; an inability to access sufficient capital from internal and external sources; fluctuations in the costs of borrowing; volatility of crude oil and natural gas prices; fluctuations in currency and interest rates; operational risks and liabilities inherent in oil and natural gas operations; the occurrence of unexpected events such as fires, equipment failures and other similar events affecting Birchcliff or other parties whose operations or assets directly or indirectly affect Birchcliff; uncertainties associated with estimating oil and natural gas reserves and resources; the accuracy of oil and natural gas reserves estimates and estimated production levels as they are affected by exploration and development drilling and estimated decline rates; geological, technical, drilling, construction and processing problems; uncertainty of geological and technical data; horizontal drilling and completions techniques and the failure of drilling results to meet expectations for reserves or production; uncertainties related to Birchcliff's future potential drilling locations; changes in tax laws, Crown royalty rates, environmental laws and incentive programs relating to the oil and natural gas industry and other actions by government authorities, including changes to the royalty and carbon tax regimes and the imposition or



reassessment of taxes; the cost of compliance with current and future environmental laws; political uncertainty and uncertainty associated with government policy changes; uncertainties and risks associated with pipeline restrictions and outages to third-party infrastructure that could cause disruptions to production; the ability to satisfy obligations under Birchcliff's firm marketing and transportation arrangements; the inability to secure adequate production transportation for Birchcliff's products; potential delays or changes in plans with respect to exploration or development projects or capital expenditures, including delays in the completion of Birchcliff's gas plants and other facilities; stock market volatility; loss of market demand; environmental risks, claims and liabilities; incorrect assessments of the value of acquisitions and exploration and development programs; shortages in equipment and skilled personnel; the absence or loss of key employees; uncertainties associated with the outcome of litigation or other proceedings involving Birchcliff; uncertainty that development activities in connection with its assets will be economical; competition for, among other things, capital, acquisitions of reserves, undeveloped lands, equipment and skilled personnel; uncertainties associated with credit facilities; counterparty credit risk; risks associated with Birchcliff's hedging program and the risk that hedges on terms acceptable to Birchcliff may not be available; risks associated with the declaration and payment of dividends, including the discretion of Birchcliff's Board to declare dividends; the failure to obtain any required approvals in a timely manner or at all; unforeseen difficulties in integrating acquired assets into Birchcliff's operations; variances in Birchcliff's actual capital costs, operating costs and economic returns from those anticipated; negative public perception of the oil and natural gas industry, including transportation, hydraulic fracturing and fossil fuels; management of Birchcliff's growth; the availability of insurance and the risk that certain losses may not be insured; and cyber-security issues.

Readers are cautioned that the foregoing lists of factors are not exhaustive. Additional information on these and other risk factors that could affect results of operations, financial performance or financial results are included under the heading "*Risk Factors*" in this Annual Information Form and in other reports filed with Canadian securities regulatory authorities from time to time.

Any future-orientated financial information and financial outlook information (collectively, "**FOFI**") contained in this Annual Information Form, as such terms are defined by applicable securities laws, is provided for the purpose of providing information about management's current expectations and plans relating to the future and is subject to the same assumptions, risk factors, limitations and qualifications as set forth in the above paragraphs. FOFI contained in this Annual Information Form was made as of the date of this Annual Information Form and Birchcliff disclaims any intention or obligation to update or revise any FOFI contained in this Annual Information Form, whether as a result of new information, future events or otherwise, unless required by applicable law. Readers are cautioned that any FOFI contained herein should not be used for purposes other than those for which it has been disclosed herein.

Management has included the above summary of assumptions and risks related to forward-looking information provided in this Annual Information Form in order to provide readers with a more complete perspective on Birchcliff's future operations. Readers are cautioned that this information may not be appropriate for other purposes.

The forward-looking information contained in this Annual Information Form is expressly qualified by the foregoing cautionary statements. The forward-looking information contained in this Annual Information Form is made as of the date of this Annual Information Form. Birchcliff is not under any duty to update or revise any of the forward-looking information except as expressly required by applicable securities laws.

#### **Access to Documents**

Any document referred to in this Annual Information Form and described as being filed on the Corporation's SEDAR profile at [www.sedar.com](http://www.sedar.com) may be obtained free of charge from Birchcliff at Suite 1000, 600 – 3<sup>rd</sup> Avenue S.W., Calgary, Alberta T2P 0G5.

## CORPORATE STRUCTURE

The Corporation was incorporated on July 6, 2004 under the ABCA as “1116463 Alberta Ltd.” and on September 10, 2004, the Corporation amended its articles to change its name to “Birchcliff Energy Ltd.” On January 18, 2005, the Corporation amalgamated under the ABCA with Scout Capital Corp., a public corporation, pursuant to a plan of arrangement under the ABCA to form an amalgamated corporation under the name “Birchcliff Energy Ltd.” On May 31, 2005, the Corporation amalgamated under the ABCA with Veracel, a private company, pursuant to a plan of arrangement under the ABCA to form an amalgamated corporation under the name “Birchcliff Energy Ltd.” (the “**Veracel Arrangement**”).

On August 3, 2012, the Corporation amended its articles to create the Series A Preferred Shares and the Series B Preferred Shares. On June 13, 2013, the Corporation amended its articles to create the Series C Preferred Shares. See “*Description of Capital Structure – Share Capital – Preferred Shares*” in this Annual Information Form.

The registered and head office of the Corporation is located at Suite 1000, 600 – 3<sup>rd</sup> Avenue S.W., Calgary, Alberta T2P 0G5.

The Corporation does not have any subsidiaries.

## GENERAL DEVELOPMENT OF THE BUSINESS

### Three Year History

A description of the significant developments in the business of the Corporation over the last three completed financial years is set forth below.

#### **2015**

On March 3, 2015, the Corporation announced the passing of Werner (Vern) A. Siemens, a founding shareholder and a director of Birchcliff, on March 2, 2015.

On May 11, 2015, the aggregate limit of Birchcliff’s credit facilities was increased to \$800 million from \$750 million. In addition to the increase in the credit facilities’ limit, Birchcliff’s syndicate of lenders also approved the consolidation of the Corporation’s previous revolving and non-revolving term credit facilities into three-year term extendible revolving credit facilities. Concurrently, the financial maintenance covenants contained in the prior credit facilities were removed.

On May 14, 2015, Mr. Dennis A. Dawson was elected as a director of the Corporation at the Corporation’s annual meeting of shareholders. See “*Directors and Officers*”.

#### **2016**

On May 11, 2016, the aggregate limit of Birchcliff’s credit facilities was decreased from \$800 million to \$750 million.

On July 28, 2016, the Corporation completed the Gordondale Acquisition for cash consideration of \$613.5 million, after closing adjustments and other related costs. The assets acquired pursuant to the Gordondale Acquisition are primarily located in the Gordondale area of Alberta, approximately 100 km northwest of Grande Prairie, Alberta and are located within Birchcliff’s Montney/Doig Resource Play in the Peace River Arch area of Alberta. The assets included high working interest operated production and a large contiguous land base which is immediately adjacent to Birchcliff’s existing Pouce Coupe properties. Pursuant to the Gordondale Acquisition, the Corporation acquired 143.5 (84.7 net) sections of land and approximately 26,000 boe/d (41% oil and NGLs) of production as at the closing date of the acquisition. The effective date of the Gordondale Acquisition was January 1, 2016.

The purchase price for the Gordondale Acquisition was primarily funded through the 2016 Public Offering and the 2016 Private Placement which closed concurrently on July 13, 2016. The aggregate gross proceeds of approximately \$690.8 million were held in escrow pending completion of the Gordondale Acquisition. In

connection with the closing of the Gordondale Acquisition on July 28, 2016, each Subscription Receipt was exchanged for one Common Share and the gross proceeds from the 2016 Public Offering and the 2016 Private Placement were released from escrow in order for Birchcliff to complete the Gordondale Acquisition. In connection with the closing of the Gordondale Acquisition, the Corporation's extendible revolving credit facilities were amended to increase the borrowing base to \$950 million from \$750 million.

On August 10, 2016, Ms. Rebecca J. Morley was appointed as a director of the Corporation. See *"Directors and Officers"*.

On November 9, 2016, the Corporation announced that the Board had approved a quarterly dividend policy in respect of its Common Shares. See *"Dividend and Distribution Policy"*. In addition, the Corporation announced that it had adopted an ongoing hedging strategy. See *"Statement of Reserves Data and Other Oil and Gas Information – Forward Contracts"*.

## **2017**

On March 1, 2017, the Corporation announced that the Board had declared a quarterly cash dividend of \$0.025 per Common Share for the calendar quarter ending March 31, 2017 on the Corporation's outstanding Common Shares. This was the first dividend paid by the Corporation on its Common Shares. See *"Dividend and Distribution Policy"*.

On March 21, 2017, the Corporation announced that it would pursue the sale of its Charlie Lake light oil resource play (the **"Charlie Lake Light Oil Resource Play"**) and that it had engaged a marketing agent to seek potential purchasers. The Corporation subsequently disposed of the majority of its assets on the Charlie Lake Light Oil Resource Play pursuant to the Worsley Disposition, which closed on August 31, 2017, and the Progress Disposition, which closed on October 2, 2017, as discussed in further detail below.

On May 10, 2017, the Corporation and its lenders agreed to an extension of the maturity dates of the Credit Facilities from May 11, 2018 to May 11, 2020 and to the borrowing base remaining unchanged at \$950 million. For additional information regarding the Credit Facilities, see *"Description of Capital Structure – Credit Facilities"*.

On May 11, 2017, Mr. James W. Surbey was elected as a director of the Corporation at the annual and special meeting of shareholders. On June 30, 2017, Mr. Surbey retired as the Vice-President, Corporate Development and Corporate Secretary of the Corporation. See *"Directors and Officers"*.

On August 1, 2017, the Corporation announced that it had entered into a definitive purchase and sale agreement with a private oil and gas company with respect to the Worsley Disposition. On August 31, 2017, the Corporation completed the Worsley Disposition for total consideration of approximately \$100 million (before adjustments), consisting of: (i) cash consideration of \$90 million; and (ii) securities of affiliates of the purchaser with a total value of \$10 million. The effective date of the Worsley Disposition was July 1, 2017. For further information regarding the details of the securities acquired by the Corporation pursuant to the Worsley Disposition, see Note 7 – *Investment in Securities* to the Corporation's audited annual financial statements for the year ended December 31, 2017.

On August 10, 2017, the Corporation announced that it had entered into a definitive purchase and sale agreement with respect to the Progress Disposition. On October 2, 2017, the Corporation completed the Progress Disposition for total consideration of \$31.7 million (before adjustments).

On November 8, 2017, Ms. Debra A. Gerlach was appointed as a director of the Corporation. See *"Directors and Officers"*.

On November 15, 2017, the Corporation announced that the TSX had accepted the Corporation's notice of intention to make the NCIB. See *"Description of Capital Structure – Share Capital – Common Shares"*.

## Recent Developments

On February 14, 2018, the Corporation announced that the Board had approved Birchcliff's 2018 capital expenditure budget of \$255 million. The Corporation's 2018 capital expenditure program (the "**2018 Capital Program**") reflects Birchcliff's long-term plan to continue the exploration and development of its low-cost natural gas, crude oil and liquids-rich assets on the Montney/Doig Resource Play. The 2018 Capital Program contemplates the drilling, completing, equipping and bringing on production of a total of 27 (27.0 net) wells during 2018 (14 in Pouce Coupe and 13 in Gordondale). The 2018 Capital Program also contemplates the completion of the Phase VI expansion of the Pouce Coupe Gas Plant and other strategic infrastructure projects to provide for future growth. See "*Description of the Business*".

Birchcliff expects that the commodity price environment and industry conditions will continue to influence the general development of its business in 2018. Birchcliff will monitor commodity prices and industry conditions and, where deemed prudent, will adjust the 2018 Capital Program to respond to changes in commodity prices and other material changes in the assumptions underlying the 2018 Capital Program. The 2018 Capital Program has been designed with financial and operational flexibility with the potential to accelerate or decelerate capital expenditures throughout the year, depending on commodity prices and industry conditions. In addition, the Corporation may make adjustments to its other business activities as appropriate. The Corporation's actual spending during 2018 may vary due to a variety of factors, including commodity prices, industry conditions, results of operations and costs of labour, services and material. Furthermore, asset acquisitions and dispositions completed during 2018 could have a material impact on the Corporation's capital expenditures, production and cash flows from operations. See "*Special Notes to Reader – Forward-Looking Information*".

## Significant Acquisitions

The Corporation did not complete any significant acquisitions during the financial year ended December 31, 2017 for which disclosure is required under Part 8 of NI 51-102.

The Corporation continues to evaluate potential acquisitions of all types of petroleum and natural gas and other energy-related assets and/or companies as part of its ongoing business. The Corporation is regularly in the process of evaluating several potential acquisitions at any one time, which individually or together could be material. Birchcliff cannot predict whether any current or future opportunities will result in one or more acquisitions for the Corporation. In addition, the Corporation may, in the future, complete financings of equity or debt (which may be convertible into equity) for purposes that may include financing of acquisitions, Birchcliff's operations and capital expenditures and repayment of indebtedness. See "*Risk Factors*".

## DESCRIPTION OF THE BUSINESS

### General

The Corporation is an intermediate oil and natural gas company based in Calgary, Alberta that is engaged in the business of exploring for, developing and producing natural gas, crude oil and NGLs in the Western Canadian Sedimentary Basin with operations concentrated within its one core area, the Peace River Arch of Alberta.

Within the Peace River Arch, Birchcliff is focused on its high-quality Montney/Doig Resource Play and the exploration and development of its low-cost natural gas, crude oil and liquids-rich assets on the play. The Corporation's Montney/Doig Resource Play is large enough to provide it with an extensive inventory of repeatable and low-cost drilling opportunities that the Corporation expects will provide production and reserves growth for many years.

Within the Montney/Doig Resource Play, the Corporation's operations are primarily concentrated in the Pouce Coupe and Gordondale areas of Alberta where it owns large contiguous blocks of high working interest land. At December 31, 2017, the Corporation operated 99% of its production. In addition, the Corporation owns and controls many of the significant facilities and infrastructure it relies upon to handle the majority of its production,

including its 100% owned and operated Pouce Coupe Gas Plant. All of the foregoing help the Corporation to control its operating costs and capital expenditures and expand its production.

The Common Shares, the Series A Preferred Shares and the Series C Preferred Shares are listed for trading on the TSX under the trading symbols “BIR”, “BIR.PR.A” and “BIR.PR.C”, respectively, and the Common Shares are included in the S&P/TSX Composite Index.

### **Principal Properties**

The following is a description of the Corporation’s principal oil and natural gas properties as at December 31, 2017. Unless otherwise stated, production volumes presented below are the Corporation’s average gross sales volumes for the period indicated, meaning Birchcliff’s working interest (operating or non-operating) share before the deduction of royalties and without including any royalty interests of Birchcliff.

#### ***Peace River Arch***

Birchcliff’s operations are concentrated within its one core area, the Peace River Arch, which is centred northwest of Grande Prairie, Alberta, adjacent to the Alberta/British Columbia border. The Peace River Arch is considered by management to be one of the most desirable natural gas and light oil drilling areas in North America. The Peace River Arch is one of the most prolific natural gas and oil producing areas of the Western Canadian Sedimentary Basin and is generally characterized by multiple horizons with a myriad of structural, stratigraphic and hydrodynamic traps. There is an abundance of resource plays, related in part to the proximity of the area to the Deep Basin, where generation and trapping of hydrocarbons preferentially occurs.

The Peace River Arch provides all-season access that allows the Corporation to drill, equip and tie-in wells on an almost continuous basis. In addition, the Corporation has control of and/or access to infrastructure in the Peace River Arch, which helps the Corporation to control operating costs and expand production.



#### ***The Montney/Doig Resource Play***

##### Overview

Birchcliff’s Montney/Doig Resource Play is centred approximately 95 km northwest of Grande Prairie, Alberta. Annual average production in 2017 for the play was 65,700 boe/d. In 2017, the Montney/Doig Resource Play accounted for approximately:

- 96% of the Corporation’s total capital expenditures;
- 97% of the Corporation’s total corporate annual average production;

- 98% of the Corporation's total annual average natural gas production, 80% of the Corporation's total annual average light oil production and 99% of the Corporation's total annual average NGLs production; and
- 99% of the Corporation's total corporate proved plus probable reserves effective December 31, 2017.

At December 31, 2017, Birchcliff held 349.4 gross sections of land on the Montney/Doig Resource Play.

Within the Montney/Doig Resource Play, the Corporation is focused on two key operating areas, Pouce Coupe and Gordondale. These two key operating areas are essentially contiguous and collectively represented approximately 97% of the Corporation's total annual average production in 2017. The Corporation has established two geographically-organized teams, the Pouce Coupe team and the Gordondale team, to manage these two key operating areas. These teams each have a full complement of highly skilled technical professionals, including engineers, geoscientists and landmen.

#### Attributes

Birchcliff characterizes its Montney/Doig Resource Play as a regionally pervasive, continuous, low-permeability hydrocarbon accumulation or system that typically requires intensive stimulation to produce. The production characteristics of this play generally include steep initial declines that rapidly trend to much lower decline rates, yielding long-life production and reserves. The play exhibits a statistical distribution of estimated ultimate recoveries and therefore provides a repeatable distribution of drilling opportunities. Birchcliff's Montney/Doig Resource Play is ideally suited for the application of horizontal drilling and multi-stage fracture stimulation technology.

As more wells are drilled into a resource play, there is a substantial decrease in both the geological and technical risks. Over the past 13 years, Birchcliff has worked to de-risk its Montney/Doig Resource Play by drilling both vertical and horizontal exploration wells in order to develop an in-depth understanding of the oil and gas pools, rock properties and petrophysical characteristics and reservoir parameters. The Corporation designs, tests and evaluates its drilling, completion and production technologies and practices to achieve continual improvements in productivity and expected ultimate recoveries in order to drive down capital and operating costs. The Corporation's pool delineation strategy de-risks future development and helps to reduce future costs as new well pads and infrastructure are designed and built to support multiple horizontal well locations and increased production.

#### Geology

The Montney/Doig Resource Play in Birchcliff's areas of operations is approximately 300 metres (1,000 feet) thick. The play has a large areal extent covering in excess of 50,000 square miles. The Montney/Doig is composed of a high percentage of hard minerals and a very low percentage of clay minerals resulting in exceptional "fracability". This, combined with the current stress regime, results in the rock shattering more like glass in a complex fracture style versus a simple bi-wing style. The rock parameters also yield exceptional fracture stability; the fractures stay open due to low proppant embedment. This is a key contributing factor to the low terminal declines and large estimated ultimate recoveries of the play. Unlike most shale gas plays that are predominantly shale, the Montney/Doig is classified by management as a hybrid resource play because it is comprised of gas saturated rock with both tight silt and sand reservoir rock interlayered with shale gas source rock. This results in relatively high permeability and productivity rates.

Hydrodynamics is another important attribute for resource plays. A large portion of the Montney/Doig Resource Play is over-pressured which reduces the potential for significant water production. The Pouce Coupe and Gordondale areas are predominantly over-pressured which also results in higher gas in-place. The Montney and a majority of the Doig were deposited in a lower to middle shore face environment that is regionally extensive and results in a widespread style deposit that provides for more repeatable results.

Part of Birchcliff's long-term strategy is to continue to explore and delineate the Montney/Doig Resource Play, both geographically and stratigraphically. The Montney/Doig Resource Play exists in two geological formations (the Montney and the Doig) and Birchcliff has divided the geologic column in its areas of operations into six drilling intervals from the youngest (top) to the oldest (bottom): (i) the Basal Doig/Upper Montney; (ii) the Montney D4; (iii) the Montney D3; (iv) the Montney D2; (v) the Montney D1; and (vi) the Montney C. At December 31, 2017, the Corporation has successfully drilled and cased an aggregate of 348 (342.8 net) Montney/Doig horizontal wells (which includes 87 (81.8 net) wells that were acquired in connection with the Gordondale Acquisition), consisting of 75 (73.5 net) wells in the Basal Doig/Upper Montney interval, 12 (12.0 net) wells in the Montney D4 interval, 13 (13.0 net) wells in the Montney D2 interval, 247 (243.3 net) wells in the Montney D1 interval and 1 (1.0 net) well in the Montney C interval. To date, the Corporation has not drilled any wells in the Montney D3 interval.

#### Key Operating Areas

The following is a brief description of the Corporation's two key operating areas within the Montney/Doig Resource Play:

##### Pouce Coupe

The Pouce Coupe key operating area is located west and northwest of Grande Prairie, Alberta and consists of the Corporation's properties in Pouce Coupe and Elmworth. At December 31, 2017, the Corporation held an aggregate of 333.4 (314.1 net) sections of land in the Pouce Coupe key operating area. Annual average production in 2017 for the Pouce Coupe key operating area was 39,092 boe/d (38,704 boe/d in Pouce Coupe and 388 boe/d in Elmworth).

In 2017, the Pouce Coupe key operating area accounted for approximately:

- 65% of the Corporation's total capital expenditures;
- 58% of the Corporation's total corporate annual average production; and
- 70% of the Corporation's total annual average natural gas production, 1% of the Corporation's total annual average light oil production and 19% of the Corporation's total annual average NGLs production.

Significant infrastructure being used by Birchcliff in the area includes the Pouce Coupe Gas Plant. See *"Description of the Business – Facilities"* for further information regarding the Pouce Coupe Gas Plant.

In 2017, the Corporation drilled 37 (37.0 net) Montney/Doig horizontal natural gas wells and 1 (1.0 net) Montney/Doig vertical science and technology well in Pouce Coupe. The Corporation's 2018 Capital Program contemplates the drilling of a total of 14 (14.0 net) wells in the Pouce Coupe area and the completion of Phase VI of the Pouce Coupe Gas Plant in 2018. See *"General Development of the Business – Recent Developments"* and *"Description of the Business – Facilities"* for further information regarding the 2018 Capital Program and the Phase VI expansion of the Pouce Coupe Gas Plant.

With respect to Elmworth, Birchcliff previously drilled two horizontal exploration wells in the Montney D4 interval in the Elmworth area, one in 2014 and one in 2015. As part of Birchcliff's future growth plans for its Montney/Doig Resource Play, Birchcliff has done some preliminary planning and other work for a proposed 40 MMcf/d natural gas processing plant in the Elmworth area. Birchcliff had previously planned to have this proposed plant come on-stream in the fall of 2021; however, given current commodity prices and industry conditions, Birchcliff has made the decision to delay the construction of this plant.

##### Gordondale

The Gordondale key operating area is located northwest of Grande Prairie, Alberta and consists solely of the Corporation's properties in Gordondale. At December 31, 2017, the Corporation held an aggregate of 137.0 (84.2 net) sections of land in the Gordondale key operating area. Annual average production in 2017 for the Gordondale key operating area was 26,608 boe/d.

In 2017, the Gordondale key operating area accounted for approximately:

- 31% of the Corporation's total capital expenditures;
- 39% of the Corporation's total corporate annual average production; and
- 28% of the Corporation's total annual average natural gas production, 79% of the Corporation's total annual average light oil production and 80% of the Corporation's total annual average NGLs production.

Significant infrastructure being used by Birchcliff in the area includes a deep-cut sour gas processing facility in Gordondale which is owned and operated by AltaGas (the "**AltaGas Facility**") and Pembina's fractionation facility at Redwater, Alberta (the "**Pembina Facility**"). See "*Description of the Business – Processing Arrangements*" for further information regarding Birchcliff's processing arrangements at these facilities.

In 2017, the Corporation drilled 16 (16.0 net) Montney horizontal oil and natural gas wells in Gordondale. The Corporation's 2018 Capital Program contemplates the drilling of a total of 13 (13.0 net) wells in the Gordondale area in 2018. See "*General Development of the Business – Recent Developments*" for further information regarding the 2018 Capital Program.

### **Other Properties**

In addition to the Corporation's Pouce Coupe and Gordondale key operating areas, the Corporation also has other miscellaneous properties, including in the Balsam, Bonanza, Hill, Teepee and Bezanson areas of Alberta. None of these properties are material to the Corporation.

### **Landholdings**

The Corporation's land base primarily consists of large contiguous blocks of high working interest acreage located near facilities owned and/or operated by Birchcliff or near third-party infrastructure. The Corporation's land activities during 2017 included: (i) the acquisition of 51.5 (54.0 net) sections of Crown and third-party lands; and (ii) the disposition of 346.3 (309.8 net) sections, including 191.8 (185.3 net) sections of land pursuant to the Worsley Disposition and 45.5 (35.7 net) sections of land pursuant to the Progress Disposition and including 80.8 (73.8 net) sections of land that expired in 2017. The Corporation's undeveloped land base at December 31, 2017 was 262,318.4 (238,705.5 net) acres, or 409.9 (373.0 net) sections, with a 91% average working interest.

### **Drilling Program and Technology**

Birchcliff drilled a total of 54 (54.0 net) wells during 2017, consisting of 37 (37.0 net) Montney/Doig horizontal natural gas wells in the Pouce Coupe area, 1 (1.0 net) Montney/Doig vertical science and technology well in the Pouce Coupe area and 16 (16.0 net) Montney horizontal oil and natural gas wells in the Gordondale area.

Birchcliff actively employs the evolving technology utilized by the industry regarding horizontal well drilling and the related multi-stage fracture stimulation (MSF) technology. Birchcliff is currently utilizing multi-well pad drilling which allows it to reduce its per well costs, as well as its environmental footprint.

### **Facilities**

During 2017, the Corporation spent approximately \$132.4 million on facilities and infrastructure. In 2018, the Corporation expects to spend approximately \$66.9 million on facilities and infrastructure, including approximately \$25.7 million on the Phase VI expansion of the Pouce Coupe Gas Plant as discussed in further detail below.



The following table sets forth the major facilities in which the Corporation held an interest at December 31, 2017:

<b>Facility Description<sup>(1)</sup></b>	<b>Area and Location</b>	<b>Birchcliff Operated?</b>	<b>Working Interest</b>
Pouce Coupe Gas Plant	Pouce Coupe (03-22-78-12W6M)	Yes	100%
Oil battery	Gordondale (02-06-79-11W6M)	Yes	100%
Oil battery	Gordondale (07-29-78-11W6M)	Yes	100%
Gas plant	Gordondale (01-01-78-10W6M)	No	~13%

(1) The Corporation does not have a working interest in either the AltaGas Facility or the Pembina Facility.

At December 31, 2017, Birchcliff also held various interests in numerous other gas plants, oil batteries, compressors, facilities and infrastructure.

The following is a more detailed description of the Pouce Coupe Gas Plant:

### ***Pouce Coupe Gas Plant***

Birchcliff's 100% owned and operated Pouce Coupe Gas Plant, which is currently licensed to process up to 260 MMcf/d of natural gas, is located in the heart of the Corporation's Montney/Doig Resource Play in the Pouce Coupe area. The Pouce Coupe Gas Plant is the cornerstone of the Corporation's strategy to develop its Montney/Doig Resource Play and to control and expand its production on the play. The strategically situated site for the Pouce Coupe Gas Plant enables the Corporation to control and operate all essential infrastructure from wellhead to sales point. The low per unit operating costs of the Pouce Coupe Gas Plant and related infrastructure give the Corporation a strong competitive advantage over other producers paying for third-party natural gas processing.

The Pouce Coupe Gas Plant meets or exceeds all AER and Alberta Environment requirements. The facility employs energy efficient equipment to optimize performance and keep operating costs low. The Pouce Coupe Gas Plant uses an amine system to remove sulphur content and refrigeration to meet pipeline dew point specifications. Acid gas is injected into a high quality reservoir via two wells located at or adjacent to the site of the Pouce Coupe Gas Plant.

The Pouce Coupe Gas Plant has been constructed in five separate phases. On March 20, 2010, Phase I commenced operation with a processing capacity of 30 MMcf/d. On November 2, 2010, Phase II of the Pouce Coupe Gas Plant commenced operation bringing the processing capacity to 60 MMcf/d. On October 2, 2012, Phase III of the Pouce Coupe Gas Plant commenced operation bringing the licensed processing capacity to 150 MMcf/d. In September 2014, the Corporation completed the Phase IV expansion of the Pouce Coupe Gas Plant which increased the processing capacity to 180 MMcf/d. In September 2017, the Corporation completed the Phase V expansion of the Pouce Coupe Gas Plant which increased the processing capacity to 260 MMcf/d.

During 2018, the Corporation expects to complete the 80 MMcf/d Phase VI expansion of the Pouce Coupe Gas Plant which will increase the processing capacity from 260 MMcf/d to 340 MMcf/d. Field construction commenced in January 2018 and the Corporation currently anticipates that Phase VI will be brought on-stream in October 2018. In addition, the Corporation is currently in the process of re-configuring Phases V and VI to provide for shallow-cut capability when Phase VI comes on-stream. This shallow-cut capability will allow the Corporation to remove propane plus (C3+) liquids from the natural gas stream.

### **Processing Arrangements**

The majority of the Corporation's production from the Pouce Coupe key operating area is processed at the Pouce Coupe Gas Plant. With respect to Gordondale, the Corporation has access to 90 MMcf/d of firm processing capacity at the AltaGas Facility and a right of first refusal with respect to any capacity in excess of 90 MMcf/d. These arrangements contain a take-or-pay obligation. In addition, the Corporation has access to and is responsible for the costs of 9,000 bbls/d of fractionation capacity at the Pembina Facility. See "Risk Factors – Business and Operational Risks – Gathering and Processing Facilities, Pipeline Systems and Rail" in this Annual Information Form.

## Petroleum and Natural Gas Sales

During 2017, the Corporation's annual average production was 67,963 boe/d and the only products produced and sold by the Corporation were natural gas, light crude oil and NGLs. During 2017, production consisted of approximately 79% natural gas, 9% light oil and 12% NGLs.

Excluding the effects of hedges using financial instruments but including the effects of fixed price physical delivery contracts, the Corporation's average realized sales price during 2017 was \$2.72/Mcf for natural gas (2016: \$2.41/Mcf), \$61.42/bbl for light crude oil (2016: \$51.40/bbl) and \$33.39/bbl for NGLs (2016: \$31.23/bbl).

The following table sets forth the aggregate petroleum and natural gas sales for the Corporation's natural gas, light crude oil and NGLs for the years ended December 31, 2017 and December 31, 2016:

<b>Product</b>	<b>2017 Petroleum and Natural Gas Sales<sup>(1)</sup></b>	<b>2016 Petroleum and Natural Gas Sales<sup>(1)</sup></b>
Natural Gas	\$318,789,983	\$218,432,044
Light Crude Oil	\$134,596,611	\$70,144,458
NGLs	\$103,244,627	\$48,900,685

(1) The amounts set forth in the table above for 2017 and 2016 exclude the effects of hedges using financial instruments but include the effects of fixed price physical delivery contracts and exclude royalty revenues.

The Corporation's revenues are highly dependent upon the prices that it receives for oil, natural gas and NGLs and such prices are closely correlated to the benchmark prices of crude oil and natural gas. See "*Risk Factors – Financial Risks and Risks Relating to Economic Conditions – Commodity Price Volatility*" in this Annual Information Form.

## Transportation and Marketing

### Transportation

#### Natural Gas and NGLs

Virtually all of Birchcliff's natural gas and NGLs production is delivered through pipelines and the Corporation employs a combination of firm and interruptible receipt pipeline service to deliver its production.

Prior to the fourth quarter of 2017, the majority of the Corporation's natural gas production was being transported on the NGTL System and sold at the AECO daily index price. During 2017, the Corporation entered into agreements with TCPL for the firm service transportation of an aggregate of 175,000 GJ/d (approximately 152 MMcf/d) of natural gas on TCPL's Canadian Mainline for a 10-year term, whereby natural gas is transported from the Empress receipt point in Alberta to the Dawn trading hub located in Southern Ontario. The toll for the Empress to Dawn portion of the service is \$0.77/GJ plus fuel. The first tranche of this service (120,000 GJ/d) became available to Birchcliff on November 1, 2017, with additional tranches becoming available on November 1, 2018 (35,000 GJ/d) and November 1, 2019 (20,000 GJ/d). In connection with this service, the Corporation entered into agreements with three natural gas marketers whereby the Corporation assigned its TCPL service from Empress to Dawn for a one-year term ending November 1, 2018, as discussed below. In addition, Birchcliff has sales agreements with a third party marketer to sell and deliver into the Alliance pipeline system: (i) approximately 40 MMcf/d of natural gas under contracts which commenced November 1, 2017 and expire March 31, 2018, 10 MMcf/d of which is sold at Alliance's Trading Pool daily index price and 30 MMcf/d of which is sold at a Chicago index price; and (ii) approximately 5 MMcf/d of natural gas under contracts which commenced April 1, 2017 and expire October 31, 2020, which is sold at Alliance's Trading Pool daily index price. See also "*Description of the Business – Marketing – Natural Gas*".

At March 1, 2018, approximately 88% of the Corporation's natural gas production was being transported on the NGTL System, 29% was being transported on the TCPL Canadian Mainline and 11% was being transported on the Alliance Pipeline System.

### Crude oil

The vast majority of the Corporation's crude oil production is transported on the Pembina Peace pipeline to Edmonton.

### **Marketing**

#### Natural Gas

The Corporation's natural gas production is primarily sold to third-party natural gas marketers at the AECO daily index price or the Dawn daily index price. In the fourth quarter of 2017, the Corporation entered into agreements with three natural gas marketers whereby the Corporation assigned its TCPL service from Empress to Dawn for a one-year term ending November 1, 2018. During this term, the marketers deliver Birchcliff's natural gas to Dawn and pay Birchcliff the Dawn daily index price, less the Empress to Dawn toll and fuel costs. Under these agreements, each marketer has the option to divert the natural gas to a secondary delivery point to optimize the price received for the natural gas. In such instance, Birchcliff will receive between 60% and 80% of the optimized value obtained for the natural gas. In addition, Birchcliff has sales agreements with a third party marketer to sell and deliver into the Alliance pipeline system as discussed above.

None of the Corporation's natural gas production is currently sold to natural gas aggregators who accumulate production from various producers and market the gas on behalf of the group.

#### Crude Oil

The Corporation's crude oil production is primarily sold to crude oil marketers on a monthly basis. The pricing is either based on an index price or is a netback or posted price provided by the marketer.

#### NGLs

The majority of the Corporation's NGLs production is currently sold to marketers under contracts that commence on April 1 of the calendar year and run for one or two years. The pricing is typically based on available index prices. In addition, the Corporation also sells ethane and propane under a long-term contract extending to 2026. Under this contract, ethane is sold at an indexed-based price and propane is priced at the buyer's posted propane price.

#### Hedging

The Corporation also engages in risk management hedging which is done using financial instruments and physical delivery sales contracts which are separate from the Corporation's marketing contracts. For further information regarding the Corporation's risk management activities, see *"Statement of Reserves Data and Other Oil and Gas Information – Other Oil and Gas Information – Forward Contracts"* and the Corporation's audited annual financial statements and related management's discussion and analysis for the year ended December 31, 2017.

### **Competitive Conditions**

The oil and natural gas industry is highly competitive in all of its phases. The Corporation competes with numerous other entities for land, acquisitions of reserves, access to drilling and service rigs and other equipment, access to transportation and skilled technical and operating personnel, among other things. The Corporation's competitors include companies that have more financial resources, staff and facilities than those of the Corporation.

Management believes that the Corporation has a competitive advantage in its focus area of the Peace River Arch area of Alberta based upon the infrastructure and land base it controls. In addition, management believes that it has a competitive advantage based on the experience it has developed on the Montney/Doig Resource Play. The Corporation attempts to enhance its competitive position by operating in areas where it believes its technical personnel are able to reduce some of the risks associated with exploration, production and marketing because such personnel are familiar with the areas. See *"Risk Factors – Business and Operational Risks – Competition"* in this Annual Information Form.

## **Seasonal and Cyclical Factors**

The exploration for and development of oil and natural gas is dependent on access to areas where operational activities are to be conducted. Seasonal weather variations, including freeze-up and break-up, can delay such access. See *“Risk Factors – Business and Operational Risks – Seasonality and Extreme Weather Conditions”* in this Annual Information Form.

The Corporation’s operational results and financial condition are highly dependent on the prices it receives for its oil and natural gas production. Crude oil and natural gas prices have fluctuated widely during recent years and are subject to fluctuations in response to changes in supply, demand, market uncertainty and numerous other factors that are beyond the control of the Corporation. See *“Risk Factors – Financial Risks and Risks Relating to Economic Conditions – Commodity Price Volatility”* in this Annual Information Form.

## **Environmental Protection**

All phases of the oil and natural gas business present environmental risks and hazards and are subject to environmental regulation pursuant to a variety of federal, provincial and local laws and regulations. Environmental legislation provides for, among other things, restrictions and prohibitions on the spill, release or emission of various substances produced in association with oil and natural gas industry operations. In addition, such legislation sets out the requirements with respect to oilfield waste handling and storage, habitat protection and the satisfactory operation, maintenance, abandonment and reclamation of well and facility sites. Compliance with environmental legislation can require significant expenditures and/or result in operational restrictions. A breach of applicable environmental legislation may result in the imposition of fines and penalties, some of which may be material. In addition, a breach may result in the suspension or revocation of necessary licences and authorizations and/or the Corporation being subject to interim compliance measures, all of which may restrict the Corporation’s ability to conduct operations. Further, the Corporation could be subject to civil liability for pollution damage. See *“Risk Factors – Environmental, Regulatory and Political Risks”* in this Annual Information Form.

## **Environmental Costs and Decommissioning Obligations**

The Corporation is currently subject to the carbon levy legislation in Alberta as described under the heading *“Industry Conditions – Climate Change Regulation – Alberta”*; however, most of the Corporation’s operations and facilities are currently exempt from paying the carbon levy until 2023 under available exemptions. In addition, the Corporation currently has one facility, namely the Pouce Coupe Gas Plant, that is subject to the CCIR that is described under the heading *“Industry Conditions – Climate Change Regulation – Alberta”*. As the Pouce Coupe Gas Plant is subject to the CCIR, such facility is currently exempt from paying the carbon levy.

At the present time, the operational and financial impacts of complying with such GHG legislation are not material to the Corporation. Based on currently available information, the Corporation does not expect the incremental direct costs of compliance between now and 2023 to be material to the Corporation, taking into account, among other things, the exemptions that are currently available to the Corporation until 2023, the benchmarking data that is currently available, forecast increases in carbon pricing, forecast throughput at the Corporation’s facilities and expected future emissions performance of the Corporation’s facilities. Looking longer-term (2023 and beyond) and assuming that the current legislation is still in effect in its present form, compliance costs are expected to continue to increase as the exemptions from the Alberta carbon levy available to the Corporation expire. The Corporation will continue to evaluate these longer-term developments in order to assess the potential financial and operational implications. Given the multitude of variables that could cause outcomes to change, it is not currently possible to predict the future incremental compliance costs with any certainty. See *“Special Notes to Reader – Forward-Looking Information”*.

At December 31, 2017, the Corporation has not recorded any material costs and liabilities relating to GHG or environmental protection legislation or any material environmental incidents. As a result of its net ownership interest in oil and natural gas properties and equipment, including well sites, processing facilities and gathering systems, the Corporation incurs decommissioning obligations. The Corporation’s decommissioning obligation at December 31, 2017 was \$269.7 million, calculated on a discounted fair value basis using a risk-free rate of 2.36%

and an inflation rate of 2.0%. Additional information on the Corporation's decommissioning obligations is available in the Corporation's audited annual financial statements for the year ended December 31, 2017.

The costs of complying with existing or future environmental legislation or regulations, including those relating to climate change and GHG emissions, may have a material adverse effect on the Corporation's financial condition or results of operations. Future changes in environmental legislation could occur and result in stricter standards and enforcement, larger fines and liability and increased capital expenditures and operating costs.

See *"Special Notes to Reader – Forward-Looking Information"*, *"Industry Conditions"* and *"Risk Factors – Environmental, Regulatory and Political Risks"* in this Annual Information Form.

## **Social and Environmental Policies**

### ***Health, Safety and Environmental Programs***

Birchcliff is committed to constantly evolving and improving its health, safety and environmental management program and conducting its activities in a manner that safeguards its employees, contractors, representatives, the environment and the public at large. The Corporation has an active program to monitor and comply with health, safety and environmental laws, rules and regulations applicable to its operations.

The Corporation's corporate policies require operational activities to be conducted in a manner which meets or exceeds regulatory requirements and industry standards to safeguard the environment and protect employees, contractors and the public at large. Employees receive pertinent health, safety and environmental training for their roles. Birchcliff conducts operational audits and assessments to identify risks and takes steps to reduce or prevent incidents. The Corporation has developed emergency response plans in conjunction with local authorities, emergency services and the communities in which it operates in order to be prepared to effectively respond to an environmental incident should one arise. In addition, the Corporation conducts rigorous emergency response exercises and training for its staff that exceed minimum regulatory requirements.

Birchcliff participates in Alberta's COR Safety Program and has received and maintained a COR certification since 2011. A COR certification demonstrates that the employer's health and safety management system has been evaluated by a certified auditor and meets provincial standards, as established by Occupational Health and Safety (Alberta). The COR Health and Safety Auditing and the COR Safety Program require a commitment to continuous improvement in the health, safety and environment management practices, including sound planning and implementation. The program is audited externally every 3 years and internally every other year.

Birchcliff works hard to maintain the safety and integrity of its facility and pipeline infrastructure. The Corporation's Asset Integrity staff manages its Pressure Equipment Integrity Program in compliance with the Alberta Boilers Safety Association (ABSA) requirements and its Pipeline Integrity Program in compliance with AER requirements. These programs are audited internally on an annual basis and externally on a periodic basis to evaluate their effectiveness and are updated based on the findings from such audits. The Corporation's Chief Inspector and pipeline Asset Integrity Group make use of databases and associated work tracking systems to ensure that all integrity tasks (inspections, pigging, etc.) are scheduled and completed according to its programs.

As part of its fundamental values, the Corporation recognizes the importance of and its responsibility for environmental stewardship. The Corporation endeavors to maintain excellence in environmental reporting and response and to take proactive steps to eliminate or reduce its environmental impact. As an organization which strives for continuous improvement, Birchcliff continues to look for and develop new technology, systems and processes that will help improve efficiency, reduce its environmental footprint and create a safer work environment. For example, the Corporation utilizes multi-well pads in many of its drilling operations.

Environmental assessments are undertaken for new projects or when acquiring new properties or facilities in order to identify, assess and minimize environmental risks and operational exposures. The Corporation conducts audits of operations to confirm compliance with internal standards and to stimulate improvement in practices where

needed. Documentation is maintained to support internal accountability and measure operational performance against recognized industry indicators to assist in achieving the objectives of the described policies and programs.

### **Community Programs**

Fostering a strong relationship with the community and its stakeholders is as integral to the success of the Corporation's projects as obtaining the required regulatory approvals. The Corporation believes cooperative, sincere and responsive consultation efforts with stakeholders in the areas in which Birchcliff operates creates a solid foundation for its business. Birchcliff has an experienced team working with local stakeholders to learn their values and priorities and to resolve any issues or concerns that arise in the course of its field operations.

Birchcliff recognizes the role that communities play in its success and looks for opportunities to "give back". The Corporation is a staunch supporter of the community and the business and educational initiatives of the indigenous communities who live in the areas where Birchcliff operates. Every year, the Corporation participates in a number of community support endeavours in the areas surrounding its field operations and in Calgary. In 2017, the Corporation contributed to a number of local community initiatives that help to elevate and enhance the quality of life at the local level, including minor hockey and other amateur sports, local schools, agricultural societies and fire departments. To date, Birchcliff and its partners have helped raise approximately \$1,000,000 to support STARS Air Ambulance in the Grande Prairie area, which is an important partner in trauma care for the Grande Prairie region. Each year, the Corporation raises funds for the United Way and the YWCA. Birchcliff makes an annual contribution to Home Front Calgary, a community-justice response team dedicated to helping families experiencing domestic violence. Through Birchcliff's support of Momentum, Calgarians living in poverty learn how to achieve a sustainable livelihood. The Corporation donates to the OneSight program and supports the Canadian Cancer Society daffodil campaign. The Corporation volunteers with Feed the Hungry, providing healthy meals in an atmosphere of dignity and respect. During the holiday season, Birchcliff employees "adopt" a number of families in need and donate gifts, food and decorations to help make the holidays special. The Corporation also fills backpacks with living essentials and gifts for the Mustard Seed and prepares sandwiches for the homeless for the Calgary Drop-In Centre.

Through these activities and numerous others, Birchcliff creates and maintains long-term, positive partnerships and relationships, while promoting employee engagement in the communities where it operates.

### **Specialized Skill and Knowledge**

The Corporation employs individuals with various professional skills and knowledge in the course of pursuing its business plan. In addition, various specialized consultants are available to assist the Corporation in areas where it believes it doesn't need full time employees. These professional skills include, but are not limited to, geology, geophysics, engineering, financial and business skills, which are generally available in the industry. Drawing on significant experience in the oil and natural gas business, the Corporation believes that its management team has a demonstrated track record of bringing together all of the key components to a successful exploration and production company: strong technical skills; expertise in planning and financial controls; the ability to execute on business development opportunities; and capital markets expertise.

### **Employees**

The following table sets forth the number of the Corporation's employees at December 31, 2017:

	<b>Number of Employees</b>
Head Office Employees	128
Field Employees	53

In addition, the Corporation hires skilled contractors to perform drilling operations, well completions and other field service operations.

See "Risk Factors – Other Risks – Reliance on Key Personnel" in this Annual Information Form.

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

All of the Corporation's reserves are located in the Province of Alberta. Birchcliff retained two independent qualified reserves evaluators, Deloitte and McDaniel, to evaluate and prepare reports on 100% of Birchcliff's light crude oil and medium crude oil (combined), conventional natural gas, shale gas and NGLs reserves. Deloitte evaluated all of Birchcliff's properties other than the Corporation's properties in Gordondale, representing approximately 75% of the assigned total proved plus probable reserves. McDaniel evaluated the reserves attributable to the Corporation's properties in Gordondale, representing approximately 25% of the assigned total proved plus probable reserves.

The statement of reserves data and other oil and gas information set forth below is dated March 14, 2018. The effective date of the reserves and future net revenue information provided is December 31, 2017, unless otherwise indicated. The preparation date in respect of the reserves disclosure contained herein is February 14, 2018 and the preparation date in respect of the resource disclosure contained in Appendix A is March 13, 2018.

Supplemental disclosure of the Corporation's contingent resources data and prospective resources data has been included as Appendix A to this Annual Information Form. The Report on Reserves Data, Contingent Resources Data and Prospective Resources Data by Deloitte and the Report on Reserves Data by McDaniel in Form 51-101F2 are attached to this Annual Information Form as Appendix B and the Report of Management and Directors on Oil and Gas Disclosure in Form 51-101F3 is attached to this Annual Information Form as Appendix C.

### Disclosure of Reserves Data

The reserves data set forth below is based upon the evaluation by Deloitte with an effective date of December 31, 2017 as contained in the report of Deloitte dated February 9, 2018 (the "**Deloitte Reserves Report**") and the evaluation by McDaniel with an effective date of December 31, 2017 as contained in the report of McDaniel dated February 14, 2018 (the "**McDaniel Reserves Report**"), which are contained in the consolidated report of Deloitte with an effective date of December 31, 2017 (the "**Consolidated Reserves Report**"). Deloitte prepared the Consolidated Reserves Report by consolidating the properties evaluated by Deloitte in the Deloitte Reserves Report with the properties evaluated by McDaniel in the McDaniel Reserves Report, in each case using the Deloitte Price Forecast. Hedging gains and losses have been incorporated into the Consolidated Reserves Report.

Deloitte and McDaniel have confirmed to the Reserves Evaluation Committee of the Board that their respective evaluations were prepared in accordance with the standards contained in the COGE Handbook and NI 51-101. In the course of preparing the reserves reports, Birchcliff provided Deloitte and McDaniel with basic information which included land, well and accounting (product prices and operating costs) information, reservoir and geological studies, estimates of on-stream dates for certain properties, contract information, budget forecasts and financial data. Other engineering, geological or economic data required to conduct the evaluations and upon which the reserves reports are based, were obtained from public records, other operators and from Deloitte's and McDaniel's non-confidential files. The extent and character of ownership and accuracy of all factual data supplied to Deloitte and McDaniel was accepted by each of Deloitte and McDaniel as presented. A field inspection and environmental/safety assessment of the properties that were the subject of the reserves evaluations was not conducted.

The net present value of future net revenue attributable to the Corporation's reserves is based on the Deloitte Price Forecast and is determined before provision for interest, debt servicing and general and administrative expense and after the deduction of royalties, operating costs, development costs and abandonment and reclamation costs.

The after-tax net present value of the Corporation's oil and natural gas properties reflects the income tax burden on the properties on a stand-alone basis and takes into account the Corporation's existing tax pools. It does not consider the business-entity-level tax situation or tax planning. It does not provide an estimate of the value at the level of the business entity, which may be significantly different. The Corporation's audited annual financial statements and related management's discussion and analysis for the year ended December 31, 2017 should be consulted for information at the level of the business entity.

There are numerous uncertainties inherent in estimating quantities of oil, natural gas and NGLs reserves and the future net revenue attributed to such reserves, including many factors beyond the control of the Corporation. The reserves and associated future net revenue information set forth in this Annual Information Form are estimates only. In general, estimates of economically recoverable oil, natural gas and NGLs reserves and the future net revenue therefrom are based upon a number of variable factors and assumptions, such as historical production from the properties, production rates, ultimate reserves recovery, the timing and amount of capital expenditures, the success of future development activities, future commodity prices, marketability of oil, natural gas and NGLs, royalty rates, the assumed effects of regulation by governmental agencies and future operating costs, all of which may vary materially from actual results. For those reasons, estimates of the economically recoverable oil, natural gas and NGLs reserves attributable to any particular group of properties, the classification of such reserves based on risk of recovery and estimates of future net revenue associated with reserves prepared by different engineers, or by the same engineer at different times, may vary substantially. The Corporation's actual production, revenues, taxes and development and operating expenditures with respect to its reserves will vary from estimates thereof and such variations could be material.

It should not be assumed that the undiscounted or discounted net present value of future net revenue attributable to the Corporation's reserves estimated by the Corporation's independent qualified reserves evaluators represent the fair market value of those 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 Birchcliff's oil, natural gas and NGLs reserves provided herein are estimates only and there is no guarantee that the estimated reserves will be recovered. Actual oil, natural gas and NGLs reserves may be greater than or less than the estimates provided herein and variances could be material. Estimates of reserves and future net revenue for individual properties may not reflect the same confidence level as estimates of reserves and future net revenue for all properties, due to the effects of aggregation.

As the tables below summarize the data contained in the Consolidated Reserves Report, they may contain slightly different numbers than the Consolidated Reserves Report due to rounding. Also due to rounding, certain columns may not add exactly.

The information relating to the Corporation's reserves contains forward-looking information, including information relating to future net revenue, forecast capital expenditures, future development plans and costs related thereto, forecast operating costs, anticipated production and abandonment and reclamation costs. See *"Special Notes to Reader – Forward-Looking Information"* in this Annual Information Form.

For additional information, please see *"Presentation of Oil and Gas Reserves and Resources"*, *"Risk Factors – Business and Operational Risks – Uncertainty of Reserves and Resource Estimates"* and *"Special Notes to Reader"* in this Annual Information Form.



## Reserves Summary

The following table sets forth the Corporation's light crude oil and medium crude oil, conventional natural gas, shale gas and NGLs reserves at December 31, 2017, estimated using the Deloitte Price Forecast:

*Summary of Reserves at December 31, 2017  
(Forecast Prices and Costs)*

Reserves Category	Light Crude Oil and Medium Crude Oil		Conventional Natural Gas		Shale Gas		NGLs		Total Boe	
	Gross (Mbbbls)	Net (Mbbbls)	Gross (MMcf)	Net (MMcf)	Gross (MMcf)	Net (MMcf)	Gross (Mbbbls)	Net (Mbbbls)	Gross (Mboe)	Net (Mboe)
Proved										
Developed Producing	8,403.9	6,797.3	13,950.1	13,040.2	982,574.8	898,576.8	23,463.6	18,180.4	197,955.1	176,913.8
Developed Non-Producing	0.0	0.5	4,309.1	3,994.8	20,400.5	18,818.3	254.3	183.6	4,372.5	3,986.3
Undeveloped	8,211.8	6,912.3	3,493.2	3,201.6	2,467,406.9	2,187,549.4	42,124.4	34,708.8	462,152.9	406,746.3
Total Proved	16,615.8	13,710.0	21,752.4	20,236.6	3,470,382.2	3,104,944.5	65,842.3	53,072.9	664,480.5	587,646.4
Total Probable	14,394.0	11,500.2	14,103.2	12,884.0	1,449,379.3	1,241,483.1	49,727.2	39,579.9	308,034.8	260,141.3
Total Proved Plus Probable	31,009.7	25,210.2	35,855.6	33,120.6	4,919,761.5	4,346,427.6	115,569.4	92,652.8	972,515.3	847,787.7

## Net Present Values of Future Net Revenue

The following table sets forth the net present values of future net revenue attributable to Birchcliff's reserves at December 31, 2017, estimated using the Deloitte Price Forecast, before and after deducting future income tax expenses and calculated at various discount rates:

*Summary of Net Present Values of Future Net Revenue at December 31, 2017  
(Forecast Prices and Costs)*

Reserves Category	Before Income Taxes Discounted At (%/year)					Unit Value Discounted at 10%/year (\$/boe)
	0 (MM\$)	5 (MM\$)	10 (MM\$)	15 (MM\$)	20 (MM\$)	
Proved						
Developed Producing	3,542.7	2,469.5	1,871.9	1,504.4	1,259.9	10.58
Developed Non-Producing	71.0	46.0	32.6	24.7	19.6	8.19
Undeveloped	7,484.0	3,603.1	1,827.9	917.9	412.2	4.49
Total Proved	11,097.7	6,118.5	3,732.4	2,447.0	1,691.7	6.35
Total Probable	6,662.2	2,779.3	1,375.7	764.1	458.7	5.29
Total Proved Plus Probable	17,759.9	8,897.8	5,108.1	3,211.1	2,150.5	6.03

Reserves Category	After Income Taxes Discounted At (%/year) <sup>(1)</sup>				
	0 (MM\$)	5 (MM\$)	10 (MM\$)	15 (MM\$)	20 (MM\$)
Proved					
Developed Producing	3,131.4	2,249.6	1,745.0	1,426.7	1,210.2
Developed Non-Producing	51.8	34.3	25.1	19.5	15.9
Undeveloped	5,447.0	2,542.0	1,206.4	523.4	147.1
Total Proved	8,630.3	4,826.0	2,976.5	1,969.7	1,373.3
Total Probable	4,854.7	2,002.6	970.7	524.1	303.7
Total Proved Plus Probable	13,485.0	6,828.6	3,947.2	2,493.8	1,677.0

(1) The after-tax net present value of Birchcliff's oil and natural gas properties reflects the income tax burden on the properties on a stand-alone basis and takes into account Birchcliff's existing tax pools. It does not consider the business-entity-level tax situation or tax planning. It does not provide an estimate of the value at the level of the business entity, which may be significantly different. The Corporation's audited annual financial statements and related management's discussion and analysis for the year ended December 31, 2017 should be consulted for information at the level of the business entity.

### Elements of Future Net Revenue

The following table sets forth the various elements of the Corporation's future net revenue attributable to the Corporation's reserves as estimated by Deloitte at December 31, 2017, estimated using the Deloitte Price Forecast and calculated without discount:

*Elements of Future Net Revenue (Undiscounted) at December 31, 2017  
(Forecast Prices and Costs)*

<b>Reserves Category</b>	<b>Revenue (MM\$)</b>	<b>Royalties (MM\$)</b>	<b>Operating Costs (MM\$)</b>	<b>Develop- ment Costs (MM\$)</b>	<b>Abandon- ment and Reclamat- ion Costs (MM\$)</b>	<b>Future Net Revenue Before Future Income Tax Expenses (MM\$)</b>	<b>Future Income Tax Expenses (MM\$)</b>	<b>Future Net Revenue After Future Income Tax Expenses (MM\$)<sup>(1)</sup></b>
Total Proved	20,072.6	2,576.9	2,977.8	3,234.0	186.2	11,097.7	2,467.5	8,630.3
Total Proved Plus Probable	31,833.6	4,506.1	4,797.2	4,503.0	267.2	17,759.9	4,274.9	13,485.0

(1) The after-tax net present value of Birchcliff's oil and natural gas properties reflects the income tax burden on the properties on a stand-alone basis and takes into account Birchcliff's existing tax pools. It does not consider the business-entity-level tax situation or tax planning. It does not provide an estimate of the value at the level of the business entity, which may be significantly different. The Corporation's audited annual financial statements and related management's discussion and analysis for the year ended December 31, 2017 should be consulted for information at the level of the business entity.

### Net Present Value of Future Net Revenue by Product Type

The following table sets forth by product type the future net revenue associated with the Corporation's reserves at December 31, 2017, estimated using the Deloitte Price Forecast, before deducting future income tax expenses and calculated using a 10% discount rate:

*Net Present Value of Future Net Revenue by Product Type at December 31, 2017  
(Forecast Prices and Costs)*

<b>Reserves Category</b>	<b>Product Type</b>	<b>Future Net Revenue Before Income Taxes (Discounted at 10%/year) (MM\$)</b>	<b>Unit Value Before Income Taxes (Discounted at 10%/year) (\$/boe)<sup>(1)</sup></b>
Total Proved	Light Crude Oil and Medium Crude Oil (including solution gas and other by-products)	573.3	8.20
	Conventional Natural Gas (including by-products but excluding solution gas and by-products from oil wells)	7.2	2.52
	Shale Gas (including by-products)	3,152.0	6.12
	<b>Total</b>	<b>3,732.4</b>	<b>6.35</b>
Total Proved Plus Probable	Light Crude Oil and Medium Crude Oil (including solution gas and other by-products)	1,125.7	8.46
	Conventional Natural Gas (including by-products but excluding solution gas and by-products from oil wells)	15.2	3.11
	Shale Gas (including by-products)	3,967.3	5.59
	<b>Total</b>	<b>5,108.1</b>	<b>6.03</b>

(1) Unit amounts are derived using net reserves volumes of the product type and associated by-products.

## Pricing Assumptions

### Forecast Prices Used in Estimates

The following table sets forth the forecast price and cost assumptions used in the Consolidated Reserves Report as contained in the Deloitte Price Forecast:

#### Deloitte Price Forecast

Year	Crude Oil		Natural Gas		NGLs				Currency Exchange Rate (CDN\$/US)	Price and Cost Inflation Rates (%)
	WTI at Cushing Oklahoma (US\$/bbl)	Edmonton City Gate (CDN\$/bbl)	Alberta AECO Average Price (CDN\$/Mcf)	Ontario Dawn Reference Point (CDN\$/Mcf)	Edmonton Ethane (CDN\$/bbl)	Edmonton Propane (CDN\$/bbl)	Edmonton Butane (CDN\$/bbl)	Edmonton Pentanes + Condensate (CDN\$/bbl)		
2018	55.00	65.40	2.00	3.85	5.60	39.25	42.50	68.65	0.780	0.0
2019	58.65	68.25	2.30	4.00	6.45	37.55	44.35	71.65	0.800	2.0
2020	62.40	70.65	2.75	4.15	7.70	35.30	45.95	74.20	0.825	2.0
2021	69.00	76.15	2.95	4.40	8.35	34.30	49.50	79.95	0.850	2.0
2022	75.75	84.05	3.20	4.60	8.95	33.60	54.60	88.25	0.850	2.0
2023	77.30	85.75	3.40	4.90	9.60	34.30	55.70	90.05	0.850	2.0
2024	78.85	87.45	3.75	5.25	10.60	34.95	56.80	91.85	0.850	2.0
2025	80.40	89.20	4.10	5.55	11.45	35.65	57.95	93.70	0.850	2.0
2026	82.00	91.00	4.20	5.75	11.85	36.40	59.10	95.55	0.850	2.0
2027	83.65	92.80	4.35	5.90	12.20	37.10	60.30	97.45	0.850	2.0
2028	85.35	94.65	4.45	6.05	12.45	37.85	61.50	99.40	0.850	2.0
2029	87.05	96.55	4.55	6.15	12.70	38.60	62.75	101.40	0.850	2.0
2030	88.80	98.50	4.65	6.30	12.95	39.40	64.00	103.45	0.850	2.0
2031	90.55	100.45	4.70	6.40	13.20	40.15	65.25	105.50	0.850	2.0
2032	92.35	102.45	4.80	6.55	13.45	40.95	66.55	107.60	0.850	2.0
2033	94.20	104.50	4.90	6.65	13.75	41.80	67.90	109.75	0.850	2.0
2034	96.10	106.60	5.00	6.80	14.00	42.60	69.25	111.95	0.850	2.0
2035	98.00	108.75	5.10	6.95	14.30	43.50	70.65	114.20	0.850	2.0
2036	100.00	110.90	5.20	7.05	14.55	44.35	72.05	116.45	0.850	2.0
2037	102.00	113.10	5.30	7.20	14.85	45.25	73.50	118.80	0.850	2.0
2037+	2%/yr	2%/yr	2%/yr	2%/yr	2%/yr	2%/0	2%/yr	2%/yr	0.850/yr	2.0/yr

The pricing and cost assumptions used were determined by Deloitte based on information available from numerous governmental agencies, industry publications, oil refineries, natural gas marketers and industry trends. These long-term price forecasts are subject to the many uncertainties that affect long-term future forecasts.

### Weighted Average Commodity Prices

The Corporation's weighted average realized commodity prices for the year ended December 31, 2017, excluding the effects of financial hedges but including the effects of fixed price physical delivery contracts, were as follows:

- Light Crude Oil and Medium Crude Oil (Combined): \$61.42/bbl.
- Shale Gas: \$2.72/Mcf (includes conventional natural gas, which represented less than 1% of the Corporation's total corporate natural gas production during 2017).
- NGLs: \$33.39/bbl.

### Reconciliation of Changes in Reserves

The following table sets forth a reconciliation of the Corporation's gross reserves at December 31, 2017 set forth in the Consolidated Reserves Report, using the Deloitte Price Forecast, to the Corporation's gross reserves at December 31, 2016 as set forth in the Prior Consolidated Reserves Report, using Deloitte's forecast price and cost assumptions effective December 31, 2016:

Reconciliation of Gross Reserves from December 31, 2016 to December 31, 2017  
(Forecast Prices and Costs)

Factors	Light Crude Oil and Medium Crude Oil (Mbbbls)	Conventional Natural Gas (MMcf)	Shale Gas (MMcf)	NGLs (Mbbbls)	Oil Equivalent (Mboe)
<b>GROSS TOTAL PROVED</b>					
<b>Opening balance December 31, 2016</b>	<b>31,792.0</b>	<b>59,393.8</b>	<b>2,741,455.4</b>	<b>49,923.6</b>	<b>548,523.8</b>
Discoveries	0.0	0.0	0.0	0.0	0.0
Extensions & Improved Recovery	4,145.7	99.7	700,773.6	15,204.3	136,162.2
Technical Revisions	(120.0)	4,095.0	151,766.1	4,250.2	30,107.0
Acquisitions	0.2	10.1	5,865.6	42.4	1,021.9
Dispositions	(17,275.8)	(37,618.3)	(173.9)	(408.7)	(23,983.2)
Economic Factors	(244.5)	(1,364.6)	(14,195.4)	(107.7)	(2,945.5)
Production <sup>(1)</sup>	(1,681.8)	(2,863.3)	(115,109.2)	(3,061.8)	(24,405.7)
<b>Closing balance December 31, 2017</b>	<b>16,615.8</b>	<b>21,752.4</b>	<b>3,470,382.2</b>	<b>65,842.3</b>	<b>664,480.5</b>
<b>GROSS TOTAL PROBABLE</b>					
<b>Opening balance December 31, 2016</b>	<b>26,655.7</b>	<b>62,289.1</b>	<b>1,532,149.2</b>	<b>39,544.6</b>	<b>331,940.0</b>
Discoveries	0.0	0.0	0.0	0.0	0.0
Extensions & Improved Recovery	2,590.6	54.8	(228,436.8)	1,059.4	(34,413.7)
Technical Revisions	1,077.7	13.2	167,035.2	9,607.0	38,526.1
Acquisitions	0.0	1.7	5,674.5	56.6	1,002.6
Dispositions	(15,817.3)	(48,025.0)	(125.8)	(493.4)	(24,335.8)
Economic Factors	(112.8)	(230.6)	(26,917.0)	(47.0)	(4,684.4)
Production <sup>(1)</sup>	0.0	0.0	0.0	0.0	0.0
<b>Closing balance December 31, 2017</b>	<b>14,394.0</b>	<b>14,103.2</b>	<b>1,449,379.3</b>	<b>49,727.2</b>	<b>308,034.8</b>
<b>GROSS TOTAL PROVED PLUS PROBABLE</b>					
<b>Opening balance December 31, 2016</b>	<b>58,447.7</b>	<b>121,682.9</b>	<b>4,273,604.6</b>	<b>89,468.2</b>	<b>880,463.8</b>
Discoveries	0.0	0.0	0.0	0.0	0.0
Extensions & Improved Recovery	6,736.3	154.5	472,336.8	16,263.7	101,748.6
Technical Revisions	957.7	4,108.2	318,801.3	13,857.1	68,633.1
Acquisitions	0.2	11.8	11,540.1	99.0	2,024.5
Dispositions	(33,093.1)	(85,643.3)	(299.7)	(902.1)	(48,319.0)
Economic factors	(357.3)	(1,595.2)	(41,112.4)	(154.7)	(7,629.9)
Production <sup>(1)</sup>	(1,681.8)	(2,863.3)	(115,109.2)	(3,061.8)	(24,405.7)
<b>Closing balance December 31, 2017</b>	<b>31,009.7</b>	<b>35,855.6</b>	<b>4,919,761.5</b>	<b>115,569.4</b>	<b>972,515.3</b>

(1) Represents the independent qualified reserves evaluators' estimates of actual production for the year ended December 31, 2017 before year-end results were available.

With respect to the Corporation's total corporate reserves, proved reserves increased by 21%, probable reserves decreased by 7% and proved plus probable reserves increased by 10%. The increases in the Corporation's proved and proved plus probable reserves is primarily attributable to: (i) the success of Birchcliff's 2017 drilling program which resulted in more potential net future drilling locations to which reserves were assigned; and (ii) positive technical revisions as a result of improved well performance. Positive technical revisions accounted for 42% of the proved plus probable reserves additions and 18% of the total proved reserves additions, after excluding the effects of acquisitions and dispositions and adding back in 2017 actual production of 24,806.3 Mboe. These increases were partially offset by the various dispositions the Corporation completed during 2017 (including the Worsley Disposition), as well as economic factors as a result of a lower commodity price forecast. The decrease in the Corporation's probable reserves is primarily attributable to the re-classification of probable reserves as proved reserves in several of the Corporation's potential net future drilling locations, as well as the dispositions the Corporation completed during 2017.

The following sets forth additional information on the reconciliation of the Corporation's reserves by product type:

- NGLs: Proved reserves increased by 32%, probable reserves increased by 26% and proved plus probable reserves increased by 29%. The increases are primarily attributable to: (i) the success of Birchcliff's 2017 drilling program which resulted in more potential net future drilling locations to which reserves were assigned; and (ii) positive technical revisions as a result of higher NGLs yields at a proposed deep-cut facility at the Pouce Coupe Gas Plant as compared to a third-party facility. These increases were partially

offset by the various dispositions the Corporation completed during 2017 (including the Worsley Disposition), as well as economic factors as a result of a lower commodity price forecast.

- Shale Gas: Proved reserves increased by 27%, probable reserves decreased by 5% and proved plus probable reserves increased by 15%. The increases are primarily attributable to: (i) the success of Birchcliff's 2017 drilling program which resulted in more potential net future drilling locations to which reserves were assigned; and (ii) positive technical revisions as a result of improved well performance. The decrease in the Corporation's probable reserves is primarily attributable to the re-categorization of probable reserves as proved reserves in several of the Corporation's potential net future drilling locations.
- Conventional Natural Gas: Proved reserves decreased by 63%, probable reserves decreased by 77% and proved plus probable reserves decreased by 71%. The decreases are primarily attributable to the Worsley Disposition.
- Light and Medium Crude Oil: Proved reserves decreased by 48%, probable reserves decreased by 46% and proved plus probable reserves decreased by 47%. The decreases are primarily attributable to the Worsley Disposition.

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

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

Undeveloped reserves are attributed by Deloitte and McDaniel in accordance with standards and procedures contained in the COGE Handbook. Proved undeveloped reserves are those reserves that can be estimated with a high degree of certainty and are expected to be recovered from known accumulations where a significant expenditure is required to render them capable of production. Probable undeveloped reserves are those reserves that are less certain to be recovered than proved reserves and are expected to be recovered from known accumulations where a significant expenditure is required to render them capable of production. Proved and probable undeveloped reserves have been assigned in accordance with engineering and geological practices as defined under NI 51-101.

The following table sets forth for each product type the volumes of each of the proved undeveloped reserves and the probable undeveloped reserves from the applicable reserves evaluations that were first attributed as reserves in each of the three most recent financial years:

##### *Undeveloped Reserves*

Year of first attribution	Proved Undeveloped Reserves				Probable Undeveloped Reserves			
	Light Crude Oil and Medium Crude Oil (Mbbbls)	Conventional Natural Gas (MMcf)	Shale Gas (MMcf)	NGLs (Mbbbls)	Light Crude Oil and Medium Crude Oil (Mbbbls)	Conventional Natural Gas (MMcf)	Shale Gas (MMcf)	NGLs (Mbbbls)
2017	3,922	0	603,102	10,507	6,417	0	199,848	10,412
2016	8,921	633	578,861	18,275	10,092	1,860	628,657	26,426
2015	1,082	2,677	242,811	1,884	613	4,660	283,730	2,949

The Corporation has a large inventory of development opportunities in its portfolio and its capital spending activities are prioritized to optimize development plans, achieve strategic goals and maximize shareholder value.

Approximately 99.9% of the Corporation's proved undeveloped reserves are attributed to the Montney/Doig Resource Play concentrated in the Corporation's key operating areas in Pouce Coupe and Gordondale. The Consolidated Reserves Report has attributed proved undeveloped reserves to each potential future horizontal drilling location that is proximal to an existing well to which the Corporation's independent qualified reserves evaluators have attributed proved developed reserves. Deloitte and McDaniel have estimated such proved undeveloped reserves using forecast production rates that are based on a statistical analysis of production rates of existing wells operated by the Corporation or others on the Montney/Doig Resource Play in the regional area.

As of December 31, 2017, undeveloped reserves represented approximately 70% of the Corporation's total proved reserves and approximately 75% of the Corporation's total proved plus probable reserves. The majority of the Corporation's proved undeveloped reserves are planned to be developed in the next seven years and the majority of the Corporation's probable undeveloped reserves are planned to be developed in the next ten years. In the Consolidated Reserves Report, the Corporation's independent qualified reserves evaluators forecast that 38 net wells and 58.8 net wells would be drilled in 2018 and 2019, respectively. The Corporation's 2018 Capital Program contemplates the drilling of 27 (27.0 net) Montney/Doig horizontal wells during 2018. Birchcliff anticipates that drilling activities in 2018 will utilize available capacity at the Pouce Coupe Gas Plant (currently 260 MMcf/d), as well as capacity as it becomes available from third-party processors. Over the ensuing years, the Corporation expects that it will continue to develop its proved undeveloped reserves on the Montney/Doig Resource Play as processing capacity at the Pouce Coupe Gas Plant is expanded to 340 MMcf/d (currently expected to come on-stream in October 2018). See "*Description of the Business – Facilities – The Pouce Coupe Gas Plant*". Given the Corporation's large contiguous concentrated land base, required timing of facility and infrastructure construction and the executional pace of the Corporation's drilling programs, the timing of proved undeveloped and probable undeveloped reserves extends past two years. The Corporation and its independent qualified reserves evaluators believe this to be a reasonable pace of development of these unconventional undeveloped reserves.

The pace of development of the Corporation's proved and probable undeveloped reserves is influenced by many factors, including the outcomes of the yearly drilling and reservoir evaluations, the price for oil and natural gas, and a variety of economic factors and conditions. There are a number of factors that could result in delayed or cancelled development, including the following: (i) changing economic conditions (due to pricing, operating and capital expenditure fluctuations); (ii) changing technical conditions (including production anomalies, such as water breakthrough or accelerated depletion); (iii) multi-zone developments (for instance, a prospective formation completion may be delayed until the initial completion is no longer economic); (iv) a larger development program may need to be spread out over several years to optimize capital allocation and facility utilization; and (v) surface access issues (including those relating to land owners, weather conditions and regulatory approvals).

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

The process of estimating reserves is complex. It requires significant judgments and decisions based on available geological, geophysical, engineering and economic data. These estimates may change substantially as additional data from ongoing development activities and production performance becomes available and as economic conditions impacting oil and natural gas prices and costs change. The reserves estimates contained in this Annual Information Form are based on current production forecasts, prices and economic conditions.

As circumstances change and additional data becomes available, reserves estimates also change. Estimates are reviewed and revised, either upward or downward, as warranted by the new information. Revisions are often required due to changes in well performance, prices, economic conditions and governmental restrictions.

Although every reasonable effort is made to ensure that reserves estimates are accurate, reserves estimation is an inferential science. As a result, the subjective decisions, new geological or production information and a changing environment may impact these estimates. Revisions to reserves estimates can arise from changes in year-end oil and natural gas prices and reservoir performance. Such revisions can be either positive or negative.

Changes in future commodity prices relative to the forecasts described above under "*Pricing Assumptions*" could have a negative impact on the Corporation's reserves, and in particular on the development of undeveloped reserves, unless future development costs are adjusted in parallel. The Corporation has a significant amount of proved and probable undeveloped reserves. At the forecast prices and costs used in the Consolidated Reserves Report, these development activities are expected to be economic. However, should oil and natural gas prices decrease materially, these activities may not be economic and the Corporation may need to defer their implementation. In addition, reserves can be significantly affected by fluctuations in product pricing, capital expenditures, operating costs, royalty regimes, abandonment and reclamation costs and well performance that is beyond the Corporation's control. Other than the foregoing and the factors disclosed or described herein, the

Corporation does not anticipate any other significant economic factors or other significant uncertainties which may affect any particular components of its reserves data.

See also “Risk Factors – Business and Operational Risks – Uncertainty of Reserves and Resource Estimates” in this Annual Information Form.

### **Abandonment and Reclamation Costs**

In connection with its operations, the Corporation will incur abandonment and reclamation costs for surface leases, wells, facilities and pipelines.

Abandonment and reclamation costs have been estimated by Deloitte and McDaniel in their respective evaluations, are attributed to all existing and future wells that were assigned reserves in their respective evaluations and do not include abandonment and reclamation costs for wells, facilities and pipelines to which no reserves were assigned. Well abandonment and reclamation costs used by Deloitte and McDaniel were not independently evaluated and were assumed to be equal to the average costs for the Corporation’s regional reclamation cost area set forth in AER Directive 011: *Licensee Liability Rating (LLR) Program: Updated Industry Parameters and Liability Costs*.

The Corporation budgets for and recognizes as a liability the estimated present value of the future decommissioning liabilities associated with its oil and natural gas properties and equipment, including wells sites, processing facilities and gathering systems. Abandonment and reclamation costs for wells, facilities and pipelines to which no reserves were assigned have been considered by the Corporation in its calculation of decommissioning liabilities. See Note 9 – *Decommissioning Obligations* to the Corporation’s audited annual financial statements for the year ended December 31, 2017.

There are no unusually significant abandonment and reclamation costs associated with the Corporation’s properties to which reserves have been attributed.

### **Future Development Costs**

Future development costs reflect the independent reserves evaluator’s best estimate of what it will cost to bring the proved and proved plus probable reserves on production. Changes in forecast future development costs occur annually as a result of development activities, acquisition and disposition activities and capital cost estimates.

The following table sets forth the future development costs that have been deducted in the estimation of the future net revenue attributable to the reserves categories noted below:

*Future Development Costs  
(Forecast Prices and Costs)*

	<b>Proved (MM\$)</b>	<b>Proved Plus Probable (MM\$)</b>
2018	247.1	307.7
2019	485.6	528.7
2020	325.3	416.2
2021	502.0	556.0
2022	628.9	701.9
Thereafter	1,045.1	1,992.5
<b>Total undiscounted</b>	<b>3,234.0</b>	<b>4,503.0</b>

The Corporation expects to be able to fund the development costs required in the future primarily from internally generated cash flows, as well as its existing credit facilities. Future development costs may also be funded through the proceeds realized from property dispositions and debt or equity financings. Planned activity levels vary each year due to factors such as capital availability, commodity prices, processing and transportation capacity and regulatory processes.

There can be no guarantee that funds will be available or that the Corporation will allocate funding to develop all of the reserves attributed in the Consolidated Reserves Report. Failure to develop those reserves would have a negative impact on the future production and future net revenue estimated by the Corporation's independent qualified reserves evaluators.

Interest and other costs of external funding are not included in the estimates of reserves and future net revenue and would reduce the reserves and future net revenue to some degree depending upon the funding sources utilized. The Corporation currently does not anticipate that interest or other funding costs would make the development of any of its properties uneconomic.

## Other Oil and Gas Information

### Oil and Gas Properties and Wells

The Corporation's important properties and facilities are described under the heading "Description of the Business". All of the Corporation's properties are located in Alberta and are onshore.

The following table sets forth the Corporation's producing and non-producing oil and natural gas wells at December 31, 2017:

#### Producing and Non-Producing Wells at December 31, 2017<sup>(1)</sup>

	Oil Wells				Natural Gas Wells			
	Producing		Non-producing		Producing		Non-producing	
	Gross	Net	Gross	Net	Gross	Net	Gross	Net
Alberta	109	86.7	38	19.1	404	374.6	171	118.5

(1) Does not include water injection wells, service wells, capped wells and wells that have not been categorized as either oil wells or natural gas wells.

At December 31, 2017, the Corporation had 5 (5.0 net) wells categorized as proved non-producing by Deloitte in the Consolidated Reserves Report. Birchcliff expects all five of these wells to be classified as proved developed producing at the end of 2018. Currently one of the five wells is back on production. Of the remaining four wells, three are expected to be brought on production later in 2018 with minimal capital as additional processing capacity becomes available and line pressures are reduced. The fifth well requires a completion stimulation that the Corporation expects to complete in 2018.

### Properties with No Attributed Reserves

The following table sets forth the gross and net acres of undeveloped lands held by the Corporation at December 31, 2017:

	Gross Acres	Net Acres
Alberta	262,318.4	238,705.5

When determining gross and net acreage for two or more leases covering the same lands but different rights, the acreage is reported for each lease. When there are multiple discontinuous rights in a single lease, the acreage is reported only once.

The rights to explore, develop and exploit with respect to 20,170.2 (20,170.2 net) acres of such undeveloped lands are expected to expire within one year of the date of this Annual Information Form. Such expiries will not materially affect the reserves attributable to Birchcliff's lands. The Corporation has no material work commitments on such undeveloped lands.



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

There are several economic factors and significant uncertainties that affect the anticipated development of the Corporation's properties to which no reserves have been attributed. The Corporation will be required to make substantial capital expenditures in order to prove, exploit, develop and produce oil and natural gas from these properties in the future. If the Corporation's cash flow from operations is not sufficient to satisfy its capital expenditure requirements, there can be no assurance that additional debt or equity financing will be available to meet these requirements or, if available, that the terms will be acceptable to the Corporation. Failure to obtain such financing on a timely basis could cause the Corporation to forfeit its interest in certain properties, miss certain opportunities, reduce its pace of development or terminate its operations on such properties. An inability of the Corporation to access sufficient capital for its exploration and development purposes could have a material adverse effect on the Corporation's ability to execute its business strategy to develop its prospects.

The significant economic factors that affect the Corporation's future development of its lands to which no reserves have been attributed are:

- (i) future commodity prices for crude oil and natural gas (and the Corporation's outlook relating to such prices);
- (ii) the future capital costs of drilling, completing, tying in and equipping the wells necessary to develop such lands at the relevant times;
- (iii) the future costs of operating wells at the relevant times; and
- (iv) the levels of royalties applicable to productions from such lands.

The significant uncertainties that affect the Corporation's development of its lands to which no reserves have been attributed are:

- (i) the ability of the Corporation to obtain the capital necessary to fund the development of such lands at the relevant times;
- (ii) the future drilling and completion results the Corporation achieves in its development activities (e.g. with respect to the development of particular intervals or geographic areas, the uncertainty would be whether the initial drilling and completion results are sufficient to justify the development of such interval or geographic area);
- (iii) drilling and completion results achieved by others on lands in proximity to the Corporation's lands;
- (iv) transportation and processing infrastructure becoming available in a timeline consistent with proposed development plans;
- (v) the availability of regulatory approvals for development of the lands and the necessary infrastructure; and
- (vi) governmental actions and future changes to applicable regulatory or royalty regimes that affect timing or economics of proposed development activities.

All of these uncertainties have the potential to delay the development of such lands. On the other hand, uncertainty as to the timing and nature of the evolution of better exploration, drilling, completion and production technologies have the potential to accelerate development activities and enhance the economics relating to the development of such lands.

There are no unusually significant abandonment and reclamation costs associated with the Corporation's properties to which no reserves have been attributed.

For a description of the Corporation's contingent and prospective resources, including a discussion of the development plans for the Corporation's development pending contingent resource projects and the contingencies

which prevent the Corporation's contingent resources from being classified as reserves, see Appendix A to this Annual Information Form. See also "Risk Factors" in this Annual Information Form.

### **Forward Contracts**

The Corporation has used and may continue to use various types of derivative financial instruments and fixed price physical sales contracts to manage the risks related to fluctuating commodity prices. The Board has authorized the Corporation to hedge such portion of its forecast production as is permitted by the Credit Facilities which permit the Corporation to hedge up to 65% of forecast production over the following four fiscal quarters.

At December 31, 2017 and March 14, 2018, the Corporation had outstanding financial derivative contracts for 4,500 bbls/d of crude oil production from January 1, 2018 to December 31, 2018. For details of the Corporation's hedging arrangements, please refer to Note 17 – *Financial Risk Management* to the Corporation's audited annual financial statements for the year ended December 31, 2017.

Other than as disclosed in the Corporation's audited annual financial statements for the year ended December 31, 2017, the Corporation is not bound by any agreement (including any transportation agreement), directly or through an aggregator, under which it is precluded from fully realizing, or may be protected from the full effect of, future market prices for crude oil or natural gas.

See "Risk Factors" for additional information on the risks and uncertainties relating to the Corporation's hedging activities. In addition, please see the Corporation's audited annual financial statements for the year ended December 31, 2017 and related management's discussion and analysis for additional details regarding the Corporation's hedging arrangements and strategy.

### **Tax Horizon**

The Corporation was not required to pay any cash income taxes for the year ended December 31, 2017. The Corporation estimates that based on its current expenditure plans and the current price environment, no income taxes will become payable on the Corporation's income for the financial year ended December 31, 2018. As at December 31, 2017, the Corporation had accumulated tax pools and loss carry forwards of approximately \$2.1 billion which can be used to offset taxable income in future years. Based on anticipated capital investment, which further augments the tax pools, it is likely that the Corporation will not become taxable within the next five years as long as commodity prices remain consistent with today's environment.

### **Costs Incurred**

The following table sets forth the Corporation's property acquisition costs for proved and unproved properties, exploration costs and development costs for the year ended December 31, 2017:

*2017 Acquisition, Exploration and Development Costs*

Acquisition Costs		Exploration Costs	Development Costs
Proved Properties (MM\$)	Unproved Properties (MM\$)	(MM\$)	(MM\$)
0.1	0.9	10.2	404.8

### Exploration and Development Activities

The following table sets forth the gross and net exploratory and development wells that the Corporation participated in during the year ended December 31, 2017:

#### 2017 Exploration and Development Activities

	Exploratory Wells <sup>(1)</sup>		Development Wells <sup>(1)</sup>		Total <sup>(1)</sup>	
	Gross	Net	Gross	Net	Gross	Net
Oil Wells	0	0.0	14	14.0	14	14.0
Natural Gas Wells	0	0.0	39	39.0	39	39.0
Service Wells	0	0.0	0	0.0	0	0.0
Stratigraphic Test Wells	0	0.0	1	1.0	1	1.0
Dry Holes	0	0.0	0	0.0	0	0.0
<b>Total</b>	<b>0</b>	<b>0.0</b>	<b>54</b>	<b>54.0</b>	<b>54</b>	<b>54.0</b>

(1) Number of wells based on rig release dates.

The Corporation's most important current and likely exploration and development activities for 2018 will focus on the drilling of wells on the Montney/Doig Resource Play and the funding of key infrastructure required for future growth, including the Phase VI expansion of the Pouce Coupe Gas Plant. The 2018 Capital Program contemplates the drilling of 27 (27.0 net) wells, consisting of 14 (14.0 net) wells in the Pouce Coupe area and 13 (13.0 net) wells in the Gordondale area. See "General Development of the Business – Recent Developments" for further information regarding the Corporation's capital spending plans for 2018.

### Production Estimates

The following table sets forth the volume of production estimated for the year ending December 31, 2018 as evaluated by Deloitte and McDaniel, which is reflected in the estimate of future net revenue disclosed in the tables under the heading "Net Present Value of Future Net Revenue" above:

#### 2018 Production Volume Estimates

	Light Crude Oil and Medium Crude Oil (Mbbbls)	Shale Gas (MMcf) <sup>(1)</sup>	NGLs (Mbbbls)	Oil Equivalent (Mboe)
Gross Proved	1,657	142,536	3,463	28,875
Gross Probable	237	5,090	234	1,318

(1) Conventional natural gas volumes have been included in the shale gas volumes as conventional natural gas volumes represented less than 1% of the volume estimates for 2018.

The following table sets forth the estimated production volumes for the fields that account for more than 20% of the estimated production volumes for the year ending December 31, 2018:

#### 2018 Production Volume Estimates for Important Fields

Field Name	Gross Proved Reserves (Mboe)	Gross Probable Reserves (Mboe)
Pouce Coupe	17,975	430
Gordondale	10,606	884

## Production History

### 2017 Average Daily Production

The following table sets forth, by product type, the Corporation's average gross daily production volumes, quarterly and for the year ended December 31, 2017:

### *2017 Quarterly Production History*

Product Type	Three months ended				Year ended
	March 31, 2017	June 30, 2017	September 30, 2017	December 31, 2017	December 31, 2017
Light Crude Oil and Medium Crude Oil (bbls/d)	5,294	7,121	6,316	5,283	6,004
Shale Gas (Mcf/d) <sup>(1)</sup>	291,770	297,016	308,748	385,280	320,927
NGLs (bbls/d)	7,740	8,013	7,503	10,607	8,471
<b>Total (boe/d)</b>	<b>61,662</b>	<b>64,636</b>	<b>65,276</b>	<b>80,103</b>	<b>67,963</b>

(1) Conventional natural gas volumes have been included in the shale gas volumes as conventional natural gas volumes represented less than 1% of the Corporation's total corporate natural gas production in 2017 and are therefore not considered material.

### 2017 Annual Production

The following table sets forth, by product type, the Corporation's annual production volumes for the year ended December 31, 2017, in total and for each field comprising more than 10% of the Corporation's total production:

### *2017 Production Volumes*

	Light Crude Oil and Medium Crude Oil (bbls)	Shale Gas (Mcf) <sup>(1)</sup>	NGLs (bbls)	Oil Equivalent (boe)
Pouce Coupe	2,894	81,964,593	605,027	14,268,686
Gordondale	1,732,702	33,068,633	2,467,926	9,712,067
Other	455,873	2,105,046	18,859	825,573
<b>Total Annual Production Volumes</b>	<b>2,191,469</b>	<b>117,138,272</b>	<b>3,091,812</b>	<b>24,806,326</b>

(1) Conventional natural gas volumes have been included in the shale gas volumes as conventional natural gas volumes represented less than 1% of the Corporation's total corporate natural gas production in 2017 and are therefore not considered material.

2017 Prices Received, Royalties Paid, Production Costs and Netbacks

The following table sets forth, by product type, the prices received, royalties paid, production costs incurred, transportation and marketing costs incurred and the resulting netback (with and without royalty income) on a per unit of volume basis, quarterly and for the year ended December 31, 2017:

*2017 Quarterly Price, Royalty, Production Cost and Netback History*

	Three months ended				Year ended December 31, 2017
	March 31, 2017	June 30, 2017	September 30, 2017	December 31, 2017	
<b>Light Crude Oil and Medium Crude Oil (\$/bbl)</b>					
Price Received	62.59	60.38	55.62	68.58	61.42
Royalties Paid	(11.02)	(8.40)	(6.19)	(10.54)	(8.86)
Production Costs	(25.38)	(20.22)	(18.67)	(23.98)	(21.82)
Transportation and Marketing	(10.77)	(9.14)	(11.98)	(13.91)	(11.31)
Netback	15.42	22.62	18.78	20.15	19.43
Royalty Income	0.02	0.01	0.02	0.03	0.02
Netback Including Royalty Income	15.44	22.63	18.80	20.18	19.45
<b>Shale Gas (\$/Mcf)<sup>(1)</sup></b>					
Price Received	3.06	3.13	2.11	2.64	2.72
Royalties Paid	(0.06)	0.16	0.11	0.04	0.06
Production Costs <sup>(2)</sup>	(0.54)	(0.44)	(0.45)	(0.40)	(0.45)
Transportation and Marketing	(0.29)	(0.29)	(0.27)	(0.45)	(0.33)
Netback	2.17	2.56	1.50	1.83	2.00
Royalty Income	-	-	-	-	-
Netback Including Royalty Income	2.17	2.56	1.50	1.83	2.00
<b>NGLs (\$/bbl)</b>					
Price Received	32.09	31.10	27.67	40.08	33.39
Royalties Paid	(5.94)	(4.78)	(4.61)	(5.61)	(5.26)
Production Costs	(3.81)	(3.35)	(3.07)	(2.83)	(3.22)
Transportation and Marketing	(2.06)	(2.05)	(1.89)	(3.22)	(2.37)
Netback	20.28	20.92	18.10	28.42	22.54
Royalty Income	0.05	0.10	0.02	0.02	0.05
Netback Including Royalty Income	20.33	21.02	18.12	28.44	22.59

(1) Conventional natural gas volumes have been included in the shale gas volumes as conventional natural gas volumes represented less than 1% of the Corporation's total corporate natural gas production in 2017 and are therefore not considered material.

(2) Includes the effects of prior period gas cost allowance credits received by the Corporation.

**INDUSTRY CONDITIONS**

Companies carrying on business in the crude oil and natural gas sector in Canada are subject to extensive controls and regulations imposed through the legislation of the Government of Canada and the provincial governments where such companies have assets or operations. While these regulations and controls do not affect the Corporation's operations in any manner that is materially different than they affect other similarly sized industry participants with similar assets and operations, investors should consider such controls and regulations carefully. Although governmental legislation is a matter of public record, the Corporation is unable to predict what additional legislation or amendments to existing legislation governments may enact in the future.

The Corporation holds interests in crude oil and natural gas properties, along with related assets, in the Province of Alberta. The Corporation's assets and operations are regulated by administrative agencies deriving authority from underlying legislation. Regulated aspects of the Corporation's upstream crude oil and natural gas business include all manner of activities associated with the exploration for and production of crude oil and natural gas, including, among other matters: (i) permits for the drilling of wells; (ii) technical drilling and well requirements; (iii) permitted locations and access of operation sites; (iv) operating standards regarding conservation of produced substances and avoidance of waste, such as restricting flaring and venting; (v) minimizing environmental impacts; (vi) the storage, injection and disposal of substances associated with production operations; and (vii) the abandonment and reclamation of impacted sites. In order to conduct crude oil and natural gas operations and remain in good standing with Alberta's regulatory scheme, the Corporation must comply with applicable legislation, regulations, orders, directives and other directions (all of which are subject to governmental oversight, review and revision,

from time to time). Compliance in this regard can be costly and a breach of the same may result in fines or other sanctions.

The discussion below outlines certain pertinent conditions and regulations that impact the oil and natural gas industry in Western Canada, and particularly in the Province of Alberta.

## **Pricing and Marketing in Canada**

### ***Crude Oil***

Producers of crude oil are entitled to negotiate sales contracts directly with crude oil purchasers, which results in the market determining the price of crude oil. Worldwide supply and demand factors primarily determine 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.

### ***Natural Gas***

The price of natural gas sold in intra-provincial, interprovincial and international trade is determined by negotiation between buyers and sellers. 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, weather conditions, supply/demand balance, the length of the contract term and other contractual terms. Spot and future prices can also be influenced by supply and demand fundamentals on various trading platforms.

### ***NGLs***

The price of condensate and other NGLs such as ethane, butane and propane sold in intra-provincial, interprovincial and international trade is determined by negotiation between buyers and sellers. Such price depends, in part, on the quality of the NGLs, price of competing chemical stock, distance to market, access to downstream transportation, supply/demand balance, the length of the contract term and other contractual terms.

## **Exports from Canada**

Crude oil, natural gas and NGLs exports from Canada are subject to the NEB Act and the Part VI Regulations. The NEB Act and the Part VI Regulations authorize crude oil, natural gas and NGLs exports under either short-term orders or long-term licences. To obtain a crude oil export licence, a mandatory public hearing with the NEB is required, which is no longer the case for natural gas and NGLs. For natural gas and NGLs, the NEB uses a written process that includes a public comment period for impacted persons. Following the comment period, the NEB completes its assessment of the application and either approves or denies the application. For natural gas, the maximum duration of an export licence is 40 years and, for crude oil and other natural gas substances (e.g. NGLs), the maximum term is 25 years. All crude oil, natural gas and NGLs licences require the approval of the cabinet of the Government of Canada.

Orders from the NEB provide a short-term alternative to export licences and may be issued more expediently, since they do not require a public hearing or approval from the cabinet of the Government of Canada. Orders are issued pursuant to the Part VI Regulations for up to one or two years depending on the substance, with the exception of natural gas (other than NGLs) for which an order may be issued for up to 20 years for quantities not exceeding 30,000 cubic metres per day.

Exporters are free to negotiate prices and other terms with purchasers, provided that the export contracts continue to meet certain other criteria prescribed by the NEB and the Government of Canada.

Pursuant to the draft legislation introduced by the Government of Canada on February 8, 2018, if enacted the NEB will be replaced by the Canadian Energy Regulator (“**CER**”) who will take on the NEB’s responsibilities with respect to exports of crude oil, natural gas and NGLs exports from Canada; however, at the present time it is not proposed

that the legislative regime relating to exports of crude oil, natural gas and NGLs exports from Canada will substantively change under the new regime. See *“Industry Conditions – Regulatory Authorities and Environmental Regulation – Federal”*.

Currently, the Corporation does not directly enter into contracts to export its production outside of Canada.

As discussed in more detail below, one major constraint to the export of crude oil, natural gas and NGLs outside of Canada is the deficit of overall pipeline and other transportation capacity to transport production from Western Canada to the United States and other international markets. Although certain pipeline or other transportation projects are underway, many contemplated projects have been cancelled or are delayed due to regulatory hurdles, court challenges and economic and political factors. The transportation capacity deficit is not likely to be resolved quickly given the significant length of time required to complete major pipeline or other transportation projects once all regulatory and other hurdles have been cleared. In addition, the production of crude oil, natural gas and NGLs in Canada is expected to continue to increase, which may further exacerbate the transportation capacity deficit.

### **Transportation Constraints and Market Access**

Producers negotiate with pipeline operators (or other transport providers) to transport their products, which may be done on a firm or interruptible basis. Due to growing production and a lack of new and expanded pipeline and rail infrastructure capacity, producers in Western Canada have experienced low pricing relative to other markets in the last several years. Transportation availability is highly variable across different areas and regions, which can determine the nature of transportation commitments available, the numbers of potential customers that can be reached in a cost-effective manner and the price received.

Developing a strong network of transportation infrastructure for crude oil, natural gas and NGLs, including by means of pipelines, rail, marine and trucks, in order to obtain better access to domestic and international markets has been a significant challenge to the Canadian crude oil and natural gas industry. Improved means of access to global markets, especially the Midwest United States and export shipping terminals on the west coast of Canada, would help to alleviate the pressures of pricing discussed herein. Several proposals have been announced to increase pipeline capacity out of Western Canada to reach Eastern Canada, the United States and international markets via export shipping terminals on the west coast of Canada. While certain projects are proceeding, the regulatory approval process as well as economic and political factors for transportation and other export infrastructure, has led to the delay of many pipeline projects or their cancellation altogether.

Under the Canadian Constitution, interprovincial and international pipelines fall within the federal government’s jurisdiction and require approval by both the NEB and the cabinet of the federal government. However, recent years have seen a perceived lack of policy and regulatory certainty at a federal level. Although the Government of Canada recently introduced draft legislation to amend the current federal approval processes (see *“Industry Conditions – Regulatory Authorities and Environmental Regulation – Federal”*), it is uncertain when the new legislation will be brought into force and whether any changes to the draft legislation will be made before the legislation is brought into force. It is also uncertain whether any new approval process adopted by the Government of Canada will result in a more efficient approval process. The lack of regulatory certainty is likely to have an influence on investment decisions for major projects. Even when projects are approved on a federal level, such projects often face further delays due to interference by provincial and municipal governments as well as court challenges on various issues such as indigenous title, the government’s duty to consult and accommodate indigenous peoples and the sufficiency of environmental review processes, which creates further uncertainty. Export pipelines from Canada to the United States face additional uncertainty as such pipelines require approvals of several levels of government in the United States.

Natural gas prices in Alberta have also been constrained in recent years due to increasing North American supply, limited access to markets and limited storage capacity. While companies that secure firm access to transport their natural gas production out of Western Canada may be able to access more markets and possibly obtain better pricing, other companies may be forced to accept spot pricing in Western Canada for their natural gas, which in

the last several years has generally been depressed (and at times producers have received negative pricing for their natural gas production). Required repairs or upgrades to existing pipeline systems have also led to further reduced capacity and apportionment of firm access, which in Western Canada may be further exacerbated by natural gas storage limitations. Additionally, while a number of liquefied natural gas export plants have been proposed for the west coast of Canada, government decision-making, regulatory uncertainty, opposition from environmental and indigenous groups and changing market conditions have resulted in the cancellation or delay of many of these projects.

### **NAFTA and Other Trade Agreements**

NAFTA came into force on January 1, 1994. Under the terms of NAFTA, Canada remains free to determine whether exports of energy resources to the United States or Mexico will be allowed, provided that any export restrictions do not: (i) reduce the proportion of energy resources exported relative to the total supply of goods of Canada as compared to the proportion prevailing in the most recent 36 month period; (ii) impose an export price higher than the domestic price (subject to an exception with respect to certain measures which only restrict the volume of exports); and (iii) disrupt normal channels of supply. Further, all three signatory countries are prohibited from imposing a minimum or maximum price requirement in any circumstance where any other form of quantitative restriction is prohibited. The signatory countries are also prohibited from imposing a minimum or maximum import price requirement on exports (where any other form of quantitative restriction is prohibited) and imports (except as permitted in the enforcement of countervailing and anti-dumping orders and undertakings). NAFTA also requires energy regulators to ensure the orderly and equitable implementation of any regulatory changes and to ensure that the application of such changes will cause minimal disruption to contractual arrangements and avoid undue interference with pricing, marketing and distribution arrangements.

In 2017, the United States government announced its intention to renegotiate NAFTA. As a result, Canada, the United States and Mexico began renegotiating the terms of NAFTA in mid-2017. The United States has also suggested that it might give notice of the termination of NAFTA if it is not satisfied with the outcome of the renegotiations. If the United States does give notice of its intent to terminate or withdraw from NAFTA, the earliest such termination or withdrawal could occur would be six months after such notice is given. The renegotiations are still underway and the outcome of such negotiations remains unclear, but as the United States remains Canada's largest trade partner by far and the largest international market for the export of crude oil, natural gas and NGLs from Canada, any changes to or the termination of NAFTA could have an impact on Western Canada's crude oil and natural gas industry at large, including the Corporation's business. See *"Risk Factors – Political Uncertainty"*.

Canada has also pursued a number of other international free trade agreements with other countries around the world. As a result, a number of free trade or similar agreements are in force between Canada and certain other countries. Canada and the European Union recently agreed to the Comprehensive Economic and Trade Agreement ("**CETA**"), which provides for duty-free, quota-free market access for Canadian oil and gas products to the European Union. Although CETA remains subject to ratification by certain national legislatures in the European Union, provisional application of CETA commenced on September 21, 2017. In addition, Canada and ten other countries recently concluded discussions and agreed on the draft text of the Comprehensive and Progressive Agreement for Trans-Pacific Partnership ("**CPTPP**"), which is intended to allow for preferential market access among the countries that are parties to the CPTPP. The text of CPTPP has not been finalized or published and the agreement remains subject to ratification by the governments of each of the countries involved. While it is uncertain what effect CETA, CPTPP or any other trade agreements will have on the oil and natural gas industry in Canada, the lack of available infrastructure for the offshore export of oil and gas may limit the ability of Canadian oil and gas producers to benefit from such trade agreements.

### **Land Tenure**

The respective provincial governments (i.e. the Crown) predominantly own the mineral rights to crude oil and natural gas located in Western Canada. According to Alberta Energy, the Crown owns approximately 81% of the Province of Alberta's mineral rights. 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 in Western Canada's provinces conduct regular land sales where oil and natural gas companies bid for leases to explore for and produce crude oil and natural gas pursuant to mineral rights owned by the respective provincial governments. The leases generally have a fixed term; however, a lease may generally be continued after the initial term where certain minimum thresholds of production have been reached, all lease rental payments have been paid on time and other conditions are satisfied.

The Province of 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. In addition, Alberta has shallow rights reversion for shallow, non-productive geological formations for new leases and licences.

To develop crude oil and natural gas resources, it is necessary for the operator 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.

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 Alberta. According to Alberta Energy, approximately 19% of the remaining mineral rights are owned by private freehold owners and other non-Crown entities. The 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.

An additional category of mineral rights ownership includes ownership by the Government of Canada of some legacy mineral lands and within indigenous reservations designated under the *Indian Act* (Canada). Indian Oil and Gas Canada ("**IOGC**"), which is a federal government agency, manages subsurface and surface leases, in consultation with the applicable indigenous peoples, for the exploration and production of crude oil and natural gas on indigenous reservations.

## **Royalties and Incentives**

### ***General***

Each province has legislation and regulations that govern royalties and production rates. The royalty regime in a given province is a significant factor in the profitability of crude oil, natural gas and NGLs production. Royalties payable on production from lands where the Crown does not hold the mineral rights are determined by negotiation between the freehold mineral owner and the lessee, although production from such lands is subject to certain provincial taxes and royalties. Royalties from production on Crown lands are determined by governmental regulation and are generally calculated as a percentage of the value of gross production. The rate of Crown royalties payable generally depends in part on prescribed reference prices, well productivity, geographical location, field discovery date, method of recovery and the type or quality of the petroleum substance produced.

Occasionally the governments of the Western Canadian provinces create incentive programs for exploration and development. Such programs often provide for royalty rate reductions, royalty holidays or royalty tax credits and are often introduced when commodity prices are low to encourage exploration and development activity. In addition, such programs may be introduced to encourage producers to undertake initiatives using new technologies that may enhance or improve the recovery of crude oil, natural gas and NGLs.

Producers and working interest owners of crude oil and natural gas rights may also carve out additional royalties or royalty-like interests through non-public transactions, which include the creation of instruments such as overriding royalties, net profits interests and net carried interests.

## ***The Royalty Framework in Alberta***

### ***Crown Royalties***

In Alberta, the provincial government royalty rates apply to Crown-owned mineral rights. In 2016, the Government of Alberta adopted a modernized Alberta royalty framework (the “**Modernized Framework**”) that applies to all wells drilled after January 1, 2017. The previous royalty framework (the “**Previous Framework**”) will continue to apply to wells drilled prior to January 1, 2017 for a period of ten years ending on December 31, 2026. After the expiry of this ten-year period, these older wells will become subject to the Modernized Framework.

The Modernized Framework applies to all hydrocarbons other than oil sands, which will remain subject to the Previous Framework. Royalties on production from non-oil sands wells under the Modernized Framework are determined on a “revenue-minus-costs” basis with the cost component based on a “drilling and completion cost allowance” formula for each well, depending on its vertical depth and/or horizontal length. The formula is based on the industry’s average drilling and completion costs as determined by the AER on an annual basis.

Producers pay a flat royalty rate of 5% 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 gross revenues from the well equals the drilling and completion cost allowance for the well set by the AER. After payout, producers pay an increased post-payout royalty on revenues of between 5% and 40% determined by reference to the then current commodity prices of the various hydrocarbons. Similar to the Previous 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, to a minimum of 5%, as the mature well’s production declines. As the Modernized Framework uses deemed drilling and completion costs in calculating the royalty and not the actual drilling and completion costs incurred by a producer, low cost producers benefit if their well costs are lower than the drilling and completion cost allowance and, accordingly, they continue to pay the lower 5% royalty rate for a period of time after their wells achieve actual payout.

The Previous Framework is applicable to all conventional crude oil and natural gas wells drilled prior to January 1, 2017. Subject to certain available incentives, royalty rates for conventional crude oil production under the Previous Framework range from a base rate of 0% to a cap of 40%. Subject to certain available incentives, royalty rates for natural gas production under the Previous Framework range from a base rate of 5% to a cap of 36%. The Previous Framework also includes a natural gas royalty formula which provides for a reduction based on the measured depth of the well below 2,000 metres deep, as well as the acid gas content of the produced gas. Under the Previous Framework, the royalty rate applicable to NGLs is a flat rate of 40% for pentanes and 30% for butanes and propane.

### ***Freehold and Other Types of Non-Crown Royalties***

Royalties on production from privately-owned freehold lands are negotiated between the mineral freehold owner and the lessee under a lease or other contract.

IOGC is a special agency responsible for managing and regulating the crude oil and natural gas resources located on indigenous reservations across Canada. IOGC’s responsibilities include negotiating and issuing the crude oil and natural gas agreements between indigenous groups and crude oil and natural gas companies, as well as collecting royalty revenues on behalf of indigenous groups and depositing the revenues in their trust accounts. While certain standards exist, the exact terms and conditions of each crude oil and natural gas lease dictate the calculation of royalties owed, which may vary depending on the involvement of the specific indigenous group. Ultimately, the relevant indigenous group must approve the terms.

### ***Incentives***

The Government of Alberta has from time to time implemented drilling credits, incentives or transitional royalty programs to encourage crude oil and natural gas development and new drilling. In addition, the Government of

Alberta has implemented certain initiatives intended to accelerate technological development and facilitate the development of unconventional resources.

### **Rental Payments and Freehold Mineral Taxes**

Currently, producers of oil and natural gas from Crown lands in Alberta are required to pay annual rental payments, at a rate of \$3.50 per hectare, in addition to the monthly royalty payments in respect of crude oil and natural gas produced.

In addition to the royalties payable to the mineral owners, producers of crude oil and natural gas from freehold lands in each of the Western Canadian provinces are required to pay freehold mineral taxes or production taxes. Freehold mineral taxes or production taxes are taxes levied by a provincial government on crude oil and natural gas production from lands where the Crown does not hold the mineral rights. Freehold mineral taxes are levied for production from freehold mineral lands on an annual basis on calendar year production. Freehold mineral taxes are calculated using a tax formula that takes into consideration, among other things, the amount of production, the hours of production, the value of each unit of production, the tax rate and the percentages that the owners hold in the title. On average, in Alberta the tax levied is 4% of revenues reported from freehold mineral title properties. The freehold mineral taxes would be in addition to any royalty or other payment paid to the owner of such freehold mineral rights, which are established through private negotiation.

### **Regulatory Authorities and Environmental Regulation**

#### ***General***

The crude oil and natural gas industry is currently subject to environmental regulation under a variety of Canadian federal, provincial, territorial and municipal laws and regulations, all of which are subject to governmental review and revision from time to time. Such regulations provide for, among other things, restrictions and prohibitions on the spill, release or emission of various substances produced in association with certain crude oil and natural gas industry operations, such as sulphur dioxide and nitrous oxide. The regulatory regimes set out the requirements with respect to oilfield waste handling and storage, habitat protection and the satisfactory operation, maintenance, abandonment and reclamation of well and facility sites. Compliance with such regulations can require significant expenditures and a breach of such requirements may result in suspension or revocation of necessary licences and authorizations, civil liability and the imposition of material fines and penalties. In addition to these specific, known requirements, future changes to environmental legislation, including anticipated legislation for air pollution and GHG emissions, may impose further requirements on operators and other companies in the crude oil and natural gas industry.

#### ***Federal***

Canadian environmental regulation is the responsibility of both the federal and provincial governments. Where there is a direct conflict between federal and provincial environmental legislation in relation to the same matter, the federal law will prevail. The federal government has primary jurisdiction over federal works, undertakings and federally regulated industries such as railways, aviation and interprovincial transport, including interprovincial pipelines.

On June 20, 2016, the Government of Canada launched a review of the current environmental and regulatory processes. On February 8, 2018, the Government of Canada introduced draft legislation to overhaul the existing environmental assessment process in Canada and replace the NEB with a new regulator, the CER. Pursuant to the draft legislation, the Impact Assessment Agency of Canada (the “**IAA**”) would replace the Canadian Environmental Assessment Agency. It appears that additional categories of projects may be included within the new impact assessment process, such as large-scale wind power facilities and in-situ oilsands facilities. The revamped approval process for applicable major developments will have specific legislated timelines at each stage of the formal impact assessment process. The IAA’s process would focus on: (i) early engagement by the proponents of major projects with the IAA and all stakeholders (such as the public and indigenous groups) prior to the formal impact assessment process; (ii) potentially increased public participation where the project undergoes a panel review; (iii)

providing analysis of the potential impacts and effects of a project without making recommendations, to support a public-interest approach to decision-making, with cost-benefit determinations and approvals made by the Minister of Environment and Climate Change or the cabinet of the Government of Canada; (iv) analyzing further specified factors for projects such as alternatives to the project and social and indigenous issues in addition to health, environmental and economic impacts; and (v) overseeing an expanded follow-up, monitoring and enforcement process with increased involvement of indigenous peoples and communities. As to the proposed CER, many of its activities would be similar to the NEB, albeit with a different structure and with the notable exception that the CER would no longer have primary responsibility in the consideration of new major projects, instead focusing on the lifecycle regulation (e.g. overseeing construction, tolls and tariffs, operations and eventual winding down) of approved projects, while providing for expanded participation by communities and indigenous peoples. It is unclear when the new regulatory scheme will come into force or whether any amendments will be made prior to coming into force. Until then, the Government of Canada's interim principles released on January 27, 2016 will continue to guide decision-making authorities for projects currently undergoing environmental assessment. The eventual effects of the proposed regulatory scheme on the proponents of major projects remain unclear.

On May 12, 2017, the Government of Canada introduced Bill C-48: *Oil Tanker Moratorium Act – An Act respecting the regulation of vessels that transport crude oil or persistent oil to or from ports or marine installations located along British Columbia's north coast*. This legislation is aimed at providing coastal protection in northern British Columbia by prohibiting crude oil tankers carrying more than 12,500 metric tonnes of crude oil or persistent crude oil products from stopping, loading, or unloading crude oil in that area. Parliament is still considering the bill, which passed the second reading on October 4, 2017. If implemented, the legislation may prevent the building of pipelines to, and export terminals located on, the portion of the British Columbia coast subject to the moratorium and, as a result, negatively affect the ability of producers to access global markets.

## **Alberta**

The AER is the regulator responsible for all resource development in Alberta. The AER is responsible for ensuring the safe, efficient, orderly and environmentally responsible development of hydrocarbon resources, including allocating and conserving water resources, managing public lands, and protecting the environment. The AER's responsibilities exclude the functions of the Alberta Utilities Commission and the Surface Rights Board, as well as Alberta Energy's responsibility for mineral tenure.

The Government of Alberta relies on regional planning to accomplish its responsible resource development goals. Its approach to natural resource management provides for engagement and consultation with stakeholders and the public and examines the cumulative impacts of development on the environment and communities by incorporating the management of all resources, including energy, minerals, land, air, water and biodiversity. While the AER is the primary regulator for energy development, several other governmental departments and agencies may be involved in land use issues, including Alberta Environment and Parks, Alberta Energy, the Policy Management Office, the Aboriginal Consultation Office and the Land Use Secretariat.

The Government of Alberta's land-use policy for surface land in Alberta sets out an approach to manage public and private land use and natural resource development in a manner that is consistent with the long-term economic, environmental and social goals of the province. It calls for the development of seven region-specific land-use plans in order to manage the combined impacts of existing and future land use within a specific region and the incorporation of a cumulative effects management approach into such plans. As a result, several regional plans have been implemented and others are in the process of being implemented. These regional plans may affect further development and operations in such regions.

### Liability Management Rating Program

In Alberta, the AER administers the Licensee Liability Rating Program (the "**Alberta LLR Program**"). The Alberta LLR Program is a liability management program governing most conventional upstream crude oil and natural gas wells, facilities and pipelines. The OGCA establishes an orphan fund (the "**Orphan Fund**") to pay the costs to suspend, abandon, remediate and reclaim a well, facility or pipeline included in the Alberta LLR Program if a licensee or

working interest participant becomes insolvent or is unable to meet its obligations. The Orphan Fund is funded by licensees in the Alberta LLR Program through a levy administered by the AER. The Alberta LLR Program is designed to minimize the risk unfunded liabilities of licensees pose to the Orphan Fund and to prevent the taxpayers of Alberta from incurring costs to suspend, abandon, remediate and reclaim wells, facilities or pipelines. The Alberta LLR Program requires a licensee whose deemed liabilities exceed its deemed assets to provide the AER with a security deposit. The ratio of deemed assets to deemed liabilities is assessed once each month and where a security deposit is required, the failure to post any required amounts may result in the initiation of enforcement action by the AER. The AER publishes the liability management rating for each licensee on a monthly basis on its public website.

In *Redwater Energy Corporation (Re)* (“**Redwater**”), the Court of Queen’s Bench of Alberta found that there was an operational conflict between the abandonment and reclamation provisions of the OGCA, including the Alberta LLR Program, and the BIA. This ruling meant that receivers and trustees have the right to renounce assets within insolvency proceedings. Such a conflict renders the AER’s legislated authority unenforceable to impose abandonment orders against licensees or to require a licensee to pay a security deposit before approving a transfer when such a licensee is insolvent. Effectively, this means that abandonment costs will be borne by the industry-funded Orphan Fund or the province in these instances because any financial resources of the insolvent licensee will first be used to satisfy secured creditors under the BIA. The decision of the Court of Queen’s Bench of Alberta was affirmed by a majority of the Alberta Court of Appeal. This decision is currently under appeal to the Supreme Court of Canada.

In response to Redwater, the AER issued several bulletins and interim rule changes to govern while the case is appealed and to allow the Government of Alberta to develop appropriate regulatory measures to adequately address environmental liabilities. All transfers of well, facility and pipeline licences in the province are subject to AER approval. As a condition of transferring existing AER licences, approvals and permits, all are assessed on a non-routine basis and the AER now requires all transferees to demonstrate that they have an LMR, being the ratio of a licensee’s assets to liabilities, of 2.0 or higher immediately following the transfer, or to otherwise prove that they can satisfy their abandonment and reclamation obligations. On December 6, 2017, the AER issued Bulletin 2017-21: *New Edition of Directive 067: Eligibility Requirements for Acquiring and Holding Energy Licences and Approvals* announcing the release of a new edition of Directive 067, which deals with licensee eligibility to operate wells and facilities. The changes to Directive 067 include requiring additional information at the time of application, increased discretion regarding the rejection of applications where an applicant poses a risk of insolvency or non-compliance and requirements for keeping corporate information up to date. Directive 067 also now requires an applicant to provide information regarding the corporate structure of the applicant, whether there are any current regulatory proceedings or outstanding non-compliances, information regarding the applicant’s shareholders and whether any directors or officers of the applicant have been directors or officers of an energy company that has been subject to insolvency proceedings in the last five years.

The AER may make further rule changes in response to Redwater at any time, especially as the case heads towards a final determination, which means that additional obligations and/or different requirements may be forthcoming.

The AER has also implemented the Inactive Well Compliance Program (the “**IWCP**”) to address the growing inventory of inactive wells in Alberta and to increase the AER’s surveillance and compliance efforts under Directive 013. The IWCP applies to all inactive wells that are noncompliant with Directive 013 as of April 1, 2015. The objective is to bring all inactive noncompliant wells under the IWCP into compliance with the requirements of Directive 013 within five years. As of April 1, 2015, each licensee is required to bring 20% of its inactive wells into compliance every year, either by reactivating or by suspending the wells in accordance with Directive 013 or by abandoning them in accordance with Directive 020: *Well Abandonment*. The list of current wells subject to the IWCP is available on the AER’s Digital Data Submission system.

### **Climate Change Regulation**

Climate change regulation at both the federal and provincial level has the potential to significantly affect the regulatory environment of the crude oil and natural gas industry in Canada. In general, there is some uncertainty

with regard to the impacts of federal or provincial climate change and environmental laws and regulations, as it is currently not possible to predict the extent of future regulatory requirements. Any new laws and regulations, or additional requirements to existing laws and regulations, could have a material impact on the Corporation's operations and cash flow.

### **Federal**

Canada has been a signatory to the United Nations Framework Convention on Climate Change (the "UNFCCC") since 1992. Since its inception, the UNFCCC has instigated numerous policy experiments with respect to climate governance. On April 22, 2016, 197 countries signed the Paris Agreement, committing to prevent global temperatures from rising more than 2° Celsius above pre-industrial levels and to pursue efforts to limit this rise to no more than 1.5° Celsius. As of March 1, 2018, 175 of the 197 parties to the convention have ratified the Paris Agreement. Canada ratified the Paris Agreement on October 5, 2016.

Following the Paris Agreement and its ratification in Canada, the Government of Canada pledged to cut its emissions by 30% from 2005 levels by 2030. Further, on December 9, 2016, the Government of Canada released the Pan-Canadian Framework on Clean Growth and Climate Change (the "**Pan-Canadian Framework**"). The Pan-Canadian Framework provided for a carbon-pricing strategy, with a carbon tax starting at \$10/tonne, increasing annually until it reaches \$50/tonne in 2022. A draft legislative proposal for the federal carbon pricing system was released on January 15, 2018. This system would apply in provinces and territories that request it and in those that do not have a carbon pricing system in place that meets the federal standards in 2018. Four provinces currently have carbon pricing systems in place that would meet federal requirements (Alberta, British Columbia, Ontario and Quebec). The comment period for the draft legislative proposal ended on February 12, 2018.

On May 27, 2017, the Government of Canada published draft regulations to reduce emissions of methane from the crude oil and natural gas sector. The proposed regulations aim to reduce unintentional leaks and intentional venting of methane, as well as ensuring that crude oil and natural gas operations use low-emission equipment and processes, by introducing new control measures. Among other things, the proposed regulations limit how much methane upstream oil and gas facilities are permitted to vent. These facilities would need to capture the gas and either re-use it, re-inject it, send it to a sales pipeline, or route it to a flare. In addition, in provinces other than Alberta and British Columbia (which already regulate such activities), well completions by hydraulic fracturing would be required to conserve or destroy gas instead of venting. The Government of Canada anticipates that these actions will reduce annual GHG emissions by about 20 megatonnes by 2030.

Additionally, the Government of Canada lowered the GHG reporting threshold from 50,000 tonnes to 10,000 for GHG-emitting facilities under the *Greenhouse Gas Reporting Program*. This update was released in advance of the 2017 reporting period. All facilities that emitted the equivalent of 10,000 tonnes of GHG in 2017 will be required to submit a report by June 1, 2018.

### **Alberta**

On November 22, 2015, the Government of Alberta introduced its Climate Leadership Plan (the "**CLP**"). The CLP has four areas of focus: implementing a carbon price on GHG emissions, phasing out coal-generated electricity and developing renewable energy, legislating an oil sands emission limit, and introducing a new methane emissions reduction plan. The Government of Alberta has since introduced new legislation to give effect to these initiatives.

The CLA came into force on January 1, 2017. The CLA and its accompanying regulations impose registration, payment, remittance, reporting and administrative obligations on applicable persons throughout the fuel supply chain. Pursuant to the CLA, an initial economy-wide carbon levy of \$20 per tonne of GHG emissions was implemented on January 1, 2017, which increased to \$30 per tonne on January 1, 2018. The levy is anticipated to increase again in 2021 in line with the federal legislation. With certain exemptions, all fuel consumption, including gasoline and natural gas, will be subject to the carbon levy. Activities integral to oil and gas production processes are exempt until 2023. In addition, facilities subject to CCIR (as described below) are exempt from paying the carbon levy on fuels used in operations.

On December 18, 2017, the Alberta government released the CCIR which came into force January 1, 2018. The CCIR replaces the *Specified Gas Emitters Regulation* (“SGER”) for compliance years 2018 onwards. The aim is to reduce annual GHG emissions by 20 megatonnes by 2020 and by 50 megatonnes by 2030, and mandates quarterly and final reporting requirements. Similar to SGER, the CCIR applies to any facility that has emitted 100,000 tonnes of CO<sub>2</sub>e in 2003 or any subsequent year. Unlike SGER, which set emission reduction requirements, the CCIR imposes an output-based benchmark on competitors in the same emitting industry. The CCIR compliance obligations will be reduced by 50% and 25% for 2018 and 2019, respectively, with no reduction for 2020 onward. In addition to the industry-specific benchmarks, each benchmark will decrease annually at a rate of 1%, beginning in 2020. The Government of Alberta intends for this strategy to align with the Pan-Canadian Framework.

Generally, the CCIR requires each regulated facility to calculate and report its total regulated emissions of specified gases which are compared as against the output based allocation for that facility. Each facility will have an output based allocation of emissions which is calculated by multiplying the actual quantity of products produced by such facility by such product’s benchmark. To the extent a facility’s total regulated emissions is less than its output based allocation, it will earn emission performance credits. To the extent a facility’s total regulated emissions exceeds its output based allocation, the person responsible for such facility will be required to “true-up” by applying emission performance credits, emission offsets, fund credits or a combination of them, such that its net emissions equal the applicable facility output based allocation.

Effective January 1, 2018, all facilities emitting 10,000 tonnes of CO<sub>2</sub>e per year or more in Alberta are required to submit annual reports on their emissions to the Government of Alberta, which complies with the federal standard under the federal *Greenhouse Gas Reporting Program*. Previously, the reporting threshold was 50,000 tonnes of CO<sub>2</sub>e per year.

The Government of Alberta also signaled its intention through the CLP to implement regulations that would lower annual methane emissions by 45% by 2025. Regulations are planned to take effect in 2020 to ensure the 2025 target is met.

Alberta was also the first jurisdiction in North America to direct dedicated funding to implement carbon capture and storage technology across industrial sectors. Alberta has committed \$1.24 billion over 15 years to fund two large-scale carbon capture and storage projects that will begin commercializing the technology on the scale needed to be successful. On December 2, 2010, the Government of Alberta passed the *Carbon Capture and Storage Statutes Amendment Act, 2010*. It deemed the pore space underlying all land in Alberta to be, and to have always been, the property of the Crown and provided for the assumption of long-term liability for carbon sequestration projects by the Crown, subject to the satisfaction of certain conditions.

### **Accountability and Transparency**

In 2015, ESTMA came into effect, which imposed mandatory reporting requirements on certain entities engaged in the “commercial development of oil, gas or minerals”, including exploration, extraction and holding permits. All companies subject to ESTMA must report payments over CDN\$100,000 made to any level of a Canadian or foreign government (including indigenous groups), including royalty payments, taxes (other than consumption taxes and personal income taxes), fees, production entitlements, bonuses, dividends (other than ordinary dividends paid to shareholders), infrastructure improvement payments and other prescribed categories of payments.

### **RISK FACTORS**

The Corporation’s operations are exposed to a number of risks, some that impact the oil and natural gas industry as a whole and others that are unique to the Corporation. The impact of any risk or a combination of risks may adversely affect the Corporation’s business, financial condition, results of operations, prospects, cash flows and reputation, which may reduce or restrict the Corporation’s ability to pay dividends and may materially affect the market price of the Corporation’s securities.

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

#### **Financial Risks and Risks Relating to Economic Conditions**

##### ***Commodity Price Volatility***

The Corporation's revenues, operating results and financial condition depend substantially on prevailing prices for oil and natural gas. Prices for oil and natural gas are subject to wide fluctuations in response to relatively minor changes in the supply of and demand for oil and natural gas, market uncertainty and a variety of additional factors that are beyond the Corporation's control. These factors include, but are not limited to, the following:

- global energy supply and demand, production and policies, including (without limitation) the ability of OPEC to set, maintain and reduce production levels in order to influence prices for crude oil;
- political conditions, instability and hostilities;
- domestic and foreign supplies of crude oil, NGLs and natural gas;
- the level of consumer demand, including demand for different qualities and types of crude oil and liquids;
- the production and storage levels of North American natural gas and crude oil and the supply and price of imported oil;
- the ability to export oil and liquefied natural gas and NGLs from North America;
- the availability, proximity and capacity of gathering, transportation, processing and/or refining facilities in regional or localized areas that may affect the realized price for oil and natural gas;
- weather conditions;
- government regulations, including existing and proposed changes to such regulations;
- the effect of world-wide environmental regulations and energy conservation and GHG reduction measures;
- the price and availability of alternative energy supplies; and
- global and domestic economic conditions, including currency fluctuations.

Oil and natural gas prices are expected to remain volatile for the near future because of market uncertainties over the supply and demand of these commodities due to the current state of the world economy, increased growth of shale oil production in the United States and other concerns of over-supply, OPEC actions, sanctions imposed on certain oil producing nations by other countries and ongoing credit and liquidity concerns. 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 and natural gas producing properties, as buyers and sellers have difficulty agreeing on such value. Price volatility also makes it difficult to budget for and project the return on acquisitions and development and exploitation projects.

A material decline in oil and natural gas prices could result in a reduction of the Corporation's net production revenue. The economics of producing from some wells may change because of lower prices, which could result in reduced production of oil or natural gas. The Corporation might also elect not to produce from certain wells at lower prices. In addition, any prolonged period of low crude oil or natural gas prices could result in a decision by the Corporation to suspend or slow exploration and development activities or the construction or expansion of new or existing facilities or reduce its production levels. Any substantial and prolonged decline in the price of oil and natural gas would have an adverse effect on the carrying value of the Corporation's assets, borrowing capacity, revenues, profitability and cash flows from operations and may have a material adverse effect on the



Corporation's business, financial condition, results of operations, prospects, its ability to pay dividends and ultimately on the market prices of the Corporation's securities.

Lower commodity prices may also affect the volume and value of the Corporation's reserves, rendering certain reserves uneconomic. The Corporation's reserves at December 31, 2017 are estimated using forecast prices and costs. If crude oil and natural gas prices stay at current levels, the Corporation's reserves may be substantially reduced as economic limits of developed reserves are reached earlier and undeveloped reserves become uneconomic at such prices. Even if some reserves remain economic at lower price levels, sustained low prices may compel the Corporation to re-evaluate its development plans and reduce or eliminate various projects with marginal economics. Any decrease in the value of the Corporation's reserves may reduce the borrowing base under the Credit Facilities, which, depending on the level of the Corporation's indebtedness, could result in the Corporation having to repay a portion of its indebtedness. See "*Risk Factors – Financial Risks and Risks Relating to Economic Conditions – Credit Facilities*".

In addition, lower commodity prices restrict the Corporation's cash flow resulting in less funds from operations being available to fund the Corporation's capital expenditure programs. The Corporation's capital expenditure plans are impacted by the Corporation's cash flow. Consequently, the Corporation may not be able to replace its production with additional reserves and both the Corporation's production and reserves could be reduced on a year-over-year basis.

In addition to possibly resulting in a decrease in the value of the Corporation's economically recoverable reserves, lower commodity prices may also result in a decrease in the value of the Corporation's infrastructure and facilities, all of which could also have the effect of requiring a write down of the carrying value of its oil and gas assets on its balance sheet and the recognition of an impairment charge on its income statement.

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

Recent market events and conditions, including global excess oil and natural gas supply, actions taken by OPEC, slowing growth in emerging economies, market volatility and disruptions in Asia, sovereign debt levels and political upheavals in various countries have caused significant weakness and volatility in commodity prices. These events and conditions have caused a significant decrease in the valuation of oil and natural gas companies and a decrease in the confidence in the oil and natural gas industry. These difficulties have been exacerbated in Canada by political and other actions resulting in uncertainty surrounding regulatory, tax, royalty changes and environmental regulation. In addition, the inability to get the necessary approvals to build pipelines, liquefied natural gas plants and other facilities to provide better access to markets for the oil and natural gas industry in Western Canada has led to additional downward price pressure on oil and gas produced in Western Canada and uncertainty and reduced confidence in the oil and natural gas industry in Western Canada. Given the current market conditions and the lack of confidence in the Canadian oil and natural gas industry, the Corporation may have difficulty raising additional funds or if it is able to do so, it may be on unfavourable and highly dilutive terms.

#### ***Substantial Capital and Additional Funding Requirements***

The Corporation anticipates that it will make substantial capital expenditures for the acquisition, exploration development and production of oil and natural gas reserves and resources in the future. As future capital expenditures are expected to be financed out of cash generated from operations, borrowings and possible future equity sales, the Corporation's ability to do so is dependent on, among other factors:

- the overall state of the capital markets;
- the Corporation's credit rating (if applicable);
- commodity prices;
- interest rates;
- royalty rates;

- tax burden due to current and future tax laws; and
- investor appetite for investments in the energy industry and the Corporation's securities in particular.

The Corporation's cash flow from its properties may not be sufficient to fund its ongoing activities at all times and from time to time the Corporation may require additional financing. The inability of the Corporation to access sufficient capital for its operations and activities could have a material adverse effect on the Corporation's financial condition, results of operations and prospects.

Due to the conditions in the oil and natural gas industry and/or global economic and political volatility, the Corporation may from time to time have restricted access to capital and increased borrowing costs. The current conditions in the oil and natural gas industry have negatively impacted the ability of oil and natural gas companies to access additional financing. Failure to obtain financing on a timely basis could cause the Corporation to forfeit its interest in certain properties, miss certain acquisition opportunities and reduce or terminate its operations.

There can be no assurance that debt or equity financing or cash generated by operations will be available or sufficient to meet the Corporation's requirements or, if debt or equity financing is available, that it will be on terms acceptable to the Corporation. To the extent that external sources of capital become limited, unavailable or available on onerous terms, the Corporation's ability to make capital investments and maintain existing assets may be impaired, and its assets, liabilities, business, financial condition and results of operations may be affected materially and adversely as a result. In addition, the future development of the Corporation's petroleum properties may require additional financing and there are no assurances that such financing will be available or, if available, will be available upon acceptable terms. The Corporation may be required to seek additional equity financing on terms that are highly dilutive to existing shareholders. Moreover, future activities may require the Corporation to alter its capitalization significantly.

#### ***Issuance of Debt***

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

#### ***Credit Facilities***

The amount authorized under the Credit Facilities is dependent on the borrowing base determined by the Corporation's lenders. The Credit Facilities are subject to a semi-annual review of the borrowing base limit by Birchcliff's syndicate of lenders, which limit is directly impacted by the value of Birchcliff's oil and natural gas reserves. The Corporation's lenders use the Corporation's reserves, commodity prices and other factors to determine the Corporation's borrowing base. Commodity prices continue to be depressed and have fallen dramatically since 2014. Continued depressed commodity prices or further declines in commodity prices could result in a reduction in the Corporation's borrowing base, thereby reducing the funds available to the Corporation under the Credit Facilities. As the borrowing base is determined based on the lender's interpretation of the Corporation's reserves and future commodity prices, there can be no assurance as to the amount of the borrowing base determined at each review. In addition, the lenders are able to request one additional borrowing base redetermination in between scheduled redeterminations and the borrowing base may be reduced in connection with asset dispositions. If, at the time of a borrowing base redetermination, the outstanding borrowings under the Credit Facilities were to exceed the borrowing base as a result of any such redetermination, the Corporation would be required to eliminate this excess. If the Corporation is forced to repay a portion of its indebtedness under the Credit Facilities, it may not have sufficient funds to make such repayments. If it does not have sufficient funds and

is otherwise unable to negotiate renewals of its borrowings or arrange new financing, it may have to sell significant assets. Any such sale could have a material adverse effect on the Corporation's business and financial results.

The maturity date of the Credit Facilities is May 11, 2020. The Corporation may each year, at its option, request an extension to the maturity date of the Syndicated Credit Facility and the Working Capital Facility, or either of them, for an additional period of up to three years from May 11 of the year in which the extension request is made. In the event that either of the Credit Facilities is not extended before the maturity date, all outstanding indebtedness under such Credit Facility will be repayable at the maturity date. There is also a risk that the Credit Facilities will not be renewed for the same principal amount or on the same terms. Any of these events could adversely affect the Corporation's ability to fund its ongoing operations and to pay dividends.

The Corporation is required to comply with covenants under the Credit Facilities. In the event that the Corporation does not comply with these covenants, the Corporation's access to capital could be restricted or repayment could be required. Events beyond the Corporation's control may contribute to the failure of the Corporation to comply with such covenants. A failure to comply with covenants could result in a default under the Credit Facilities, which could result in the Corporation being required to repay amounts owing thereunder. The acceleration of the Corporation's indebtedness under one agreement may permit acceleration of indebtedness under other agreements that contain cross-default or cross-acceleration provisions. In addition, the Credit Facilities impose certain restrictions on the Corporation, including, but not limited to, restrictions on the payment of dividends, incurring of additional indebtedness, dispositions of properties and the entering into of amalgamations, mergers, plans of arrangements, reorganizations or consolidations with any person. The Credit Facilities do not currently contain any financial maintenance covenants; however, there is no assurance that the lenders may not impose any such covenants on the Corporation in the future. Any such covenants may either affect the availability or price of additional funding.

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

### ***Dividends***

The declaration and payment of dividends is subject to the discretion of the Board and may vary depending on a variety of factors and conditions existing from time to time, including fluctuations in commodity prices, the financial condition of Birchcliff, production levels, results of operations, capital expenditure requirements, working capital requirements, debt service requirements, operating costs, royalty burdens, foreign exchange rates, interest rates, contractual restrictions, Birchcliff's hedging activities or programs, available investment opportunities, Birchcliff's business plan, strategies and objectives, the satisfaction of the solvency and liquidity tests imposed by the ABCA for the declaration and payment of dividends and other factors that the Board may deem relevant. Depending on these and various other factors, many of which are beyond the control of Birchcliff, the dividend policy of the Corporation may vary from time to time and, as a result, future cash dividends could be reduced or suspended entirely.

Pursuant to the ABCA, the Corporation may not declare or pay a dividend if there are reasonable grounds for believing that: (i) the Corporation is, or would after the payment be, unable to pay its liabilities as they become due; or (ii) the realizable value of its assets would thereby be less than the aggregate of its liabilities and stated capital of its outstanding shares. Additionally, pursuant to the agreement governing the Credit Facilities, the Corporation is not permitted to make any distribution (which includes dividends) at any time when an event of default exists or would reasonably be expected to exist upon making such distribution, unless such event of default arose subsequent to the ordinary course declaration of the applicable distribution.

Dividends may be reduced or suspended during periods of lower cash flows from operations. The timing and amount of Birchcliff's capital expenditures, and the ability of the Corporation to repay or refinance existing debt as it becomes due, directly affects the amount of cash dividends that may be declared by the Board. Future acquisitions, expansions of Birchcliff's assets, and other capital expenditures and the repayment or refinancing of existing debt as it becomes due may be financed from sources such as cash flows from operations, the issuance of additional shares or other securities of Birchcliff, and borrowings. Dividends may be reduced, or even eliminated, at times when significant capital or other expenditures are made. There can be no assurance that sufficient capital will be available on terms acceptable to Birchcliff, or at all, to make additional investments, fund future expansions or make other required capital expenditures. To the extent that external sources of capital, including the issuance of additional shares or other securities or the availability of additional credit facilities, become limited or unavailable on favourable terms or at all due to credit market conditions or otherwise, the ability of the Corporation to make the necessary capital investments to maintain or expand its operations, to repay outstanding debt and to invest in assets, as the case may be, may be impaired. To the extent Birchcliff is required to use cash flows from operations to finance capital expenditures or acquisitions or to repay existing debt as it becomes due, the cash available for dividends may be reduced and the level of dividends declared may be reduced.

The market value of the Corporation's securities may deteriorate if dividends are reduced or suspended. Furthermore, the future treatment of dividends for tax purposes will be subject to the nature and composition of dividends paid by Birchcliff and potential legislative and regulatory changes.

See "Dividend and Distribution Policy" in this Annual Information Form.

### **Hedging**

From time to time, the Corporation may enter into agreements that fix the prices on its oil and natural gas production to offset the risk of revenue losses if commodity prices decline. However, to the extent that the Corporation engages in fixed price risk management activities to protect it from commodity price declines, the Corporation may also be prevented from realizing the full benefits of commodity price increases above the prices established by the Corporation's hedging contracts. In addition, the Corporation's hedging arrangements may expose it to the risk of financial loss in certain circumstances, including instances in which:

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

Similarly, from time to time the Corporation may enter into agreements to fix the exchange rate of Canadian dollars to United States dollars or other currencies in order to offset the risk of revenue losses if the Canadian dollar increases in value compared to the other currencies. However, if the Canadian dollar declines in value compared to such fixed currencies, the Corporation will not benefit from the fluctuating exchange rate.

### **Credit Risk**

The Corporation may be exposed to third-party credit risk through its contractual arrangements with its current or future joint venture partners, marketers of its petroleum and natural gas production and other parties. In addition, the Corporation may be exposed to third-party credit risk from operators of properties in which the Corporation has a working or royalty interest. In the event such entities fail to meet their contractual obligations to the Corporation, such failures may have a material adverse effect on the Corporation's business, financial condition, results of operations and prospects. In addition, poor credit conditions in the industry and of joint venture partners may affect a joint venture partner's willingness to participate in the Corporation's ongoing capital program,

potentially delaying the program and the results of such program until the Corporation finds a suitable alternative partner. To the extent that any of such third parties go bankrupt, become insolvent or make a proposal or institute any proceedings relating to bankruptcy or insolvency, it could result in the Corporation being unable to collect all or a portion of any money owing from such parties. Any of these factors could materially adversely affect the Corporation's financial and operational results.

Conversely, the Corporation's counterparties may deem the Corporation to be at risk of defaulting on its contractual obligations. These counterparties may require that the Corporation provide additional credit assurances by prepaying anticipated expenses or posting letters of credit, which would decrease the Corporation's available liquidity.

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

World oil and natural gas prices are quoted in United States dollars. The Canadian/United States dollar exchange rate, which fluctuates over time, consequently affects the price received by Canadian producers of oil and natural gas. Material increases in the value of the Canadian dollar relative to the United States dollar may negatively affect the Corporation's production revenues. Future Canadian/United States exchange rates could also impact the future value of the Corporation's reserves as determined by independent evaluators. Although a low value of the Canadian dollar relative to the United States dollar may positively affect the price the Corporation receives for its oil and natural gas production, it could also result in an increase in the price for certain goods used for the Corporation's operations, which may have a negative impact on the Corporation's financial results.

To the extent that the Corporation engages in risk management activities related to foreign exchange rates, there is a credit risk associated with the counterparties with whom the Corporation may contract. Please see *"Risk Factors – Financial Risks and Risks Relating to Economic Conditions – Hedging"* in this Annual Information Form.

An increase in interest rates could result in a significant increase in the amount the Corporation pays to service debt, resulting in a reduced amount available to fund its exploration and development activities and the cash available for dividends and could negatively impact the market prices of the Corporation's securities.

#### **Business and Operational Risks**

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

Oil and natural gas operations involve many risks that even a combination of experience, knowledge and careful evaluation may not be able to overcome. The long-term commercial success of the Corporation depends on its ability to find, acquire, develop and commercially produce oil and natural gas reserves. Without the continual addition of new reserves, any existing reserves the Corporation may have at any particular time and the production therefrom, will decline over time as such existing reserves are produced. A future increase in the Corporation's reserves will depend on both the ability of the Corporation to explore and develop its existing properties and its ability to select and acquire suitable producing properties or prospects. There is no assurance that the Corporation will be able to continue to find satisfactory properties to acquire or participate in. Moreover, management of the Corporation may determine that current markets, terms of acquisition, participation or pricing conditions make potential acquisitions or participations uneconomic. There is also no assurance that the Corporation will discover or acquire further commercial quantities of oil and natural gas. The success of the Corporation's business is highly dependent on its ability to acquire or discover new reserves in a cost efficient manner as substantially all of the Corporation's cash flow is derived from the sale of the petroleum and natural gas reserves that it accumulates and develops. In order to remain financially viable, the Corporation must be able to replace reserves over time at a lesser cost on a per unit basis than its cash flow on a per unit basis.

Future oil and natural gas exploration may involve unprofitable efforts from dry wells as well as from wells that are productive but do not produce sufficient petroleum substances to return a profit after drilling, completing (including hydraulic fracturing), operating and other costs. Completion of a well does not assure a profit on the investment or recovery of drilling, completion and operating costs.

Drilling hazards, environmental damage and various field operating conditions could greatly increase the cost of operations and adversely affect the production from successful wells. Field operating conditions include, but are not limited to, delays in obtaining governmental approvals or consents, the shutting-in of wells resulting from extreme weather conditions, insufficient storage or transportation capacity or geological and mechanical conditions. While diligent well supervision and effective maintenance operations can contribute to maximizing production rates over time, it is not possible to eliminate production delays and declines from normal field operating conditions, which can negatively affect revenue and cash flow levels to varying degrees.

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

Oil and natural gas production operations are also subject to all the risks typically associated with such operations, including encountering unexpected formations or pressures, premature decline of reservoirs and the invasion of water into producing formations. Losses resulting from the occurrence of any of these risks may have a material adverse effect on the Corporation's business, financial condition, results of operations and prospects. The Corporation also remains subject to the risk that the production rate of a significant well may decrease in an unpredictable and uncontrollable manner, which could result in a decrease in the Corporation's overall production and associated cash flows.

As is standard industry practice, the Corporation is not fully insured against all risks, nor are all risks insurable. Although the Corporation maintains liability insurance in an amount that it considers consistent with industry practice, liabilities associated with certain risks could exceed policy limits or not be covered. In either event, the Corporation could incur significant costs. Please see *"Risk Factors – Other Risks – Insurance"* in this Annual Information Form.

### ***Project Risks***

The Corporation manages a variety of small and large projects in the conduct of its business. Project delays may delay expected revenues from operations. Significant project cost overruns could make a project uneconomic. The Corporation's ability to execute projects and market oil and natural gas depends upon numerous factors beyond the Corporation's control, including:

- the availability of processing capacity;
- the availability and proximity of pipeline capacity;
- the availability of storage capacity;
- the availability of, and the ability to acquire, water supplies needed for drilling and hydraulic fracturing at a reasonable cost and the Corporation's ability to dispose of water used or removed from strata in accordance with applicable environmental regulations;
- the supply of and demand for oil and natural gas;
- the availability of alternative fuel sources;
- the effects of inclement weather;
- the availability of drilling and related equipment;
- unexpected cost increases;

- accidental events;
- currency fluctuations;
- regulatory changes;
- the availability and productivity of skilled labour; and
- the regulation of the oil and natural gas industry by various levels of government and governmental agencies.

Because of these factors, the Corporation could be unable to execute projects on time, on budget, or at all, and may be unable to effectively market the oil and natural gas that it produces.

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

The Corporation delivers its products through gathering and processing facilities, pipeline systems and, in certain circumstances, by rail. The amount of oil and natural gas that the Corporation can produce and sell is subject to the accessibility, availability, proximity and capacity of these gathering and processing facilities, pipeline systems and railway lines. The lack of availability of capacity in any of the gathering and processing facilities, pipeline systems and railway lines could result in the Corporation's inability to realize the full economic potential of its production or in a reduction of the price offered for the Corporation's production. Although pipeline expansions are ongoing, the lack of firm pipeline capacity continues to affect the oil and natural gas industry and limit the ability to produce and market oil and natural gas production. In addition, the pro-rationing of capacity on pipeline systems continues to affect the ability to export oil and natural gas. Unexpected shut-downs or curtailment of capacity of pipelines for maintenance or integrity work or because of actions taken by regulators could also affect the Corporation's production, operations and financial results. As a result, producers are increasingly turning to rail as an alternative means of transportation. In recent years, the volume of crude oil shipped by rail in North America has increased dramatically. Any significant change in market factors or other conditions affecting these infrastructure systems and facilities, as well as any delays in constructing new infrastructure systems and facilities could harm the Corporation's business and, in turn, the Corporation's financial condition, results of operations and cash flows. Announcements and actions taken by the governments of British Columbia and Alberta relating to approvals of infrastructure projects may continue to intensify, leading to increased challenges to interprovincial and international infrastructure projects moving forward. In addition, while the federal government has recently introduced draft legislation to overhaul the existing environmental assessment process and replace the NEB with a new regulatory agency, the impact of the new proposed regulatory scheme on proponents and the timing of receipt of approvals of major projects remains unclear. See *"Industry Conditions – Regulatory Authorities and Environmental Regulation"*.

Following major accidents in Lac-Mégantic, Quebec and North Dakota, the Transportation Safety Board of Canada and the U.S. National Transportation Board recommended additional regulations for railway tank cars carrying crude oil. In June 2015, as a result of these recommendations, the Government of Canada passed the *Safe and Accountable Rail Act* which increased insurance obligations on the shipment of crude oil by rail and imposed a per tonne levy of \$1.65 on crude oil shipped by rail to compensate victims and for environmental cleanup in the event of a railway accident. In addition to this legislation, new regulations have implemented the TC-117 standard for all rail tank cars carrying flammable liquids which formalized the commitment to retrofit, and phase out DOT-111 tank cars carrying crude oil. The increased regulation of rail transportation may reduce the ability of railway lines to alleviate pipeline capacity issues and adds additional costs to the transportation of crude oil by rail. On July 13, 2016, the Minister of Transport (Canada) issued Protective Direction No. 38, which directed that the shipping of crude oil on DOT-111 tank cars end by November 1, 2016. Tank cars entering Canada from the United States will be monitored to ensure they are compliant with Protective Direction No. 38.

The Corporation's production passes through Birchcliff owned or third-party infrastructure prior to it being ready for sale. There is a risk that should this infrastructure fail and cause a significant portion of the Corporation's production to be shut-in and unable to be sold, this could have a material adverse effect on the Corporation's

available cash flow. With respect to facilities owned by third parties and over which the Corporation has no control, these facilities may discontinue or decrease operations either as a result of normal servicing requirements or as a result of unexpected events. A discontinuation or decrease of operations could have a material adverse effect on the Corporation's ability to process its production and deliver the same for sale. Midstream and pipeline companies may take actions to maximize their return on investment which may in turn adversely affect producers and shippers, especially when combined with a regulatory framework that may not always align with the interests of particular shippers.

Further, the Corporation has certain long-term take-or-pay transportation commitments to deliver products through third-party owned infrastructure which creates a financial liability and there can be no assurance that future volume commitments will be met which may adversely affect the Corporation's financial condition and cash flows from operations.

### ***Uncertainty of Reserves and Resource Estimates***

There are numerous uncertainties inherent in estimating quantities of oil, natural gas and NGLs reserves and the future net revenue attributed to such reserves, including many factors beyond the control of the Corporation. The reserves and associated future net revenue information set forth in this Annual Information Form are estimates only. In general, estimates of economically recoverable oil, natural gas and NGLs reserves and the future net revenue therefrom are based upon a number of variable factors and assumptions, such as historical production from the properties, production rates, ultimate reserves recovery, the timing and amount of capital expenditures, the success of future development activities, future commodity prices, marketability of oil, natural gas and NGLs, royalty rates, the assumed effects of regulation by governmental agencies and future operating costs, all of which may vary materially from actual results. For those reasons, estimates of the economically recoverable oil, natural gas and NGLs reserves attributable to any particular group of properties, the classification of such reserves based on risk of recovery and estimates of future net revenue associated with reserves prepared by different engineers, or by the same engineer at different times, may vary substantially. The Corporation's actual production, revenues, taxes and development and operating expenditures with respect to its reserves will vary from estimates thereof and such variations could be material.

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

In accordance with applicable securities laws in Canada, the Corporation's independent qualified reserves evaluators have used forecast prices and costs in estimating the reserves and future net revenue as summarized herein. Actual future net revenue will be affected by other factors such as actual production levels, supply and demand for oil and natural gas, curtailments or increases in consumption by oil and natural gas purchasers, changes in governmental regulations or taxation and the impact of inflation on costs.

Actual production and cash flows derived from the Corporation's reserves will vary from the estimates contained in the Corporation's independent reserves evaluations and such variations could be material. The independent reserves evaluations are based in part on the assumed success of the Corporation's forecast operations. The reserves and estimated future net revenue to be derived therefrom and contained in the Corporation's independent reserves evaluations may be reduced to the extent that such activities do not achieve the level of success assumed in the evaluations.

This Annual Information Form also contains estimates of the volumes of the Corporation's contingent resources and prospective resources, as well as the net present value of the future net revenue associated with the best estimate of development pending contingent resources. The same uncertainties inherent in estimating quantities of reserves apply to estimating quantities of contingent resources. The uncertainty in estimating prospective



resources is even greater. Actual results may vary significantly from these estimates and such variances could be material. In addition, there are contingencies that prevent contingent resources from being classified as reserves. With respect to the Corporation's contingent resources, there is uncertainty that it will be commercially viable to produce any portion of the resources. With respect to the Corporation's prospective resources, there is no certainty that any portion of the resources will be discovered. If discovered, there is no certainty that it will be commercially viable to produce any portion of the prospective resources.

The Consolidated Reserves Report, the Deloitte Reserves Report, the McDaniel Reserves Report and the 2017 Resource Assessment are effective as of December 31, 2017 and, except as may be specifically stated or required by applicable securities laws, have not been updated since that date.

### ***Costs and Availability of Equipment and Services***

Oil and natural gas exploration and development activities are dependent on the availability of drilling and related equipment (typically leased from third parties) and skilled personnel trained to use such equipment in the areas where such activities will be conducted. Demand for such limited equipment and skilled personnel, or access restrictions, may affect the availability of such equipment and skilled personnel to the Corporation and may delay exploration and development activities.

### ***Hydraulic Fracturing***

Some of the Corporation's operations use hydraulic fracturing. Hydraulic fracturing involves the injection of water, sand and small amounts of additives under pressure into rock formations to stimulate the production of oil and natural gas. Specifically, hydraulic fracturing enables the production of commercial quantities of oil and natural gas from reservoirs that were previously unproductive. While hydraulic fracturing has been in use for many years, there has been increased focus on the environmental aspects of hydraulic fracturing practices in recent years. Increased regulation and attention given to the hydraulic fracturing process could lead to greater opposition (including litigation) to oil and natural gas production activities using hydraulic fracturing techniques. Any new laws, regulations or permitting requirements regarding hydraulic fracturing could lead to operational delays, increased operating costs, third-party or governmental claims and could increase the Corporation's costs of compliance and doing business, as well as delay the development of oil and natural gas resources from certain formations which are not commercial without the use of hydraulic fracturing. Restrictions on hydraulic fracturing could also reduce the amount of oil and natural gas that the Corporation is ultimately able to produce from its reserves and, therefore, could adversely affect the Corporation's business, financial condition, results of operations and prospects.

### ***Potential Future Drilling Locations***

The Corporation's identified potential future drilling locations represent a significant part of the Corporation's future growth. Birchcliff's ability to drill and develop these locations and the drilling locations on which Birchcliff actually drills wells depends on a number of uncertainties and factors, including, but not limited to, the availability of capital, equipment and personnel, oil and natural gas prices, capital and operating costs, inclement weather, seasonal restrictions, drilling results, additional geological, geophysical and reservoir information that is obtained, production rate recovery, gathering system and transportation constraints, net prices received for commodities produced, regulatory approvals and regulatory changes. As a result of these uncertainties, there can be no assurance that the potential future drilling locations that the Corporation has identified will ever be drilled or if Birchcliff will be able to produce oil, NGLs or natural gas from these or any other potential drilling locations. As such, Birchcliff's actual drilling activities may differ materially from those presently identified, which could adversely affect Birchcliff's business.

### ***Operational Dependence***

Other companies operate some of the assets in which the Corporation has an interest. The Corporation has limited ability to exercise influence over the operation of those assets or their associated costs, which could adversely affect the Corporation's business, financial condition, results of operations and prospects. The Corporation's return

on assets operated by others depends upon a number of factors that may be outside of the Corporation's control, including, but not limited to, the timing and amount of capital expenditures, the operator's expertise and financial resources, the approval of other participants, the selection of technology and risk management practices.

In addition, due to the current low and volatile commodity price environment, many companies, including companies that may operate some of the assets in which the Corporation has an interest, may be in financial difficulty, which could impact their ability to fund and pursue capital expenditures, carry out their operations in a safe and effective manner and satisfy regulatory requirements with respect to abandonment and reclamation obligations. If companies that operate some of the assets in which the Corporation has an interest fail to satisfy regulatory requirements with respect to abandonment and reclamation obligations, the Corporation may be required to satisfy such obligations and to seek recourse from such companies. To the extent that any of such companies go bankrupt, become insolvent or make a proposal or institute any proceedings relating to bankruptcy or insolvency, it could result in such assets being shut-in, the Corporation potentially becoming subject to additional liabilities relating to such assets and the Corporation having difficulty collecting revenue due to it from such operators. Any of these factors could have a material adverse effect on the Corporation's financial and operational results.

### ***Cost of New Technologies***

The oil and natural gas industry is characterized by rapid and significant technological advancements and introductions of new products and services utilizing new technologies. Other oil and natural gas companies may have greater financial, technical and personnel resources that allow them to enjoy technological advantages and may in the future allow them to implement new technologies before the Corporation. There can be no assurance that the Corporation will be able to respond to such competitive pressures and implement such technologies on a timely basis or at an acceptable cost. If the Corporation implements such technologies, there is no assurance that the Corporation will do so successfully. One or more of the technologies currently utilized by the Corporation or implemented in the future may become obsolete. In such case, the Corporation's business, financial condition, results of operations and prospects could be affected adversely and materially. If the Corporation is unable to utilize the most advanced commercially available technology, its business, financial condition, results of operations and prospects could also be adversely affected in a material way.

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

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

### ***Seasonality and Extreme Weather Conditions***

The level of activity in the Canadian oil and natural gas industry is influenced by seasonal weather patterns. Wet weather and spring thaw may make the ground unstable. Consequently, municipalities and provincial transportation departments may enforce road bans that restrict the movement of rigs and other heavy equipment, thereby reducing activity levels. Road bans and other restrictions generally result in a reduction of drilling and exploratory activities and may also result in the shut-in of some of the Corporation's production if not otherwise tied-in. In addition, certain oil and gas producing properties are located in areas that are inaccessible other than during the winter months because the ground surrounding the sites in these areas consists of swampy terrain. In addition, extreme cold weather and heavy snowfall and heavy rainfall may restrict the Corporation's ability to

access its properties and cause operational difficulties, including damage to machinery or dangerous working conditions. Seasonal factors and unexpected weather patterns may lead to declines in exploration and production activity and also to volatility in commodity prices as the demand for natural gas rises during cold winter months and hot summer months.

### ***Expiration of Licences and Leases***

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

### ***Competition***

The oil and natural gas industry is highly competitive in all of its phases. The Corporation competes with numerous other entities for land, acquisitions of reserves, access to drilling and service rigs and other equipment, access to transportation and skilled technical and operating personnel, among other things. The Corporation's competitors include oil and natural gas companies that have substantially greater financial resources, staff and facilities than those of the Corporation. Some of these companies not only explore for, develop and produce oil and natural gas, but also carry on refining operations and market oil and natural gas on an international basis. As a result of these complementary activities, some of these competitors may have greater and more diverse competitive resources to draw on than the Corporation. The Corporation's ability to increase its reserves in the future will depend not only on its ability to explore and develop its present properties, but also on its ability to select and acquire other suitable producing properties or prospects for exploratory drilling.

### ***All Assets in One Area***

All of the Corporation's producing properties are geographically concentrated in the Peace River Arch area of Alberta. As a result of this concentration, the Corporation may be disproportionately exposed to the impact of delays or interruptions of production from that area caused by significant governmental regulation in Alberta, transportation capacity constraints, curtailment of production, natural disasters, availability of equipment, facilities or services, adverse weather conditions or other events which impact that area. Due to the concentrated nature of the Corporation's portfolio of properties, a number of the Corporation's properties could experience any of the same conditions at the same time, resulting in a relatively greater impact on the Corporation's results of operations than they might have on other companies that have a more diversified portfolio of properties. Such delays or interruptions could have a material adverse effect on the Corporation's financial condition and results of operations.

### ***Expansion into New Activities***

The operations and expertise of the Corporation's management are currently focused primarily on oil and natural gas production, exploration and development in Peace River Arch area of Alberta. In the future, the Corporation may acquire or move into new industry related activities or new geographical areas or may acquire different energy related assets, and as a result may face unexpected risks or alternatively, significantly increase the Corporation's exposure to one or more existing risk factors, which may in turn result in the Corporation's future operational and financial condition being adversely affected.

### ***Environmental, Regulatory and Political Risks***

#### ***Political Uncertainty***

In the last several years, the United States and certain European countries have experienced significant political events that have cast uncertainty on global financial and economic markets. During the 2016 presidential

campaign, a number of election promises were made and the American administration has begun taking steps to implement certain of these promises. The administration has announced the withdrawal of the United States from the Trans-Pacific Partnership and Congress has passed sweeping tax reforms, which, among other things, significantly reduces U.S. corporate tax rates. This may affect the competitiveness of other jurisdictions, including Canada. NAFTA is currently under renegotiation and the result is uncertain at this time. The administration has also taken action with respect to the reduction of regulation which may also affect the relative competitiveness of other jurisdictions. It is unclear exactly what other actions the administration in the United States will implement, and if implemented, how these actions may impact Canada and in particular the oil and natural gas industry. Any actions taken by the American administration may have a negative impact on the Canadian economy and on the businesses, financial conditions, results of operations and the valuation of Canadian oil and natural gas companies, including the Corporation.

In addition to the political disruption in the United States, the citizens of the United Kingdom voted to withdraw from the European Union and the Government of the United Kingdom has begun taking steps to implement such withdrawal. Some European countries have also experienced the rise of anti-establishment political parties and public protests held against open-door immigration policies, trade and globalization. To the extent that certain political actions taken in North America, Europe and elsewhere in the world result in a marked decrease in free trade, access to personnel and freedom of movement, it could have an adverse effect on the Corporation's ability to market its products internationally, increase costs for goods and services required for the Corporation's operations, reduce access to skilled labour and as a result, negatively impact the Corporation's business, operations, financial condition and the market value of the Corporation's securities.

A change in federal, provincial or municipal governments in Canada may have an impact on the directions taken by such governments on matters that may impact the oil and natural gas industry, including the balance between economic development and environmental policy such as the potential impact of the recent change of government in British Columbia and announcements and actions by the Government of British Columbia that may impact the completion of the Trans-Mountain Pipeline project and other infrastructure projects.

### ***Geopolitical Risks***

Political events throughout the world that cause disruptions in the supply of oil and natural gas continuously affect the marketability and price of oil and natural gas acquired or discovered by the Corporation. Conflicts, or conversely peaceful developments, arising outside of Canada, including changes in political regimes or the parties in power, have a significant impact on the price of oil and natural gas. Any particular event could result in a material decline in prices and result in a reduction of the Corporation's revenue.

In addition, the Corporation's oil and natural gas properties, wells and facilities could be the subject of a terrorist attack. If any of the Corporation's properties, wells or facilities are the subject of terrorist attack, it may have a material adverse effect on the Corporation's business, financial condition, results of operations and prospects.

### ***Regulatory***

Various levels of governments impose extensive controls and regulations on oil and natural gas operations (including exploration, development, production, pricing, marketing and transportation). Governments may regulate or intervene with respect to exploration and production activities, prices, taxes, royalties and the exportation of oil and natural gas. Amendments to these controls and regulations may occur from time to time in response to economic or political conditions. See "*Industry Conditions*". The implementation of new regulations or the modification of existing regulations affecting the oil and natural gas industry could reduce the demand for crude oil and natural gas and increase the Corporation's costs or make certain projects uneconomic, which may have a material adverse effect on the Corporation's business, financial condition, results of operations and prospects. Recently, the Government of Canada and certain provincial governments have taken steps to initiate protocols and regulations to limit the release of methane from oil and natural gas operations. Such draft regulations and protocols may require additional expenditures or otherwise negatively impact the Corporation's operations and may affect the Corporation's revenues. See "*Industry Conditions – Climate Change Regulation*".

In order to conduct oil and natural gas operations, the Corporation requires regulatory permits, licences, registrations, approvals and authorizations from various governmental authorities. There can be no assurance that the Corporation will be able to obtain all of the permits, licences, registrations, approvals and authorizations that may be required to conduct operations that it may wish to undertake. In addition, the Corporation may have to comply with the requirements of certain federal legislation such as the *Competition Act* (Canada) and the *Investment Canada Act* (Canada), which may adversely affect its business and financial condition and the market value of its securities or assets, particularly when undertaking, or attempting to undertake, an acquisition or disposition.

### **Environmental**

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

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

Political and economic events may significantly affect the scope and timing of climate change measures that are put in place. Some of the Corporation's facilities may be subject to existing or future provincial or federal climate change regulations to manage emissions and there can be no assurance that the compliance costs will be immaterial. The implementation of new environmental regulations or the modification of existing environmental regulations affecting the oil and natural gas industry generally could reduce demand for oil and natural gas and increase costs. Please also see "*Risk Factors – Environmental, Regulatory and Political Risks – Climate Change Regulation*" in this Annual Information Form.

### **Climate Change Regulation**

The Corporation's exploration and production facilities and other operations and activities emit GHG which requires the Corporation to comply with applicable GHG emissions legislation. Climate change policy is evolving at regional, national and international levels and political and economic events may significantly affect the scope and timing of climate change measures that are ultimately put in place. As a signatory to the UNFCCC and the Paris Agreement, the Government of Canada pledged to cut its GHG emissions by 30% from 2005 levels by 2030. One of the pertinent policies announced to date by the Government of Canada to reduce GHG emission is the planned implementation of a nation-wide price on carbon emissions. Provincially, the Government of Alberta has already implemented a carbon levy on almost all sources of GHG emissions, now at a rate of \$30 per tonne. The direct or indirect costs of compliance with GHG-related legislation may have a material adverse effect on the Corporation's business, financial condition, results of operations and prospects. Adverse impacts to the Corporation's business as a result of GHG legislation may include, but are not limited to, increased compliance costs, permitting delays, increased operating costs and capital expenditures and reduced demand for the oil, natural gas and NGLs that the Corporation produces. In addition, the Pouce Coupe Gas Plant is subject to the CCIR and some of the Corporation's other significant facilities may ultimately become subject to future regional, provincial and/or federal climate change regulations to manage GHG emissions. In addition, concerns about climate change have resulted in a

number of environmental activists and members of the public opposing the continued exploitation and development of fossil fuels. Given the evolving nature of the debate related to climate change and the control of GHG and resulting requirements, it is expected that current and future climate change regulations will have the effect of increasing the Corporation's operating expenses and in the long-term reducing the demand for oil and gas production resulting in a decrease in the Corporation's profitability and a reduction in the value of its assets or asset write-offs. See *"Description of the Business – Environmental Protection – Environmental Costs and Decommissioning Obligations"* and *"Industry Conditions – Climate Change Regulation"*.

### **Carbon Pricing Risk**

The majority of countries across the globe have agreed to reduce their carbon emissions in accordance with the Paris Agreement. See *"Industry Conditions – Regulatory Authorities and Environmental Regulation – Climate Change Regulation"*. In Canada, the federal and certain provincial governments have implemented legislation aimed at incentivizing the use of alternatives fuels and in turn reducing carbon emissions. The taxes placed on carbon emissions may have the effect of decreasing the demand for oil and natural gas products and at the same time, increasing the Corporation's operating expenses, each of which may have a material adverse effect on the Corporation's profitability and financial condition. Further, the imposition of carbon taxes puts the Corporation at a disadvantage with its counterparts who operate in jurisdictions where there are less costly carbon regulations.

### **Liability Management Programs**

Alberta has developed the Alberta LLR Program which is designed to prevent taxpayers from incurring costs associated with the suspension, abandonment, remediation and reclamation of wells, facilities and pipelines in the event that a licensee or permit holder is unable to satisfy its regulatory obligations. This program involves an assessment of the ratio of a licensee's deemed assets to deemed liabilities. If a licensee's deemed liabilities exceed its deemed assets, a security deposit is generally required. Changes to the required ratio of the Corporation's deemed assets to deemed liabilities or other changes to the requirements of the Alberta LLR Program may result in the requirement for security to be posted in the future and may result in significant increases to the Corporation's compliance obligations. In addition, the Alberta LLR Program may prevent or interfere with the Corporation's ability to acquire or dispose of assets as both the vendor and the purchaser of oil and gas assets must be in compliance with the Alberta LLR Program (both before and after the transfer of the assets) for the applicable regulatory agency to allow for the transfer of such assets.

The decision of the Court of Queen's Bench of Alberta in Redwater found an operational conflict between the BIA and the AER's abandonment and reclamation powers when the licensee is insolvent, which was affirmed by a majority of the Alberta Court of Appeal and has been appealed by the AER to the Supreme Court of Canada for final determination. In response to the decision, the AER issued interim rules to administer the Alberta LLR Program until the Government of Alberta can develop new regulatory measures to adequately address environmental liabilities. There remains a great deal of uncertainty as to what new regulatory measures will be developed by the provinces or in concert with the federal government, as the final ruling will become binding in all Canadian jurisdictions. While the impact on Birchcliff of any legislative, regulatory or policy decisions as a result of the Redwater decision and its pending appeal cannot be reliably or accurately estimated, any cost recovery or other measures taken by applicable regulatory bodies may impact Birchcliff and materially and adversely affect, among other things, Birchcliff's business, financial condition, results of operations and cash flows.

See *"Industry Conditions – Regulatory Authorities and Environmental Regulation – Alberta – Liability Management Rating Program"*.

### **Royalty Regimes**

The Corporation's cash flows are directly affected by changes to royalty regimes. There can be no assurance that the Government of Alberta will not adopt a new royalty regime or modify the existing royalty regime, which may have an impact on the economics of the Corporation's projects. An increase in the royalty rates in Alberta would reduce the Corporation's earnings and could make future capital investments, or the Corporation's operations, less

economic or uneconomic. On January 29, 2016, the Government of Alberta adopted a new royalty regime which took effect on January 1, 2017. See *“Industry Conditions – Royalties and Incentives”*.

#### ***Disposal of Fluids Used in Operations***

The safe disposal of the hydraulic fracturing fluids (including the additives) and water recovered from oil and natural gas wells is subject to ongoing regulatory review by the federal and provincial governments, including its effect on fresh water supplies and the ability of such water to be recycled, amongst other things. While it is difficult to predict the impact of any regulations that may be enacted in response to such review, the implementation of stricter regulations may increase the Corporation’s costs of compliance.

#### **Other Risks**

##### ***Volatility in the Market Prices of the Corporation’s Securities***

The trading price of securities of oil and natural gas issuers is subject to substantial volatility often based on factors related and unrelated to the financial performance or prospects of the issuers involved. The market price of the Corporation’s securities may be volatile, which may affect the ability of holders to sell such securities at an advantageous price. Factors unrelated to the Corporation’s performance could include macroeconomic developments nationally, within North America or globally, domestic and global commodity prices or current perceptions of the oil and natural gas market. In certain jurisdictions, institutions, including government-sponsored entities, have determined to decrease their ownership in oil and gas entities which may impact the liquidity of certain securities and may put downward pressure on the trading price of those securities. Similarly, the market prices of the Corporation’s securities could be subject to significant fluctuations in response to variations in the Corporation’s operating results, financial condition, liquidity and other internal factors. In addition, market price fluctuations in the Corporation’s securities may also be due to the Corporation’s results failing to meet the expectations of securities analysts or investors in any quarter, downward revision in securities analysts’ estimates and material public announcements by the Corporation, along with a variety of additional factors, including, without limitation, those set forth under *“Special Notes to Reader – Forward-Looking Information”*. Accordingly, the prices at which the Corporation’s securities will trade cannot be accurately predicted.

##### ***Reliance on Key Personnel***

The Corporation’s success depends, in large measure, on certain key personnel. The loss of the services of such key personnel could have a material adverse effect on the Corporation. The Corporation does not have “key person” insurance in effect for the Corporation. The contributions of the existing management team to the immediate and near-term operations of the Corporation are likely to be of central importance. In addition, the competition for qualified personnel in the oil and natural gas industry is intense and there can be no assurance that the Corporation will be able to continue to attract and retain all of the personnel necessary for the development and operation of its business. Shareholders must rely upon the ability, expertise, judgment, discretion, integrity and good faith of the Corporation’s management.

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

The Corporation considers acquisitions and dispositions of assets in the ordinary course of business. Typically, once an acquisition opportunity is identified, a review of available information relating to the assets is conducted. There is a risk that even a detailed review of records and assets may not necessarily reveal every existing or potential problem, nor will it permit the Corporation to become sufficiently familiar with the assets to fully assess their deficiencies and potential. There is no guarantee that defects in the chain of title will not arise to defeat the Corporation’s title to certain assets or that environmental defects, liabilities or deficiencies do not exist or are greater than anticipated. Inspections may not always be performed on every well, and environmental problems, such as ground water contamination, are not necessarily observable even when an inspection is undertaken. Even when problems are identified, the Corporation may assume certain environmental and other risk liabilities in connection with acquired assets.

In addition, acquisitions of oil and gas properties or companies are based in large part on engineering, environmental and economic assessments. These assessments include a series of assumptions regarding such factors as recoverability and marketability of oil and natural gas, environmental restrictions and prohibitions regarding releases and emissions of various substances, future prices of oil and gas, future operating costs, future capital expenditures and royalties and other government levies which will be imposed over the producing life of the reserves. Many of these factors are subject to change and are beyond the control of the Corporation. All such assessments involve a measure of geologic, engineering, environmental and regulatory uncertainty that could result in lower production and reserves or higher operating or capital expenditures than anticipated.

Achieving the benefits of acquisitions depends on successfully consolidating functions and integrating operations and procedures in a timely and efficient manner and the Corporation's ability to realize the anticipated growth opportunities and synergies from combining the acquired businesses and operations with those of the Corporation. The integration of acquired businesses may require substantial management effort, time and resources, diverting management's focus away from other strategic opportunities and operational matters.

Management continually assesses the value and contribution of the various assets within its portfolio. In this regard, certain assets may be periodically disposed of so the Corporation can focus its efforts and resources more efficiently. Depending on the state of the market for such assets, there is a risk that certain assets of the Corporation could realize less on disposition than what the market may expect for such disposition or realize less than their carrying value on the Corporation's financial statements.

#### ***Management of Growth and Integration***

The Corporation may be subject to both integration and growth-related risks, including capacity constraints and pressure on its internal systems and controls. The ability of the Corporation to effectively manage growth and the integration of additional assets will require it to continue to implement and improve its operational and financial systems and to expand, train and manage its employee base. An inability of the Corporation to effectively deal with this growth could have a material adverse impact on its business, financial condition, results of operations and prospects.

#### ***Reputational Risk Associated with the Corporation's Operations***

Any environmental damage, loss of life, injury or damage to property caused by the Corporation's operations could damage its reputation in the areas in which it operates. Negative sentiment towards the Corporation could result in a lack of willingness of municipal authorities being willing to grant the necessary licenses or permits for the Corporation to operate its business. In addition, negative sentiment towards the Corporation could result in the residents of the areas where the Corporation is doing business opposing further operations in the area by the Corporation. If the Corporation develops a reputation of having an unsafe work site, this may impact its ability to attract and retain the necessary skilled employees and consultants to operate its business. Further, the Corporation's reputation could be affected by actions and activities of other corporations operating in the oil and natural gas industry, over which it has no control. In addition, environmental damage, loss of life, injury or damage to property caused by the Corporation's operations could result in negative investor sentiment towards it, which may result in limiting the Corporation's access to capital, increasing the cost of capital, and decreasing the price and liquidity of the Corporation's securities.

#### ***Changing Investor Sentiment***

A number of factors, including the concerns of the effects of the use of fossil fuels on climate change, concerns of the impact of oil and gas operations on the environment, concerns of environmental damage relating to spills of petroleum products during transportation and concerns of indigenous rights, have affected certain investors' sentiments towards investing in the oil and natural gas industry. As a result of these concerns, some institutional, retail and public investors have announced that they no longer are willing to fund or invest in oil and gas properties or companies or are reducing the amount thereof over time. In addition, certain institutional investors are requesting that issuers develop and implement more robust social, environmental and governance policies and practices. Developing and implementing such policies and practices can involve significant costs and require a



significant time commitment from the Corporation's Board, management and employees. Failing to implement the policies and practices as requested by institutional investors may result in such investors reducing their investment in the Corporation or not investing in the Corporation at all. Any reduction in the investor base interested or willing to invest in the oil and natural gas industry and more specifically, in the Corporation, may result in limiting Birchcliff's access to capital, increasing the cost of capital and decreasing the price and liquidity of the Corporation's securities.

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

The Corporation is dependent upon the availability, capacity, reliability and security of its information technology infrastructure and its ability to expand and continually update this infrastructure, to conduct daily operations. The Corporation depends on various information technology systems to estimate reserves, process and record financial data, manage its land base, analyze seismic information, administer its contracts with its operators and lessees and communicate with employees and third-party partners.

In the event the Corporation is unable to regularly deploy software and hardware, effectively upgrade systems and network infrastructure and take other steps to maintain or improve the efficiency and efficacy of its information technology systems, the operation of such systems could be interrupted or result in the loss, corruption, or release of data. Further, the Corporation is subject to a variety of information technology and system risks as a part of its normal course operations, including potential breakdown, invasion, virus, cyber-attack, cyber-fraud, security breach, and destruction or interruption of the Corporation's information technology systems by third parties or insiders. Unauthorized access to these systems by employees or third parties could lead to corruption or exposure of confidential, fiduciary or proprietary information, interruption to communications or operations or disruption to its business activities or its competitive position. In addition, cyber-phishing attempts, in which a malicious party attempts to obtain sensitive information such as usernames, passwords, and credit card details (and money) by disguising as a trustworthy entity in an electronic communication, have become more widespread and sophisticated in recent years. If the Corporation becomes a victim to a cyber-phishing attack it could result in a loss or theft of the Corporation's financial resources or critical data and information or could result in a loss of control of the Corporation's technological infrastructure or financial resources. The Corporation applies technical and process controls in line with industry-accepted standards to protect its information assets and systems; however, these controls may not adequately prevent cyber-security breaches. Disruption of critical information technology services, or breaches of information security, could have a negative effect on the Corporation's performance and earnings, as well as on its reputation. The significance of any such event is difficult to quantify, but may in certain circumstances be material and could have a material adverse effect on the Corporation's business, financial condition, results of operations and prospects.

In addition to the oversight provided by the Corporation's Information Technology Committee, there is further reporting on the Corporation's information technology and cyber-security risks to the Board. To date, the Corporation has not been subject to a cyber-security attack or other breach that has had a material impact on its business or operations or resulted in material losses to the Corporation; however, there is no assurance that the measures the Corporation takes to protect its business systems and operational control systems will be effective in protecting against a breach in the future and that the Corporation will not incur such losses in the future.

### ***Insurance***

Although the Corporation maintains insurance in accordance with industry standards to address certain risks, such insurance has limitations on liability and may not be sufficient to cover the full extent of such liabilities. In addition, certain risks are not, in all circumstances, insurable or, in certain circumstances, the Corporation may elect not to obtain insurance to deal with specific risks due to the high premiums associated with such insurance or other reasons. The payment of any uninsured liabilities would reduce the funds available to the Corporation. The occurrence of a significant event that the Corporation is not fully insured against, or the insolvency of the insurer of such event, could have a material adverse effect on the Corporation's business, financial condition, results of operations and prospects.

### ***Litigation***

In the normal course of the Corporation's operations, it may become involved in, be named as a party to, or be the subject of, various legal proceedings, including regulatory proceedings, tax proceedings and legal actions, relating to personal injury, property damage, property taxes, land rights, access rights, royalty rights, the environment and lease and contractual disputes. The outcome of outstanding, pending or future proceedings cannot be predicted with certainty and may be determined adversely to the Corporation and, as a result, could have a material adverse effect on the Corporation's assets, liabilities, business, financial condition and results of operations. Even if the Corporation prevails in any such legal proceeding, the proceeding could be costly and time-consuming and may divert the attention of management and key personnel away from the Corporation's business operations, which may adversely affect the Corporation.

Due to the rapid development of oil and gas technology, the Corporation may become involved in, be named as a party to, or be the subject of, various legal proceedings in which it is alleged that the Corporation has infringed the intellectual property rights of others or conversely, the Corporation may commence lawsuits against others who the Corporation believes are infringing upon its intellectual property rights. The Corporation's involvement in intellectual property litigation could result in significant expense, adversely affecting the development of its assets or intellectual property or diverting the efforts of its technical and management personnel, whether or not such litigation is resolved in the Corporation's favour. In the event of an adverse outcome as a defendant in any such litigation, the Corporation may, among other things, be required to: (i) pay substantial damages; (ii) cease the development, use, sale or importation of processes that infringe upon other patented intellectual property; (iii) expend significant resources to develop or acquire non-infringing intellectual property; (iv) discontinue processes incorporating infringing technology; or (v) obtain licences to the infringing intellectual property. However, the Corporation may not be successful in such development or acquisition or such licences may not be available on reasonable terms. Any such development, acquisition or licence could require the expenditure of substantial time and other resources and could have a material adverse effect on the Corporation's business and financial results.

### ***Aboriginal Claims***

Aboriginal peoples have claimed aboriginal title and rights in portions of Western Canada. The Corporation is not aware that any claims have been made in respect of its properties or assets; however, the legal basis of an aboriginal land claim and aboriginal rights is a matter of considerable legal complexity and the impact of the assertion of such a claim, or the possible effect of a settlement of such claim, upon the Corporation cannot be predicted with any degree of certainty at this time. In addition, no assurance can be given that any recognition of aboriginal rights or claims whether by way of a negotiated settlement or by judicial pronouncement (or through the grant of an injunction prohibiting exploration or development activities pending resolution of any such claim) would not delay or even prevent the Corporation's exploration and development activities. If a claim arose and was successful, such claim may have a material adverse effect on the Corporation's business, financial condition, results of operations and prospects. In addition, the process of addressing such claims, regardless of the outcome, may be expensive and time consuming and could result in delays which could have a material adverse effect on the Corporation's business, financial condition, results of operations and prospects.

### ***Internal Controls***

Effective internal controls are necessary for the Corporation to provide reliable financial reports and to help prevent fraud. Although the Corporation undertakes a number of procedures in order to help ensure the reliability of its financial reports, including those imposed on it under Canadian securities laws, the Corporation cannot be certain that such measures will ensure that the Corporation will maintain adequate control over financial processes and reporting. Failure to implement required new or improved controls, or difficulties encountered in their implementation, could harm the Corporation's results of operations or cause it to fail to meet its reporting obligations. If the Corporation or its independent auditor discovers a material weakness, the disclosure of that fact, even if quickly remedied, could reduce the market's confidence in the Corporation's financial statements and harm the trading prices of the Corporation's securities.

### ***Title to Assets***

Although title reviews may be conducted prior to the purchase of oil and natural gas producing properties or the commencement of drilling wells, such reviews do not guarantee or certify that a defect in the chain of title will not arise to defeat the Corporation's ownership claim. The actual interest of the Corporation in properties may accordingly vary from the Corporation's records. If a title defect does exist, it is possible that the Corporation may lose all or a portion of the properties to which the title defect relates, which may have a material adverse effect on the Corporation's business, financial condition, results of operations and prospects. There may be valid challenges to title, or legislative changes which affect the Corporation's title, to the oil and natural gas properties the Corporation controls that could impair the Corporation's activities on them and result in a reduction of the revenue received by the Corporation.

### ***Income Taxes***

The Corporation files all required income tax returns and believes that it is in full compliance with the provisions of the *Income Tax Act* (Canada) and all other applicable provincial tax legislation. However, such returns are subject to reassessment by the applicable taxation authority. In the event of a successful reassessment of the Corporation, such reassessment may have an impact on current and future taxes payable.

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

### ***Breaches of Confidentiality***

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

### ***Negative Impact of Additional Sales or Issuances of Securities***

The Corporation may issue an unlimited number of Common Shares without any vote or action by the shareholders, subject to the rules of any stock exchange on which the Corporation's securities may be listed. The Corporation may make future acquisitions or enter into financings or other transactions involving the issuance of securities of the Corporation which may be dilutive. If the Corporation issues additional securities, the percentage ownership of existing shareholders will be reduced and diluted and the price of the Corporation's securities could decrease.

### ***Additional Taxation Applicable to Non-Residents***

Tax legislation in Canada may impose withholding or other taxes on the cash dividends, stock dividends or other property transferred by the Corporation to non-resident shareholders. These taxes may be reduced pursuant to tax treaties between Canada and the non-resident shareholder's jurisdiction of residence. Evidence of eligibility for a reduced withholding rate must be filed by the non-resident shareholder in prescribed form with their broker (or in the case of registered shareholders, with the transfer agent). In addition, the country in which the non-resident shareholder is resident may impose additional taxes on such dividends. Any of these taxes may change from time to time.

### ***Foreign Exchange Risk for Non-Resident Shareholders***

The Corporation's cash dividends are declared in Canadian dollars and may be converted in certain instances to foreign denominated currencies at the spot exchange rate at the time of payment. As a consequence, non-resident shareholders and shareholders who calculate their return in currencies other than the Canadian dollar are subject to foreign exchange risk. To the extent that the Canadian dollar strengthens with respect to their currency, the amount of any dividend will be reduced when converted to their home currency.

### ***Conflicts of Interest***

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

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

Shareholders and prospective investors are cautioned not to place undue reliance on the Corporation's forward-looking information. By its nature, forward-looking information involves numerous assumptions and known and unknown risks and uncertainties, of both a general and specific nature, that could cause actual results to differ materially from those suggested by the forward-looking information or contribute to the possibility that predictions, forecasts or projections will prove to be materially inaccurate. Additional information on the risks, assumptions and uncertainties relating to forward-looking information is found under the heading "*Special Notes to Reader – Forward-Looking Information*" in this Annual Information Form.

## **DIVIDEND AND DISTRIBUTION POLICY**

### **Common Shares**

On November 9, 2016, the Corporation announced that the Board had approved a quarterly dividend policy in respect of the Common Shares. This dividend policy establishes that until changed by the Board, cash dividends will be paid to the holders of Common Shares on the last day of March, June, September and December in each year (or if such date is not a business day, on the next business day). The record date for determining the shareholders entitled to receive dividends is expected to be on or about the 15<sup>th</sup> day of the last month of the applicable quarter. The first quarterly dividend under this policy was paid in respect of the quarter ended March 31, 2017. The dividend policy is periodically reviewed by the Board and no assurance or guarantee can be given that Birchcliff will maintain the dividend policy in its current form.

Birchcliff does not have a dividend reinvestment plan or stock dividend program.

### **Preferred Shares – Series A and Series C Preferred Shares**

The Corporation has Series A Preferred Shares and Series C Preferred Shares outstanding, on which dividends have been paid to their holders in accordance with their terms. The decision whether or not to pay dividends on any Preferred Shares, and the amount of any such dividend, is subject to the discretion of the Board.

## Dividend History

The following table sets forth details regarding the cash dividends that were declared on the Common Shares, the Series A Preferred Shares and the Series C Preferred Shares during the three most recently completed financial years:

Declared	Record Date	Payment Date	Type	Amount (\$)
<b>Common Shares</b>				
November 30, 2017	December 15, 2017	January 2, 2018	Quarterly, Cash	0.025
September 5, 2017	September 15, 2017	October 2, 2017	Quarterly, Cash	0.025
May 30, 2017	June 15, 2017	June 30, 2017	Quarterly, Cash	0.025
March 1, 2017	March 15, 2017	March 31, 2017	Quarterly, Cash	0.025
<b>Series A Preferred Shares</b>				
November 30, 2017	December 15, 2017	January 2, 2018	Quarterly, Cash	0.523375
September 5, 2017	September 15, 2017	October 2, 2017	Quarterly, Cash	0.50
May 30, 2017	June 15, 2017	June 30, 2017	Quarterly, Cash	0.50
March 1, 2017	March 15, 2017	March 31, 2017	Quarterly, Cash	0.50
November 30, 2016	December 15, 2016	January 3, 2017	Quarterly, Cash	0.50
September 1, 2016	September 15, 2016	September 30, 2016	Quarterly, Cash	0.50
May 31, 2016	June 15, 2016	June 30, 2016	Quarterly, Cash	0.50
March 3, 2016	March 16, 2016	March 31, 2016	Quarterly, Cash	0.50
December 2, 2015	December 15, 2015	December 31, 2015	Quarterly, Cash	0.50
September 3, 2015	September 16, 2015	September 30, 2015	Quarterly, Cash	0.50
June 2, 2015	June 15, 2015	June 30, 2015	Quarterly, Cash	0.50
March 5, 2015	March 16, 2015	March 31, 2015	Quarterly, Cash	0.50
<b>Series C Preferred Shares</b>				
November 30, 2017	December 15, 2017	January 2, 2018	Quarterly, Cash	0.4375
September 5, 2017	September 15, 2017	October 2, 2017	Quarterly, Cash	0.4375
May 30, 2017	June 15, 2017	June 30, 2017	Quarterly, Cash	0.4375
March 1, 2017	March 15, 2017	March 31, 2017	Quarterly, Cash	0.4375
November 30, 2016	December 15, 2016	January 3, 2017	Quarterly, Cash	0.4375
September 1, 2016	September 15, 2016	September 30, 2016	Quarterly, Cash	0.4375
May 31, 2016	June 15, 2016	June 30, 2016	Quarterly, Cash	0.4375
March 3, 2016	March 16, 2016	March 31, 2016	Quarterly, Cash	0.4375
December 2, 2015	December 15, 2015	December 31, 2015	Quarterly, Cash	0.4375
September 3, 2015	September 16, 2015	September 30, 2015	Quarterly, Cash	0.4375
June 2, 2015	June 15, 2015	June 30, 2015	Quarterly, Cash	0.4375
March 5, 2015	March 16, 2015	March 31, 2015	Quarterly, Cash	0.4375

The declaration and payment of dividends in any quarter is subject to the discretion of the Board and may vary depending on a variety of factors and conditions existing from time to time. The payment of cash dividends to shareholders is not assured or guaranteed and dividends may be reduced or suspended. In addition to the foregoing, the Corporation's ability to pay dividends now or in the future may be limited by covenants contained in the agreements governing any indebtedness that the Corporation has incurred or may incur in the future, including the terms of the Credit Facilities. The Credit Facilities provide that Birchcliff is not permitted to make any distribution (including dividends) at any time when an event of default exists or would reasonably be expected to exist upon making such distribution, unless such event of default arose subsequent to the ordinary course declaration of the applicable distribution. For further information regarding the risks and assumptions relating to the payment of dividends, please see "Risk Factors – Financial Risks and Risks Relating to Economic Conditions – Dividends" in this Annual Information Form.

## DESCRIPTION OF CAPITAL STRUCTURE

### Share Capital

The authorized share capital of the Corporation consists of an unlimited number of Common Shares and an unlimited number of Preferred Shares issuable in series, each without par value. In addition, the Corporation also has Performance Warrants and Options that are outstanding.

The following table sets forth the securities of the Corporation that were outstanding at December 31, 2017:

<b>Authorized Securities Outstanding</b>	<b>Number of Securities</b>
Common Shares	265,796,698
Series A Preferred Shares	2,000,000
Series C Preferred Shares	2,000,000
Performance Warrants	2,939,732
Options	14,158,107

The following is a summary of the rights, privileges, restrictions and conditions which attach to the securities of the Corporation:

#### ***Common Shares***

Shareholders are entitled to receive notice of, to attend and to one vote per Common Share at all meetings of holders of Common Shares, except meetings at which only holders of a specified class of shares are entitled to vote. Shareholders are entitled to receive any dividend declared by the Corporation on the Common Shares; provided that the Corporation shall be entitled to declare dividends on the Preferred Shares or on any of such classes of shares without being obliged to declare any dividends on the Common Shares. Subject to the rights, privileges, restrictions and conditions attaching to any other class of shares of the Corporation, holders of Common Shares are entitled to receive the remaining property of the Corporation upon dissolution in equal rank with the holders of other Common Shares.

On November 15, 2017, the Corporation announced that the TSX had accepted the Corporation's notice of intention to make the NCIB. Pursuant to the NCIB, the Corporation may purchase up to 20,121,747 of the outstanding Common Shares. The actual number of Common Shares purchased pursuant to the NCIB and the timing of such purchases will be determined by the Corporation and is dependent on future market conditions. The NCIB commenced on November 20, 2017 and will terminate on November 19, 2018, or such earlier time as the NCIB is completed or is terminated at the option of the Corporation. All Common Shares purchased under the NCIB will be cancelled.

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

The Preferred Shares may from time to time be issued in one or more series and the Board may fix from time to time before such issue the number of Preferred Shares which is to comprise each series and the designation, rights, privileges, restrictions and conditions attaching to each series of Preferred Shares including, without limiting the generality of the foregoing, any voting rights, the rate or amount of dividends or the method of calculating dividends, the dates of payment thereof, the terms and conditions of redemption, purchase and conversion, if any, and any sinking fund or other provisions.

The Preferred Shares of each series shall, with respect to the payment of dividends and the distribution of assets or return of capital in the event of liquidation, dissolution or winding up of the Corporation, whether voluntary or involuntary, or any other return of capital or distribution of the assets of Birchcliff amongst its shareholders for the purpose of winding up its affairs, be entitled to preference over the Common Shares and over any other shares of the Corporation ranking by their terms junior to the Preferred Shares of that series. The Preferred Shares of any series may also be given such other preferences, not inconsistent with the articles of the Corporation, over the Common Shares and any other Preferred Shares as may be fixed by the Board.

If any cumulative dividends or amounts payable on the return of capital in respect of a series of Preferred Shares are not paid in full, all series of Preferred Shares shall participate rateably in respect of accumulated dividends and return of capital.

In the event of the liquidation, dissolution or winding-up of the Corporation, the holders of Series A Preferred Shares, Series B Preferred Shares and Series C Preferred Shares are entitled to all accrued and unpaid dividends thereon, before any amount is paid or any property or assets are distributed to holders of the Common Shares.

#### Series A Preferred Shares and Series B Preferred Shares

The Series A Preferred Shares and the Series B Preferred Shares are identical in all material respects other than different dividend rights, redemption rights and conversion rights attached thereto. There are currently no Series B Preferred Shares outstanding.

On August 8, 2012, the Corporation issued an aggregate of 2,000,000 Series A Preferred Shares. The holders of the outstanding Series A Preferred Shares are entitled to receive, as and when declared by the Board, fixed cumulative preferential cash dividends. The dividend rate of the Series A Preferred Shares reset on September 30, 2017 and will reset every five years thereafter at a rate equal to the then current five-year Government of Canada bond yield plus 6.83%. The dividend rate for the initial period from and including the date of issue to, but excluding, September 30, 2017, was \$2.00 per share per year, payable quarterly. The dividend rate for the five-year period from and including September 30, 2017 to, but excluding September 30, 2022, is 8.374%.

The Series A Preferred Shares were redeemable by the Corporation on September 30, 2017 and are redeemable by the Corporation on September 30 in every fifth year thereafter, at a redemption price of \$25.00 per share, plus all accrued and unpaid dividends.

The holders of the Series A Preferred Shares had the right to convert their shares into an equal number of Series B Preferred Shares on September 30, 2017, subject to certain conditions being met. On August 14, 2017, the Corporation announced it did not intend to exercise its right to redeem the Series A Preferred Shares on September 30, 2017. As a result, the holders of the Series A Preferred Shares had the right to choose to retain any or all of their Series A Preferred Shares and continue to receive a fixed rate quarterly dividend or to convert, on a one-for-one basis, any or all of their Series A Preferred Shares into Series B Preferred Shares and receive a floating rate quarterly dividend. On September 18, 2017, the Corporation announced that the holders of the Series A Preferred Shares were not entitled to convert their Series A Preferred Shares into Series B Preferred Shares as only 165,960 Series A Preferred Shares had been tendered for conversion, which was less than the 250,000 shares required to give effect to the conversion. As a result, none of Birchcliff's outstanding Series A Preferred Shares were converted into Series B Preferred Shares on September 30, 2017. Holders of the Series A Preferred Shares will have the opportunity to convert their shares into Series B Preferred Shares again on September 30, 2022, and every five years thereafter as long as the shares remain outstanding.

#### Series C Preferred Shares

On June 14, 2013, the Corporation issued 2,000,000 Series C Preferred Shares. The holders of the outstanding Series C Preferred Shares are entitled to receive, as and when declared by the Board, fixed cumulative preferential cash dividends at an annual rate of \$1.75 per share, payable quarterly. The Series C Preferred Shares are redeemable by the Corporation on and after June 30, 2018 at a redemption price of \$25.75 per share if redeemed before June 30, 2019, at a redemption price of \$25.50 per share if redeemed on or after June 30, 2019 but before June 30, 2020 and at a redemption price of \$25.00 per share if redeemed on or after June 30, 2020, in each case together with all accrued and unpaid dividends.

On and after June 30, 2020, the holders of Series C Preferred Shares may redeem their shares for cash on the last day of March, June, September and December of each year at \$25.00 per share, together with all accrued and unpaid dividends. Upon receipt of a notice of redemption from the holder, the Corporation may elect to convert such Series C Preferred Shares into Common Shares. The number of Common Shares into which each Series C Preferred Share may be so converted will be determined by dividing the amount of \$25.00 together with all

accrued and unpaid dividends by the greater of \$2.00 and 95% of the weighted average trading price of the Common Shares on the TSX for a period of 20 consecutive trading days ending on the fourth day prior to the date specified for conversion (the “**Current Market Price**”). In addition, on and after June 30, 2018, the Corporation may convert the outstanding Series C Preferred Shares into Common Shares. The number of Common Shares into which each Series C Preferred Share may be so converted will be determined by dividing the then applicable redemption price, together with all accrued and unpaid dividends, by the greater of \$2.00 and 95% of the Current Market Price. Any conversion of the Series C Preferred Shares will be subject to the approval of the TSX, if required.

### ***Performance Warrants***

Performance Warrants were granted to the executive officers of the Corporation at the Corporation’s inception and were designed to act as a long-term retention incentive for the holders thereof. The Performance Warrants were specifically designed to provide a financial incentive to the holders upon the trading price of the Common Shares exceeding \$6.00, being the trading price that is equal to at least two times the exercise price of \$3.00. This condition was satisfied in November of 2005 and accordingly, all of the Performance Warrants have been exercisable since November 2005. The outstanding Performance Warrants are held by Messrs. Tonken, Geremia, Surbey and Bosman, each of whom is an executive officer and/or director of the Corporation. On May 15, 2014, the holders of Common Shares approved an amendment to the outstanding Performance Warrants to extend the expiry date of such Performance Warrants from January 31, 2015 to January 31, 2020.

### ***Options***

Pursuant to the Stock Option Plan, Options may be granted from time to time to the directors, officers, employees and consultants of the Corporation. Options are granted by the Board who, at the time of the grant, fixes the exercise price, vesting dates and the expiry date of such Options. The maximum number of Common Shares that may be issued under the Stock Option Plan at any time shall not exceed 10% of the aggregate number of Common Shares actually outstanding at that time, as determined on a non-diluted basis.

The Stock Option Plan provides that the expiry date of an Option shall be no later than 10 years from the date of grant of such Option and that the exercise price of an Option shall be determined by the Board but shall not be lower than the higher of: (i) the closing price of the Common Shares on the TSX on the first trading day immediately preceding the date of grant; or (ii) the lowest price permitted by the TSX. All of the Options granted to date under the Stock Option Plan provide for: (i) the expiry of such Options not later than the fifth anniversary of the date of grant; and (ii) the vesting of such Options with respect to one-third of the Common Shares issuable thereunder on each of the first, second and third anniversaries of the date of grant.

### ***Credit Facilities***

The Corporation has extendible revolving credit facilities in the aggregate principal amount of \$950 million (the “**Credit Facilities**”) which are comprised of an extendible revolving syndicated term credit facility of \$900 million (the “**Syndicated Credit Facility**”) and an extendible revolving working capital facility of \$50 million (the “**Working Capital Facility**”). The Credit Facilities allow for prime rate loans, LIBOR loans, U.S. base rate loans, bankers’ acceptances and, in the case of the Working Capital Facility only, letters of credit. The maturity date of each of the Syndicated Credit Facility and the Working Capital Facility is May 11, 2020. The Corporation may each year, at its option, request an extension to the maturity date of the Syndicated Credit Facility and the Working Capital Facility, or either of them, for an additional period of up to three years from May 11 of the year in which the extension request is made. The Credit Facilities do not contain any financial maintenance covenants.

The Credit Facilities are subject to semi-annual reviews of the borrowing base limit by the Corporation’s syndicate of lenders, which are typically completed in May and November of each year.

For further information regarding the Credit Facilities, see the Corporation’s audited annual financial statements and related management’s discussion and analysis for the year ended December 31, 2017, a copy of which is available on SEDAR. Please also see “*Risk Factors – Financial Risks and Risks Relating to Economic Conditions – Credit Facilities*” in this Annual Information Form.



## MARKET FOR SECURITIES

### Trading Price and Volume

The Common Shares, the Series A Preferred Shares and the Series C Preferred Shares are listed for trading on the TSX under the trading symbols “BIR”, “BIR.PR.A” and “BIR.PR.C”, respectively. The following table sets forth the price ranges and volumes of each class of securities of the Corporation that were traded on the TSX during the year ended December 31, 2017:

Month	Common Shares			Series A Preferred Shares			Series C Preferred Shares		
	High (\$)	Low (\$)	Monthly Trading Volume	High (\$)	Low (\$)	Monthly Trading Volume	High (\$)	Low (\$)	Monthly Trading Volume
January	9.58	8.01	26,235,150	25.50	24.98	36,031	25.56	25.10	17,007
February	8.37	7.02	30,138,194	25.87	25.15	34,819	25.56	25.29	16,780
March	7.785	6.40	33,885,269	25.89	25.16	32,483	25.63	25.10	39,072
April	8.17	6.75	15,556,026	25.87	25.32	16,748	25.65	25.16	22,241
May	7.14	6.10	18,961,513	25.58	25.25	12,335	25.60	25.30	21,694
June	6.46	5.39	23,016,651	25.60	24.99	42,155	25.47	25.03	17,848
July	6.63	5.33	15,029,878	25.35	25.07	7,476	25.35	25.07	17,048
August	6.08	5.49	13,529,164	26.40	25.20	26,424	25.50	25.21	33,012
September	6.46	5.58	22,987,049	26.69	26.19	31,005	25.53	25.25	18,025
October	6.00	4.92	48,932,586	26.65	25.93	10,624	25.75	25.20	36,762
November	5.89	4.69	30,375,418	26.66	25.99	11,402	25.40	25.00	41,185
December	5.08	3.89	35,242,855	26.50	25.83	17,460	25.41	24.95	20,727

### Prior Sales

During the year ended December 31, 2017, the only securities the Corporation issued which are outstanding but are not listed or quoted on a marketplace were an aggregate of 4,867,400 Options which were granted at exercise prices ranging from \$4.17 to \$9.03 per Common Share.

### ESCROWED SECURITIES AND SECURITIES SUBJECT TO CONTRACTUAL RESTRICTION ON TRANSFER

To the Corporation’s knowledge, at December 31, 2017, no securities of Birchcliff were held in escrow or subject to a contractual restriction on transfer.

## DIRECTORS AND OFFICERS

### Directors

The following table sets forth for each person who is a director of the Corporation at the date hereof: (i) their name, province and country of residence; (ii) the period during which they have served as a director of the Corporation or its predecessor entities; and (iii) their principal occupation during the past five years or more:

Name, Province and Country of Residence	Director Since	Principal Occupation During the Past Five Years or More
<b>Dennis A. Dawson</b> <sup>(1)(2)(3)(4)</sup> <i>Alberta, Canada</i> Independent	May 14, 2015	<p>Mr. Dawson is a director of Birchcliff and has been the Lead Director since May 11, 2017. Mr. Dawson was the Vice-President, General Counsel and Corporate Secretary of AltaGas from December 1998 until April 2015. Mr. Dawson first joined AltaGas as Associate General Counsel in August 1997, after consulting with AltaGas Services Inc. from July 1996. Effective July 1998, he became AltaGas' General Counsel and Corporate Secretary and effective December 1998, Mr. Dawson became Vice-President, General Counsel and Corporate Secretary. Mr. Dawson has over 32 years of oil and natural gas experience, including nine years as General Counsel for Pan-Alberta Gas Ltd., a major Canadian natural gas export and marketing company. Mr. Dawson received a Bachelor of Arts degree from the University of Lethbridge and a Bachelor of Laws degree from the University of Alberta.</p>
<b>Debra A. Gerlach</b> <sup>(1)(2)(3)(4)</sup> <i>Alberta, Canada</i> Independent	November 8, 2017	<p>Ms. Gerlach is a director of Birchcliff. From September 1996 until September 2017, Ms. Gerlach was a partner with Deloitte LLP where she practiced in the Assurance and Advisory group and prior thereto she held various positions within Deloitte LLP from the time she joined the firm in August 1982. During her 35 year career with the firm, Ms. Gerlach worked with numerous public oil and gas companies. Ms. Gerlach is a Chartered Accountant with the Chartered Professional Accountants of Alberta and received a Bachelor of Commerce degree and a Master of Business Administration degree from the University of Calgary.</p>
<b>Rebecca J. Morley</b> <sup>(1)(2)(3)(4)</sup> <i>Alberta, Canada</i> Independent	August 10, 2016	<p>Ms. Morley is a director of Birchcliff. Ms. Morley has over 16 years of experience in the capital markets industry. From October 2014 to January 2016, Ms. Morley was the Vice-President, Corporate Development of Rayne Capital Management Inc., an alternative asset manager. From May 2013 to August 2014, Ms. Morley was the President and Chief Executive Officer of LinkGate Capital Corp., a registered securities firm. From July 2011 to May 2013, Ms. Morley worked as a Research Analyst and Associate Portfolio Manager at Cypress Capital Management Ltd. Prior thereto, Ms. Morley was a Partner and Research Analyst with Paradigm Capital and a Research Associate with each of GMP Securities and TD Newcrest. In addition, Ms. Morley is currently the Chair of the Board of Directors of the YWCA of Calgary, was the Chair of the Audit Committee in 2014 and 2015 and has been a director since 2012. Ms. Morley received a Bachelor of Business Administration degree with a Major in Finance (Honours) from St. Francis Xavier University and is a CFA Charterholder.</p>

Name, Province and Country of Residence	Director Since	Principal Occupation During the Past Five Years or More
<b>Larry A. Shaw</b> <sup>(1)(2)(3)(4)(5)</sup> Alberta, Canada Independent	July 6, 2004	Mr. Shaw is a director of Birchcliff and was the Chairman of the Board from the inception of the Corporation until May 11, 2017. Mr. Shaw has over 30 years of experience in the oil and natural gas industry and is one of the Corporation's founders. Prior to joining Birchcliff, Mr. Shaw served as the Chairman of the Board of Case Resources Inc., Big Bear Exploration Ltd. and Stampeder Exploration Ltd. He was the President of Shaw Automotive Group Ltd. and Shaw G.M.C. Pontiac Buick Hummer Ltd. for many years. Mr. Shaw received an Honors Degree in Business Administration from the University of Western Ontario.
<b>James W. Surbey</b> <sup>(2)(3)</sup> Alberta, Canada Non-Independent	May 11, 2017	Mr. Surbey is a director of Birchcliff and was the Vice-President, Corporate Development and Corporate Secretary of Birchcliff from the inception of the Corporation until June 30, 2017. Mr. Surbey has over 41 years of experience in the oil and natural gas industry and is one of the Corporation's founders. Prior to joining Birchcliff, he served as the Vice-President, Corporate Development of Case Resources Inc. and the Senior Vice President, Corporate Development of Big Bear Exploration Ltd. Mr. Surbey was previously a senior partner of the law firm Howard, Mackie (now Borden Ladner Gervais LLP). Mr. Surbey received a Bachelor of Engineering degree and a Bachelor of Laws degree from McGill University and is a member of the Law Society of Alberta.
<b>A. Jeffery Tonken</b> Alberta, Canada Chairman of the Board Non-Independent	July 6, 2004	See Mr. Tonken's biography under "Executive Officers".

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- (1) Member of the Audit Committee.
  - (2) Member of the Compensation Committee.
  - (3) Member of the Reserves Evaluation Committee.
  - (4) Member of the Nominating Committee.
  - (5) It is currently anticipated that Mr. Shaw will not run for re-election at the next annual meeting of shareholders.

The directors of the Corporation are elected annually at the annual meeting of the holders of Common Shares and hold office until the close of the next annual meeting of such shareholders.

### Executive Officers

The following table sets forth for each person who is an executive officer of the Corporation at the date hereof: (i) their name, province and country of residence; (ii) their position with the Corporation; and (iii) their principal occupation during the past five years or more:

<b>Name and Province and Country of Residence</b>	<b>Current Position with Birchcliff</b>	<b>Principal Occupation During the Past Five Years or More</b>
<p><b>A. Jeffery Tonken</b> <i>Alberta, Canada</i></p>	<p>Chairman of the Board and President and Chief Executive Officer</p>	<p>Mr. Tonken has been the President and Chief Executive Officer and a director of Birchcliff since the inception of the Corporation and the Chairman of the Board since May 11, 2017. Mr. Tonken has over 37 years of experience in the oil and natural gas industry and is one of the Corporation's founders. Prior to Birchcliff, Mr. Tonken founded and served as the President and Chief Executive Officer of Case Resources Inc., Big Bear Exploration Ltd. and Stampeder Exploration Ltd. Mr. Tonken was previously a partner of the law firm Howard, Mackie (now Borden Ladner Gervais LLP). Mr. Tonken is a Governor of the Canadian Association of Petroleum Producers (CAPP). Mr. Tonken received a Bachelor of Commerce degree from the University of Alberta and a Bachelor of Laws degree from the University of Wales and is a member of the Law Society of Alberta.</p>
<p><b>Myles R. Bosman</b> <i>Alberta, Canada</i></p>	<p>Vice-President, Exploration and Chief Operating Officer</p>	<p>Mr. Bosman has been the Vice-President, Exploration and Chief Operating Officer of Birchcliff since the inception of the Corporation. Mr. Bosman is a Professional Geologist and has over 27 years of experience in the oil and natural gas industry and is one of the Corporation's founders. Prior to joining Birchcliff, Mr. Bosman served as the Vice-President, Exploration and Chief Operating Officer of Case Resources Inc., the Exploration Manager of Summit Resources Ltd. and as an Exploration Geologist with both Numac Energy Inc. and Canadian Hunter Exploration. Mr. Bosman received a Bachelor of Science degree in Geology from the University of Calgary and a Resource Engineering diploma from the Northern Alberta Institute of Technology. Mr. Bosman is a member of APEGA.</p>
<p><b>Christopher A. Carlsen</b> <i>Alberta, Canada</i></p>	<p>Vice-President, Engineering</p>	<p>Mr. Carlsen has been the Vice-President, Engineering of Birchcliff since July 22, 2013. Prior thereto, he was an Asset Team Lead and Senior Exploitation Engineer with Birchcliff. Mr. Carlsen is a Professional Engineer and has over 17 years of experience in the oil and natural gas industry. Prior to joining Birchcliff in 2008, he was the Senior Engineer at Greenfield Resources Ltd. and held various engineering positions at both Encana Corporation and PanCanadian Petroleum Ltd. Mr. Carlsen received a Bachelor of Science degree in Chemical Engineering from the University of Saskatchewan. Mr. Carlsen is a member of APEGA.</p>

<b>Name and Province and Country of Residence</b>	<b>Current Position with Birchcliff</b>	<b>Principal Occupation During the Past Five Years or More</b>
<b>Bruno P. Geremia</b> <i>Alberta, Canada</i>	Vice-President and Chief Financial Officer	Mr. Geremia has been the Vice-President and Chief Financial Officer of Birchcliff since the inception of the Corporation. Mr. Geremia is a Chartered Accountant and has over 26 years of experience in the oil and natural gas industry and is one of the Corporation’s founders. Prior to joining Birchcliff, Mr. Geremia served as the Vice-President and Chief Financial Officer of both Case Resources Inc. and Big Bear Exploration Ltd., as the Director, Commercial of Gulf Canada Resources and as the Manager, Special Projects of Stampeder Exploration Ltd. Mr. Geremia was previously a Chartered Accountant with Deloitte & Touche LLP. Mr. Geremia received a Bachelor of Commerce degree from the University of Calgary.
<b>David M. Humphreys</b> <i>Alberta, Canada</i>	Vice-President, Operations	Mr. Humphreys has been the Vice-President, Operations of Birchcliff since October 9, 2009. Mr. Humphreys has over 30 years of experience in the oil and natural gas industry. Prior to joining Birchcliff in 2009, he served as the Vice-President, Operations of Highpine Oil & Gas Ltd., White Fire Energy Ltd. and Virtus Energy Ltd. and the Production Manager of both Husky Oil Operations Ltd. and Ionic Energy. Mr. Humphreys received a Hydrocarbon Engineering Technology diploma from the Northern Alberta Institute of Technology and is a member of ASET. Mr. Humphreys also has his P.L. (Eng.) designation and is a member of APEGA.

### Shareholdings of Directors and Executive Officers

At March 13, 2018: (i) the directors and executive officers of the Corporation, as a group, beneficially owned, or exercised control or direction over, directly or indirectly, 5,515,939 Common Shares, representing approximately 2% of the issued and outstanding Common Shares; and (ii) the executive officers of the Corporation, as a group, held Performance Warrants and Options to acquire a further 7,364,885 Common Shares.

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

None of the directors or executive officers of the Corporation is, as at the date of this Annual Information Form, or was within 10 years before the date of this Annual Information Form, a director, chief executive officer or chief financial officer of any company including the Corporation that: (i) was subject to a cease trade order, an order similar to a cease trade order or an order that denied the relevant company access to any exemption under securities legislation that was in effect for a period of more than 30 consecutive days (an “**Order**”) that was issued while the director or executive officer was acting in the capacity as director, chief executive officer or chief financial officer; or (ii) was subject to an Order that was issued after the director or executive officer ceased to be a director, chief executive officer or chief financial officer and which resulted from an event that occurred while that person was acting in the capacity as director, chief executive officer or chief financial officer.

Except as disclosed below, none of the directors or executive officers of the Corporation or a shareholder holding a sufficient number of securities of the Corporation to affect materially the control of the Corporation: (i) is, as at the

date of this Annual Information Form, or within the 10 years before the date of this Annual Information Form, a director or executive officer of any company including the Corporation that, while that person was acting in that capacity, or within a year of that person ceasing to act in that capacity, became bankrupt, made a proposal under any legislation relating to bankruptcy or insolvency or was subject to or instituted any proceedings, arrangement or compromise with creditors or had a receiver, receiver manager or trustee appointed to hold its assets; or (ii) has, within the 10 years before the date of this Annual Information Form, become bankrupt, made a proposal under any legislation relating to bankruptcy or insolvency, or became subject to or instituted any proceedings, arrangement or compromise with creditors, or had a receiver, receiver manager or trustee appointed to hold the assets of the director, executive officer or shareholder.

Mr. Surbey resigned from his role as a director of Fair Sky Resources Ltd. in December 2007 and within a year of his resignation, a secured lender enforced its security and appointed a receiver of that corporation.

From July 8, 2010 to February 20, 2018, Mr. Geremia was a director of Manitek Energy Inc. (“**Manitek**”), a company listed on the TSX Venture Exchange. On January 10, 2018, Manitek announced that it had filed a Notice of an Intention to Make a Proposal (the “**NOI**”) pursuant to the provisions of the BIA, naming FTI Consulting Canada Inc. (“**FTI**”) as the proposed trustee. Manitek was unable to form a proposal with its creditors within 30 days after filing its NOI and as a result, on February 20, 2018, the Court of Queen’s Bench of Alberta issued a Receivership Order placing Manitek into receivership and substituting Alvarez & Marsal Canada Inc. (“**Alvarez**”) in place of FTI as the trustee in bankruptcy. The Court also appointed Alvarez as the receiver and manager of Manitek and terminated the NOI. All of the directors of Manitek, including Mr. Geremia, resigned.

None of the directors or executive officers of the Corporation or a shareholder holding a sufficient number of securities of the Corporation to affect materially the control of the Corporation has been subject to: (i) any penalties or sanctions imposed by a court relating to securities legislation or by a securities regulatory authority or has entered into a settlement agreement with a securities regulatory authority; or (ii) any other penalties or sanctions imposed by a court or regulatory body that would likely be considered important to a reasonable investor in making an investment decision.

### **Conflicts of Interest**

Directors and executive officers of the Corporation may invest in or become directors or officers of other oil and natural gas companies or entities that may provide financing to, or make equity investments in, competitors of the Corporation, which may give rise to conflicts of interest. Conflicts, if any, will be governed by the ABCA. Pursuant to the ABCA, directors and executive officers of the Corporation are required to disclose the nature and extent of any interest that they have in a material contract or material transaction, and in the case of a director, such director will refrain from voting on any matter in respect of such contract or transaction, unless otherwise provided by the ABCA.

## **AUDIT COMMITTEE**

### **Audit Committee Charter**

The Charter adopted by the Audit Committee of the Corporation is attached hereto as Appendix D.

### **Composition of the Audit Committee and Relevant Education and Experience**

At the date hereof, the Audit Committee is comprised of Mr. Dennis A. Dawson, Ms. Debra A. Gerlach, Ms. Rebecca J. Morley and Mr. Larry A. Shaw. Ms. Morley is Chair of the Audit Committee. Each of the members of the Audit Committee is “independent” and “financially literate” within the meaning of NI 52-110. The following table sets forth the relevant education and experience of each member of the Audit Committee:

<b>Name</b>	<b>Independent?</b>	<b>Financially Literate?</b>	<b>Relevant Education and Experience</b>
Dennis A. Dawson	Yes	Yes	Mr. Dawson was the Vice-President, General Counsel and Corporate Secretary of AltaGas and has over 32 years of oil and natural gas experience, including nine years as General Counsel for Pan-Alberta Gas Ltd., a major Canadian natural gas export and marketing company. Mr. Dawson received a Bachelor of Arts degree from the University of Lethbridge and a Bachelor of Laws degree from the University of Alberta.
Debra A. Gerlach	Yes	Yes	Ms. Gerlach was a partner with Deloitte LLP for over 21 years where she practiced in the Assurance and Advisory group. During that time, she worked with many public oil and gas companies over her 35 year career with the firm. Ms. Gerlach is a Chartered Accountant with the Chartered Professional Accountants of Alberta and received a Bachelor of Commerce degree and a Master of Business Administration degree from the University of Calgary.
Rebecca J. Morley (Chair)	Yes	Yes	Ms. Morley has over 16 years of experience in the capital markets industry. From October 2014 to January 2016, Ms. Morley was the Vice-President, Corporate Development of Rayne Capital Management Inc., an alternative asset manager. From May 2013 to August 2014, Ms. Morley was the President and Chief Executive Officer of LinkGate Capital Corp., a registered securities firm. From July 2011 to May 2013, Ms. Morley worked as a Research Analyst and Associate Portfolio Manager at Cypress Capital Management Ltd. Prior thereto, Ms. Morley was a Partner and Research Analyst with Paradigm Capital and a Research Associate with each of GMP Securities and TD Newcrest. In addition, Ms. Morley is currently the Chair of the Board of Directors of the YWCA of Calgary, was the Chair of the Audit Committee in 2014 and 2015 and has been a director since 2012. Ms. Morley received a Bachelor of Business Administration degree with a Major in Finance (Honours) from St. Francis Xavier University and is a CFA Charterholder.
Larry A. Shaw <sup>(1)</sup>	Yes	Yes	Mr. Shaw has served as the chairman of several public oil and gas companies and as a member of the audit committee of such companies and was also the President of Shaw Automotive Group Ltd. and Shaw G.M.C. Pontiac Buick Hummer Ltd. for many years.

(1) It is currently anticipated that Mr. Shaw will not run for re-election at the next annual meeting of shareholders.

## Pre-Approval Policies and Procedures

The Charter adopted by the Audit Committee provides that all non-audit services to be provided to the Corporation by the Corporation's external auditor must be pre-approved by the Audit Committee. The Audit Committee may delegate this function to one of its independent members, who shall report to the Audit Committee on any such approvals.

## External Auditor Service Fees

The following table sets forth information about fees billed to Birchcliff for professional services rendered by KPMG LLP in the years ended December 31, 2017 and 2016:

<b>Fees</b>	<b>2017</b>	<b>2016</b>
Audit Fees <sup>(1)</sup>	\$272,293	\$227,000
Audit-Related Fees <sup>(2)</sup>	-	\$52,470
Tax Fees <sup>(3)</sup>	\$18,055	\$12,775
All Other Fees <sup>(4)</sup>	-	141,095
<b>Total</b>	<b>\$290,348</b>	<b>\$433,340</b>

(1) "Audit Fees" consist of fees for the audit of the Corporation's annual financial statements and the review of the Corporation's quarterly financial statements, as well as services that are normally provided in connection with statutory and regulatory filings or engagements.

(2) "Audit-Related Fees" consist of fees for assurance and related services that are reasonably related to the performance of the audit or the review of the Corporation's financial statements and are not reported under the heading of "Audit Fees" above. During 2016, such fees related to the services provided in connection with the 2016 Public Offering, including the auditor's review of the prospectus and continuous disclosure documents, attendance at due diligence meetings and the preparation of comfort letters.

(3) "Tax Fees" consist of fees for professional services rendered for tax compliance, tax advice and tax planning. During 2017 and 2016, such fees related to the preparation and filing of Birchcliff's corporate income tax return and other tax-related work.

(4) "All Other Fees" consist of fees for products and services other than those described under the headings of "Audit Fees", "Audit-Related Fees" and "Tax Fees" above. During 2016, such fees related to the French translation of the Corporation's financial statements and other documents.

## LEGAL PROCEEDINGS AND REGULATORY ACTIONS

The Corporation's 2006 income tax filings were reassessed by the CRA in 2011 (the "Reassessment"). The Reassessment was based on the CRA's position that the tax pools available to Veracel, prior to its amalgamation with Birchcliff, ceased to be available to Veracel after Birchcliff and Veracel amalgamated on May 31, 2005. The Veracel tax pools in dispute totalled \$39.3 million. Birchcliff appealed the Reassessment to the Tax Court of Canada (the "TCC") and the trial of that appeal occurred in November 2013. On October 1, 2015, the TCC issued its decision (the "TCC Decision") and dismissed Birchcliff's appeal on the basis of the general anti-avoidance rule contained in the *Income Tax Act* (Canada). The TCC Decision was rendered by a judge based on the written record and not by the judge who conducted the trial. As a result of the TCC Decision, Birchcliff recorded a non-cash deferred income tax expense in the amount of \$10.2 million in the fourth quarter of 2015. Birchcliff appealed the TCC Decision to the Federal Court of Appeal (the "FCA"), which appeal was heard in January 2017. On April 28, 2017, the FCA issued its decision and allowed the appeal and set aside the TCC Decision, based on the lack of jurisdiction by the judge who rendered the TCC Decision. In setting aside the TCC Decision, the FCA referred the matter back to the judge of the TCC who initially conducted the trial in 2013 to render a judgement. The judge of the TCC rendered a decision in November 2017 and dismissed Birchcliff's appeal. Birchcliff has appealed that decision to the FCA.

There are no other material legal proceedings that the Corporation is or was a party to, or that any of its property is or was the subject of, during the most recently completed financial year or that the Corporation knows to be contemplated.

During the year ended December 31, 2017, there were: (i) no penalties or sanctions imposed against the Corporation by a court relating to securities legislation or by a securities regulatory authority; (ii) no other penalties or sanctions imposed by a court or regulatory body against the Corporation that would likely be considered important to a reasonable investor in making an investment decision; and (iii) no settlement agreements the Corporation entered into before a court relating to securities legislation or with a securities regulatory authority.



## **INTEREST OF MANAGEMENT AND OTHERS IN MATERIAL TRANSACTIONS**

There is no material interest, direct or indirect, of: (i) any director or executive officer of the Corporation; (ii) any person or company who beneficially owns, or controls or directs, directly or indirectly, more than 10% of the Common Shares; or (iii) any associate or affiliate of any of the persons or companies referred to in (i) or (ii), in any transaction within the three most recently completed financial years or during the current financial year that has materially affected or is reasonably expected to materially affect the Corporation.

## **TRANSFER AGENT AND REGISTRAR**

The transfer agent and registrar for the Common Shares is Computershare Trust Company of Canada at its principal offices in Calgary, Alberta and Toronto, Ontario.

## **MATERIAL CONTRACTS**

Except for contracts entered into in the ordinary course of business, the Corporation did not enter into any material contracts within the last financial year, or before the last financial year but which are still in effect.

## **INTERESTS OF EXPERTS**

### **Names of Experts**

The only persons or companies who are named as having prepared or certified a report, valuation, statement or opinion described or included in a filing, or referred to in a filing, made under NI 51-102 by the Corporation during, or relating to, the Corporation's most recently completed financial year, and whose profession or business gives authority to the report, valuation statement or opinion made by the person or company, are KPMG LLP, Deloitte and McDaniel.

### **Interests of Experts**

KPMG LLP performed the audit in respect of the audited annual financial statements of the Corporation as at and for the years ended December 31, 2017 and December 31, 2016. KPMG LLP is considered independent of the Corporation within the meaning of the relevant rules and related interpretations prescribed by the relevant professional bodies in Canada and any applicable legislation or regulations.

The Corporation's independent qualified reserves evaluator, Deloitte, prepared the Deloitte Reserves Report, the Consolidated Reserves Report and the 2017 Resource Assessment. As at the date hereof, the designated professionals (as defined in NI 51-102) of Deloitte, as a group, beneficially own, directly or indirectly, less than 1% of the securities of the Corporation.

The Corporation's independent qualified reserves evaluator, McDaniel, prepared the McDaniel Reserves Report. As at the date hereof, the designated professionals of McDaniel, as a group, beneficially own, directly or indirectly, less than 1% of the securities of the Corporation.

## **ADDITIONAL INFORMATION**

Additional information about the Corporation can be found on SEDAR at [www.sedar.com](http://www.sedar.com) and on the Corporation's website at [www.birchcliffenergy.com](http://www.birchcliffenergy.com). Additional information, including the remuneration and indebtedness of the directors and executive officers of the Corporation, the principal holders of Common Shares and the securities authorized for issuance under equity compensation plans, is contained in the information circular of the Corporation for the most recent annual meeting of the holders of Common Shares, which was held on May 11, 2017.

Additional financial information relating to the Corporation is provided in the Corporation's audited annual financial statements and related management's discussion and analysis for the year ended December 31, 2017.

## APPENDIX A

### DISCLOSURE OF CONTINGENT RESOURCES DATA AND PROSPECTIVE RESOURCES DATA

Birchcliff engaged Deloitte to prepare an independent evaluation of resources in respect of Birchcliff lands that have potential for the Montney/Doig Resource Play effective December 31, 2017, which is contained in a report dated March 13, 2018 (the “**2017 Resource Assessment**”). Deloitte also prepared a resource assessment effective December 31, 2016 (the “**2016 Resource Assessment**”). The 2017 Resource Assessment and the 2016 Resource Assessment were prepared in accordance with the standards contained in the COGE Handbook and NI 51-101 in effect at the relevant time.

Resource estimates contained herein at December 31, 2017 and 2016 are extracted from the relevant resource assessment and reflect only resources on Birchcliff’s Montney/Doig lands. The resource assessments did not include any of Birchcliff’s other properties. All anticipated results disclosed herein were prepared by Deloitte, who is an independent qualified reserves evaluator. Deloitte utilized probabilistic methods to generate high, best and low estimates of resource volumes.

Certain terms used herein are defined under the headings “*Glossary of Terms*” and “*Presentation of Oil and Gas Reserves and Resources*” in the Annual Information Form. Certain other terms used herein but not defined are defined in NI 51-101, CSA Staff Notice 51-324 or the COGE Handbook and, unless the context otherwise requires, shall have the same meanings herein as in NI 51-101, CSA Staff Notice 51-324 or the COGE Handbook, as the case may be.

All of Birchcliff’s resources are located in the Province of Alberta. Unless otherwise indicated, all volumes of Birchcliff’s resources presented herein are on an unrisks basis, meaning that they have not been adjusted for the chance of commerciality, and all volumes are presented on a gross basis, meaning Birchcliff’s working interest (operating or non-operating) share before deduction of royalties and without including any royalty interests of Birchcliff. Numbers in the tables presented herein may not total due to rounding.

**The estimates of Birchcliff’s resources provided herein are estimates only and there is no guarantee that the estimated resources will be recovered. Actual resources may be greater than or less than the estimates provided herein and variances could be material. With respect to Birchcliff’s discovered resources (including contingent resources), there is uncertainty that it will be commercially viable to produce any portion of the resources. With respect to Birchcliff’s undiscovered resources (including prospective resources), there is no certainty that any portion of the resources will be discovered. If discovered, there is no certainty that it will be commercially viable to produce any portion of the resources. Estimates of future net revenue, whether calculated without discount or using a discount rate, do not represent fair market value. Please see “*Risk Factors and Uncertainties*” in this Appendix A and “*Risk Factors*” in the Annual Information Form to which this Appendix A is attached.**

For further information regarding the presentation of Birchcliff’s resource disclosure, please see “*Presentation of Oil and Gas Reserves and Resources*” and “*Special Notes to Reader*” in the Annual Information Form.

#### **Interest of Birchcliff in Resources in the Study Area**

Birchcliff holds significant high working interest acreage in large contiguous blocks on the Montney/Doig Resource Play in the Peace River Arch area of Alberta. Birchcliff engaged Deloitte to evaluate the total PIIP and contingent and prospective resources on Birchcliff’s lands for the Doig Phosphate (“**DoigP**”), Basal Doig (“**BD**”) and Montney formations in the Montney/Doig deep basin area of northwest Alberta (the “**Study Area**”). In the Study Area, Birchcliff owns an interest in approximately 326.4 gross (319.3 net) sections of land which include Montney rights (inclusive of oil sections in the Gordondale area) and 307.1 gross (285.5 net) sections of land which include Doig rights. As compared to the 2016 Resource Assessment, these numbers are down approximately 22% for Montney rights (419.2 (407.4 net) sections as contained in the 2016 Resource Assessment) and 19% for Doig rights (377.8 (351.2 net) sections as in the 2016 Resource Assessment), primarily as a result of asset dispositions completed by the Corporation during 2017.

In the Study Area, resources have been assigned in areas ranging from Townships 69 to 80, Ranges 5 to 13W6. The Study Area is further bounded in a northwest-southeast direction by the deep basin edge. The geological section studied was divided into the DoigP, BD and Montney stratigraphic units. The Montney was further subdivided into seven intervals, from the top to the base: D5, D4, D3, D2, D1, TSE Valhalla and C.

Contingent resources have been attributed to Birchcliff's properties in the Pouce Coupe, Gordondale and Elmworth areas. Prospective resources have been attributed to Birchcliff's properties in the Pouce Coupe, Gordondale, Elmworth, Grande Prairie and Saddle Hills areas. Birchcliff's resources in the Pouce Coupe and Gordondale areas are proximal to Birchcliff's lands to which reserves have been attributed and to the Pouce Coupe Gas Plant, as well as to third party gathering and processing infrastructure. Birchcliff's resources in the Elmworth area are proximal to Birchcliff's lands to which reserves have been attributed and to third party gathering and processing infrastructure.

Birchcliff's average working interest in its gross best estimate contingent resources is 96.8% and its average working interest in its gross best estimate prospective resources is 96.5%.

### Project Definition

Pursuant to NI 51-101, Birchcliff is required to describe the "projects" to which its resources have been attributed. "Project" is defined in the COGE Handbook as "a defined activity, or set of activities that provides the basis for the assessment and classification of resources". Deloitte segregated Birchcliff's Montney/Doig resources into development projects based on areal (property/area) and vertical (play interval) boundaries. The Study Area consisted of five areas with resources, namely: Pouce Coupe, Gordondale, Elmworth, Grande Prairie and Saddle Hills. The Montney/Doig formations are comprised of nine individually mapped stratigraphic units: the DoigP, the BD and the Montney D5, D4, D3, D2, D1, TSE and C stratigraphic units.

Stratigraphic units were combined for specific projects if Deloitte believed that a single well could produce from more than one unit at once and both zones have been designated as either prospective or contingent. If Birchcliff did not hold rights to all of the combined units across all of its land, they were classified as their own separate project for those particular sections. For details regarding Birchcliff's particular projects, see "Contingent Resources" and "Prospective Resources" in this Appendix A.

### Summary of Discovered and Undiscovered Resources

The following table sets forth Birchcliff's gross best estimate contingent resources, prospective resources, total discovered and undiscovered PIIP and total PIIP at December 31, 2017 and December 31, 2016:

#### *Summary of Discovered and Undiscovered Resources*

Resource Class	Volumes		Change from December 31, 2016
	December 31, 2017 (Bcfe)	December 31, 2016 (Bcfe)	
Contingent Resources	12,358.4	13,371.6	(8)%
Total Discovered PIIP	39,027.6	41,268.5	(5)%
Prospective Resources	13,483.8	16,586.3	(19)%
Total Undiscovered PIIP	27,123.4	34,480.3	(21)%
Total PIIP	66,150.9	75,748.9	(13)%

Birchcliff's contingent and prospective resources, total discovered and undiscovered PIIP and total PIIP at December 31, 2017 all decreased as compared to December 31, 2016, primarily as a result of the various dispositions the Corporation completed during 2017. In addition, approximately 426 Bcfe of Birchcliff's contingent resources recognized at December 31, 2016 were re-classified as reserves at December 31, 2017.

The following table sets forth Birchcliff's gross volumes for all resources, both discovered and undiscovered, at December 31, 2017:

*Summary of Reserves and Resources*

Resource Class		Reserves and Resource Volumes (Bcfe) <sup>(1)(2)</sup>			
		Raw/Sales	Low Estimate Case	Best Estimate Case	High Estimate Case
Discovered	Cumulative Production <sup>(3)</sup>	Sales	824.9	824.9	824.9
	Remaining Reserves <sup>(3)(4)</sup>	Sales	3,971.2	5,812.2	7,195.4
	Total Commercial Recoverable	Sales	4,796.1	6,637.1	8,020.3
	Surface and Process Loss <sup>(5)</sup>	Raw	223.5	332.0	394.3
	Total Commercial	Raw	5,019.6	6,969.1	8,414.6
	<b>Contingent Resources<sup>(3)</sup></b>	Sales	<b>8,408.8</b>	<b>12,358.4</b>	<b>19,561.1</b>
	Development Pending	Sales	5,454.3	8,112.3	12,925.8
	Development On Hold	Sales	2,756.6	3,939.9	5,667.4
	Development Unclassified	Sales	195.7	302.4	944.0
	Development Not Viable	Sales	2.2	3.8	24.0
	Surface and Process Loss	Raw	649.0	933.8	1,354.5
	Unrecoverable	Raw	17,091.9	18,766.3	19,176.2
	Total Sub-Commercial	Raw	26,419.6	32,058.5	40,091.9
	<b>TOTAL DISCOVERED PIIP</b>	Raw	<b>31,169.3</b>	<b>39,027.6</b>	<b>48,506.5</b>
Undiscovered	<b>Prospective Resources<sup>(3)</sup></b>	Sales	<b>8,857.4</b>	<b>13,483.8</b>	<b>20,628.7</b>
	Prospect <sup>(6)</sup>	Sales	8,857.4	13,483.8	20,628.7
	Surface and Process Loss	Raw	397.1	598.7	906.6
	Unrecoverable	Raw	11,355.0	13,041.0	13,467.3
	<b>TOTAL UNDISCOVERED PIIP</b>	Raw	<b>20,609.5</b>	<b>27,123.4</b>	<b>35,002.5</b>
<b>TOTAL PIIP</b>	Raw	<b>51,778.8</b>	<b>66,150.9</b>	<b>83,509.0</b>	

- (1) The volumes presented in the table above, other than cumulative production and reserves, have been presented on an unrisks basis, meaning that they have not been adjusted for the chance of commerciality.
- (2) The sum of the total commercial and total sub-commercial resource volumes differs from the total discovered PIIP resource volumes in the table above because the liquids yields included as sales resource volumes were converted to a gas equivalent using a 1:6 bbl/Mcf conversion factor, which is an energy-based conversion factor rather than a volume-based conversion factor. This methodology was also utilized for the components of the undiscovered PIIP volumes and results in a similar discrepancy in volumes.
- (3) Sales gas, oil and NGLs volumes were combined at a ratio of 1 bbl: 6 Mcfe.
- (4) Includes reserves assigned to both vertical and horizontal Montney/Doig wells in the Consolidated Reserves Report. Birchcliff has ongoing projects to drill horizontal wells targeting the Montney. This has resulted in some of the areas in the Study Area already having been assigned undeveloped reserves by Birchcliff's independent qualified reserves evaluators. The reserves assignments as of the effective date of the 2017 Resource Assessment have been subtracted from the resource estimates. Proved, probable and possible reserves as contained in the Consolidated Reserves Report are included in the above table for completeness; however, reserves were not the focus of the 2017 Resource Assessment. The low estimate case includes the estimate of proved reserves contained in the Consolidated Reserves Report, the best estimate case includes the estimate of proved plus probable reserves contained in the Consolidated Reserves Report and the high estimate case includes the estimate of proved plus probable plus possible reserves contained in the Consolidated Reserves Report. Possible reserves are those additional reserves that are less certain to be recovered than probable reserves. There is a 10% probability that the quantities actually recovered will equal or exceed the sum of proved plus probable plus possible reserves.
- (5) Includes surface and process loss attributed to cumulative production and remaining reserves volumes.
- (6) All of Birchcliff's prospective resources were sub-classified into the project maturity sub-class of "prospect". Please see "Prospective Resources – Project Maturity Sub-classes for Prospective Resources" in this Appendix A.

## Contingent Resources

### Summary of Risked Contingent Resources

The following table sets forth Birchcliff's best estimate (2C) risked contingent resources by product type at December 31, 2017, using the Deloitte Price Forecast:

*Summary of Risked Contingent Resources – 2C  
at December 31, 2017  
(Forecast Prices and Costs)*

Resources Project Maturity Sub-class <sup>(1)</sup>	Shale Gas <sup>(2)</sup>		NGLs		Light Crude and Medium Crude Oil		Total	
	Gross <sup>(3)</sup> (Bcf)	Net <sup>(4)</sup> (Bcf)	Gross <sup>(3)</sup> (MMbbls)	Net <sup>(4)</sup> (MMbbls)	Gross <sup>(3)</sup> (MMbbls)	Net <sup>(4)</sup> (MMbbls)	Gross <sup>(3)</sup> (Bcfe)	Net <sup>(4)</sup> (Bcfe)
Development Pending	5,939.3	4,793.8	177.9	110.1	10.3	7.8	7,068.7	5,501.2
Development On Hold	1,959.4	N/A	67.4	N/A	-	N/A	2,363.9	N/A
Development Unclassified	70.3	N/A	8.4	N/A	0.02	N/A	120.9	N/A
Development Not Viable	0.5	N/A	-	N/A	-	N/A	0.8	N/A

- (1) For a description of the project maturity sub-classes applicable to the Corporation's contingent resources, please see "Contingent Resources – Project Maturity Sub-classes for Contingent Resources" in this Appendix A.
- (2) The associated solution gas from the assigned oil resource locations has been included in the shale gas product type.
- (3) Total risked contingent resources are technical volumes.
- (4) Numbers are not applicable because economics were not evaluated for Birchcliff's development on hold, development unclassified or development not viable contingent resources. As economics were not evaluated, no information is available for royalties and a net number cannot be determined.

At December 31, 2017, Birchcliff had gross best estimate contingent resources of 12,358.4 Bcfe (unrisked before adjusting for the chance of commerciality) and gross best estimate contingent resources of 9,554.4 Bcfe (risked after adjusting for the chance of commerciality).

### Summary of the Risked Net Present Value of Development Pending Contingent Resources

The following table sets forth the net present value of future net revenue of Birchcliff's best estimate risked contingent resources in the development pending project maturity sub-class at December 31, 2017, using the Deloitte Price Forecast:

*Summary of Risked Net Present Value of Future Net Revenue of Development Pending Contingent Resources  
at December 31, 2017  
(Forecast Prices and Costs)*

Resources Project Maturity Sub-class	Risked Net Present Value of Future Net Revenue Before Income Taxes Discounted at (%/year) <sup>(1)</sup>				
	0 (MM\$)	5 (MM\$)	10 (MM\$)	15 (MM\$)	20 (MM\$)
Contingent (2C)	23,112.0	5,521.2	1,589.2	491.7	130.3
Development Pending					

- (1) The net present value of future net revenue attributable to the Corporation's development pending contingent resources is based on the Deloitte Price Forecast and is determined before provision for interest, debt servicing and general and administrative expense and after the deduction of royalties, operating costs, development costs and abandonment and reclamation costs.

**An estimate of risked net present value of future net revenue of contingent resources is preliminary in nature and is provided to assist the reader in reaching an opinion on the merit and likelihood of the Corporation proceeding with the required investment. It includes contingent resources that are considered too uncertain with respect to the chance of development to be classified as reserves. There is uncertainty that the estimate of risked net present value of future net revenue will be realized.**

The Deloitte Price Forecast is summarized in the Annual Information Form under the heading "Statement of Reserves Data and Other Oil and Gas Information – Pricing Assumptions".

### ***Chance of Commerciality of Contingent Resources***

As all contingent resources are considered to be discovered, the chance of commerciality is equal to the chance of development for contingent resources. “Chance of development” is the estimated probability that, once discovered, a known accumulation will be commercially developed. Deloitte referred to the six requirements outlined in Volume 2 of the COGE Handbook (Section 2.4.4) for commerciality when estimating the chance of development for Birchcliff’s contingent resource projects. These requirements include: (i) economic viability; (ii) marketability of the product; (iii) evidence of infrastructure; (iv) evidence that legal, contractual, environmental, governmental and other social and economic concerns will allow for implementation; (v) a reasonable expectation that internal and external approvals will be forthcoming; and (vi) evidence to support a reasonable timetable for development.

Evaluation of each of these items are qualitative in nature. Deloitte stated that it had no reason to believe that requirements (ii), (iv) or (v) are significantly better or worse when comparing development pending projects against each other. The most tangible distinction between development pending projects was requirement (iii) (evidence of infrastructure) and therefore served as the basis for selecting the chance of commerciality for these projects. The guidance in the COGE Handbook recommends a high chance of success should be at minimum 80%. Out of the Pouce Coupe, Gordondale and Elsworth properties, infrastructure in the Pouce Coupe and Gordondale properties is the most developed. The Pouce Coupe Gas Plant processes a significant portion of product from the greater Pouce Coupe area and plant expansions are within Birchcliff’s five year budget. Plant expansions and sizeable investment committed to pipeline infrastructure are supported in the Deloitte Reserves Report. For this reason, Pouce Coupe projects were assigned the highest chance of commerciality of 90% by Deloitte, with the exception of the Pouce Coupe D2 project. Birchcliff has not yet produced from the D2 interval in the Pouce Coupe area; however, in the adjacent Gordondale area, production has been demonstrated by Birchcliff and reserves have been assigned in the D2 interval and competitor offsets have demonstrated production. Therefore, the Pouce Coupe D2 project was assigned a chance of commerciality of 80%, even though it was not assigned reserves in the Deloitte Reserves Report effective December 31, 2017.

The Gordondale area has infrastructure and maintenance costs forecast in the McDaniel Reserves Report, including the development of an assumed deep-cut natural gas processing plant located at the site of the Pouce Coupe Gas Plant (the “**Assumed 3-22 Deep Cut Plant**”). Deloitte has assigned a 90% chance of commerciality for the D1/TSE gas and D2 oil and gas projects based on the existing infrastructure in the area. For the BD/D5/DoigP, BD/DoigP only and D4 projects, Deloitte has assigned an 80% chance of commerciality to such projects due to the lack of development on these zones in the area to date. In addition, the upper Montney zones on the Gordondale property prove to be in low pressure areas and therefore decreased well deliverability may be a factor. To account for low pressure lands within the Gordondale upper Montney zones, Deloitte has risked the projects by assigning lower recoverable volumes on a per location basis.

Projects in the Elsworth area have little to no infrastructure investment booked in the reserves reports prepared by the Corporation’s independent qualified reserves evaluators effective December 31, 2017 and were assigned an 80% chance of commerciality as these projects are forecast to be processed through a natural gas processing plant assumed by Deloitte in its assessment (the “**Assumed Elsworth Plant**”) affecting certainty in operating costs and the economics of the project.

The chance of development is expected to decrease for other maturity sub-classes based on requirements (i), (iii), and (vi). The uncertainty associated with these requirements typically increases in the development on hold, development unclarified and development not viable sub-classes. Deloitte modelled this by estimating the chance of commerciality values to be 60% for development on hold, 40% for development unclarified and 20% for development not viable projects. These projects have lower chances of commerciality as a result of the priority of development being given to other contingent projects, due to distance to infrastructure and less desirable economics. The estimated contingent resources and associated net present values are simply multiplied by the chance of commerciality in the economic software to result in risked volumes and net present values.

### ***Project Maturity Sub-classes for Contingent Resources***

Contingent resources can be sub-classified based on their project maturity sub-class. The project maturity sub-classes for contingent resources are “development pending”, “development on hold”, “development unclarified” or “development not viable”, all as defined in the COGE Handbook. “Development pending” is when resolution of the final conditions for development is being actively pursued (high chance of development). “Development on hold” is when there is a reasonable chance of development, but there are major non-technical contingencies to be resolved that are usually beyond the control of the operator. “Development unclarified” is when the evaluation is incomplete and there is ongoing activity to resolve any risks or uncertainties. “Development not viable” is when no further data acquisition or evaluation is currently planned and hence there is a low chance of development.

Approximately 66% of Birchcliff’s gross unrisks best estimate case contingent resources were sub-classified as development pending, 32% were sub-classified as development on hold, 2% were sub-classified as development unclarified and less than 1% were sub-classified as development not viable. Although Birchcliff’s development unclarified and development not viable projects do not represent a material amount of Birchcliff’s estimated contingent resources, the Corporation has chosen to disclose the estimated volumes of such resources for completeness.

Birchcliff’s contingent resources were sub-classified by Deloitte as development pending, development on hold, development not viable or development unclarified as described below.

#### ***Development Pending***

Each contingent resource project was sub-classified as development pending if the contingent resource project is currently economic and satisfies the COGE Handbook requirements of commerciality in that:

- (i) there is an expected market for the sale of forecast production volumes from the project;
- (ii) the necessary production and transportation facilities are expected to be available in the relevant time frame, as a result of Birchcliff’s long range forward planning;
- (iii) there is no reasonable expectation that legal, contractual, environmental, governmental and other social and economic concerns will preclude the development of the project since project development is in the same area and follows the same business model that Birchcliff has been implementing over the last 11 years with respect to the development of its Montney/Doig Resource Play;
- (iv) there is a reasonable expectation that internal and external approvals will be forthcoming in a timely manner since project development is in the same area and follows the same business model that Birchcliff has been implementing over the last 11 years with respect to the development of its Montney/Doig Resource Play; and
- (v) Birchcliff intends to move forward with the development of the project within a reasonable time frame as it moves towards completion of the development of its reserves.

#### ***Development On Hold***

Each contingent resource project was sub-classified as development on hold if it could be economic at some point in the future. In addition, some contingent resource projects satisfied the conditions for development pending; however, if the Corporation indicated that it currently had no intention of developing these resources within a reasonable timeframe, the project was sub-classified as development on hold. This applied to one of the Corporation’s projects in Pouce Coupe (the C on hold project), one of the Corporation’s projects in Gordondale (the C on hold project) and one of the Corporation’s projects in the Elmworth North area (the BD/D5/DoigP on hold project). See “*Contingent Resources – Birchcliff’s Contingent Resource Projects*”.

### Development Unclarified

Contingent resource projects with limited information and uncertain economics were sub-classified as development unclarified. These projects will require further examination in the future to move into a different project maturity sub-class.

### Development Not Viable

Contingent resource projects were sub-classified as development not viable when their contingent volumes had a low chance of development due to no further plans for data acquisition or evaluation. These projects are unlikely to ever be economic. The reclassification from development not viable to development on hold can only occur if prices increase beyond the current Deloitte Price Forecast assuming the same project economics.

### Economic Status Criteria of Contingent Resource Project Maturity Sub-classes

For purposes of addressing the project economic criterion of each of the project maturity sub-classes, Deloitte applied the following criteria:

- (i) each resource project was considered currently economic if the project had a positive NPV discounted at a rate of 10% (before income taxes) using the Deloitte Price Forecast with current capital and operating expense assumptions;
- (ii) Deloitte considered that a resource project could be economic at some point in the future if the project had a positive undiscounted NPV (before income taxes) using the Deloitte Price Forecast that was increased by 20%; and
- (iii) Deloitte considered that a resource project was unlikely to ever be economic if the project did not have a positive undiscounted NPV (before income taxes) using the Deloitte Price Forecast that was increased by 20%.

### ***Economic Classification of Contingent Resources***

Contingent resource estimates should have sufficient economic analysis to sub-classify the resource as either economic or sub-economic under economic conditions that are the same as those used for reporting reserves. The appropriate level of economic evaluation will depend on the project status and maturity. Economic contingent resources are those contingent resources that are currently economically recoverable based on specific forecasts of production, capital and operating costs, commodity prices and inflation. Sub-economic contingent resources are those contingent resources that are not currently economically recoverable based on specific forecasts of production, capital and operating costs, commodity prices and inflation. Each contingent resource project was sub-classified by Deloitte as economic if the project had a positive NPV discounted at a rate of 10% (before income taxes) using the Deloitte Price Forecast with current capital and operating expense assumptions. Each contingent resource project that did not meet this economic hurdle was sub-classified as sub-economic. Where evaluations are incomplete such that it is premature to identify the economic viability of a project, the economic status was sub-classified as undetermined.

All of Birchcliff's development pending projects were sub-classified as economic and Birchcliff's development not viable and development on hold projects were sub-classified as sub-economic. Development unclarified projects were sub-classified as economic status undetermined.

Approximately 66% of Birchcliff's unrisks best estimate contingent resources were sub-classified as economic contingent resources, 32% were sub-classified as sub-economic contingent resources and the remaining 2% were sub-classified as economic status undetermined.



## Birchcliff's Contingent Resource Projects

The following table sets forth for each of Birchcliff's contingent resource projects, the project maturity sub-class, the chance of commerciality, the economic status, the estimated total cost to achieve commercial production, the timeline of each project and the estimated date of first commercial production and the number of resource locations:

### Contingent Resource Projects

Project	Project Maturity Sub-class	Development Status	Chance of Commerciality <sup>(1)</sup>	Economic Status	Estimated Total Cost to Achieve Commercial Production (MM\$) <sup>(2)</sup>	Timeline of Project and Estimated Date of First Commercial Production <sup>(2)</sup>	Resource Locations <sup>(2)(5)</sup>
<b>Pouce Coupe Area</b>							
Pouce Coupe	BD/D5/DoigP	Development Pending	90%	Economic		2028	163
Pouce Coupe	BD/DoigP Only <sup>(6)</sup>	Development Not Viable	20%	Sub-Economic		N/A	N/A
Pouce Coupe	D5 Only <sup>(6)</sup>	Development Pending	90%	Economic		2028	25
Pouce Coupe	D4	Development Pending	90%	Economic		2028	308
Pouce Coupe	D3	Development Unclassified	40%	Undetermined		N/A	N/A
Pouce Coupe	D2 <sup>(3)</sup>	Development Pending	80%	Economic	6.5 <sup>(3)</sup>	2047	97
Pouce Coupe	D1/TSE	Development Pending	90%	Economic		2029	67
Pouce Coupe	C Dev Pending	Development Pending	90%	Economic		2031	481
Pouce Coupe	C Dev On Hold	Development On Hold	60%	Sub-Economic		N/A	N/A
Pouce Coupe	Plant & Infrastructure Capital <sup>(7)</sup>	Development Pending	90%	Economic		2028	N/A
<b>Total</b>					<b>6.5</b>	<b>Total</b>	<b>1,141</b>
<b>Gordondale Area</b>							
Gordondale	BD/D5/DoigP	Development Pending	80%	Economic		2030	118
Gordondale	BD/DoigP Only <sup>(6)</sup>	Development Pending	80%	Economic		2029	34
Gordondale	D5 Only <sup>(6)</sup>	Development On Hold	60%	Sub-Economic		N/A	N/A
Gordondale	D4 <sup>(3)</sup>	Development Pending	80%	Economic	4.8 <sup>(3)</sup>	2025	50
Gordondale	D2 Oil <sup>(8)</sup>	Development Pending	90%	Economic		2025	41
Gordondale	D2 Gas	Development Pending	90%	Economic		2040	110
Gordondale	D1/TSE Oil <sup>(8)</sup>	Development Unclassified	40%	Undetermined		N/A	N/A
Gordondale	D1/TSE Gas	Development Pending	90%	Economic		2026	15
Gordondale	C	Development On Hold	60%	Sub-Economic		N/A	N/A
Gordondale	Plant & Infrastructure Capital <sup>(7)</sup>	Development Pending	90%	Economic		2025	N/A
<b>Total</b>					<b>4.8</b>	<b>Total</b>	<b>368</b>
<b>Elmworth Area</b>							
Elmworth South	D5	Development On Hold	60%	Sub-Economic		N/A	N/A
Elmworth South	D4	Development Pending	80%	Economic		2025	63
Elmworth North	BD/D5/DoigP Pending <sup>(4)</sup>	Development Pending	80%	Economic	5.3 <sup>(4)</sup>	2021	64
Elmworth North	BD/D5/DoigP On Hold	Development On Hold	60%	Sub-Economic		N/A	N/A
Elmworth North	D5 Only <sup>(6)</sup>	Development On Hold	60%	Sub-Economic		N/A	N/A
Elmworth North	D4	Development Pending	80%	Economic		2023	119
Elmworth North	D1/TSE	Development On Hold	60%	Sub-Economic		N/A	N/A
Elmworth	Plant & Infrastructure Capital <sup>(7)</sup>	Development Pending	80%	Economic	74.7 <sup>(4)</sup>	2020	N/A
<b>Total</b>					<b>80.0</b>	<b>Total</b>	<b>246</b>
<b>GRAND TOTAL</b>					<b>91.3</b>	<b>GRAND TOTAL</b>	<b>1,755</b>

(1) Please see "Contingent Resources – Chance of Commerciality of Contingent Resources" in this Appendix A for information regarding the process employed by Deloitte to risk Birchcliff's contingent resources.

(2) With respect to the estimated total cost to achieve commercial production, the costs set forth in the table above only include the capital required to achieve initial commercial production for the project area, as discussed in further detail herein. With respect to the timelines of projects and the estimated date of first commercial production, timelines are based on the development plan that was used by Deloitte in the 2017 Resource Assessment and reflect the expected dates that further drilling of those resource projects will first occur under such plan. Development plans were only created for those contingent resources sub-classified as development pending. As no development plans were created for contingent resources in the development on hold, development unclassified or development not viable project maturity sub-classes, there is insufficient information to determine the estimated total cost to achieve commercial production, the timeline of the project or the number of resource locations.

- (3) With respect to Birchcliff's development pending projects in the Pouce Coupe area (other than the D2 project) and the Gordondale area (other than the D4 project), there are no costs to achieve commercial production, as the necessary infrastructure is expected to be in place as a result of the development of the Corporation's existing commercial projects. With respect to the D2 project in the Pouce Coupe area and the D4 project in the Gordondale area, the estimated costs are approximately \$6.5 million and \$4.8 million, respectively, which represent the risked cost of the first well in that interval that would be necessary for Birchcliff to achieve commercial production in that interval.
- (4) The costs to achieve commercial production represent the required facility and/or major pipeline capital for the entire Elmworth area and represent all projects in the project area. With respect to Birchcliff's development pending projects in the Elmworth area (other than the BD/D5/DoigP project and Facility & Infrastructure capital), there are no costs to achieve commercial production, as the necessary infrastructure is expected to be in place as a result of the development of the Corporation's existing commercial projects and the Assumed Elmworth Plant and infrastructure. With respect to the BD/D5/DoigP project in the Elmworth North area, the estimated cost is approximately \$5.3 million, which represents the risked cost of the first well in that interval that would be necessary for Birchcliff to achieve commercial production in that interval.
- (5) Resource locations represent the number of wells forecast to be drilled under the development plan for development pending projects.
- (6) Birchcliff does not hold rights to all of the combined stratigraphic units within this area so this project was created.
- (7) Plant and infrastructure projects consist of facility developments and the associated costs required to develop resources according to the modeled development plan. Such projects are further described under the heading "*Contingent Resources – Development Plans for Development Pending Projects*" and include new major pipelines, new plant capacities, increases of plant capacities and sustaining pipeline and compression projects.
- (8) Sections include oil volumes, solution gas, free gas and sorbed gas.

The total cost to achieve commercial production for all projects disclosed in the table above is estimated to be \$91.3 million. The total cost to achieve commercial production only includes the capital required to achieve initial commercial production for the project area (for example, required facility and pipeline capital) and does not represent the total capital required to develop the entire project. The total capital required to fully develop the projects set forth in the table above (including total costs to achieve commercial production and total sustaining capital) is estimated to be approximately \$10,927.1 million (undiscounted) as follows: (i) Pouce Coupe Area: \$7,118.0 million; (ii) Gordondale Area: \$2,083.1 million; and (iii) Elmworth Area: \$1,726.1 million.

The recovery technology for each contingent resource project described above is multi-fracture horizontal wells, which is considered an established technology under the COGE Handbook. All of the contingent resource projects described above are based on pre-development studies.

### ***Development Plans for Development Pending Projects***

#### *Overview*

Development plans were created for those projects sub-classified as development pending. Such plans were determined by Deloitte and are consistent with the guidance and input provided by Birchcliff. Deloitte has modelled what is considered a reasonable development plan for development pending contingent resources. In order to create a development schedule for each project, Deloitte utilized an internally built development planning tool. The tool automated the field development plan based on various configurable inputs and constraints while maximizing NPV discounted at a rate of 10% (before income taxes). In addition, unique constraints were applied to each of the facilities assumed by Deloitte in its development plans which were modelled into the development planning tool and the optimal drilling schedule for each plant was calculated.

The uncertainty relating to the development of each of the development pending projects primarily relates to the timing and corporate sanctioning for the development of these resources. Deloitte has forecast development to begin in 2020. There can be no certainty that any of the projects described herein will be developed on the timelines discussed herein. Development of the projects is dependent on a number of contingencies as further described herein, as well as numerous risk factors and uncertainties.

#### *Projects in the Pouce Coupe Area*

All six of Birchcliff's contingent development pending projects in the Pouce Coupe area (excluding the plant and infrastructure capital project) were assumed by Deloitte to produce to the Pouce Coupe Gas Plant. In determining the development plans for such projects, Deloitte relied on the following assumptions relating to the Pouce Coupe Gas Plant:

- The maximum plant capacity will be increased to 660 MMcf/d in October 2022.

- The maximum number of resource locations (wells) drilled per year cannot exceed 100 for the life of the resource development.
- The maximum resource locations for each project cannot be exceeded.

For these projects, the proposed resource development plans contemplate that the drilling of the 1,141 resource locations identified in the table above will commence in 2028. Under the proposed development plans for these projects, all resource locations will be drilled by 2049. The plant and infrastructure capital is for sustaining existing pipelines (forecast to be incurred from 2028 to 2049) and additional compression support (forecast to be incurred from 2050 to 2054).

#### Projects in the Elsworth Area

All three of Birchcliff's contingent development pending projects in the Elsworth North and South areas were assumed by Deloitte to produce to the Assumed Elsworth Plant. In determining the development plans for such projects, Deloitte relied on the following assumptions for the Assumed Elsworth Plant:

- The maximum plant capacity will be 40 MMcf/d in 2021, which increases to 80 MMcf/d in 2023 and 120 MMcf/d in 2024.
- The maximum number of resource locations drilled per year cannot exceed 35 for the life of the resource development.
- The maximum resource locations for each project cannot be exceeded.

For these projects, the proposed resource development plans contemplate that the drilling of the 246 resource locations identified in the table above will take place over 17 years from 2021 until 2037. The plant and infrastructure capital is for the Assumed Elsworth Plant, a sales pipeline and a trunk pipeline (forecast to be incurred in 2020 and 2021), gas plant expansions (forecast to be incurred in 2023 and 2024), additional pipeline infrastructure (forecast to be incurred from 2025 to 2037) and additional compression support (forecast to be incurred from 2038 to 2042).

#### Projects in the Gordondale Area

All six of Birchcliff's contingent development pending projects in the Gordondale area (excluding the plant and infrastructure capital project) were assumed by Deloitte to produce to the Assumed 3-22 Deep Cut Plant. In determining the development plans for such projects, Deloitte relied on the following assumptions for the Assumed 3-22 Deep Cut Plant:

- The maximum plant capacity will remain at 120 MMcf/d until October 2020 when it will increase to 150 MMcf/d.
- The maximum number of resource locations drilled per year cannot exceed 35 for the life of the resource development.
- The maximum resource locations for each project cannot be exceeded.

For these projects, the proposed resource development plans contemplate that the drilling of the 368 resource locations identified in the table above will take place over 25 years from 2025 until 2049. The plant and infrastructure capital is for pipeline infrastructure (forecast to be incurred from 2025 to 2049) and additional compression support (forecast to be incurred from 2050 to 2054).

## **Contingencies**

Contingent resources are not currently considered to be commercially recoverable due to one or more contingencies. A contingency is a condition that must be satisfied for a portion of contingent resources to be classified as reserves that is specific to the project being evaluated and expected to be resolved within a reasonable timeframe. Contingencies may include factors such as economic, legal environmental, political and regulatory matters or a lack of markets.

### Development Pending Project Maturity Sub-classes

The development of each of Birchcliff's development pending projects is contingent upon:

- Birchcliff obtaining the necessary internal approvals for the expenditure of capital on the development project; and
- Birchcliff initiating field development in an appropriate timeframe.

These contingencies are expected to be resolved as a result of Birchcliff developing and implementing plans over time in an orderly fashion.

### Development on Hold and Development Not Viable Project Maturity Sub-classes

In addition to the contingencies described above for Birchcliff's development pending projects, the development of each of Birchcliff's development on hold projects is also contingent upon the ability of the project to compete with projects which have a greater chance of commerciality for finite development capital and resources and the strategic considerations relating to the scale and efficiencies of these projects. These contingencies are expected to be resolved over time through Birchcliff's orderly clarification of sanctioned corporate plans through its five-year plan and annual budget processes.

### Development Unclarified Project Maturity Sub-classes

In addition to the contingencies described above for Birchcliff's development pending projects, the development of each of Birchcliff's development unclarified projects is also contingent upon clarifying uncertainties in the economic evaluation and production forecasts consistent with an early stage of development for the project. These contingencies are expected to be resolved by the continued economic evaluation of future production and development.

### Projects Involving New Facilities or Infrastructure

In addition to the contingencies described above for Birchcliff's development pending projects, each of Birchcliff's contingent resource projects that require new facilities or infrastructure are also contingent upon the development of the facilities and infrastructure described under the heading "*Development Plans for Development Pending Projects*". This contingency applies to all of Birchcliff's projects in the Elsworth South and North areas.

In the Pouce Coupe area, Deloitte has forecast capital expenses for a facility expansion on the Pouce Coupe Gas Plant. However, the expansion is not required to produce a single well.

These additional contingencies are expected to be resolved by the sanctioned approval and construction of the described facilities.

### Projects Producing Sour Gas

In addition to the contingencies described above for Birchcliff's development pending projects, the development of each of Birchcliff's contingent resource projects expected to deliver volumes of sour gas (H<sub>2</sub>S) have the following additional contingencies:

- Birchcliff obtaining the necessary regulatory approvals;
- the design, construction and maintenance by Birchcliff of sour gas disposal wells and facilities; and
- Birchcliff maintaining social licence for the development of the project with surface landholders, First Nations and other stakeholders.
- These contingencies apply to all projects in the Elsworth North and South areas. These additional contingencies can be resolved by Birchcliff implementing best practices in these operations and by Birchcliff effectively engaging with regulatory authorities, surface landholders, First Nations and other stakeholders.

### Full Field Development

The complete full field development of each of Birchcliff's contingent resource projects is contingent upon:

- Birchcliff continuing proactive effective long range planning and design (surface and sub-surface) of all future development wells involved in the project; and
- Birchcliff obtaining the necessary regulatory approvals, particularly related to downspacing in the Montney.

These additional contingencies are expected to be resolved by continuing to implement development consistent with full field development plans and effectively engaging with regulatory authorities.

### **Prospective Resources**

#### **Summary of Risked Prospective Resources**

The following table sets forth Birchcliff's best estimate risked prospective resources by product type at December 31, 2017:

*Summary of Risked Prospective Resources – Best Estimate at December 31, 2017*

Resources	Shale Gas		NGLs		Total	
	Gross (Bcf)	Net <sup>(2)</sup> (Bcf)	Gross (MMbbls)	Net <sup>(2)</sup> (MMbbls)	Gross (Bcfe)	Net <sup>(2)</sup> (Bcfe)
Prospective (Best Estimate) <sup>(1)(2)</sup>	4,188.7	N/A	81.5	N/A	4,677.6	N/A

(1) All of Birchcliff's prospective resources are sub-classified into the project maturity sub-class of "prospect". For a description of the project maturity sub-classes applicable to prospective resources, please see "Prospective Resources – Project Maturity Sub-classes for Prospective Resources" in this Appendix A. The numbers in the table above are technical volumes.

(2) Numbers are not applicable because economics were not evaluated for Birchcliff's prospective resources. As economics were not evaluated, no information is available for royalties and a net number cannot be determined.

At December 31, 2017, Birchcliff had gross best estimate prospective resources of 13,483.8 Bcfe (unrisked before adjusting for the chance of commerciality) and 4,677.6 Bcfe (risked after adjusting for the chance of commerciality).

### **Chance of Commerciality of Prospective Resources**

The chance of commerciality for prospective resources is equal to the product of the chance of discovery and the chance of development. “Chance of discovery” is the estimated probability that exploration activities will confirm the existence of a significant accumulation of potentially recoverable petroleum. “Chance of development” is the estimated probability that, once discovered, a known accumulation will be commercially developed. The chance of discovery associated with Birchcliff’s prospective resource volumes has been estimated by Deloitte to be 90% for all projects with a chance of development of either 40% or 30%, resulting in an overall chance of commerciality of 36% or 27%.

The chance of discovery was estimated to be 90% due to the relatively high geological certainty of encountering the specific zone in each project and area. Birchcliff and nearby industry competitors have and continue to refine the geological model within and outside of the Study Area. Additionally, Deloitte’s four mile radius boundary in conjunction with geological mapping and the exploration success of Birchcliff and nearby industry competitors with similar resources and under varying conditions indicates that the resource play is well understood from an exploratory viewpoint.

The chance of development was estimated to be 40% for projects in high pressure zones due to the priority given to the further development of the existing plays and the contingent projects, the greater distance to existing reserves and the greater distance to existing infrastructure. This also takes into account Birchcliff’s high working interest and operatorship of its assets as the Corporation is not subject to the priorities of working interest partners for such assets. For prospective projects outside of the low pressure boundary, the chance of development was estimated to be 30%. The factor was decreased as individual well deliverability will most likely be an issue in the low pressure zones during the development of these projects.

### **Project Maturity Sub-classes for Prospective Resources**

Prospective resources can be sub-classified based on their project maturity sub-class. The project maturity sub-classes for prospective resources are “prospect”, “lead” and “play”, all as defined in the COGE Handbook. A “prospect” is defined as a potential accumulation within a play that is sufficiently well defined to represent a viable drilling target. A “lead” is defined as a potential accumulation within a play that requires more data acquisition and/or evaluation in order to be sub-classified as a prospect. A “play” is defined as a family of geologically similar fields, discoveries, prospects and leads. 100% of Birchcliff’s prospective resources were sub-classified as prospects.

### **Birchcliff’s Prospective Resource Projects**

The following is a description of each of Birchcliff’s prospective resource projects:

<b>Project</b>		<b>Chance of Discovery</b>	<b>Chance of Development</b>	<b>Chance of Commerciality</b>
Pouce Coupe	D4	90%	40%	36%
Pouce Coupe	D3	90%	40%	36%
Pouce Coupe	D2	90%	40%	36%
Gordondale	BD/D5/DoigP <sup>(1)(2)</sup>	90%	30%	27%
Gordondale	BD/DoigP Only <sup>(1)(2)</sup>	90%	30%	27%
Gordondale	D5 Only <sup>(1)(2)</sup>	90%	30%	27%
Gordondale	D4 <sup>(2)</sup>	90%	30%	27%
Gordondale	D3 <sup>(2)</sup>	90%	30%	27%
Gordondale	D2 Gas	90%	40%	36%
Gordondale	C	90%	40%	36%
Elmworth	DoigP	90%	40%	36%
Elmworth	BD	90%	40%	36%
Elmworth	D5	90%	40%	36%
Elmworth	D4	90%	40%	36%
Elmworth	D3	90%	40%	36%
Elmworth	D2	90%	40%	36%
Elmworth	D1/TSE	90%	40%	36%
Elmworth	C	90%	40%	36%
Elmworth North	BD/D5/DoigP <sup>(1)</sup>	90%	40%	36%

Elmworth North	D5 Only <sup>(1)</sup>	90%	40%	36%
Elmworth North	D4	90%	40%	36%
Elmworth North	D3	90%	40%	36%
Elmworth North	D2	90%	40%	36%
Elmworth North	D1 Only	90%	40%	36%
Elmworth North	TSE Only	90%	40%	36%
Elmworth North	C	90%	40%	36%
Elmworth South	DoigP	90%	40%	36%
Elmworth South	BD	90%	40%	36%
Elmworth South	D5	90%	40%	36%
Elmworth South	D4	90%	40%	36%
Elmworth South	D3	90%	40%	36%
Elmworth South	D2	90%	40%	36%
Elmworth South	D1/TSE	90%	40%	36%
Elmworth South	C	90%	40%	36%
Grande Prairie	DoigP <sup>(2)</sup>	90%	30%	27%
Grande Prairie	BD <sup>(2)</sup>	90%	30%	27%
Grande Prairie	D5 <sup>(2)</sup>	90%	30%	27%
Grande Prairie	D4 <sup>(2)</sup>	90%	30%	27%
Grande Prairie	D3 <sup>(2)</sup>	90%	30%	27%
Grande Prairie	D2 <sup>(2)</sup>	90%	30%	27%
Grande Prairie	D1 <sup>(2)</sup>	90%	30%	27%
Grande Prairie	TSE <sup>(2)</sup>	90%	30%	27%
Grande Prairie	C <sup>(2)</sup>	90%	30%	27%
Saddle Hills	DoigP <sup>(2)</sup>	90%	30%	27%
Saddle Hills	BD <sup>(2)</sup>	90%	30%	27%
Saddle Hills	D5 <sup>(2)</sup>	90%	30%	27%
Saddle Hills	D4 <sup>(2)</sup>	90%	30%	27%
Saddle Hills	D3 <sup>(2)</sup>	90%	30%	27%
Saddle Hills	D2 <sup>(2)</sup>	90%	30%	27%
Saddle Hills	D1 <sup>(2)</sup>	90%	30%	27%
Saddle Hills	TSE <sup>(2)</sup>	90%	30%	27%
Saddle Hills	C <sup>(2)</sup>	90%	30%	27%

(1) Birchcliff does not hold rights to all of the combined stratigraphic units within this area so this project was created.

(2) These projects have a lower change of development assigned as they fall within the low pressure boundary.

The recovery technology for each project described above is multi-fracture horizontal wells which is considered an established technology under the COGE Handbook. All of the projects described above are based on pre-development studies.

## Risk Factors and Uncertainties

### General

There are numerous uncertainties inherent in estimating quantities of resources and the future net revenue attributed to the best estimate of the Corporation's development pending contingent resources, including many factors beyond the control of Birchcliff. The resource and associated future net revenue information for the best estimate of the development pending contingent resources set forth herein are estimates only. In general, estimates of resources and the future net revenue therefrom are based upon a number of variable factors and assumptions, such as historical production from the properties, production rates, ultimate resource recovery, the timing and amount of capital expenditures, the success of future development activities, future commodity prices, marketability of oil, NGLs and natural gas, royalty rates, the assumed effects of regulation by governmental agencies and future operating costs, all of which may vary materially from actual results. For those reasons, estimates of the resources attributable to any particular group of properties, classification of such resources based on risk of recovery and estimates of future net revenue associated with resources prepared by different engineers, or by the same engineer at different times, may vary substantially. Birchcliff's actual production, revenues, taxes and development and operating expenditures with respect to its resources will vary from estimates thereof and such variations could be material.

It should not be assumed that the undiscounted or discounted net present value of future net revenue attributable to the best estimate of Birchcliff's development pending contingent resources represent the fair market value of those resources. There is no assurance that the forecast prices and costs assumptions will be attained and variances could be material. The estimates of Birchcliff's resources provided herein are estimates only and there is no guarantee that the estimated resources will be recovered. Actual resources may be greater than or less than the estimates provided herein and variances could be material. With respect to the discovered resources (including contingent resources), there is uncertainty that it will be commercially viable to produce any portion of the resources. With respect to the undiscovered resources (including prospective resources), there is no certainty that any portion of the resources will be discovered. If discovered, there is no certainty that it will be commercially viable to produce any portion of the resources.

For further information regarding the risks and uncertainties relating to Birchcliff and its properties to which no reserves have been attributed, please see *"Statement of Reserves Data and Other Oil and Gas Information – Other Oil and Gas Information – Properties with No Attributed Reserves"* and *"Risk Factors"* in the Annual Information Form.

### ***Risk Factors and Uncertainties***

There are numerous factors and uncertainties that affect the anticipated development of the Corporation's resources.

The chances of development for the estimated resources are subject to a number of factors, including overall project economics, the employed recovery technology or technology under development, regulatory and environmental approval, the availability of markets and production facilities and political risk to the development. The Corporation will be required to make substantial capital expenditures in order to prove, exploit, develop and produce oil and natural gas from its resource properties in the future. If the Corporation's cash flow from operations is not sufficient to satisfy its capital expenditure requirements, there can be no assurance that additional debt or equity financing will be available to meet these requirements or, if available, that the terms will be acceptable to the Corporation. Failure to obtain such financing on a timely basis could cause the Corporation to forfeit its interest in certain properties, miss certain opportunities, reduce its pace of development or terminate its operations on such properties. An inability of the Corporation to access sufficient capital for its exploration and development purposes could have a material adverse effect on the Corporation's ability to execute its business strategy to develop its prospects.

The significant economic factors that affect the Corporation's future development of its resources are:

- future commodity prices for crude oil and natural gas (and the Corporation's outlook relating to such prices);
- the future capital costs of drilling, completing, tying in and equipping the wells necessary to develop such lands at the relevant times;
- the future costs of operating wells at the relevant times; and
- the levels of royalties applicable to productions from such lands.

The significant uncertainties that affect the Corporation's development of its resources are:

- the ability of the Corporation to obtain the capital necessary to fund the development of such lands at the relevant times;
- the future drilling and completion results the Corporation achieves in its development activities (e.g. with respect to the development of particular intervals or geographic areas, the uncertainty would be whether the initial drilling and completion results are sufficient to justify the development of such interval or geographic area);
- drilling and completion results achieved by others on lands in proximity to the Corporation's lands;



- transportation and processing infrastructure becoming available in a timeline consistent with proposed development plans;
- the availability of regulatory approvals for development of the lands and the necessary infrastructure; and
- governmental actions and future changes to applicable regulatory or royalty regimes that affect timing or economics of proposed development activities.

Significant risk factors specific to Birchcliff and the projects outlined herein include the following:

- Commodity prices have been and are expected to remain volatile. Sustained low prices may compel the Corporation to re-evaluate its development plans and reduce or eliminate various projects with marginal economics. Birchcliff will need to be satisfied that its forecast of future industry and economic conditions and commodity prices prevailing during and after the applicable development project is sufficient to justify proceeding with development such project.
- The actual operating and other costs may vary materially from the costs assumed by Deloitte. For example, the operating costs for the Elmworth area assumed by Deloitte were based on the field operating costs for the nearby, analogous Pouce Coupe area. If actual operating or other costs vary materially from those assumed by Deloitte, this would have an impact on the economics of the applicable project and could delay development.
- If the facilities and infrastructure do not expand in the manner and in the time frame assumed by Deloitte, this would have an impact on the development schedules for Birchcliff's resource projects and such projects could be delayed.
- The Corporation's development activities are dependent on the availability of equipment, materials (including those needed for fracturing operations) and skilled personnel. Demand for such limited equipment, materials and skilled personnel may affect the availability of such equipment, materials and skilled personnel to the Corporation and may delay the Corporation's development activities. During times of high demand, the costs of such equipment, materials and personnel may increase, resulting in increased costs to the Corporation.
- The implementation of new regulations or the modification of existing regulations regarding fracturing operations may have a material adverse impact on the Corporation's ability to develop its resources. Any new laws, regulations or permitting requirements regarding hydraulic fracturing could lead to operational delays, increased operating costs, third party or governmental claims and could increase the Corporation's costs of compliance and doing business. All of the foregoing could delay development.

All of these risks and uncertainties have the potential to delay the development of Birchcliff's resources. On the other hand, uncertainty as to the timing and nature of the evolution of better exploration, drilling, completion and production technologies have the potential to accelerate development activities and enhance the economics relating to the development of such resources.

There are no unusually significant abandonment and reclamation costs associated with the resources.

***Positive and Negative Factors Relevant to the Estimates***

Significant positive factors relevant to the estimates of Birchcliff's resources include:

- Birchcliff's and offsetting competitor wells with production history from the same zones;
- the same drilling and completion techniques are intended to be used by Birchcliff to develop these resources; and
- Birchcliff's strong record of developing similar development projects according to its plans.

Significant negative factors relevant to the estimate of Birchcliff's resources include

- current limitations in take-away/midstream capacity to deliver the resources to market;
- uncertainty in assumptions about the geometry of hydraulic fracture stimulations and associated recovery factors; and
- low pressure areas with potential production deliverability issues. This is applicable to the Corporation's D4, D5 only, BD/DoigP only and BD/D5/DoigP contingent resource projects in Gordondale, the Corporation's D3, D4, D5 only, BD/DoigP only and BD/D5/DoigP prospective resource projects in Gordondale and all of the Corporation's prospective resource projects in the Grande Prairie and Saddle Hills areas.

**APPENDIX B**

**FORM 51-101F2**

**REPORT ON RESERVES DATA, CONTINGENT RESOURCES DATA AND PROSPECTIVE RESOURCES DATA  
BY INDEPENDENT QUALIFIED RESERVES EVALUATOR**

To the Board of Directors of Birchcliff Energy Ltd. (the “Company”):

1. We have evaluated a portion of the Company’s reserves data, contingent resources data and prospective resources data as at December 31, 2017. The reserves data are estimates of proved reserves and probable reserves and related future net revenue as at December 31, 2017, estimated using forecast prices and costs. The contingent resources data and prospective resources data are risked estimates of volumes of contingent resources and prospective resources and related risked net present value of future net revenue as at December 31, 2017, estimated using forecast prices and costs.
2. The reserves data, contingent resources data and prospective resources data are the responsibility of the Company’s management. Our responsibility is to express an opinion on the reserves data, contingent resources data and prospective resources 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, contingent resources data and prospective resources data are free of material misstatement. An evaluation also includes assessing whether the reserves data, contingent resources data and prospective resources 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 plus probable reserves, estimated using forecast prices and costs and calculated using a discount rate of 10 percent, included in the reserves data of the Company evaluated for the year ended December 31, 2017, and identifies the respective portions thereof that we have evaluated and reported on to the Company’s management and Board of Directors:

Independent Qualified Reserves Evaluator or Auditor	Effective Date of Evaluation Report	Location of Reserves (Country or Foreign Geographic Area)	Net Present Value of Future Net Revenue (before income taxes, 10% discount rate)			
			Audited (\$M)	Evaluated (\$M)	Reviewed (\$M)	Total (\$M)
Deloitte LLP	December 31, 2017	Canada (All properties excluding Gordondale, Alberta)	-	3,609,820	-	3,609,820

6. The following tables set forth the risked volume and risked net present value of future net revenue of contingent resources and prospective resources (before deduction of income taxes) attributed to contingent resources and prospective resources, estimated using forecast prices and costs and calculated using a discount rate of 10%, included in the Company’s statement prepared in accordance with Form 51-101F1 and identifies the respective portions of the contingent resources data and prospective resources data that we have evaluated and reported on to the Company’s management and Board of Directors:

Classification	Independent Qualified Reserves Evaluator or Auditor	Effective Date of Evaluation Report	Location of Resources Other than Reserves (Country or Foreign Geographic Area)	Risky Volume (Bcfe)	Risky Net Present Value of Future Net Revenue (before income taxes, 10% discount rate)		
					Audited (\$M)	Evaluated (\$M)	Total (\$M)
Development Pending Contingent Resources (2C)	Deloitte LLP	December 31, 2017	Canada	7,068.7	-	1,589,243	1,589,243

Classification	Independent Qualified Reserves Evaluator or Auditor	Effective Date of Evaluation Report	Location of Resources Other than Reserves (Country or Foreign Geographic Area)	Risky Volume (Bcfe)
Prospective Resources (Best Estimate) – Prospect	Deloitte LLP	December 31, 2017	Canada	4,677.6
Contingent Resources (2C)	Deloitte LLP	December 31, 2017	Canada	
Development on Hold				2,363.9
Development Unclassified				120.9
Development Not Viable				0.8

7. In our opinion, the reserves data, contingent resources data and prospective resources 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, contingent resources data and prospective resources data that we reviewed but did not audit or evaluate.
8. We have no responsibility to update our reports referred to in paragraphs 5 and 6 for events and circumstances occurring after the effective date of our reports.
9. Because the reserves data, contingent resources data and prospective resources data are based on judgements regarding future events, actual results will vary and the variations may be material.

Executed as to our report referred to above:

Deloitte LLP  
700, 850 – 2<sup>nd</sup> Street S.W.  
Calgary, Alberta  
T2P 0R8

(signed) “Robin G. Bertram”  
Robin G. Bertram, P. Eng.  
Partner

Execution Date: March 13, 2018

**FORM 51-101F2**  
**REPORT ON RESERVES DATA BY INDEPENDENT QUALIFIED RESERVES EVALUATOR**

To the Board of Directors of Birchcliff Energy Ltd. (the “Company”):

1. We have evaluated a portion of the Company’s reserves data as at December 31, 2017. The reserves data are estimates of proved reserves and probable reserves and related future net revenue as at December 31, 2017, 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 plus probable reserves, estimated using forecast prices and costs and calculated using a discount rate of 10 percent, included in the reserves data of the Company evaluated for the year ended December 31, 2017, and identifies the respective portions thereof that we have evaluated and reported on to the Company’s management and Board of Directors:

Independent Qualified Reserves Evaluator	Effective Date of Evaluation Report	Location of Reserves (Country or Foreign Geographic Area)	Net Present Value of Future Net Revenue \$M (before income taxes, 10% discount rate)			
			Audited	Evaluated	Reviewed	Total
McDaniel & Associates Consultants Ltd.	December 31, 2017	Canada (Gordondale, Alberta)	-	1,498,302.7	-	1,498,302.7

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 reports 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 judgements 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.**

(signed) “P.A. Welch”  
P.A. Welch, P. Eng.  
President & Managing Director  
Calgary, Alberta, Canada  
February 14, 2018

## APPENDIX C

### FORM 51-101F3 REPORT OF MANAGEMENT AND DIRECTORS ON OIL AND GAS DISCLOSURE

Management of Birchcliff Energy Ltd. (the “**Company**”) are 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 and includes other information such as contingent resources data and prospective resources data.

Independent qualified reserves evaluators have evaluated the Company’s reserves data, contingent resources data and prospective resources data. The report of the independent qualified reserves evaluators will be filed with securities regulatory authorities concurrently with this report.

The Reserves Evaluation Committee of the Board of Directors of the Company has:

- (a) reviewed the Company’s procedures for providing information to the independent qualified reserves evaluators;
- (b) met with the independent qualified reserves evaluators to determine whether any restrictions affected the ability of the independent qualified reserves evaluators to report without reservation; and
- (c) reviewed the reserves data, contingent resources data and prospective resources data with management and the independent qualified reserves evaluators.

The Reserves Evaluation Committee of the Board of Directors 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 Evaluation Committee, approved:

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

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

(signed) “*A. Jeffery Tonken*”  
President and Chief Executive Officer

(signed) “*Christopher A. Carlsen*”  
Vice-President, Engineering

(signed) “*James W. Surbey*”  
Director and Chairman of the  
Reserves Evaluation Committee

(signed) “*Dennis A. Dawson*”  
Director and Member of the  
Reserves Evaluation Committee

DATE: March 14, 2018.

## APPENDIX D

### AUDIT COMMITTEE CHARTER

#### **Purpose**

The purpose of the Audit Committee (the “**Committee**”) of the board of directors (the “**Board**”) of Birchcliff Energy Ltd. (the “**Corporation**”) is to assist the Board in overseeing:

- (a) the preparation of the financial statements of the Corporation and the conduct of any audit thereof;
- (b) the Corporation’s compliance with applicable financial reporting requirements; and
- (c) the independence and performance of the Auditor.

#### **Definitions**

For the purposes of this Charter, the following terms have the following meanings:

- (a) “**Auditor**” means the auditor appointed to prepare an audit report in respect of the annual financial statements of the Corporation.
- (b) “**NI 52-110**” means National Instrument 52-110 – *Audit Committees* promulgated by the securities regulatory authorities in Canada as may be amended from time to time.

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

- (a) Number of Members: The Committee shall be composed of a minimum of three members, each of whom shall be a member of the Board.
- (b) Independence of Members: Each member of the Committee shall be “independent” within the meaning of NI 52-110 unless the Board determines to rely on an exemption contained in NI 52-110.
- (c) Financial Literacy: Each member of the Committee shall be “financially literate” within the meaning of NI 52-110 unless the Board determines to rely on an exemption contained in NI 52-110.
- (d) Appointment and Vacancies: The members of the Committee shall be appointed by the Board and shall serve at the pleasure of the Board. Any member of the Committee may be removed or replaced at any time by the Board and shall automatically cease to be a member of the Committee as soon as such member ceases to be a director of the Corporation. The Board may fill vacancies on the Committee by appointment from among its members. If and whenever a vacancy shall exist on the Committee, the remaining members may exercise all of its powers so long as a quorum remains.
- (e) Chair: The Board shall designate one member of the Committee as the chairperson of the Committee (the “**Chair**”). The Chair shall preside over all meetings of the Committee, and in the Chair’s absence, the members of the Committee may designate from among such members the Chair for the purpose of such meeting.

#### **Transaction of Business and Meetings**

- (a) Transaction of Business: The Committee shall transact its business in accordance with governing corporate legislation and the provisions of the by-laws of the Corporation. To the extent not provided

either therein or in the provisions of this Charter, the Committee may determine the manner in which it will transact its business by way of resolution passed by a majority of votes cast thereon.

- (b) Number of Meetings: The Committee shall meet at least four times per year or more frequently as is necessary to carry out its duties and responsibilities.
- (c) Calling of Meetings: The Chair or any member of the Committee may at any time convene a meeting of the Committee. Upon a request from the Auditor, the Chair shall convene a meeting of the Committee to consider any matters that the Auditor desires to bring to the attention of the Committee.
- (d) Notice of Meetings: Notice of meetings shall be delivered, mailed, faxed, emailed or sent by any other form of transmitted or recorded message to each member of the Committee not less than forty-eight hours before the meeting is to take place. Notice of any meeting or any irregularity thereof may be waived by any member. Meetings may be held at any time without formal notice if all the members are present, or if a quorum is present and those members who are absent have signified their consent to the meeting being held in their absence. Any resolution passed or action taken at such a meeting shall be valid and effectual as if it had been passed or taken at a meeting duly called and constituted.
- (e) Quorum: A quorum for meetings of the Committee shall be at least two members of the Committee. No business may be transacted by the Committee at a meeting unless a quorum of the Committee is present.
- (f) Voting: All motions made at a meeting of the Committee shall be decided by a simple majority of votes cast by members of the Committee who vote on such motion. In the event of an equality of votes on any motion, the Chair shall not have a second or casting vote.
- (g) Minutes and Reporting to the Board: Minutes shall be prepared of all meetings of the Committee. A copy of such minutes shall be circulated to all members of the Committee and the Board. In addition, the Chair may report orally to the Board on any matter in his or her view requiring the immediate attention of the Board.
- (h) Attendance of Non-Members: The Committee may invite to a meeting any officers, directors or employees of the Corporation, legal counsel, advisors and other persons whose attendance it considers necessary or desirable in order to carry out its duties and responsibilities. If not a member of the Committee, such invitees shall have no voting rights at any meeting of the Committee.

### **Duties and Responsibilities**

#### ***External Auditor***

- (a) The Committee shall recommend to the Board:
  - (i) the person or firm to be nominated as Auditor for the purposes of preparing or issuing an auditor's report or performing other audit, review or attest services for the Corporation; and
  - (ii) the compensation of the Auditor.
- (b) The Committee is authorized in carrying out its duties to communicate directly with the Auditor and the Auditor shall report directly to the Committee. The Committee shall be directly responsible for overseeing the work of the Auditor 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 Auditor regarding financial reporting.



- (c) The Committee shall review and recommend to the Board the annual audit plan of the Auditor and the terms of the Auditor's engagement, including the appropriateness and reasonableness of the Auditor's fees.
- (d) The Committee may review and evaluate the Auditor's performance.
- (e) The Committee shall review and receive assurances as to the independence of the Auditor.
- (f) The Committee shall review any reports issued by the Canadian Public Accountability Board which specifically relate to any previous audit of the financial statements of the Corporation.
- (g) The Committee shall periodically meet with the Auditor without management present to discuss the completeness and accuracy of the Corporation's financial statements.
- (h) When there is to be a change in the Auditor, the Committee shall review the issues related to the change and shall approve the information to be included in the notice of such change required to be filed with the applicable regulatory authorities.
- (i) The Committee shall pre-approve all non-audit services to be provided to the Corporation (or its subsidiary entities, if any) by the Auditor. The Committee may delegate this function to one of its independent members, who shall report to the Committee on any such approvals.

***Financial Reporting and Public Disclosure***

- (j) The Committee shall review, report to the Board on and, if deemed advisable by the Committee, recommend to the Board for approval, the Corporation's interim and annual financial statements and all related management's discussion and analysis before those materials are filed with the applicable regulatory authorities and publicly disclosed. If authorized by the Board, the Committee may approve the interim financial statements and the related management's discussion and analysis, before those materials are filed with the applicable regulatory authorities and publicly disclosed. The Committee shall receive and review any reports prepared by management of the Corporation or the Auditor that relate to any of the following:
  - (i) changes in accounting principles, or in their application, which may have a material impact on a current or future year's financial statements;
  - (ii) significant accruals, reserves or other estimates, such as ceiling test calculations;
  - (iii) the accounting treatment of significant, unusual or non-recurring transactions;
  - (iv) disclosures of commitments and contingencies;
  - (v) adjustments raised by the Auditor, whether or not included in the financial statements;
  - (vi) unresolved differences between management and the Auditor;
  - (vii) explanations of significant variances with comparative reporting periods; and
  - (viii) related party transactions and ensuring that the nature and extent of such transactions are properly disclosed.

- (k) The Committee shall review, report to the Board on and, if deemed advisable by the Committee, recommend for approval by the Board, the Corporation's annual and interim earnings press releases before the Corporation publicly discloses this information.
- (l) As it relates to financial information that is extracted or derived from the Corporation's financial statements, the Committee shall review, report to the Board on and, if deemed advisable by the Committee, recommend for approval by the Board, all annual reports, annual information forms, information circulars, business acquisition reports, prospectuses and other securities offering documents (excluding, for greater certainty, the Corporation's corporate presentations) before such documents are publicly disclosed and, if applicable, filed with the applicable regulatory authorities.
- (m) The Committee shall ensure that adequate procedures are in place for the review of the Corporation's public disclosure of financial information extracted or derived from the Corporation's financial statements and shall periodically assess the adequacy of those procedures.

#### ***Internal Controls***

- (n) The Committee shall oversee management's reporting on internal controls and shall advise the Board of any material failures of the internal controls.
- (o) The Committee shall establish procedures:
  - (i) for the receipt, retention and treatment of complaints received by the Corporation regarding accounting, internal accounting controls, or auditing matters; and
  - (ii) for the confidential, anonymous submission by employees of the Corporation of concerns regarding questionable accounting or auditing matters.

#### ***Other Duties and Responsibilities***

- (p) The Committee shall review management's reports regarding the certification of annual and interim financial reports in accordance with applicable securities legislation.
- (q) The Committee shall review and approve:
  - (i) the Corporation's hiring policies regarding partners, employees and former partners and employees of the present and former Auditor; and
  - (ii) the employment by the Corporation of any current or former partner or employee of the present and former Auditor.
- (r) The Committee shall review, at least annually, this Charter and recommend to the Board any amendments to this Charter that the Committee considers necessary or advisable.
- (s) The Committee shall bring to the attention of the Board such other issues as are necessary to carry out its mandate and shall make recommendations to the Board with respect to the foregoing. In addition, the Committee shall review and report to the Board on any other matters as may be delegated to it by the Board from time to time.

#### **Access to Information and Advisors**

- (a) In discharging its role, the Committee shall have full access to all books, records, facilities and personnel of the Corporation to the extent that the same relate to matters that are the responsibility of the

Committee under this Charter. The Committee may require the Auditor or any director, officer or employee of the Corporation to appear before it to discuss the accounts and records and/or financial position of the Corporation. Members of the Committee may rely upon the accuracy of any statement or report prepared by the Auditor or upon any other statement or report including any appraisal report prepared by a qualified person and shall not be responsible or held liable for any loss or damage in respect of any action taken on the basis of such statement or report.

- (b) The Committee has the authority to engage such advisors (including independent legal counsel) as it considers necessary or desirable to assist it in fulfilling its duties and responsibilities as provided in this Charter and to set the compensation to be paid thereto, such engagement to be at the Corporation's expense. The Corporation shall be responsible for all other expenses of the Committee that are deemed necessary or desirable by the Committee in order to fulfil its duties and responsibilities as provided for in this Charter.

Approved and Adopted: March 14, 2018.