



**ANNUAL INFORMATION FORM**

**For the year ended April 30, 2017**

**Dated: June 21, 2017**

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## **ITEM 1: CAUTIONARY STATEMENT ON FORWARD-LOOKING INFORMATION**

Unless otherwise noted, the information given herein is as of April 30, 2017.

Certain statements made in this document that are not current or historical factual statements may constitute “forward looking information” within the meaning of applicable Canadian securities legislation. Forward looking information may include, but is not limited to, statements with respect to future events or future performance, the effect of the Copper Purchase Agreement in respect of the Chapada Mine (each as defined herein) on the Corporation’s financial position and/or results; production volumes; the financial and operational strength of counterparties; industry conditions, trends and practices; realized prices for production; future mineral reserves and mine life; management’s expectations regarding the Corporation’s growth and results of operations; estimated future revenues; fluctuations in the prices of the primary commodities that are material for the Corporation’s royalty revenue (including coal, potash, iron ore, zinc and copper); requirements for additional capital; business prospects and opportunities; treatment under governmental regulatory regimes with respect to environmental matters; treatment under governmental taxation regimes; government regulation of mining operations; dependence on personnel; and competitive conditions. Such forward looking information reflects management’s current beliefs and is based on information currently available to management. Expressions such as “anticipates”, “expects”, “believes”, “estimates”, “could”, “intends”, “may”, “plans”, “will”, “would”, “pro forma” and other similar expressions, or the negative of these terms, are generally indicative of forward looking information. By its very nature, forward looking information requires the Corporation to make assumptions and is subject to inherent risks and uncertainties which give rise to the possibility that the Corporation’s predictions, forecasts, expectations or conclusions will not prove to be accurate, that the Corporation’s assumptions may not be correct and that the Corporation’s objectives, strategic goals and priorities will not be achieved. Such forward looking information is not fact but only reflects management’s estimates and expectations.

A number of factors could cause actual events or results to differ materially from any forward looking information, including, without limitation: fluctuations in the prices of the primary commodities that drive royalty revenue; fluctuations in the value of the Canadian dollar; changes in national and local government legislation, including permitting and licensing regimes and taxation policies; regulations and political or economic developments in any of the jurisdictions where properties in which the Corporation holds a royalty or other interest are located; influence of macroeconomic developments; reduced access to debt and equity capital; litigation; title, permit or licensing disputes related to the Corporation’s interests or any of the properties in which the Corporation holds a royalty or other interest; excessive cost escalation as well as development, permitting, infrastructure, operating or technical difficulties on any of the properties in which the Corporation holds a royalty or other interest; rate and timing of production differences from resource estimates; and risks and hazards associated with the business of development and mining on any of the properties in which the Corporation holds a royalty or other interest, including, but not limited to unusual or unexpected geological and metallurgical conditions, slope failures or cave ins, flooding and other natural disasters.

The forward looking information contained herein is based upon assumptions management believes to be reasonable, including, without limitation: the ongoing operation of the properties in which the Corporation holds a royalty or other interest by the owners or operators of such properties in a manner consistent with past practice; the accuracy of public statements and disclosures made by the owners or operators of such underlying properties; no material adverse change in the market price of the commodities that underlie the asset portfolio; no adverse development in respect of any significant property in which the Corporation holds a royalty or other interest; the accuracy of publicly disclosed expectations for the development of underlying properties that are not yet in production; and the absence of any other factors that could cause actions, events or results to differ from those anticipated, estimated or intended. However, there can be no assurance that forward looking information will prove to be accurate, as actual results and future

events could differ materially from those anticipated in such information. Investors are cautioned that the forward looking information is not a guarantee of future performance. The Corporation cannot assure investors that actual results will be consistent with any forward looking information disclosed herein. Accordingly, investors should not place undue reliance on forward looking information due to the inherent uncertainty thereof. For additional information with respect to risks, uncertainties and assumptions, please refer to the “Risk Factors” section of this AIF.

The forward looking information disclosed herein is provided as of the date of this AIF only and the Corporation does not assume any obligation to update or revise such information to reflect any new information, estimates or opinions, future events or results or otherwise, except as required by applicable law.

## **ITEM 2: CURRENCY**

All currency references in this Annual Information Form (the “AIF”) are to Canadian dollars unless otherwise indicated.

## **ITEM 3: TECHNICAL AND THIRD PARTY INFORMATION**

Except where otherwise stated, the disclosure in this AIF relating to properties and operations on the properties in which Altius holds royalty and streaming interests is based primarily on information publicly disclosed by the owners or operators of these properties and information available in the public domain as at June 12, 2017. As a royalty holder, Altius has limited, if any, access to properties included in its royalty portfolio. Altius generally relies on publicly available information regarding these properties and operations and generally has no ability to independently verify such information. Additionally, Altius has, and may from time to time receive, operating information from the owners and operators of these properties, which it is not permitted to disclose to the public. Altius is dependent on the operators of the properties and their qualified persons to provide information to Altius or on publicly available information to prepare required disclosure pertaining to properties and operations on the properties on which Altius holds royalty and streaming interests and generally has limited or no ability to independently verify such information. Although Altius does not have any knowledge that such information may not be accurate, there can be no assurance that such third party information is complete or accurate.

## **ITEM 4: CORPORATE STRUCTURE**

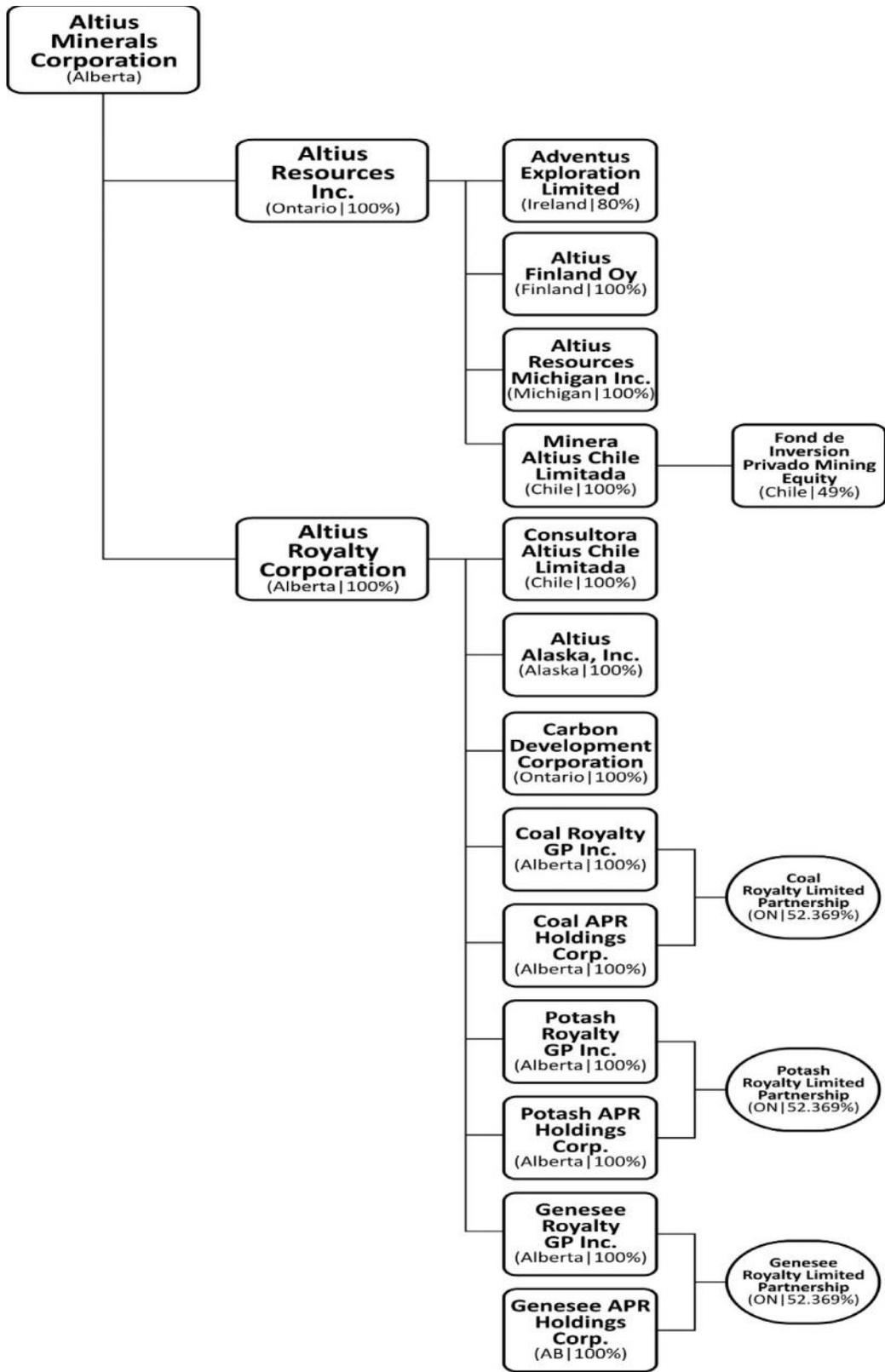
### **4.1 Name, Address and Incorporation**

The Corporation was incorporated as a private corporation under the name 730260 Alberta Inc. by certificate and articles of incorporation (the “Articles”) issued pursuant to the provisions of the *Business Corporations Act* (Alberta) on March 5, 1997. The Articles were amended by certificate and articles of amendment dated June 12, 1997 to remove the “private company” provisions and the restrictions on share transfers and to change the name of the Corporation to “Altius Minerals Corporation.”

The head office of the Corporation is located at Suite 202 – 66 Kenmount Road, St. John’s, Newfoundland and Labrador A1B 3V7. Its registered office is located at 850, 901 – 9 Ave SW, Calgary, Alberta T2P 3C5.

### **4.2 Inter-Corporate Relationships**

The following chart sets forth the material subsidiaries of the Corporation, their jurisdictions of incorporation or formation, and the Corporation’s equity interest in each such subsidiary.



## ITEM 5: GENERAL DEVELOPMENT OF THE BUSINESS

### 5.1 Significant Acquisitions

There were no significant acquisitions during the current fiscal year.

### 5.2 Three Year History

Over the past three years, the Corporation has expanded its project generation business into multiple mining friendly jurisdictions and has continued to grow its diversified mining royalty business through acquisitions of high quality royalty and streaming interests.

#### Year Ended April 30, 2015

During the year ended April 30, 2015, the Corporation continued generative exploration activities and mineral property accumulation in eastern Canada and Chile in spite of the commodity cycle downturn. Royalty revenue grew during fiscal 2015 with the addition of 11 producing royalties acquired from Sherritt International Corporation (“Sherritt”) in late fiscal 2014.

Following this acquisition Altius financed the acquisition of the remaining 50% interest in the Carbon Development Partnership (“CDP”) through the issuance of 4,643,000 common shares at a price of \$14.00 per share for total gross proceeds of \$65,002,000 pursuant to a short form prospectus dated May 6, 2014 (the “Offering”). The Offering closed on May 13, 2014, and Altius used \$21 million of the net proceeds of the Offering to acquire the remaining CDP interest, with the balance of the net proceeds of the Offering being used to repay unsecured loans and credit facilities totaling \$28.2 million, and for general corporate purposes.

In November 2014, the Corporation entered into a support agreement with respect to a proposed business combination of Osisko Gold Royalties Ltd. (“Osisko”) and Virginia Mines Inc. (“Virginia”). The transaction was approved by the respective shareholders of Osisko and Virginia in January 2015 and as a result the Corporation received shares in Osisko. On February 18, 2015, the Corporation completed the divestiture of its shareholding. Total cash proceeds received from the sale were approximately \$41 million. As a result of the monetization of this investment, the Corporation’s net debt position (total debt minus cash on hand) was reduced to approximately \$62,000,000, positioning the Corporation to consider additional royalty investment opportunities, such as the acquisition of Callinan, which was completed on May 5, 2015.

#### Year Ended April 30, 2016

During the year ended April 30, 2016 the Corporation continued generative exploration activities and mineral property accumulation in eastern Canada, Chile, Michigan, and Ireland. The Corporation also added another producing royalty and several early stage royalties to its portfolio with the acquisition of Callinan Royalties Corporation (“Callinan”). On May 5, 2015, under a plan of arrangement whereby Altius acquired all of the issued and outstanding common shares of Callinan (the “Arrangement”), each former Callinan shareholder received 0.163 of an Altius common share and \$0.203 in cash for each Callinan common share held. The Corporation paid \$9,431,775 in cash and issued 7,573,297 common shares to the shareholders of Callinan under the Arrangement. As a result of this acquisition, the Corporation acquired a 4% net smelter royalty return (“NSR”) on the 777 mine in Flin Flon, Manitoba and numerous other exploration stage royalties and related alliances.

The Corporation expanded its mineral exploration business into the Republic of Ireland in 2016 with a focus on zinc and other base metals through a financing and controlling investment of Adventus Exploration Ltd. (“Adventus”), a private Irish mineral exploration company. On November 3, 2015, the Corporation entered

into an exploration alliance and funding agreement with Adventus. Furthermore, on April 30, 2016, the Corporation increased its ownership in Adventus to 80%.

On September 21, 2015, the Corporation closed a strategic transaction with Bitterroot Resources Ltd. (“Bitterroot”) under which the Corporation will finance future mineral exploration on Bitterroot’s Voyageur and Copper Range lands in the Upper Peninsula of Michigan (the “Properties”) in return for ownership and control of the Properties, notably all of which are ‘freehold’ interests. The intent of the transaction is to define and enhance nickel exploration targets and attract third party partners to further explore this emerging and potentially globally significant nickel mining district. The Corporation was also granted a 2% net smelter return (“NSR”) royalty on the Voyageur lands and the right to repurchase a 1% NSR held by a third party on the Copper Range lands, both of which are subject to the Corporation funding required exploration expenditures in accordance with the terms of the agreement.

#### Year Ended April 30, 2017

During the year ended April 30, 2017, junior equity markets improved as a result of the cyclical upturn in commodity prices. The Corporation took advantage of this upturn to vend 22 mineral properties in 8 separate vend out agreements to third parties during the year. In addition, the Corporation continued to acquire mineral properties in mining friendly jurisdictions, including eastern Canada, western Canada, Chile, Michigan, Ireland, Australia, and Finland.

The Corporation also added another producing royalty/streaming interest (to bring its total to 15) with the acquisition of the Chapada copper stream from Yamana Gold Inc. (“Yamana”). Royalty revenue grew to record levels during the year as a result of the growing portfolio of royalties as and also benefited from improvements in commodity prices. The Corporation increased its credit capacity and lowered its debt cost with a new credit facility led by the Bank of Nova Scotia and gained additional access to capital through an investment agreement with Fairfax Financial Holdings Limited.

#### *Fairfax Investment*

On April 26, 2017 the Corporation executed an agreement with Fairfax Financial Holdings Limited and certain of its subsidiaries (collectively “Fairfax”) which will allow Fairfax to invest up to \$100,000,000 in the Corporation’s preferred securities and common share purchase warrants. Fairfax has agreed to purchase, on a private placement basis, a \$10, 5% preferred security, in an aggregate amount of up to \$100,000,000, issuable in tranches of not less than \$25,000,000. On April 26, 2017 the Corporation closed an initial purchase of preferred securities for \$25,000,000, and has sole discretion until December 31, 2017 to require additional purchases by Fairfax for the remaining \$75,000,000. The preferred securities are subordinate secured securities that may be repaid by the Corporation at any time after April 26, 2022 and at any time after April 26, 2020 if the volume-weighted average trading price of its common shares for any 10 day period after April 26, 2020 is at least \$24 per share. The preferred securities mature on April 26, 2102.

On April 26, 2017 the Corporation also issued 6,670,000 common share purchase warrants, exercisable at \$15 per share, which will vest proportionately based on the aggregate amount of preferred securities purchased by the Fairfax entities under the private placement. Each vested warrant will be exercisable on or prior to April 26, 2022, but the expiry date will be extended to April 26, 2024 if the closing price of the Corporation’s common shares is less than \$24 per share on April 26, 2022. The Corporation can also elect to require early exercise of the warrants if the volume-weighted average trading price of the Corporation’s common shares, for any 10 day period, reaches \$24 per share at any time after April 26, 2020.

In accordance with the terms of the arrangement Fairfax nominated one director, Mr. Guy Bentinck, to the board of directors of Altius effective May 8, 2017. Mr. Bentinck is currently Chief Financial Officer of Fairfax Africa Holdings Limited, an investment holding company publicly traded on the Toronto Stock Exchange focused on investing in Africa. Prior to this role, Mr. Bentinck served as a consultant to Hamblin Watsa Investment Counsel, a wholly-owned subsidiary of Fairfax Financial Holdings Limited that provides global investment management services to the insurance and reinsurance subsidiaries of Fairfax. Mr. Bentinck has over 20 years of public company experience in the natural resources sector, including President and Chief Executive Officer of Potash Ridge Corporation, Chief Financial Officer and Senior Vice President, Capital Projects at Sherritt International Corporation and Chief Financial Officer of Royal Utilities Income Trust.

#### *Chapada Copper Stream*

On May 3, 2016 the Corporation closed an agreement to acquire a copper purchase streaming interest in the Chapada copper-gold mine located in central Brazil and operated by a subsidiary of Yamana Gold Inc. (“Yamana”). The total cost of the acquisition was US\$60,000,000 which was composed of an initial US\$8,000,000 paid on March 31, 2016 and a final payment of US\$52,000,000 and 400,000 common share purchase warrants of the Corporation paid on May 3, 2016. Under the terms of the Agreement the Corporation is entitled to purchase 3.7% of the payable copper produced from the Chapada mine at 30% of the market price. The percentage rate of payable copper is subject to reduction in the event of a threshold production increase at Chapada or upon delivery of 75 million pounds of copper. Additional details on the agreement can be found in the Corporation’s news release dated March 31, 2016 and on SEDAR.

#### *Equity Raise*

On May 3, 2016 the Corporation closed an equity financing under a short-form prospectus. The equity offering consisted of 3,578,800 Common Shares of the Corporation at a price of \$11.25 per Common Share for aggregate gross proceeds of \$40,261,500. The Common Shares were offered for sale pursuant to an underwriting agreement dated April 19, 2016 between the Corporation and a syndicate of underwriters which included TD Securities Inc., Scotia Capital Inc., Raymond James Ltd., BMO Nesbitt Burns Inc. and Haywood Securities Inc. Upon closing the Corporation paid the Underwriters a fee equal to 5.0% of the gross proceeds of the equity offering. The Corporation used the net proceeds of the equity offering for general corporate purposes and to partially fund the acquisition of the Chapada copper stream.

#### *New Credit Facility*

The Corporation arranged a new senior secured debt facility of \$150,000,000 (the “New Credit Facilities”), comprised of a \$70,000,000, 4 year amortizing term debt facility (the “Term Facility”) and an \$80,000,000, 3 year, revolving facility (the “Revolving Facility”). The New Credit Facilities were provided by a consortium of lenders led by the Bank of Nova Scotia, as Lead Arranger and Administrative Agent, ING Capital LLC as Syndication Agent and Bookrunner, Export Development Canada and the Toronto-Dominion Bank. The Term Facility is repayable over a four year period with quarterly principal repayments of \$2,000,000, which commenced July 31, 2016, until July 31, 2017 and increasing to \$3,250,000 per quarter thereafter, bearing interest at variable rates of approximately 5.3%. The Revolving Facility is payable in full in 3 years and also bears interest at variable rates. Additional draw-downs on the Revolving Facility are permitted for future qualifying royalty and streaming acquisitions.

On May 3, 2016 the Corporation drew down the full amount of the Term Facility of \$70,000,000 and \$33,000,000 (US \$26,000,000) on the Revolving Facility to repay its existing Credit Facility and to pay a portion of the purchase price for the Chapada copper purchase agreement. Scheduled payments of \$8,000,000 and voluntary payments of \$16,929,000 (US \$13,000,000) were made during the year ended April 30, 2017. Subsequent to the quarter, \$3,418,000 (US \$2,500,000) in additional voluntary payments were made.

### *Gold-Silver, British Columbia*

On March 31, 2017 the Corporation signed an agreement to option its Gibson project to Canex Metals Inc. (“Canex”) (TSXV:CANX). Canex will issue to Altius 1,125,000 common shares upon signing of the agreement as part of a series of staged common share payments totaling 3,545,000 million shares (approximately 14% of Canex). Altius retains a right to purchase an underlying 1.5-per-cent net smelter return royalty on certain claims (and a 1% NSR royalty on other claims) and preferential rights on any future royalties or streams granted on the property. If Canex achieves a measured and indicated mineral resource in excess of one million gold equivalent ounces, a milestone payment of 1,275,000 shares will be issued to Altius. Canex is planning an initial mechanical trenching program for summer 2017 of known historical high-grade gold-silver zones.

### *Copper, Ireland*

On December 31, 2016, the Corporation within our 80% owned Irish subsidiary executed a letter of intent regarding an option/earn-in agreement for the Southwest Cork copper project in Ireland with First Quantum Minerals Ltd. (“FQM”). FQM may earn up to 75% of the project by making staged cash payments of \$325,000 and conducting US\$6,250,000 in exploration work over 7 years. Altius will directly retain a 2% NSR royalty on the project.

### *Zinc, Ireland and Newfoundland*

In December 2016 Altius reported that together with select strategic investors it participated in the co-founding of a new company, Adventus Zinc Corporation (“Adventus Zinc”) (TSXV:ADZN), by contributing a portfolio of zinc exploration projects from its Newfoundland and Irish properties and cash in exchange for shares in the company. Adventus Zinc via an Initial Public Offering began trading as a public company on the TSXV Exchange on February 9, 2017. The Corporation currently holds 12,114,012 shares (approximately 26.6%) and two seats on Adventus Zinc’s board of directors.

Adventus Zinc is focused on pursuing the acquisition of one or more advanced-stage zinc projects while advancing its portfolio of prospective zinc exploration projects located in both Ireland and Eastern Canada.

### *Gold, Chile*

In November 2016 the Corporation’s 49%-owned Mining Equity Fund (“Mining Equity”), based in Santiago, Chile, executed a Heads of Agreement (“HOA”) with an Australian junior company, Emu NL (ASE:EMU), related to the option of its Vidalita gold project in Chile. As consideration for the option Mining Equity will, assuming the full option exercise, receive 15,000,000 Emu shares. Mining Equity has received 2,500,000 shares in accordance with the agreement. Minimum exploration expenditures of \$1,000,000 US will be committed to the project over the initial 24 months of the agreement and a 1% NSR royalty will be retained by Mining Equity. An initial but abbreviated drill program was undertaken on the property subsequent to year end and confirmed the presence of anomalous gold-silver in what is interpreted to be a high sulphidation epithermal system. Additional work is planned after the South American winter.

### *Metallurgical Coal, British Columbia*

On November 8, 2016 the private company optionee of the Telkwa Coal project (“Telkwa”), Telkwa Coal Limited (“TCL”), completed a transaction to be acquired by an Australian based public issuer, Allegiance Coal Ltd. (“Allegiance”). TCL has the right to earn up to a 90 percent interest in Telkwa in exchange for staged milestone payments. On October 29, 2016 the Corporation elected to receive its milestone option payment and reimbursement of certain mineral tenure related expenses in the form of shares in ASX listed

Allegiance. The Corporation now holds 10,956,282 shares of Allegiance (or 4.8% of the outstanding shares). The Corporation also retains a sliding scale gross sales royalty that ranges between 1.5% and 3.0% depending upon benchmark coal prices at the time of any coal sale, and a 10% project interest.

### *Gold, Newfoundland*

On September 15, 2016 the Corporation completed an agreement to option its Wilding Lake property to a new TSX Venture Exchange listed Capital Pool Company which has since been renamed as Antler Gold Inc. (“Antler”) (TSXV:ANTL). During the year ended April 30, 2017 Altius received 4,500,000 shares of Antler in exchange for the Wilding lake property while retaining a 2% net smelter return royalty covering the vast project.

Furthermore, in April 2017 the Corporation agreed to an option-based sale of six additional gold projects in central Newfoundland to Antler for an additional 980,000 Antler common shares (increasing Altius’s total shareholding in Antler to 5,480,000 shares or 19.9%) and a retained 2% NSR royalty on all projects vended.

### *Subsequent Events*

On June 1, 2017 Altius invested \$10 million in an unsecured subordinated convertible debenture (the “Debenture”) of Champion Iron Limited (“Champion”). The investment is a component of a \$40 million debt and equity bridge financing which Champion arranged for its subsidiary Quebec Iron Ore Inc. (“QIO”) in connection with the restart of operations at QIO’s Bloom Lake Iron Mine (“Bloom Lake”) located near Fermont, Quebec. The Debenture is convertible at the option of Altius at any time into Champion common shares at a conversion price of \$1.00 per share. If Champion and QIO do not complete a master financing of a minimum of \$212 million to finance certain Bloom Lake capital expenditures by November 30, 2017 then the conversion price will be adjusted to the lesser of \$1.00 or to the five-day weighted average trading price of the shares on the TSX determined as of the date of conversion. The maximum number of shares that may be issued upon conversion of the Debenture is 50,000,000 with the balance of the unconverted principal amount of the Debenture, if any, to be repaid in cash or converted into a proportion of a royalty at the option of Champion. If the principal amount is not repaid in full on or before the second anniversary of the Debenture, Altius will have the right to convert the entire outstanding principal amount into a 0.21% gross overriding royalty on the Bloom Lake project. The Debenture has a term to maturity of 12 months and will bear interest at a rate of 8% payable quarterly.

## **ITEM 6: DESCRIPTION OF THE BUSINESS**

### **6.1 General**

The Corporation has two key elements to its long-term business strategy - the building of a diversified portfolio of long-life mine royalty/streaming interests and the generation of high quality exploration projects that are converted to royalties and various other types of third party funded interests. Both business components recognize the strong inherent cyclicality of valuations and the availability of capital within the minerals sector, and are managed with contrarian discipline over full-cycle investment timeframes. Altius currently has 15 employees.

Its diversified direct and indirect royalties and streams generate revenue from 15 operating mines located in Canada (14) and Brazil (1), from copper, zinc, nickel, cobalt, precious metals, potash, iron ore and thermal (electrical) and metallurgical coal. The portfolio also includes numerous pre-production stage royalties covering a wide spectrum of mineral commodities in numerous jurisdictions.

The Corporation’s exploration project generation portfolio is well diversified by commodity and geography, and consists of exploration projects it has generated in respect of which it seeks to create funding partnerships

with other exploration and mining companies to advance the projects while retaining royalties and equity or minority project interests.

See Schedules “A”, “B”, “C” and “D” for additional discussion on material royalties as well as Item 7 Royalty Portfolio.

### **777 Mine**

Altius owns a 4% net smelter royalty, in addition to a tonnage royalty, covering the 777 Mine and the 777 North expansion, which are located in the Flin Flon mining district, Manitoba, Canada and are operated by Hudbay. The 777 Mine is an underground mining operation that commenced commercial production in 2004 and that has an expected mine life of 2020 based on current reserves. The mine is a low-cost producer of copper, zinc, gold and silver and it has an expected production rate of approximately 1,200,000 tonnes for 2017.

### **Chapada Copper Stream**

On May 3, 2016 Altius completed its acquisition of a copper purchase agreement (the “Copper Purchase Agreement”) with a subsidiary of Yamana to acquire future copper payments referenced to Yamana’s Chapada copper-gold mine located in central Brazil (the “Chapada Mine”). The Copper Purchase Agreement has a base rate of 3.7% referenced to copper production from the Chapada Mine, reducing to 1.5% for remaining life of mine after 75 million pounds of copper are delivered to Altius. In addition, the Copper Purchase Agreement provides for an expansion incentive rate whereby the rate decreases to 2.65% in the event of an expansion of the Chapada Mine. The Copper Purchase Agreement is guaranteed by Yamana and Yamana’s wholly-owned Brazilian subsidiary that owns the Chapada Mine.

The aggregate purchase price under the Copper Purchase Agreement was US\$60 million in cash plus 400,000 common share purchase warrants of Altius that will be exercisable at \$14.00 per share until May 3, 2021 (the “Warrants”). The Copper Purchase Agreement also provides for ongoing payments by Altius to Yamana for each pound of copper received equal to 30% of the spot copper price. For more information on the Chapada Mine, please refer to Schedule “C” to this AIF.

### **Voisey’s Bay**

In 2003, Altius indirectly acquired a 7.5% interest in a 3% net smelter return royalty interest in Voisey’s Bay nickel-copper-cobalt project. Altius has since increased its 7.5% interest to a 10% interest and therefore currently has an effective 0.3% net smelter return royalty. The Voisey’s Bay mine is operated by Vale.

### **Coal**

The coal royalties comprise royalty interests in respect of electrical coal produced from the Genesee Mine, the Sheerness Mine, the Paintearth Mine and the Highvale Mine. As a result of Alberta’s climate leadership plan, these four electrical coal royalties are not expected to produce beyond 2030. The Corporation also holds a royalty interest in respect of metallurgical coal produced from the Cheviot Mine. All of the coal mines are located in Alberta, Canada.

The government of Alberta has publicly acknowledged that the province's new policy objective - to completely phase out coal-based electrical generation capacity by 2030 - will have a negative economic impact on certain stakeholders that made investments in its integrated coal electricity sector under previous policy regimes. It has therefore elected to provide transition payments to impacted electrical generation stations as a means of compensation for resulting stranded investments and to ensure continuing investor

confidence in the province. The Corporation continues to seek positive engagement with key political decision makers within the government of Alberta to explain the expropriation-like negative impacts that the policy change has had on its investments in Alberta, but we have thus far been ignored. We have therefore, now been forced to begin to explore our various legal options.

### ***Coal Royalty Agreements***

The coal royalties are comprised of electrical coal rights at the Genesee Mine, Sheerness Mine, Paintearth Mine and Highvale Mine, which are payable under coal leases, coal supply/exchange agreements and the Genesee Royalty Agreement. All of the electrical coal royalty arrangements provide for a royalty payable at a base rate with an annual escalator provision that is tied to indices published by Statistics Canada. Electrical coal royalties are paid by the power utilities and the royalty rates are escalated in accordance with Canadian GDP inflation, in most cases. Certain of the coal rights to which the coal royalties are tied have been unitized with the coal rights of other owners within a larger geographic area to form Dedicated Reserves. These Dedicated Reserves may or may not be subject to unitization agreements. Under a unitization agreement, any coal produced from a unitized area is allocated to and deemed to be produced from the lands of each party in accordance with each party's proportionate share of the coal reserves for the purpose of calculating royalties. Under the terms of its unitized leases, Altius will earn its share of royalties based on its proportionate share of total coal production within the unitized area. Under a non-unitized arrangement, actual royalties earned may vary depending on the total coal production in the areas where coal and royalty mineral rights are located. At the Sheerness Mine, Paintearth Mine and Highvale Mine, not all coal rights have been unitized and, as such, variations will result from mining operations moving in and out of the areas where coal and mineral rights are located.

### **Potash**

The potash royalties comprise royalty interests in respect of potash produced from the Rocanville Mine, Cory Mine, Allan Mine, Patience Lake Mine, Vanscoy Mine and Esterhazy Mine, each of which is located in Saskatchewan, Canada.

### ***Potash Royalty Agreements***

The potash royalty agreements under which the potash royalties are payable are generally structured as a lease of subsurface mineral rights owned by a party to a potash mining company in return for a royalty payment based on a percentage of the net selling price of potash. The specific royalty percentages are generally determined in accordance with Saskatchewan's Subsurface Mineral Regulations, which provide for a variable rate depending on the average grade of potash ore mined. The net selling price is typically determined with reference to the mining company's list price for standard grade potash.

Subsurface minerals are leased to PotashCorp, Mosaic and Agrium, which are mining companies that have the exclusive right to mine the leased subsurface minerals under various unitized and non-unitized leases. Under the unitized leases, as with the coal royalties, Altius will earn royalties based on its proportionate share of all potash mined within the larger area. Altius will earn royalty payments for each tonne of potash produced based on the market price of potash, the quality of the potash that is produced during a given period, and the tonnage produced from within the lands or the unitized area. Actual royalties earned each year may vary depending on total potash production at each of the mines underlying the potash royalties. At mines where the leases of mineral rights are not unitized or where there are multiple unitized areas, variations will also result from mining operations moving in and out of the areas where the potash rights are located.

Below is a summary of the Corporation's producing royalties and fiscal 2017 revenues.

**Summary of Producing Royalties and Streaming Interests**

<b>Mine</b>	<b>Operator</b>	<b>Royalty</b>	<b>2017 Revenue <sup>(1)</sup> (millions \$ )</b>	<b>Commodity</b>
<b>Chapada</b>	Yamana Gold	3.7% of payable copper	10.6	Copper
<b>777</b>	Hudbay Minerals	Net smelter	10.6	Zinc, Copper, Gold & Silver
<b>Genesee</b>	Westmoreland/Capital Power Corporation	Tonnes x indexed multiplier	6.0	Coal/Electricity
<b>Sheerness</b>	Westmoreland/ATCO/TransAlta	Tonnes x indexed multiplier	5.6	Coal/Electricity
<b>Paintearth</b>	Westmoreland/ATCO	Tonnes x indexed multiplier	0.8	Coal/Electricity
<b>Highvale</b>	TransAlta	Tonnes x indexed multiplier	0.9	Coal/Electricity
<b>Cheviot</b>	Teck	2.5% effective net revenue	3.5	Metallurgical Coal
<b>Rocanville</b>	Potash Corp	Revenue	2.5	Potash
<b>Cory</b>	Potash Corp	Revenue	0.5	Potash
<b>Allan</b>	Potash Corp	Revenue	0.3	Potash
<b>Patience Lake</b>	Potash Corp	Revenue	0.2	Potash
<b>Esterhazy</b>	Mosaic	Revenue	0.9	Potash
<b>Vanscoy</b>	Agrium	Revenue	0.1	Potash
<b>Voisey's Bay</b>	Vale	0.3% NSR	nil	Nickel-Copper-Cobalt
<b>CDP</b>	Various	Revenue	1.9	Potash /other
<b>IOC <sup>(2)</sup></b>	Iron Ore Company of Canada	7% gross overriding royalty	1.7	Iron

(1) Attributable revenue based on annual Management Discussion and Analysis, April 30, 2017

(2) Held indirectly through common shares of Labrador Iron Ore Royalty Corporation

## **Founding Equity Stakes**

### ***Adventus***

The Corporation, together with select strategic investors co-founded a new company, Adventus Zinc Corporation (“Adventus Zinc”), by contributing a portfolio of zinc exploration projects from its Newfoundland and Irish properties and cash in exchange for shares in the company. Adventus Zinc via an Initial Public Offering began trading as a public company on the TSXV on February 9, 2017. The Corporation currently holds 12,114,012 shares (approximately 26.6%) and two seats on Adventus Zinc’s board of directors. Adventus Zinc is focused on pursuing the acquisition of one or more advanced-stage zinc projects while advancing its portfolio of prospective zinc exploration projects located in both Ireland and Eastern Canada.

### ***Mining Equity***

The Corporation entered into an agreement with Zeus Capital Inc. (“Zeus”) of Santiago, Chile, to establish a mineral exploration prospect generation business in Chile. Altius, Zeus and its investors agreed to contribute a total of \$7.1 million into the new business entity at various milestones over a four-year period. Altius acquired a 49% equity stake and a retained royalty interest in all projects generated by this entity. In addition to its portion of equity financing, Zeus arranged up to \$14 million in financing in the form of a non-recourse loan from the Chilean government's Fenix program that is designed to promote the development of a domestic junior exploration sector in Chile. Exploration work commenced in Chile through Fondo de Inversion Privado Mining Equity (“Mining Equity”), the entity created to conduct exploration work under the alliance. Early stage work included mapping/sampling and prospecting in various regions throughout Chile as well as the evaluation of several mineral properties held by cash constrained junior exploration companies and individuals. No mineral rights acquisitions were completed during the year and technical evaluation continued. A Chile-dedicated technical team was established to operate the business.

### ***Alderon***

The Corporation currently holds a 24.6% interest in Alderon Iron Ore Corporation, a corporation conducting further exploration and evaluation work on the Kamistaitusset iron ore property located in western Labrador. The Corporation received its equity stake in exchange for transfer of the Kami iron ore properties during the year ended April 30, 2011.

## **6.2 Risk Factors**

The following is a summary of significant business risks as they pertain to the outlook and conditions currently known to management which could have a material impact on the financial condition and results of the operations of the Corporation and its investments and royalty interests. The risks described are not the only ones faced by the Corporation and any risks in combination or individually could have a material adverse effect on the Corporation’s financial condition and results of operations.

### ***Operational and Development Risk***

The Corporation operates in the mineral exploration sector, which implicitly involves a high degree of risk caused by limited chances of discovery of an economic deposit and eventual mine development. The Corporation mitigates this risk by cost-sharing with exploration partners and by continuously evaluating the economic potential of each mineral property at every stage of its life cycle.

#### *Development Stage Projects*

Profits from commercial operations will depend on a significant number of factors, including economic feasibility, changing market conditions, aboriginal involvement, environmental and governmental regulations, labour availability, the cost of and the ability to attract external financial capital, and the ability to attract partners with sufficient technical expertise and relevant industry experience to further develop the various projects. Any failure to meet one or a combination of these factors may result in project delays or potential cancellation and the Corporation's future operating results may be adversely affected. The Corporation mitigates this risk by evaluating the economic potential of each property at each stage of its life cycle and through diversification of projects.

#### *Dependence on Third Party Property Owners and Operators*

The revenue derived from the Corporation's royalty portfolio is based on production by third party property owners and operators. These owners and operators are responsible for determining the manner in which the properties underlying the royalties are exploited, including decisions to expand, continue or reduce production from a property, and decisions to advance exploration efforts and conduct development of non-producing properties. The Corporation will have little or no input on such matters. The interests of third party owners and operators and those of the Corporation on the relevant properties may not always be aligned. As an example, it will, in almost all cases, be in the interest of the Corporation to advance development and production on properties as rapidly as possible in order to maximize near term cash flow to mitigate the risk, while third party owners and operators may, in many cases, take a more cautious approach to development as they are at risk on the cost of development and operations. The inability of the Corporation to control the operations for the properties in which it has a royalty interest may result in a material and adverse effect on the Corporation's profitability, results of operation and financial condition.

#### *Exposure to Mineral Price Fluctuations*

The revenue derived by the Corporation from its royalty portfolio and investments could be affected by changes in the market price of the commodities that underlie those royalties and other investments, which can affect production levels to which its royalty portfolio is tied. The Corporation's revenue will be particularly sensitive to changes in the price of copper, metallurgical coal and potash, as the revenue from these commodities represents the majority of the cash flow expected to be derived in the near future. Commodity prices, including those to which the Corporation is exposed, fluctuate on a daily basis and are affected by numerous factors beyond the control of the Corporation, including levels of supply and demand, industrial development levels, inflation and the level of interest rates. Such external economic factors are in turn influenced by changes in international investment patterns, monetary systems and political developments.

All commodities, by their nature, are subject to wide price fluctuations and future material price declines will result in a decrease in revenue or, in the case of severe declines that cause a suspension or termination of production by relevant operators, a complete cessation of revenue from royalties or working interests applicable to one or more relevant commodities. Moreover, the broader commodity market tends to be cyclical, and a general downturn in overall commodity prices could result in a significant decrease in overall revenue. Any such price decline may result in a material and adverse effect on the Corporation's profitability, results of operation, financial condition and dividend policy. The Corporation mitigates this risk through monitoring of prices as well as ensuring asset and commodity diversification.

#### *Limited Access to Data and Disclosure for Royalty / Stream Portfolio*

The Corporation neither serves as the mine property owner or operator for the properties underlying its royalty portfolio, and in almost all cases the Corporation has no input into how the operations are conducted. Consequently, the Corporation has varying access to data on the operations or to the actual properties themselves. This could affect its ability to assess the value of the royalty interest or enhance the royalty's

performance. This could also result in delays in cash flow from that anticipated by the Corporation based on the stage of development of the applicable properties underlying its royalty portfolio. The Corporation's royalty payments may be calculated by the royalty payors in a manner different from the Corporation's projections and the Corporation may or may not have rights of audit with respect to such royalty interests. In addition, some royalties may be subject to confidentiality arrangements that govern the disclosure of information with regard to royalties and as a result the Corporation may not be in a position to publicly disclose non-public information with respect to certain royalties. The limited access to data and disclosure regarding the operations of the properties in which the Corporation has an interest may restrict the Corporation's ability to assess the value or enhance its performance, which may result in a material and adverse effect on the Corporation's profitability, results of operation and financial condition. The Corporation mitigates this risk by building relationships with various operators and counterparties to encourage information sharing.

#### *Dependence on Payment from Operators*

The Corporation will be dependent to a large extent upon the financial viability and operational effectiveness of owners and operators of the properties underlying its royalty and streaming portfolio. Payments from production generally flow through the operator and there is a risk of delay and additional expense in receiving such revenues. Payments may be delayed by restrictions imposed by lenders, delays in the sale or delivery of products, recovery by the operators of expenses, the establishment by the operators of mineral reserves for such expenses or the bankruptcy, insolvency or other adverse financial condition of the operator. The Corporation's rights to payment under the royalties must, in most cases, be enforced by contract without the protection of a security interest over property that the Corporation could readily liquidate. This inhibits the Corporation's ability to collect outstanding royalties upon a default. In the event of a bankruptcy, insolvency or other arrangement of an operator or owner, the Corporation will be treated like any other unsecured creditor, and therefore have a limited prospect for full recovery of royalty revenue. The Corporation mitigates this risk by having formal legal agreements with royalty payors which would allow the Corporation to exert legal rights and enforce royalty contracts, if required.

#### *Unknown Defects and Impairments*

A defect in a streaming transaction under a copper purchase agreement may arise to defeat or impair the claim of the Corporation to such streaming transaction, which may have a material adverse effect on the Corporation. It is possible that material changes could occur that may adversely affect management's estimate of the recoverable amount. Any impairment estimates, which are based on applicable key assumptions and sensitivity analysis, are based on management's best knowledge of the amounts, events or actions at such time, and the actual future outcomes may differ from any estimates that are provided by the Corporation. Any impairment charges on the Corporation's carrying value could have a material adverse effect on the Corporation.

#### *Security over Underlying Assets*

There is no guarantee that the Corporation will be able to effectively enforce any guarantees, indemnities or other security interests it may have. Should a bankruptcy or other similar event related to a mining operator occur that precludes a party from performing its obligations under the copper purchase agreement, the Corporation would have to enforce its security interest. In the event that the mining operator has insufficient assets to pay its liabilities, it is possible that other liabilities will be satisfied prior to the liabilities owed to the Corporation. In addition, bankruptcy or other similar proceedings are often a complex and lengthy process, the outcome of which may be uncertain and could result in a material adverse effect on the Corporation.

The Corporation's security interests may be subject to enforcement and insolvency laws of foreign jurisdictions that differ significantly from those in North America, and the Corporation's security interests may not be enforceable as anticipated. Further, there can be no assurance that any judgments obtained in

Canadian courts will be enforceable in any of those jurisdictions. If the Corporation is unable to enforce its security interests, there may be a material adverse effect on the Corporation.

#### *The Ability to Attract Partners for Exploration*

The probability of successfully progressing early stage projects is dependent on an ability to attract exploration partners to share project expenditures and to provide additional technical expertise required to develop projects. If the Corporation is unable to attract partners to cost-share project expenditures and to provide additional technical expertise, the level of exploration the Corporation could perform with limited personnel may be adversely impacted. This could affect the likelihood of discovering future commercially feasible projects. To mitigate this risk, the Corporation monitors the market cycles and adjusts our business development approach for the changes. Marketing and business development are ongoing throughout all stages.

#### *Credit Facility*

The Credit Facility is subject to certain restrictive conditions that limit the discretion of management with respect to certain business matters, including financial covenants that require the Corporation to meet certain financial ratios, financial condition tests and other restrictive covenants. A failure to comply with the obligations in the Credit Facility could result in a default which, if not cured or waived, could result in a termination of the Credit Facility. The Corporation monitors this risk by analysis of financial results and covenant calculations as well as ongoing communications with creditors.

#### *Leverage Risk*

The Corporation's degree of leverage, could have adverse consequences for the Corporation, including: limiting the Corporation's ability to obtain additional financing for working capital, debt service requirements, acquisitions and general corporate or other purposes; restricting the Corporation's flexibility and discretion to operate its business; having to dedicate a portion of the Corporation's cash flows from operations to the payment of interest on its existing indebtedness and not having such cash flows available for other purposes including expenditures that are important to its growth and strategies; exposing the Corporation to increased interest expense on borrowings at variable rates; limiting the Corporation's ability to adjust to changing market conditions; and placing the Corporation at a competitive disadvantage compared to its competitors that have less debt. The Corporation mitigates this risk through awareness and recognition that reducing the debt balance is a priority and ensuring that the Corporation meet debt obligations and working capital requirements by budgeting and monitoring cash flow.

#### *Dividends*

The ability to pay dividends will be dependent on the financial condition of the Corporation. Payment of dividends on the Corporation's common shares is within the discretion of the Board and will depend upon the Company's future earnings, cash flows, acquisition capital requirements and financial condition, and other relevant factors. Although the Corporation currently pays a regular dividend, there can be no assurance that it will be in a position to declare dividends due to the occurrence of one or more of the risks described herein.

#### *Debt and Equity Financing*

Because of their size and scale, the success of some resource-based projects depends on the ability of the Corporation, its partners or its investments to raise the financial capital required to successfully construct and operate a project. This ability may be affected by general economic and market conditions, including the perceived threat or actual occurrence of an economic recession or liquidity issues. If market conditions are not favorable, major resource based projects could be cancelled or delayed, or the expected rate of return to the Corporation may be significantly diminished. The Corporation mitigates this risk by asset and commodity diversification to protect and cover if one market is unfavorable.

### *Government Regulations*

The Corporation's operations are subject to extensive governmental regulations with respect to such matters as environmental protection, health, safety and labour; mining law reform; restrictions on production or export, price controls and tax increases; aboriginal land claims; and expropriation of property in the jurisdictions in which it operates. Compliance with these and other laws and regulations may require the Corporation to make significant capital outlays which may slow its growth by diverting its financial resources. The enactment of new adverse regulations or regulatory requirements, such as the announcement by the Government of Alberta regarding the phase out of its coal fueled electrical generation capacity by 2030 or more stringent enforcement of current regulations or regulatory requirements may increase costs, which could have an adverse effect on the Corporation. The Corporation cannot give assurances that it will be able to adapt to these regulatory developments on a timely or cost effective basis. Violations of these regulations and regulatory requirements could lead to substantial fines, penalties or other sanctions. The Corporation mitigates this risk through not doing business in unstable countries and within stable countries, the Corporation follows all laws and regulations and engages legal counsel to ensure compliance, if necessary.

### *Key Employee Attraction and Retention*

The Corporation's continued success is highly dependent on the retention of key personnel who possess business and technical expertise and are well versed in the various projects underway and under consideration. The number of persons skilled in the acquisition, exploration and development of natural resource and mining projects is limited and competition for such persons is intense. As the Corporation's business activity grows, additional key financial, administrative and operations personnel as well as additional staff may be required. Although the Corporation believes it will be successful in attracting, training and retaining qualified personnel, there can be no assurance of such success. If the Corporation is not successful in attracting, training and retaining qualified personnel, the efficiency of operations may be affected. Additionally, should any key person decide to leave, then the success of one or more of the projects underway or under consideration could be at risk.

Although safety and health factors are considered integral to all aspects of the Corporation, mineral exploration is an inherently risky business. In the event of an accident or an unforeseen circumstance, the Corporation has emergency succession plans in place for both the Executive Chairman and the CEO of the Corporation as well as for other members of senior management.

### *Exploration Alliances*

The Corporation's objective is to create joint ventures or corporate structures related to the opportunities it generates, which results in the Corporation carrying minority and non-operating project or equity interests and/or royalty interests. In certain circumstances the Corporation must rely on the decisions and expertise regarding operational matters for properties, equity interests and other assets including: whether, when and how to commence permitting; feasibility analysis; facility design and operation, processing, plant and equipment matters; and the temporary or permanent suspension of operations. In some of these instances, it may be difficult or impossible for the Corporation to ensure that the properties and assets are operated in its best interest. To mitigate this risk, the Corporation participates in cost-sharing with exploration partners. As well, there is continuous evaluation of economic potential of each property at every stage of its life cycle. The Corporation will undertake ongoing monitoring and relationship building with appropriate government officials in order to have input into possible regulatory changes and to better plan for what these changes might mean financially and operationally to the Corporation.

### *Legal Claims*

Altius may become party to legal claims arising in the ordinary course of business, including as a result of activities of joint ventures in which it has an interest. There can be no assurance that any such legal claims will not result in significant costs to Altius. To mitigate this risk, there are ongoing communications with the

parties to whom it does business and are aware of any legal issues and potential operational and financial impacts. The Corporation works diligently with counterparties to limit legal issues.

#### *Title to Mineral Properties Cannot Be Assured*

The acquisition of title to mineral properties is a very detailed and time consuming process. Title to, and the area of, mineral rights may be disputed and additional amounts may have to be paid to surface rights owners in connection with any development of mining activity. The properties may also be subject to prior unregistered agreements of transfer or aboriginal land claims, and title may be affected by undetected defects. Although Altius believes it has taken reasonable measures to ensure that title to its properties are in good standing, there is no guarantee that title to its properties will not be challenged or impaired by third parties, or that such rights and title interests will not be revoked or significantly altered to the detriment of the Corporation.

#### **Financial Instrument Risk**

The Corporation's financial assets and financial liabilities are exposed to various risk factors that may affect the fair value presentation or the amount ultimately received or paid on settlement of its assets and liabilities. The Corporation manages these risks through prudent investment and business decisions, and, where the exposure is deemed too high, the Corporation may enter into derivative contracts to reduce this exposure. The Corporation does not utilize derivative financial instruments for trading or speculative purposes. Hedge accounting is applied only when appropriate documentation and effectiveness criteria are met. The Corporation does not currently use any hedges.

A summary of the major financial instrument risks and the Corporation's approach to the management of these risks are highlighted below.

#### *Credit risk*

Credit risk is the risk that a third party might fail to fulfill its performance obligations under the terms of a financial instrument. Credit risk arises from cash and cash equivalents and receivables. The Corporation closely monitors its financial assets, including the receivables from royalty operators who are responsible for remitting royalty revenues. The operators are established and reputable companies in the mining and mineral sector and as such management does not believe we have a significant concentration of credit risk.

#### *Foreign currency risk*

Certain royalty and streaming interests are denominated and paid in US dollars and therefore expose the Corporation to foreign currency fluctuations. The Corporation does not enter into any derivative contracts to reduce this exposure. However, a portion of the Corporation's new credit facility is denominated in US dollars and acts to partially offset the near-term variability in the US dollar exchange rate.

#### *Liquidity risk*

The Corporation believes that on a long-term basis its revenue generating assets, ability to increase its Credit Facility and net working capital position will enable it to meet current and future obligations at the current level of activity. This conclusion could change with a significant change in the operations of the Corporation or from other developments.

#### *Other price risk*

The value of the Corporation's mining and mineral related investments is exposed to fluctuations in the quoted market price depending on a number of factors, including general market conditions, company-specific

operating performance and the market value of the commodities that the companies may focus on. The Corporation does not utilize any derivative contracts to reduce this exposure.

The Corporation may be unable to sell its entire interest in an investment without having an adverse effect on the fair value of the security due to low trading volumes on some investments. The Corporation does not enter into any derivative contracts to reduce this exposure.

#### *Interest rate risk*

The Corporation has debt and is therefore exposed to interest rate risk on liabilities. The Corporation has variable interest rates on its New Credit Facilities and manages this through the ability to lock in rates for specified time periods. The Corporation's cash and cash equivalents may fluctuate in value depending on the market interest rates and the time to maturity of the instruments. The Corporation manages this risk by limiting the maximum term to maturity on invested funds or holding the investments to maturity.

## **ITEM 7: ROYALTY PORTFOLIO**

### **7.1 Genesee Royalty**

The Corporation holds a royalty on the Genesee coal mine (the "Genesee Mine"), which is located approximately 70 km southwest of Edmonton, Alberta (the "Genesee Royalty"). The Genesee Mine, which is an open pit mine, has been in operation since 1989 and has an annual production capacity of 5.1 Mt. Its coal is delivered to the Genesee power station which is approximately 25 km southwest of the mine. The power station is operated by Capital Power Corporation.

The coal rights underlying the Genesee Royalty have been unitized with the coal rights of other owners within a larger geographic area and are subject to a unitization agreement. The Genesee Royalty is comprised of (i) a crown equivalent royalty, calculated as the greater of a royalty calculated in accordance with the Alberta Coal Royalty Regulations as they stood at April 1981, or the per tonne provincial royalty payable for coal produced from Crown leases and (ii) an overriding royalty, which is an agreed upon base rate that is escalated by the GDP implicit price index published by Statistics Canada.

Management considers the Genesee Royalty to be material to the Corporation for purposes of National Instrument 43-101 – *Standards for Disclosure for Mineral Projects* ("NI 43-101"). Additional information on the Genesee Royalty can be found in Schedule "A" to this AIF.

### **7.2 Sheerness Royalty**

The Corporation holds a royalty on the Sheerness coal mine (the "Sheerness Royalty"). The Sheerness Mine is located approximately 160 km northeast of Calgary, Alberta. Operations commenced in 1986 and currently have an annual production capacity of 3.1 Mt. Coal is delivered by road from the open pit mine to the Sheerness power station, which is adjacent to the mine. Sheerness power station is owned by ATCO Power Ltd. (50%) and TransAlta Corporation (50%).

The Sheerness Royalty is payable under four leases/agreements. The Sheerness Royalty is non-unitized and the royalty rate is based on an agreed base rate escalated by the GDP implicit price index published by Statistics Canada. Sandstorm Gold ("Sandstorm") retains the right to receive a royalty on revenue earned from the mining of certain of the lands underlying the Sheerness Royalty. This royalty is non-unitized and the royalty rate is set at per tonne amount for coal deliveries made from the leased area.

Management considers the Sheerness Royalty to be material to the Corporation for purposes of NI 43-101. Additional information on the Sheerness Royalty can be found in Schedule “B” to this AIF.

### **7.3 777 Mine Royalty**

Altius, owns a 4% net smelter royalty, in addition to a tonnage royalty, covering the 777 Mine and the 777 North expansion, which are located in the Flin Flon mining district, Manitoba, Canada and are operated by Hudbay. The 777 Mine is an underground mining operation that commenced commercial production in 2004 and that has an expected mine life of 2020 based on current reserves. The mine is a low-cost producer of copper, zinc, gold and silver and it has an expected production rate of approximately 1,200,000 tonnes of ore for 2017.

Management considers the 777 mine royalty to be material to the Corporation for purposes of NI 43-101. Additional information on the 777 mine royalty can be found in Schedule “C” to this AIF.

### **7.4 Chapada Copper Stream**

Under the terms of the Chapada Copper Streaming Agreement, the Corporation is entitled to purchase 3.7% of the payable copper produced from the Chapada mine at 30% of the market price. The rate of payable copper is subject to reduction in the event of a threshold production increase at Chapada or upon delivery of 75 million pounds of copper.

The Chapada mine is located in Goias state, Brazil, and is a 21-million- to 22-million-tonne-per-year copper-gold mine that began production in 2007. It is projected to produce 120 million pounds of copper in 2017. Chapada's assumed mine life is approximately 17 years. Significant mine life upside potential exists if mineral resources are converted to mineral reserves (source: Yamana's website), and the copper interest is referenced to a 700-square-kilometre land package that has delivered several recent discoveries and remains significantly underexplored. Further details on Chapada can be found on Yamana's website.

Management considers the Chapada copper streaming interest to be material to the Corporation for purposes of NI 43-101. Additional information on the Chapada streaming interest can be found in Schedule “D” to this AIF.

## **ITEM 8: DIVIDENDS AND DISTRIBUTIONS**

Altius paid aggregate dividends of \$5,204,000 (2016 - \$4,789,000) on its common shares during the year ended April 30, 2017. The future payment of dividends or distributions will remain dependent upon the financial requirements to fund future growth, the financial condition of the Corporation and other factors the Corporation's board of directors (the “Board”) may consider appropriate in the circumstances. The Corporation is not aware of any restrictions that could prevent the paying of dividends or distributions.

## **ITEM 9: DESCRIPTION OF CAPITAL STRUCTURE**

### *Authorized and Issued Capital*

The Corporation is authorized to issue an unlimited number of common shares and an unlimited number of preferred shares. As at April 30, 2017, there were 43,335,654 common shares and no preferred shares issued and outstanding. The Corporation has issued 2,500,000 preferred securities.

On May 3, 2016 the Corporation closed an equity financing under a short-form prospectus. The equity offering consisted of 3,578,800 common shares of the Corporation at a price of \$11.25 per Common Share, for aggregate gross proceeds of \$40,261,500. In addition, there are 400,000 warrants issued and outstanding to Yamana and 6,670,000 warrants issued to Fairfax that will vest in tandem and in proportion with the amount of the drawdown under the preferred securities agreement.

### *Preferred Securities*

During the year ended April 30, 2017, Fairfax agreed to purchase, on a private placement basis, a \$10, 5% preferred security, in an aggregate amount of up to \$100,000,000, issuable in tranches of not less than \$25,000,000. On April 26, 2017, the Corporation closed an initial issuance of preferred securities for \$25,000,000, and has sole discretion until December 31, 2017 to require additional purchases by Fairfax for the remaining \$75,000,000. The preferred securities are subordinate secured securities that may be repaid by the Corporation at any time after April 26, 2022 and at any time after April 26, 2020 if the volume-weighted average trading price of its common shares for any 10 day period after April 26, 2020 is at least \$24 per share. The preferred securities have a term of 85 years.

### *Common Shares*

The holders of common shares are entitled to dividends if, as and when declared by the Board, to one vote per share at meetings of common shareholders of the Corporation and, upon liquidation, dissolution, or winding up to receive on a pro rata basis the net assets of the Corporation after payment of debts and other liabilities, in each case subject to the rights, privileges, restrictions and conditions attaching to any other series or class of shares ranking senior in priority or on a pro rata basis with the common shares. The common shares do not carry any pre-emptive subscription, redemption or conversion rights, nor do they contain any sinking or purchase fund provisions.

### *Preferred Shares*

The preferred shares may be issued in one or more series, each consisting of a number of preferred shares as determined by the Board who also may fix the designations, rights, privileges, restrictions and conditions attaching to the shares of each series of preferred shares. The preferred shares, with respect to payment of dividends and distribution of assets in the event of voluntary or involuntary liquidation, dissolution or winding-up or any other distribution of the assets, rank on a parity with the preferred shares of every other series and shall be entitled to preference over the common shares and the shares of any other class ranking junior to the preferred shares.

## **ITEM 10: MARKET FOR SECURITIES**

The Corporation's common shares trade on the Toronto Stock Exchange under the trading symbol "ALS". The common shares were listed for trading on the Toronto Stock Exchange on January 15, 2007, prior to which they were listed for trading on the TSX Venture Exchange.

### **10.1 Price Range and Trading Volume**

The following table sets forth the reported high and low sale prices and the trading volumes of the Corporation's common shares for each month in the fiscal year ending April 30, 2017.

Month	Price Range		Trading Volume
	High \$	Low \$	
May 2016	11.24	9.95	909,265
June 2016	10.84	9.77	810,807
July 2016	11.11	9.94	945,218
August 2016	10.68	9.01	1,247,740
September 2016	11.17	9.33	1,040,354
October 2016	11.25	9.90	558,370
November 2016	12.79	10.41	1,353,839
December 2016	14.06	11.60	1,368,403
January 2017	12.78	11.11	802,030
February 2017	13.11	10.95	1,341,198
March 2017	13.30	12.98	1,385,865
April 2017	12.75	11.41	783,069

## ITEM 11: DIRECTORS AND OFFICERS

### 11.1 Name, Address, Occupation and Security Holding

The following table sets forth the names, the provinces/countries of residence, the positions held with the Corporation and the principal occupations of each of the directors and executive officers:

Name and Province and Country of Residence Position and Date of Appointment	Principal occupation
John Baker Newfoundland and Labrador, Canada Director since June 1997, Executive Chairman since November 2006	Executive Chairman of the Corporation
Brian Dalton Newfoundland and Labrador, Canada President and CEO, Director since June 1997	President and CEO of the Corporation
Frederick Mifflin <sup>1,2,3</sup> Ontario, Canada Director since November 2006	Vice Chairman, Blair Franklin Capital Partners Inc., an independent financial advisory firm
Susan Sherk <sup>2,3</sup> Newfoundland and Labrador, Canada Director since November 2006	Socio-Economic Consultant and a former Senior Human Environment Associate with AMEC Environment and Infrastructure, a division of AMEC Americas Limited, an international project management and services company
Jamie Strauss <sup>2,3</sup> London, United Kingdom Director since October 2010	Director, Strauss Partners, a mining finance boutique firm
Anna Stylianides <sup>1,3</sup> British Columbia, Canada Director since May 2015	Executive Chair of Eco-Oro Minerals Corp, Former director of Callinan Royalties Corporation

<b>Name and Province and Country of Residence Position and Date of Appointment</b>	<b>Principal occupation</b>
Donald Warr <sup>1</sup> Newfoundland and Labrador, Canada Director since November 2006	Partner, Blackwood & Warr Chartered Professional Accountants
Guy Bentinck Ontario, Canada Director since May 2017	Chief Financial Officer, Fairfax Africa Holdings Limited
Ben Lewis Newfoundland and Labrador, Canada Chief Financial Officer since October 2006	Chief Financial Officer of the Corporation
Chad Wells Newfoundland and Labrador, Canada Vice President, Corporate Development/Corporate Secretary since February 2003	Corporate Secretary and Vice President, Corporate Development of the Corporation
Lawrence Winter Newfoundland and Labrador, Canada Vice-President, Exploration since October 2006	Vice-President, Exploration of the Corporation

**Notes:**

- (1) Member of the Audit Committee.
- (2) Member of the Compensation Committee.
- (3) Member of the Governance Committee.

Except as otherwise noted in the footnote below<sup>1</sup>, each of the directors and the officers of the Corporation has held the principal occupation set forth opposite his or her name in the table above for the past five years.

As at the date of this AIF, the directors and executive officers of the Corporation, as a group, own beneficially, directly or indirectly, or exercise control or direction over 2,362,783 common shares or 5.29% of the issued and outstanding common shares. Each director holds office until the next annual general meeting of shareholders or until his or her successor is elected or appointed.

## **11.2 Corporate Cease Trade Orders or Bankruptcies**

During the past ten years, except as noted below, none of the directors, executive officers or shareholders holding a sufficient number of securities to affect materially the control of the Corporation is or has been a director or executive officer of any other company that while such person was acting in that capacity: (a) was the subject of a cease trade order or similar order or an order that denied such company access to any exemption under securities legislation for a period of more than 30 consecutive days, (b) was subject to an event that resulted, after the director or executive officer ceased to be a director or executive officer, in such company being the subject of a cease trade or similar order or an order that denied such company access to any exemption under securities legislation, for a period of more than 30 consecutive days, or (c) within a year of that person ceasing to act in that capacity, such company became bankrupt, made a proposal under any

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<sup>1</sup> Mr. Strauss has held various financial brokerage positions in London for the past five years. Prior to June 30, 2014, Mr. Baker was a partner with the law firm McInnes Cooper.

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.

John Baker, Executive Chairman, and Brian Dalton, CEO, also serve as directors of Newfoundland and Labrador Refining Corporation (“NLRC”), a 39.6% owned equity investment of the Corporation. In response to a bankruptcy petition initiated by a contractor, NLRC sought and was granted creditor protection under the BIA on June 24, 2008. This protection enabled NLRC, under the supervision of a trustee, to formulate a proposal for restructuring and to continue its efforts to attract financing and/or partners for the refinery project. The initial period of creditor protection granted was 30 days, and was later extended until October 17, 2008. NLRC filed a proposal with the Trustee and Official Receiver on October 17, 2008 and an amended Proposal on or about November 6, 2008 (the “Proposal”). The Proposal was approved by Order of the Supreme Court of Newfoundland and Labrador (the “Court”) on November 20, 2009. Altius Resources Inc. filed a Proof of Claim in the amount of \$30,099,254 - \$30,092,865 of which is a secured claim as a result of a debenture dated December 20, 2007 and registered under the Personal Property Security Act (Newfoundland and Labrador) on February 19, 2008. Under the Proposal, NLRC was given a continued period of time, up to 3 years, to search for an equity partner, buyer or funding (the “Standstill Period”). During the Standstill Period, funds which would otherwise be allocated to Altius, as secured creditor, were utilized to maintain the existence of regulatory approvals and to fund the cost of a continuing equity solicitation process. The Proposal further stated that, upon Project commencement, creditors would receive 100% of the amount owing to them plus interest within 30 days of the date of restructuring, defined as the earlier of the following: (i) the date at which all or substantially all of the shares or all or substantially all of the non-tangible assets of NLRC are sold, (ii) the date at which financing of the NLRC Project is achieved, and (iii) the date at which construction of the NLRC Project commences. On June 12, 2014 the Trustee under the Proposal delivered a Notice of Default in the Performance of the Proposal indicating that there had been a default in the performance of a provision of the Proposal which was not cured or waived, that the Trustee intended to apply for its discharge as Trustee, and that creditors were free to take proceedings to annul the Proposal and place NLRC in bankruptcy. No further proceedings were taken by creditors and accordingly on July 30, 2014 the Trustee was granted an Order by the Court discharging the Trustee under the Proposal without annulment of the Proposal.

### **11.3 Penalties or Sanctions**

None of the directors, executive officers or shareholders holding a sufficient number of securities to affect materially the control of the Corporation has been subject to (a) any penalties or sanctions 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 (b) 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.

### **11.4 Personal Bankruptcies**

During the past ten years, none of the directors, executive officers or shareholders holding a sufficient number of securities to affect materially the control of the Corporation has become bankrupt, made a proposal under any legislation relating to bankruptcy or insolvency, or become subject to or instituted any proceedings, arrangement or compromise with creditors, or had a receiver, receiver manager or trustee appointed to hold the assets of such director, executive officer or shareholder.

### **11.5 Conflicts of Interest**

Some of the directors and officers are or may be engaged in business activities on their own behalf and on behalf of other corporations and situations may arise where some of the directors and officers may be in a

potential conflict of interest with the Corporation. Conflicts, if any, will be subject to the procedures and remedies under the *Business Corporations Act* (Alberta).

## **ITEM 12: LEGAL PROCEEDINGS**

The Corporation and its subsidiaries are not a party to any material legal proceedings.

In 2014, CDP, Altius Prairie Royalties Corp. (“APRC”) and 1815953 Alberta Ltd, now Altius Royalty Corporation (“ARC”) were served with a Statement of Claim by Bow City Power Ltd. (“BCPL”) arising out of a 2007 purchase agreement, in which BCPL alleged that CDP breached the agreement by hindering it from obtaining certain consents in aid of its financing efforts, by granting certain coal bed methane rights to a third party and by failing to enter into a coal lease agreement with BCPL pursuant to a coal lease option agreement. BCPL claims damages in excess of \$1 billion. Altius believes that the BCPL claims are without merit, and has not recorded any provision for such claims in its accounts. However, as with any action, a successful outcome cannot be guaranteed.

Altius is a 10% unit holder in the Labrador Nickel Royalty Limited Partnership (“LNRLP”) while Royal Gold is the General Partner holding the remaining 90%. As a result of Vale deducting capital costs associated with construction of its Long Harbour processing facility against the net smelter return royalty calculation, the related royalty has been reduced to \$nil. Altius disagrees that the royalty agreement allows for the deduction of capital related costs against royalty payments and through LNRLP is pursuing a legal claim asserting its position and its royalty entitlements.

The LNRLP legal claim against Vale also includes assertions that all previous royalty payments made to it have been inadequate on the basis that the sales of material from the mine to other operating subsidiaries of Vale were completed at lower than fair market prices. The legal claim is currently in the document production stage.

## **ITEM 13: INTEREST OF MANAGEMENT AND OTHERS IN MATERIAL TRANSACTIONS**

There are no material interests, direct or indirect, of any director, executive officer, or any person or company who beneficially owns, directly or indirectly, more than 10% of the outstanding common shares or any known associate or affiliate of such persons, in any transaction during the three most recently completed financial years or during the current financial year which has materially affected or is reasonably expected to materially affect the Corporation or a subsidiary of the Corporation.

## **ITEM 14: TRANSFER AGENT AND REGISTRAR**

TSX Trust Company, through its office in Toronto, Ontario, is the transfer agent and registrar for the Corporation’s common shares.

## **ITEM 15: MATERIAL CONTRACTS**

The following are the material contracts entered into by Altius other than a contract entered into in the ordinary course of business during the financial year ended April 30, 2017 or since such time or before such time and that are still in effect:

- 1) Copper Purchase Agreement relating to the Chapada copper-gold mine between Altius and certain subsidiaries of Yamana Gold Inc.;

- 2) Credit Agreement and related amendments among Altius and certain subsidiaries dated May 3, 2016 and April 26, 2017 respectively relating to the credit facilities;
- 3) Underwriting agreement among Altius and TD Securities Inc., Scotia Capital Inc., Raymond James Ltd., BMO Nesbitt Burns Inc., Haywood Securities Inc. dated April 19th, 2016 relating to the offering of 3,578,800 common shares at a price of \$11.25 per share; and
- 4) Governance and indenture agreements providing for the issue of 5% subordinate preferred securities to Fairfax dated April 26, 2017.

A copy of each material contract is available on SEDAR under Altius' profile at [www.sedar.com](http://www.sedar.com).

In the normal course of business, the Corporation enters into and maintains several earn-in agreements or exploration alliances with other exploration companies to provide technical support and to cost – share in exploration expenditures. These agreements normally result in the Corporation holding a reduced ownership in the mineral property and holding a royalty interest in any future potential mining revenues. While these agreements are not individually material, any of them could become material pending a significant mineral discovery and eventual development.

The Corporation holds directly and indirectly royalty and streaming interests with third party mine operators that may be considered material. Because the Corporation enters into these contracts in normal course of its business, they are not listed in the summary above. However, the Corporation does file these contracts on SEDAR. See the Summary of Producing Royalty and Streaming Interests table above for a list of these royalties.

## **ITEM 16: INTERESTS OF EXPERTS**

Other than transactions carried out in the ordinary course of business of the Corporation or its subsidiaries, none of the directors or executive officers of the Corporation, any shareholder directly or indirectly beneficially owning, or exercising control or direction over, more than 10% of the outstanding Common Shares, or an associate or affiliate of any of the foregoing persons has had, during the three most recently completed financial years of the Corporation or during the current financial year, any material interest, direct or indirect, in any transactions that materially affected or would materially affect the Corporation or its subsidiaries.

Keith Wilson, P. Eng., of Norwest, a “qualified person” as such term is defined in NI 43-101 and who is independent of the Corporation, has reviewed and approved the scientific and technical information in this annual information form on the Genesee Mine and Sheerness Mine. Keith Wilson does not own any securities of the Corporation or of any associate or affiliate of the Corporation. Readers should consult the Westmoreland 10-K, to obtain further particulars regarding the Genesee Mine and Sheerness Mine. The Westmoreland 10-K is available for review under Westmoreland's profile on EDGAR at [www.sec.gov](http://www.sec.gov).

Lawrence Winter, P. Geo, Vice President of Exploration for Altius, a “qualified person” as such term is defined in NI 43-101 has reviewed and approved the scientific and technical information in this annual information form on the Chapada and 777 Mines. Readers should consult the Hudbay annual information form and the NI 43-101 technical report entitled “Technical Report, 777 Mine, Flin Flon, Manitoba, Canada”, prepared by Brett Pearson, P. Geo., Darren Lyhkun, P. Eng., Cassandra Spence, P. Eng., Stephen West, P. Eng. and Robert Carter, P. Eng. and dated effective October 15, 2012 (the “777 Technical Report”) to obtain further particulars regarding the 777 Mine. Readers should consult the Yamana annual information form for the year ended December 31, 2016 dated March 28, 2017 (the “Yamana AIF”) and the *Technical Report on*

*the Chapada Mine, Brazil* dated July 31, 2014 (“Chapada Technical Report”), prepared by Roscoe Postle Associates Inc. (“RPA”) for further particulars regarding the Chapada mine.

Deloitte LLP is the auditor of the Corporation and is independent of the Corporation within the meaning of the Rules of Professional Conduct of the Institute of Chartered Accountants of Newfoundland and Labrador.

## **ITEM 17: AUDIT COMMITTEE**

The purpose of the Corporation's audit committee is to provide assistance to the Board in fulfilling its legal and fiduciary obligations with respect to matters involving the accounting, auditing, financial reporting, internal control and legal compliance functions of the Corporation. It is the objective of the audit committee to maintain free and open communications among the Board, the independent auditors and the financial and senior management of the Corporation.

The full text of the audit committee’s charter is included as Schedule "E" to this AIF.

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

The audit committee is comprised of Fred Mifflin (Chair), Don Warr and Anna Stylianides. All members are financially literate and are independent, as defined under Section 1.4 and 1.5 of National Instrument 52-110 *Audit Committees* (“NI 52-110”).

### **17.2 Relevant Education and Experience**

#### **Frederick Mifflin**

Mr. Mifflin is Vice Chairman of Blair Franklin Capital Partners Inc., an independent financial advisory firm. From 1989 to 2006, Mr. Mifflin was employed by BMO Capital Markets Inc. in various executive positions. Mr. Mifflin holds a B. Comm. (Honours) degree from Queen’s University, an M.B.A. from The University of Chicago and is a graduate of the Advanced Management Program of the Harvard Business School. Mr. Mifflin is also a director accredited by the Institute of Corporate Directors.

#### **Donald Warr**

Mr. Warr is a chartered accountant with over 45 years of experience in providing accounting and financial services. He has been a partner in the firm of Blackwood & Warr Chartered Accountants since 1992. Prior to 1992, Mr. Warr was a partner with a national public accounting firm. Mr. Warr was the Chief Financial Officer of the Corporation from February 2004 to October 2006.

#### **Anna Stylianides**

Ms. Stylianides has over 20 years of experience in the global capital markets having spent much of her career in investment banking, private equity, and corporate management and restructuring. She began her career in corporate law by joining the firm of Webber Wentzel Attorneys in 1990 after graduating from the University of the Witwatersrand in Johannesburg, South Africa. In 1992 she joined Investec Merchant Bank Limited where she specialized in risk management and gained extensive experience in the areas of corporate finance and structured finance, mergers and acquisitions, structuring, specialized finance and other banking and financial services transactions. She is currently Executive Chair of Eco Oro Minerals Corp. (formerly Greystar Resources) and a Director of Entrée Gold, Capfin Partners, Sabina Gold & Silver Corp. and the Fraser Institute.

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

Under its terms of reference, the audit committee is required to review and pre-approve the objectives and scope of the audit work to be performed by the Corporation's external auditors and their proposed fees. In addition, the audit committee is required to review and pre-approve all non-audit services which the Corporation's external auditors are to perform.

Pursuant to these procedures since their implementation, all of the services provided by the Corporation's external auditors relating to the fees reported as audit, audit-related, tax and all other services have been approved by the audit committee.

### **17.4 Audit Fees**

The aggregate fees billed by the external auditors in the years ending April 30, 2017 and April 30, 2016 for audit services were \$263,000 and \$394,000 respectively.

### **17.5 Tax Fees**

The aggregate fees billed by the external auditors in the years ending April 30, 2017 and April 30, 2016, for tax compliance, tax advice and tax planning services were \$176,000 and \$73,000, respectively. The Corporation internally restructured its companies during the 2017 fiscal year to streamline operations and to match its segment reporting.

### **17.6 Audit Related Fees**

The aggregate fees billed by the external auditors in the years ending April 30, 2017 and April 30, 2016, for all audit-related fees were \$nil and \$nil, respectively.

### **17.7 All Other Fees**

All other fees billed by the external auditors in the years ending April 30, 2017 and April 30, 2016 were \$nil and \$nil, respectively.

## **ITEM 18: ADDITIONAL INFORMATION**

Additional information relating to the Corporation may be found on the System for Electronic Document Analysis and Retrieval (SEDAR) at [www.sedar.com](http://www.sedar.com).

Additional information, including regarding directors' and officers' remuneration and indebtedness, principal holders of the Corporation's securities and securities authorized for issuance under equity compensation plans, is contained in the Corporation's management information circular for its most recent annual meeting of shareholders that involved the election of directors. Additional information is also provided in the Corporation's financial statements and Management's Discussion & Analysis for its most recently completed financial year.

**SCHEDULE “A”**  
**GENESEE ROYALTY**

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Certain of the information below has been excerpted or derived from the Westmoreland 2016 10-K for the Genesee Mine. Keith Wilson, P. Eng., of Norwest, has reviewed and approved the scientific and technical information in this section on the Genesee Mine. Readers should consult the Westmoreland 10-K to obtain further particulars regarding the Genesee Mine. The Westmoreland 10-K is available for review under Westmoreland’s profile on EDGAR at [www.sec.gov](http://www.sec.gov).

*Genesee Mine*

The Genesee Mine is a surface mine located in central Alberta, north of the Town of Warburg and approximately 70 km southwest of Edmonton. Coal rights within the permit area are controlled by Prairie Mines and Royalty ULC (PMRULC) a subsidiary of the Westmoreland Coal Company (Westmoreland), Capital Power Corporation and a joint venture between the two parties. By contract, PMRULC has exclusive right to mine the coal within the Genesee Mine permit area.

The mine supplies sub-bituminous coal to the three units at the Genesee Generating Station which is owned by Capital Power and TransAlta Corporation (TransAlta) and operated by Capital Power. Average annual production from the mine is approximately 5.1 million tonnes per year.

The Genesee Mine is operated under the Alberta Energy Regulator (AER) Mine permit No. C99-8C. Alberta Environmental Protection and Enhancement Act (“EPEA”) Approval No. 10404-03-00 regulates the development, operation and reclamation of the mine and any disturbances directly related to the Genesee Mine. The approval expires on July 02, 2025. All operating licenses and approvals are granted with the capability to renew every ten years upon reapplication.

The coal seams found in the mine are Sub-bituminous ‘B’ in rank and are contained in the uppermost Cretaceous Scollard Formation Ardley Coal Zone. The strata are relatively flat-lying and structurally undisturbed although some glacial faulting has been noted along the north-facing subcrop.

The mine operation includes East Pit, West Pit, North Pit East and North Pit West. Currently, mining is conducted in East Pit and West Pit. Coal is supplied to the three generating units at the Genesee Power Station (Units 1, 2, 3). Coal is uncovered using two large draglines with support from a truck and shovel prestripping fleet for supplementary overburden removal. Coal is transported to the generating station using end-dump type haul trucks.

The existing contract runs for the life of the mine. As part of the joint venture agreement all coal leases are dedicated to the mine for the coal supply to the Genesee Generating Station.

*Mineral Reserve Estimates*

The following table summarizes coal reserves in the Genesee Mine as of December 31, 2016, as reported in Westmoreland’s 10-K and converted to metric units

<b>Proven Reserves (Mt)</b>	<b>Probable Reserves (Mt)</b>	<b>Sulphur Content<sup>(1)</sup> (%)</b>	<b>Heating Value<sup>(2)</sup> (kj/kg)</b>
137.5	2.0	0.23	19,255

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Notes

- (1) Approximate sulphur content applies to the coal mined in 2016.  
(2) Approximate heat content applies to the coal mined in 2016.

For the period ending December 31, 2016, Westmoreland has reduced the stated reserves at the Genesee Mine from 268.5 Mt to 139.5 Mt, far more than the annual production. Norwest expects this reduction was implemented to comply with new performance standards for coal-fired power plants.

Under the Canadian Environment Protection Act (CEPS, 1999), there is a performance standard for new and existing coal-fired power plants. The performance standard came into effect on July 1, 2015 and stated that a maximum limit of 420 metric tonnes of Carbon Dioxide Emissions/GWh (1 GWh = 3,412 MMBtu/h) must be met by new and existing coal-fired electricity generating units.

New and existing coal-fired electricity generating units are classified generally as follows:

- a New Unit is one that starts producing electricity commercially on or after July 1, 2015; and
- an End-of-life Coal Unit is, in general one that is 50 years of age, as determined by the following principles:
  - Units commissioned before 1975 will reach their end-of-useful-life on December 31, 2019 or on December 31st of the 50th year that follows their commissioning date, whichever comes first
  - Units commissioned after 1974 but before 1986 will reach their end-of-useful-life on December 31, 2029 or on December 31st of the 50th year that follows their commissioning date, whichever comes first
  - Units commissioned in or after 1986 will reach their end-of-useful-life on December 31st of the 50th year that follows their commissioning date.

Norwest calculations confirm that the reduced reserves, as stated in Westmoreland's 10-K, comply with new performance standards.

Norwest also notes that the Government of Alberta has proposed a phase out of all coal fired emissions in the province by 2030. While this legislation is still forthcoming, the Government has entered into agreements with TransAlta, Capital Power and ATCO to end coal-fired emissions on or before December 31, 2030. Norwest expects that Westmoreland will further reduce the Genesee Mine reserve base to comply with this position.

**SCHEDULE “B”**  
**SHEERNESS ROYALTY**

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*Sheerness Royalty*

Certain of the information below has been excerpted or derived from the Westmoreland 2016 10-K for the Sheerness Mine. Keith Wilson, P. Eng., of Norwest, has reviewed and approved the scientific and technical information in this section on the Sheerness Mine. Readers should consult Westmoreland 10-K to obtain further particulars regarding the Sheerness Mine. The Westmoreland 10-K is available for review under Westmoreland’s profile on EDGAR at [www.sec.gov](http://www.sec.gov).

*Sheerness Mine*

The Sheerness Mine is a surface mine located in south central Alberta, approximately 160 km northeast of Calgary and 25 km south of the Town of Hanna. Coal rights within the permit area are controlled by Prairie Mines and Royalty ULC (PMRULC) a subsidiary of the Westmoreland Coal Company (Westmoreland), TransAlta Corporation (TransAlta) and ATCO. By contract PMRULC has the exclusive right to mine the coal within the Sheerness Mine permit area.

The mine supplies sub-bituminous coal to the two generating units at the Sheerness Generating Station which is owned by TransAlta and ATCO and operated by ATCO. Average annual production from the mine is 3.1 million tonnes.

The Sheerness Mine is operated under the Alberta Energy Regulator (AER) Mine permit No. C 99-6B. The Sheerness Mine permit has no expiry date. The Alberta Environmental Protection and Enhancement Act (EPEA) Approval No. 11876-04-00 regulates the development, operation and reclamation of the mine and any disturbances directly related to the Sheerness Mine. The approval expires on April 22, 2025. All operating licenses and approvals are granted with the capability to renew every five to ten years upon reapplication.

Coal seams found in the mine are Sub-bituminous ‘C’ in rank and are contained within the lowermost strata of the Upper Cretaceous Paskapoo Formation – Scollard Member. The Horseshoe Canyon Formation conformably overlies the Bearpaw Formation, which consists primarily of coarsening upward cycles of marine sediments. Regionally, these strata lie in the eastern reaches of the Alberta Syncline and dip very gently in a west-southwesterly direction. As a result, the Lower Horseshoe Canyon Formation subcrops to the east of the Sheerness Mine and strata of the underlying Bearpaw Formation become the locally predominant bedrock unit. The coal-bearing strata in the area are directly overlain by till units except along escarpments and areas of high topographic relief.

The mine operation is comprised of several pit areas including Pit 3, Pit 4, Pit 6, Pit 7, Pit 8, Pit 9 and Pit 10. Current operations are being conducted in Pit 6 and Pit 9. Coal is supplied to the two units at the Sheerness Generating Station. Coal is uncovered using two draglines. The coal is transported to the generating station using tractor-trailer type haul trucks.

The existing contract runs until 2026.

*Mineral Reserve Estimates*

The following table summarizes coal reserves in the Sheerness Mine as of December 31, 2016, as reported in Westmoreland's 10-K and converted to metric units

<b>Proven Reserves (Mt)</b>	<b>Probable Reserves (Mt)</b>	<b>Sulphur Content<sup>(1)</sup> (%)</b>	<b>Heating Value<sup>(2)</sup> (kj/kg)</b>
22.8	3.0	0.50	16,312

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Notes

- (1) Approximate sulphur content applies to the coal mined in 2016.
- (2) Approximate heat content applies to the coal mined in 2016.

Norwest notes that the Government of Alberta has proposed a phase out of all coal fired emissions in the province by 2030. While this legislation is still forthcoming, the Government has entered into agreements with TransAlta, Capital Power and ATCO to end coal-fired emissions on or before December 31, 2030. Norwest expects that Westmoreland may further reduce the Sheerness Mine reserve base to comply with this position.

## SCHEDULE "C"

### 777 MINE

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On May 5, 2015 Altius completed the acquisition of Callinan Royalties Corporation pursuant to a plan of arrangement under the *Canada Business Corporations Act* (Canada) pursuant to which Altius acquired a 4% net smelter royalty and tonnage royalty on the 777 underground copper, zinc, gold and silver mine located within the Flin Flon Greenstone Belt (the "777 Mine") owned indirectly by Hudbay Mining Inc. ("Hudbay").

The information below with respect to the 777 Mine has been excerpted or derived from the Hudbay annual information form for the year ended December 31, 2016 dated March 30, 2017 (the "Hudbay AIF").

Readers should consult the Hudbay AIF and the NI 43-101 technical report entitled "Technical Report, 777 Mine, Flin Flon, Manitoba, Canada", prepared by Brett Pearson, P. Geo., Darren Lyhkun, P. Eng., Cassandra Spence, P. Eng., Stephen West, P. Eng. and Robert Carter, P. Eng. and dated effective October 15, 2012 (the "777 Technical Report") to obtain further particulars regarding the 777 Mine. The Hudbay AIF and the 777 Technical Report are available for review under Hudbay's profile on SEDAR at [www.sedar.com](http://www.sedar.com). The information below is subject to the assumptions, qualifications and procedures set out in the 777 Technical Report and is qualified in its entirety with reference to the full text of the 777 Technical Report.

Dr. Lawrence Winter, P. Geo, Vice President, Exploration for Altius, has reviewed and approved the scientific and technical information in this section on the 777 Mine.

#### *Project Description and Location*

The 777 Mine is an underground copper and zinc mine with significant precious metals credits located in Flin Flon, Manitoba. Unless the context indicates otherwise, references to the 777 Mine include the 777 North expansion.

Hudbay owns a 100% interest in the properties that comprise the 777 Mine through mineral leases, Order in Council ("OIC") leases and mineral claims in Manitoba and Saskatchewan. The properties cover approximately 3,800 hectares, including approximately 500 hectares in Manitoba and approximately 3,300 hectares in Saskatchewan. Annual lease rental payments are \$6,913 and \$1,600 to the Manitoba and Saskatchewan governments, respectively, and the annual work expenditure requirement for the Saskatchewan properties is \$257,025. Individual leases have different expiry dates that range from 2016 to 2036. Hudbay's surface rights and permits are sufficient for purposes of Hudbay's current mining operations.

Liabilities associated with the 777 Mine are addressed by the closure plans that have been submitted to regulators in both Saskatchewan and Manitoba and financial assurance has been provided to cover the demolition and remediation activities outlined in such closure plans. The closure and remediation liability in respect of the property is estimated at \$1.8 million as of December 31, 2015. In addition, closure plans have been submitted and are backed with financial assurance for the associated Flin Flon Metallurgical Plant ("FFMC"), which includes the Flin Flon Tailings Impoundment System ("FFTIS") utilized by the 777 Mine.

Mineral production from the 777 Mine property is subject to a 4% net smelter returns royalty and a 27.56 cents per tonne production royalty pursuant to a Royalty Agreement (the "Royalty Agreement") dated as of January 1, 2015 between Hudson Bay Mining and Smelting Co. Limited ("HBMS") and Callinan Royalties

Corporation (“Callinan”). The Royalty Agreement replaces the previous Net Profits Interest and Royalty Agreement, which was terminated in conjunction with the execution of the Royalty Agreement.

Precious metals production from the 777 Mine is subject to a streaming agreement between Hudbay and Silver Wheaton, as described in the Hudbay AIF.

#### *Accessibility, Climate, Local Resources, Infrastructure and Physiography*

The 777 Mine is located in Flin Flon, Manitoba, which has a population of approximately 6,000 people, and is accessible by paved highway. Flin Flon is the site of Hudbay’s principal concentrator and zinc plant and has well developed access to rail and air transportation. Personnel requirements for the 777 Mine and processing facilities are largely drawn from the immediate area.

Electrical power is supplied from the Manitoba Hydro and Saskatchewan Power Corporation power grids, which are fed by three hydroelectric generating stations. No issues are foreseen for securing additional electrical power in the future if required. Water for mining activities is supplied from a reservoir located adjacent to the 777 Mine site and is sufficient for operations.

Tailings from milling are sent to the Paste Backfill Plant located at the lower level of the mill building. Mixed paste backfill is pumped to one of two lined boreholes adjacent to the mill, where paste is gravity fed to 1,082 metre level for distribution to mined out stopes. Tailings not used in paste production are pumped to the FFTIS. The FFTIS is located in Saskatchewan approximately 500m to the west of Hudbay’s Flin Flon Metallurgical Complex.

The 777 Mine site is 311 metres above sea level. The geographical area has cool summers and very cold winters with a mean annual temperature of 0.6° C. Operating costs in the first and fourth quarters are typically higher due to additional heating and other seasonal costs.

#### *History*

In 1993, the 777 deposit was first indicated by an underground exploration hole that intersected the mineralization at a depth of 1,000 metres. In 1995, a drilling program delineated the ore body and by 1997, this ore body was defined. In 1999, development of the 777 Mine was commenced as part of the “777 Project” and commercial production from the mine commenced in January 2004. By this time, Minorco S.A. had merged with Anglo American Corporation of South Africa to form Anglo American plc (“Anglo American”). In December 2004, Hudbay acquired HBMS and the 777 Mine from Anglo American. HBMS took a working option on the 777 property in 1967 from Callinan. In 1988, HBMS acquired Callinan’s remaining interest in the property and in return granted Callinan a production royalty and a net profit interest, which net profit interest has since been converted to a net smelter return royalty, as described above.

#### *Geological Setting*

The 777 deposit lies in the western portion of the Paleoproterozoic Flin Flon Greenstone Belt. The Greenstone Belt is interpreted to be comprised of a variety of distinct 1.92 to 1.87Ga tectonostratigraphic assemblages including juvenile arc, back-arc, ocean floor and ocean island, and evolved volcanic arc assemblages that were amalgamated to form an accretionary collage prior to the emplacement of voluminous intermediate to granitoid plutons and generally subsequent deformation. The volcanic assemblages consist of mafic to felsic volcanic rocks with intercalated volcanogenic sedimentary rocks. The younger plutons and coeval successor arc volcanics, volcanoclastic, and sedimentary successor basin rocks include the older, largely marine turbidites of the Burntwood Group and the terrestrial metasedimentary sequences of the Missi Group (which includes the Flin Flon formation).

The Flin Flon formation is subdivided into three mappable members containing units of heterolithic and monolithic breccias, rhyolite flows and domes, and massive and pillowed basalt flows and flow top breccias. It is comprised of the Millrock member, which contains the 777 and Callinan mineralization, and the footwall to it with the Blue Lagoon and Club members. A complex succession of felsic and basalt-dominated heterolithic volcanoclastic rocks host the Flin Flon Main, Callinan and 777 volcanogenic massive sulphide (VMS) deposits within the Greenstone Belt. The north-trending, VMS-hosting, 30 to 700 metre thick volcanic/volcanoclastic succession is recognized for at least 5 kilometres along strike and has an average dip of 60°E. The volcanoclastic rocks have been interpreted to occupy a volcano-tectonic depression within a basaltic footwall succession.

### *Exploration*

#### Drilling

Diamond drilling is the only drilling type carried out for the purposes of exploration, ore zone definition and sampling of the 777 Mine. The modern 777 drilling program began in the early 2000's and, as at September 30, 2015, a total of 2,442 holes and 335,902 metres had been drilled. All holes, except a geotechnical shaft pilot hole and surface North expansion exploration holes, were drilled from underground by a contractor using AW-34, AQTk, BQ and NQ core sizes. Drill hole spacing along the 777 deposit is generally 30 to 50 metres. Core recovery is near 100% for all holes. Drilling was categorized as definition, exploration, or geotechnical. Geotechnical drilling was completed in areas of planned underground infrastructure to ensure competency.

Standard procedure is that the core is initially logged for lithology then descriptively for grain size, foliation, minor units, alteration minerals and intensity, faults, RQD, joints and contacts. Sample intervals are determined by both lithology and a visual estimate of the sulphide mineralization. As a general rule, sample intervals are approximately one metre, though the length varies depending on lithology or type of mineralization. It is likely that in no cases were samples taken from intervals less than 10 centimetres in length. However, as many of the assays are historic in nature, several were split when they overlapped lithological boundaries in the resource block model and resulted in shorter sample intervals.

#### Surveying

Hudbay routinely conducts time-domain borehole electromagnetic surveys with three dimensional probes on drill holes. These probes used are induction coil probes which measure the secondary magnetic field induced by the primary field created by a loop. These electronic methods can generally detect off hole targets up to 150 metres or more from the hole depending on the size and conductivity of the target. The sample quality can be affected by active mine workings and the proximity of the geophysical apparatus to a large ore body, such as 777, which can leave an imprint of the mine itself on the data.

After the initial aggressive exploration program that defined the 777 deposit, few holes had downhole geophysical surveys. The first modern exploration drill hole at the 777 Mine, T7X-001, was pulsed in late 2004. Following that hole, little exploration work was conducted between 2005 and 2008 with only 56 holes being drilled during that four-year period. Since 2009, exploration efforts have increased along with the use of downhole geophysical surveying.

In 2007 a total of 75 kilometres of high resolution 2D seismic profiles as well as a 3D survey covering approximately 10 square kilometres was completed. Results were hampered by the significant challenges posed by the complex crystalline geology of the area, proximity to an active town, active mining operations, and the highly variable terrain.

The survey resulted in a greater understanding of the area geology. Also, the discovery of Zone 33 at the 777 Mine was attributed to this survey as it showed a seismic reflector in the footwall, which was later followed up with drilling and downhole pulsing. Previous downhole geophysical surveys had noted this anomaly, but it was previously discounted as a shadow effect from the 777 Mine.

### Mineralization

The 777 and Callinan deposits occur within an east-facing sequence of volcanic rocks documented as tholeiitic and basalt-dominated, and dated around 1888 Ma. The rocks immediately hosting the mineralization, however, consist of quartz-phyric (QP) and quartz feldspar-phyric (QFP) rhyolite flows and quartz-±feldspar crystal-lithic volcanoclastic rocks of rhyolitic composition.

The 777 deposit can be divided into two main southeast plunging trends, the North Limb and the South Limb, as well as the West Zone. All three zones lie within the same stratigraphic sequence with the same lithofacies as described above. The West Zone lies in the footwall in what is interpreted to be a lower thrust slice and both limbs have the same stratigraphic sequence. On average the lenses strike at  $010^\circ$  and dip to the east at  $45^\circ$ . All zones have a relatively shallow plunge trending at  $-35^\circ$  towards  $140^\circ$ .

Horizontal widths throughout the deposit range from 2.5 metres to 70 metres in thickness, and can be thicker when two or more zones overlap. There are a total of nine distinct sulphide lenses contained within the 777 deposit. Each of the zones is distinguished based on grade and mineralization type as well as their spatial location. The 777 deposit encompasses an area approximately 1,300m downplunge by 550 metres across and varying in depth from approximately 870 to 1,600 metres below surface. Lenses in general are fairly continuous with the exception of scattered diorite intrusions.

The Callinan deposit is subdivided into two rhyolite horizons termed the East-QP and the West-QP. The East-QP is host to the lenses of the North Zone (northern portion), and the East Zone (southeast portion), and is on the same horizon as the 777 Mineralization. The West-QP hosts the South Zone (southwest portion) and its associated lenses. Each of these zones is further subdivided into a number of mineralized lenses. The subdivision of Zones into lenses was based on the spatial distribution of the mineralization. The South Zone lenses generally strike to the north and dips at  $50^\circ$  to the east with a plunge trending at  $-50^\circ$  towards  $135^\circ$ . The North and East Zones generally strike at  $020^\circ$  with a  $50^\circ$  dip to the east with a shallow plunge trending at  $-30^\circ$  towards  $145^\circ$ .

There are a total of 20 sulphide lenses contained within the three broad zones of the Callinan deposit. The Callinan mineralization is a distal deposit that has a matrix supported breccia with variable amounts of wallrock fragments in a fine to medium grained sulphide matrix. The wallrock fragments are intensely altered with chlorite, talc and sericite with some degree of pyritization and carbonation.

These lenses contain variable amounts of pyrite, sphalerite, chalcopyrite and minor pyrrhotite. Mineralization is generally medium to coarse grained disseminated to solid sulphides consisting of pyrite, chalcopyrite, sphalerite, pyrrhotite, and magnetite. The principle gangue minerals are chlorite and quartz. Alteration minerals include biotite, epidote and actinolite.

## *Sampling and Analysis*

### Sampling Methods

The majority of sample intervals from definition and exploration drilling were whole rock sampled with the core placed in a plastic bag with its unique sample identification tag. Typically when exploration drilling in new areas, all samples are either split or cut in half with a diamond saw and a representative portion of the hole is kept.

The bagged samples were placed in either a burlap bag or a plastic pail with a submittal sheet that was prepared by the geologist or technician. Samples were delivered to the Flin Flon assay laboratory, located in the Flin Flon Metallurgical Complex, which is owned and operated by Hudbay. Samples are checked by laboratory personnel to ensure that they match the submittal sheet. The samples were analyzed for the following elements: gold, silver, copper, zinc, lead, iron, arsenic and nickel. Base metal and silver assaying was completed by aqua regia digestion and read by a simultaneous ICP unit. The gold analysis was completed on each sample by AAS after fire assay lead collection. Gold values greater than 10g/t were reassayed using a gravimetric finish. All analytical balances are certified annually by a third party. Check weights are used daily to verify calibration of balances. All metal standards used to make the calibration standards for the AAS and ICP are certified and traceable. Each is received with a certificate of analysis. The Flin Flon assay laboratory was recently certified, in December 2011, to the ISO 9001 quality management system to help ensure it meets Hudbay's needs as well as those of other stakeholders.

A total of 112,732 samples from 3,396 drill holes were submitted to the Flin Flon assay laboratory for analysis as of the date of the most recent technical report. The average length for these sample intervals was 1.62 metres.

Bulk density measurements were taken on 2,982 of the mineralized samples selected for assaying as of the date of the most recent technical report. The measurement methodology consisted of first weighing the core sample in air, then, the sample was suspended in a tub filled with water by a chain on the underside of the scale in such a way that it did not touch the sides of the water-filled tub and the weight of the submerged sample was recorded.

### Quality Assurance and Quality Control

As part of Hudbay's Quality Assurance and Quality Control ("QAQC") measures, a portion of the pulp duplicates has been sent to Bureau Veritas Commodities Canada Ltd. ("Bureau Veritas") in Vancouver, British Columbia, formerly Acme Analytical Laboratories Ltd., for comparison and verification purposes since early 2006. Hudbay's QAQC measures also involve the use of blank materials, reference standards, internal duplicates, and repeats.

During the drilling programs at 777 a total of four different types of blanks were inserted into the sample stream between early 2000 and September 2011. Blanks were inserted at a rate of 1 for every 20 assays until the fall of 2003, when this was reduced to 1 for every 50 assays as a means of cost reduction. Since Hudbay's assay laboratory runs batches of 50-60 samples at a time this should place at least one blank in every batch.

The use of reference standards has become increasingly systematic and they are now inserted into the sample stream at every 20th assay interval. Duplicates are used as a check to verify the repeatability of the assay data. Duplicates are run at Hudbay's laboratory at a frequency of one in twenty samples, and also at Bureau Veritas as an independent check.

Repeats, typically referred to as 'blinds', are run on a monthly basis on one sample out of every four or five duplicates that were analyzed during that month. The results are considered an internal independent check on Hudbay's assay laboratory results.

#### Data Verification

Examination and mapping of the underground drifting visually confirmed the geology and VMS style of mineralization. As well, the examination of drill core for several holes has also confirmed the mineralization and geology and compared well to underground mapping with drill logs and assays. A visit was conducted to the 777 core logging and storage area, exploration core storage facility, and Hudbay's assay facility and each was deemed to be secure and in reasonable condition. In addition, the qualified person has had several discussions with current and former geologists as well as other personnel that have worked at the deposit to verify various details of the mining, infrastructure, geology, drilling and sampling.

Full verification of the data was not able to be completed as a small portion of the data from the Callinan portion of the deposit is considered historic in nature.

#### Security of Samples

For security purposes, all sample preparation, splitting, handling, and storage was in the control of personnel at all times in accordance with then applicable chain of custody policies which were consistent with industry standards at the time. Hudbay implemented a documented full chain of custody procedure in August 2011. This involves the creation of a submittal sheet with all batches of drill core sent for assay by the geologist daily. The sheet is signed both by the geologist, to verify the samples were stored securely, and by the laboratory personnel, to verify it was in their control from the time it left the core shack and is consistent with the current industry standards.

#### *Mineral Resource and Mineral Reserve Estimates*

##### Mineral Resources

Mineral resources were separated into the 777 and Callinan portions of the deposit. This was done for mining and planning purposes as the Callinan lenses represent the upper, and more historic, portion of the mineralization and the 777 zones represent the lower more recently drilled and identified mineralization. The interpreted lenses of the 777 zones and certain Callinan lenses were built by digitizing polylines around the mineralization. Polylines were then linked with tag strings and triangulated in order to create three dimensional wireframe solids. The remainder of the mineralization was interpreted by digitizing polylines in a 2D plane around mineralized intercepts. The average strike and dip of the zone was estimated and utilized to calculate the horizontal width of the mineralization for both the 2D Gridded Seam Model and the polygonal interpretations.

The mineral resource estimate, effective as of a September 30, 2015 cut-off date for diamond drilling, was completed using MineSight 9.5 software in mine coordinates, and for the Callinan lenses, the current version of MineSight at the time of estimation. The block model was constrained by interpreted 3D wireframes of the mineralization. Gold, silver, copper, zinc, iron, specific gravity and in some cases dilution variables and horizontal width were estimated into blocks using either ordinary kriging or relative co-ordinate kriging for most lenses. Lens intersections were generally selected based on a metal grade of 3% zinc equivalent over 2 metres. Intersections were modelled as low as 0.3m to provide additional information for statistical and mine planning purposes.

## Mineral Reserves

Mining, processing and economic parameters were applied to the block model to form the basis of the reserve estimate with an effective date of January 1, 2016. The measured resources were used to estimate the proven mineral reserves and the indicated resources were used to estimate the probable mineral reserves. For mining purposes, there are eight active mining areas in the mine to allow for a blended product with the end goal to send a blended grade to the mill. Mining methods were established for each mining area and a net smelter return (“NSR”) was calculated to determine the economic viability.

NSR revenues were calculated for each mining area comprised of blocks from the block model assuming metallurgical recoveries and long term metals prices. To determine the economic viability and NSR margin of each mining block, onsite operating costs, capital development and offsite costs were estimated and applied against copper and zinc concentrate produced for each mining block. The final step of the reserving process involved developing an annualized life-of-mine production plan and supporting cash flow analysis to determine the mineral reserves.

## Mineral Reserves and Resources

The following tables set forth the estimates of the mineral reserves and resources at the 777 mine.

<b>777 Mineral Reserves – January 1, 2017<sup>(1)(2)</sup></b>					
<b>777 Mine</b>	<b>Tonnes</b>	<b>Cu (%)</b>	<b>Zn (%)</b>	<b>Au (g/t)</b>	<b>Ag (g/t)</b>
Proven	3,080,000	1.98	4.93	2.01	31.53
Probable	1,386,000	1.16	5.09	2.04	30.96
<b>Total Mineral Reserve</b>	<b>4,466,000</b>	<b>1.73</b>	<b>4.98</b>	<b>2.02</b>	<b>31.35</b>
<b>777 Indicated Mineral Resources – September 30, 2016<sup>(1)(2)(3)</sup></b>					
	<b>Tonnes</b>	<b>Cu (%)</b>	<b>Zn (%)</b>	<b>Au (g/t)</b>	<b>Ag (g/t)</b>
<b>777 Mine</b>	736,000	0.99	3.53	1.82	26.24
<b>777 In-Mine Inferred Mineral Resources – September 30, 2016<sup>(1)(2)(3)</sup></b>					
	<b>Tonnes</b>	<b>Cu (%)</b>	<b>Zn (%)</b>	<b>Au (g/t)</b>	<b>Ag (g/t)</b>
<b>777 Mine</b>	673,000	1.01	4.26	1.72	30.95

Notes:

1. A zinc price of \$1.24 per pound (includes premium), copper price of \$2.67 per pound, a gold price of \$1,300 per ounce and silver price of \$18.00 per ounce using an exchange rate of 1.25 C\$/US\$ was used to estimate mineral reserves and mineral resources.
2. For additional details relating to the estimates of mineral reserves and resources at our 777 mine, including data verification and quality assurance / quality control processes, refer to Schedule B and the 777 Technical Report.
3. Mineral resources that are not mineral reserves do not have demonstrated economic viability. The above mineral resources are exclusive of mineral reserves

## *Mining Operations*

The 777 Mine is a multi-lens orebody with shaft access down to the 1508 metre level. The mine consists of an internal ramp that provides access to each mining level. Mobile tired diesel equipment is utilized. Load haul dump (“LHD”) units vary from 6.1m<sup>3</sup> to 7.6m<sup>3</sup>. Trucks are 40 to 50 ton units feeding an ore pass system or direct to rock-breakers which feed an underground crusher and ore is skipped to surface via the shaft.

Long-hole open stope is the mining method used at the 777 Mine. Mine sequencing involves primary, secondary, chevron and longitudinal retreat stopes that are either paste or unconsolidated loose waste rock backfilled. Long-hole stopes are mined at 15 metre to 17 metre vertical sill to sill intervals. Stope strike

lengths are generally 16 metres with widths of 2 to 100 metres, with an average of approximately 20 metres. The ore is undercut at the top and bottom of the block, providing access for drilling and mucking. Drilling is done by top hammer long-hole drills with holes varying in length between 10 metres and 20 metres long and a hole diameter of 3 inches. Mucking is accomplished by remote LHD units and then loaded to haul trucks.

Ore at 777 Mine is loaded by LHDs to underground haul trucks, which dump to a series of ore passes that feed three chutes on 1412 metre level. Haul trucks are loaded from the chutes and haul the ore directly to the main ore pass system on 1412 metre level. The ore is temporarily stored in a 1,725 tonne coarse ore bin that feeds the crusher. From the crusher it is conveyed to a 1,600 tonne fine ore bin, where it is conveyed to a loading pocket at the 1508 metre level and placed into two 15 tonne skips and hoisted to surface. The ore on surface is hauled by 53 to 63 tonne haulage trucks directly to the Flin Flon concentrator or is dumped on a stockpile close to the concentrator.

Ore from 777 North expansion is loaded onto haul trucks by LHDs and transported up the ramp to surface. The ore is dumped on the ground prior to being sent through a surface crusher operated by a contractor. The ore is then loaded and transported for processing at the Flin Flon concentrator or stockpiled nearby.

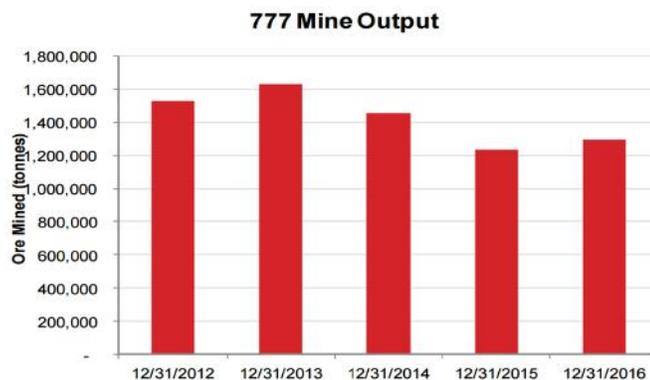
Hudbay's Flin Flon concentrator processes 777 ore into copper and zinc concentrates. Copper concentrate is sold to third party purchasers and zinc concentrate is sent to the Flin Flon zinc plant where it is further processed into special high grade zinc before being sold to third party purchasers.

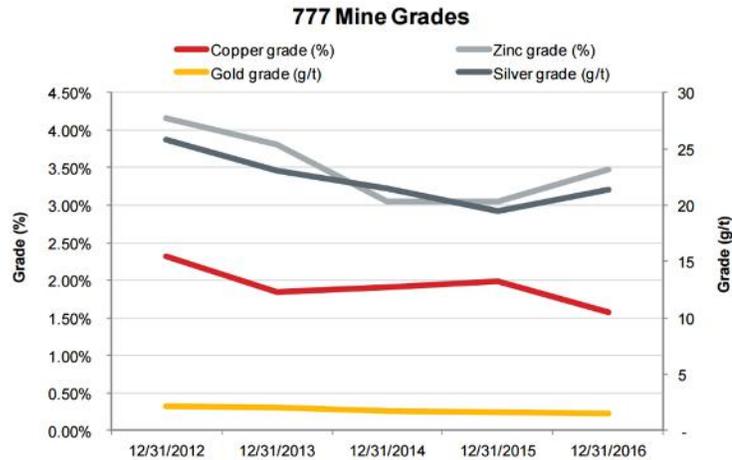
Current production rates are expected to be approximately 4,000 tonnes per day for the 777 Mine based on 363 days of production per year. Production from 777 is subject to federal and provincial income taxes, as well as the Manitoba mining tax. The combined federal and provincial income tax rates are assumed to be approximately 27% for the life of the mine.

The 777 Mine has been in commercial production since 2004 and the original project capital has already been paid back and ongoing capital is defined as sustaining capital.

### *Production*

The following charts set forth Hudbay's production from the 777 Mine for the years ended December 31, 2016, 2015, 2014, 2013, and 2012.





*Exploration and Development*

2011 marked the first year that a concentrated effort on exploration drilling was conducted from underground at the 777 Mine. Much of the drilling to that date had been focused on converting resources to reserves. In excess of 113,700 metres of underground exploration drilling has been drilled at the 777 Mine targeting additional resources in the hanging wall, footwall, along strike and in upgrading inferred resources.

An extensive exploration program was conducted from 2014 to 2015 to extend the mine life of 777. Specific work included the analysis of 7,696 litho-geochemistry samples to determine rock types and ore associated signatures, 18 select historical drill holes were geophysically re-surveyed and geology from more than 6,000 drill holes in the area were collated and reviewed. The drilling program included 18 holes from surface for 15,466 metres and 55 holes from underground for 34,564 metres. No new mineable zones were added to the mine life as the result of the program and all high priority targets have been followed up with drilling as well as most of the less category targets.

The War Baby claim prospect, defined as the area down plunge from the high grade 777 mine 30 and 60 lenses, was optioned from Callinan Royalties in late 2014. Callinan Royalties had drilled several wedges in the late 1990's from one surface hole that showed sporadic near ore grade intersections. The 777 mine geology team reviewed the information provided by Callinan Royalties and drilled seven drill holes from December 2014 to November 2015 from existing underground development to confirm historical mineralized intersections and also to provide step-out geological information. Results of this drilling indicated the sporadic mineralization was stringer type material within an intense chlorite alteration zone associated with the Second Panel, and the Upper Panel rhyolite that hosts the 777 mine lenses was almost barren of economic sulphides. The down plunge extents of 777 mine 30 and 60 lenses were not entirely defined by this drilling however based on geophysical information and previous testing suggests that no significant mineralization remains at depth.

The majority of the exploration holes drilled during the 2014 to 2015 program had time domain electromagnetic surveys completed. All high priority geophysical targets were tested during the program and no further work is warranted. In total, 36 borehole electromagnetic surveys from surface and 74 from underground have been completed to date at 777 mine.

## SCHEDULE "D"

### CHAPADA MINE

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All of the information below with respect to the Chapada Mine owned by Yamana has been excerpted or derived from the Yamana annual information form for the year ended December 31, 2016 dated March 28, 2017 (the "Yamana AIF") and the *Technical Report on the Chapada Mine, Brazil* dated July 31, 2014 ("Chapada Technical Report"), prepared by Roscoe Postle Associates Inc. ("RPA").

Readers should consult the Yamana AIF to obtain further particulars regarding the Chapada Mine. The Yamana AIF and Chapada Technical Report are available for review under Yamana's profile on SEDAR at [www.sedar.com](http://www.sedar.com). The information below is subject to the assumptions, qualifications and procedures set out in the Yamana AIF and is qualified in its entirety with reference to the full text of the Yamana AIF.

Dr. Lawrence Winter, P.Geo, Vice President, Exploration for Altius, who is a "qualified person" for the purpose of NI 43-101, has reviewed and approved the scientific and technical information in this section on the Chapada Mine.

#### *Property Description, Location and Access*

The Chapada Mine is located in northern Goiás State, approximately 320 kilometres north of the state capital of Goiania and 270 kilometres northwest of the national capital of Brasilia. It is situated at latitude 14° 14' S, longitude 49° 22' W. Corpo Sul is situated at the southwest extremity of the Chapada deposit. The Suruca deposit is located six kilometres northeast of the Chapada Mine at approximately latitude 14° 11' S, longitude 49° 20' W.

Access to the project area from Brasilia is via BR-153 (Belem/Brasilia) to Campinorte (GO) and then via GO-465 (Campinorte/Santa Terezinha) west to Alto Horizonte. The town of Alto Horizonte lies between the Suruca and Chapada deposits. Chapada Airport, suitable for small aircraft with an 800 metres long airstrip, is located close to Alto Horizonte, approximately four kilometres northeast of the Chapada Mine.

The Chapada Mine is divided into 16 claims covering 18,921.37 hectares. The claims are held in the name of Mineração Maracá Indústria e Comércio S/A ("Mineração Maracá"), a 100% owned subsidiary of Yamana. See also "– Exploration, Development and Production".

Yamana (via Mineração Maracá) holds all of the surface rights in the area of the Chapada Mine, which incorporates all of the proposed locations of buildings, fixed installations, waste dumps, and tailing disposal in the current mine plan. Yamana is of the opinion that it can acquire the right to dispose of waste rock and tailings on additional surface property, if and when required. The land ownership is registered with the Registrar of Real Estate in Mara Rosa, Goiás.

Other than statutory royalties which are paid to the Brazilian government based on commercial copper and gold production, RPA is not aware of any rights, agreements or encumbrances to which the Chapada Mine is subject, which would adversely affect the value of the property or Mineração Maracá's ownership interest. The environmental licensing process for Corpo Sul started in 2013 and the required licences were granted in 2014. No current environmental liabilities have been identified within the mine area. Ongoing items such as waste stockpiles, depleted heap leach piles, and tailings storage facilities will be rehabilitated during the mine life or at the time of mine closure.

## History

The Chapada deposit was discovered in 1973 by a Canadian company, INCO Ltda. (“INCO”), which followed up with geochemistry, geophysics, trenching, and initial drilling. There are few outcrops in the mine area due to laterite-saprolite cover. Consequently, deposit definition required extensive diamond drill exploration. Development drilling of the deposit occurred in several campaigns from 1976 through 1996 by INCO, Parsons-Eluma Projetos e Consultoria S/C (“Parsons”), a Brazilian copper company, Eluma — Noranda, Santa Elina, and Santa Elina-Echo Bay (“Echo Bay”). Historical ownership and exploration activities are summarized in Table 1.

**Table 1**

Date	Owner	Activity
1973	INCO	Chapada discovery.
1975-1976		2,000 metres x 500 metres grid drilling program. Parsons acquires a 50% interest in the Chapada project.
1976-1979	INCO & Parsons	200 metres x 100 metres drill grid. A 92 metres deep shaft is completed with 255 metres of cross-cuts for exploration and metallurgical sampling.
1979		Mining concession No. 2394 covering 3,000 hectares is issued to Mineração Alonte by the Departamento Nacional da Producao Mineral (“DNPM”).
1980-1981		Soil drilling completed in the plant, tailing ponds, and potential water dam areas.
1981	Parsons	Feasibility study completed.
1994-1995		A 4,500 metres drilling program re-evaluation of a near surface gold deposit. Preliminary feasibility study by Watts, Griffis and McOuat.
May 1994	SERCOR	Mineração Santa Elina Industria e Comercio S/A (“SERCOR”) acquires the Chapada deposit through a subsidiary, Mineração Maracá.
July 1994	SERCOR and Echo Bay	Echo Bay acquires an initial interest in Santa Elina by purchasing 5% of the outstanding shares from SERCOR.
Dec 1994		Santa Elina completes its initial public offering.
Sep 1995		Santa Elina and Echo Bay approve the Chapada project joint venture. Santa Elina issues about 3% of the outstanding shares to Echo Bay. Echo Bay receives the option to acquire 50% interest in the project.
May 1996		Santa Elina is privatized and SERCOR and Echo Bay become equal owners of the company.

Dec 1996		Santa Elina completes an in-fill drilling program
Dec 1997		Independent Mining Consultants, Inc. reviews the Echo Bay model and completes a mine feasibility study.
Jan 1998		Kilborn Holdings Inc., (now SNC-Lavalin Group Inc.), completes the Chapada project bankable feasibility study.
Apr 2001		Construction licence issued.
May 2000	PINUS	PINUS acquires 100% of Mineração Maracá.
2003	Yamana	The property is purchased by Yamana.
2004		The feasibility study is completed.
2007		Commercial production starts.

In 2008, Yamana started a plant expansion to increase throughput from 16 million tonnes per annum to 22 million tonnes per annum.

From 2007 to the end of 2016, the Chapada Mine has produced 188.5 million tonnes grading 0.34 grams per tonne gold and 0.40% copper.

The Suruca deposit has been explored by various companies since the 1970s, as summarized in Table 2, and was exploited by garimpeiros in the 1980s. Yamana reports that garimpeiros produced approximately 200 kilograms of gold in that period. A historical estimate of resources was identified in the mid-1990s; however, as this estimate is historic in nature, it cannot be relied upon.

**Table 2**

Date	Ownership
1980 - 1981	INCO/Eluma
1987 - 1988	Cominco
1993 - 1994	WMC
1996 - 1997	Santa
2008 to present	Yamana

#### *Geological Setting, Mineralization and Deposit Types*

The Chapada area is located between the Amazonian craton to the northwest and the San Francisco craton to the southeast, within the north-northeast striking metavolcano-sedimentary Mara Rosa Magmatic Arc which is part of a large system of mobile belts that have a complex, multi-phased history of deformation.

The Chapada, Corpo Sul and Suruca deposits are located in the Eastern Belt of the Mara Rosa volcano sedimentary sequence. The Eastern Belt in the vicinity of the Chapada Mine comprises a thick package of amphibolites succeeded by volcanic and volcanoclastic rocks and overlying metasedimentary rocks. The metavolcanic-sedimentary units are intruded by metaplutonic rocks of dioritic to quartz-diorite composition. These intrusions are associated with magmatic fluids responsible for copper-gold and gold mineralization.

The volcanics and sediments have been metamorphosed to biotite and amphibolite schist in the Chapada mineralized area.

In the immediate area of the Chapada deposit, the biotite and amphibolite schist units have been folded into a broad anticline with a north-easterly fold axis. The two limbs of the anticlinal structure dip to the northwest and southeast. There is a minor secondary synclinal fold of the major antiform so that the northeast and southwest ends are somewhat higher than the central zone of the structure in the middle of the deposit. This combination of folds gives the deposit a broad “saddle” shape.

The deposit has undergone hydrothermal alteration typical of a copper-gold porphyry system. Alteration styles include biotitization, sericitization, argillitization, and propylitization.

The bedrock schists are overlain by approximately 25 metres of saprolite material with a minor lateritic component near the top of the saprolite zone. Within that laterite component, there is a ferricrete zone at surface.

The Corpo Sul deposit is located immediately on-strike and two kilometres to the southwest of the Chapada open pit. It is interpreted as another intrusive Copper-Gold Porphyry center, less deformed than Chapada Mine, and associated with an intrusion of Quartz Porphyry Diorite/Tonalite (Potassic alteration), enveloped by a Feldspathic Biotite Schist (Potassic alteration) surrounded by sericite schists (Sericitic alteration).

Corpo Sul has largely the same stratigraphic units found in Chapada, however at Corpo Sul the tuffs and lapilli tuffs are less deformed. The area is covered by a 30 metre lateritic profile. The lateritic profile comprises an immature lateritic terrain that was subdivided from base to the top in: coarse saprolite, saprolite, mottled zone or argillic zone, lateritic duricrust and pisolitic soils (products of alteration of duricrust).

The Suruca deposit, north of the main Chapada pit, has geology that is grouped from base to top as: Amphibolite, Intermediate Metavolcanic rocks and Metasediments. There are several intrusions of quartz diorite porphyry that occur preferentially in the intermediate metavolcanic rocks and metasediments. Hydrothermal alteration overprints the lithologies and is characterized by inner and outer halos. The inner halo occurs in the intermediate rocks, metasediments and diorites with strong and pervasive sericitic alteration and the outer halo is characterized by propylitic alteration that occurs mainly in the amphibolites.

The Sucupira deposit lies immediately northwest of the main Chapada pit, west of the northeast to southwest trending Sucupira fault. The Sucupira deposit was formed within diorite intruded volcanic and sedimentary units prior to metamorphic deformation. The deposit as currently understood is a continuation of ore found within the Cava Norte pit which can be traced in drill cuttings up to 1.7 kilometers to the southwest. Gold and copper mineralization occurs within a potassic and sericite alteration halo that is elongated northeast to southwest, loosely following an antiform fold nose. The deposit contains both a higher grade core of gold and copper values that are enveloped by a lower grade halo of gold-copper values. Calcsilicate rock units thought to be skarn related host minor amounts of mineralization as well.

The primary copper-gold mineralization at Chapada is epigenetic. Copper is principally present as chalcopyrite with minor amounts of bornite. Fine grained gold is closely associated with the sulphide mineralization and was likely to be contemporaneous with the copper.

Copper mineralization occurs as finely disseminated crystals, elongated pods, lenses along foliation, crosscutting stringers, and coarse clots in occasional late stage quartz veins or pegmatites. The copper mineralization and grade are somewhat better in the central zone of the deposit along the anticline axis than in the surrounding anticlinal limbs; however, copper mineralization is pervasive over a broad area. Gold mineralization is more uneven spatially and may have been remobilized by post mineral low temperature alteration events.

The Corpo Sul mineralization includes oxide and sulphide ores. The oxide ore comprises approximately 7% of the deposit and is associated with the weathering surface. The width varies between 20 metres and 40 metres at an average grade of 0.26 grams per tonne gold and 0.35% copper. The oxide mineralization comprises soil, mottled zone, fine saprolite, and coarse saprolite. The sulphide ore represents the majority of the mineralization with widths from 25 metres to 300 metres at an average grade of 0.24 grams per tonne gold and 0.31% copper.

The gold at Suruca is related to folded quartz vein/veinlets with sericitic and biotite alteration, rather than high sulphide concentrations. The second generation of quartz veins/veinlets with sulphides (sphalerite + galena + pyrite), carbonates and epidote also host gold which is related to zinc.

Mineralization predominately pre-dates deformation hence the gold is associated with epithermal features and not structurally controlled.

### *Exploration*

For exploration work completed prior to Yamana, please see “–History”, above.

Yamana started exploration work in 2007 with diamond drilling mainly to the east of the pit to check for the extension of the mineralization potentially hosted in a synclinal structure.

In early 2008, consultant Richard Sillitoe defined a genetic model of mineralization with a typical porphyry copper-gold system (Cu-Au-Mo association) that underwent intense isoclinal folding and amphibolite facies metamorphism during continental collision at the end of the Neoproterozoic. However, original mineralogy may not have been profoundly changed, due to the stability of minerals like quartz, anhydrite, pyrite, chalcopyrite, magnetite and biotite under amphibolite facies conditions.

Yamana began exploration work at Suruca in 2008 with geological mapping, chip sampling and shallow drilling at Suruca South.

See also “– Exploration, Development and Production”.

### *Drilling*

Yamana commenced drilling the Chapada deposit in 2008. To the end of 2013, Yamana has drilled 344 holes for 73,891 metres (Table 3). Drilling has delineated the main deposit areas at a spacing of 100 metres by 50 metres, with a tighter 50 metres pattern in the central portion of the deposit.

**Table 3**

Year	No. Drill Holes	Metres
2008	30	5,126
2009	7	2,352
2010	18	4,373
2011	85	19,305
2012	131	28,568
2013	73	14,167
<b>Total</b>	<b>344</b>	<b>73,891</b>

The 2008 and 2009 drilling campaigns were concentrated in the region named “Near Mine” and in the south portion of the area. The 2010 and 2011 campaigns targeted the Near Mine and Corpo Sul areas. In 2013, Yamana

drilled in the northeast section of Chapada Corpo Principal with the objective of delineating an inferred mineral resource. In Corpo Sul, an infill drilling program was carried out in the southwest portion of the deposit on a 50 metre by 50 metre grid to upgrade indicated to measured mineral resources and on a 100 metre by 100 metre grid to convert inferred to indicated mineral resources.

The majority of holes were drilled at an azimuth of 130° and an 85° dip. Drill holes with inclination between 45° and 85° were surveyed every three metres downhole using a Deviflex electronic surveying instrument. No significant deviation issues were found.

To date, Yamana has drilled 186 holes for 37,899.16 metres at Suruca, as summarized in Table 4.

**Table 4**

Year	No. Drill Holes	Metres
2008	7	439.5
2009	21	6,457.8
2010*	103	20,476.9
2011	55	10,524.96
Total	186	37,899.16

\*Includes 11 metallurgical holes for 1,014 metres

At Suruca in 2009, Yamana completed successful drilling to test a magnetic anomaly and the area of the garimpeiro workings. The 2010 drilling program focused on delineation of the Suruca deposit at 400 metres by 200 metres spacing followed by infill drilling at 200 metres by 200 metres spacing. An infill program of 100 metres by 100 metres spacing was completed in the north portion of deposit.

The majority of holes were drilled at an azimuth of 130° and a 60° dip; some holes were drilled at an azimuth of 310°. Drill holes with inclination between 45° and 85° were surveyed every three metres downhole using a Reflex Maxibor II or Devicom Deviflex electronic surveying instrument. In sub-vertical holes, a PeeWee or EZ- Shot instrument was used. All holes were surveyed and no significant deviation issues were found.

See also “– Exploration, Development and Production”.

#### *Sampling, Analysis and Data Verification*

Yamana’s samples are selected down the entire length of the drill hole core, sawn in half with an electric diamond bladed core saw, and sampled prior to logging. Half core samples are selected by a geology technician or trained sampler. The samples are then placed in a numbered plastic bag along with a paper sample tag, and tied closed with a piece of string. Sample weight is approximately 3.5 kilograms. Six to eight samples are placed in a larger plastic bag, loaded onto a truck owned and driven by a locally based transport company, and driven to the ALS Chemex laboratory sample preparation facility in Goiania, State of Goiás.

After sampling, the geologist completes a graphic log and logs the core in detail for lithology, structure, mineralization and alteration. Codes are assigned for the oxidation state, consistency and alteration including alteration halo, sulphides, silicification, biotite, sericite, epidote, amphibolite, garnet, carbonate, rhodochrosite, chlorite, and kyanite content. Angles of structures such as foliation and faults are recorded.

Approximately four samples from each alteration halo per drill hole are selected for density testwork by two different methods after sampling and logging. The first method used is the water displacement method, performed in the logging shed. The second method, which is gravimetric, is done in the laboratory using pulverized samples.

Sample preparation involves crushing and pulverization. Upon receipt of the samples, each sample is weighed and dried at 100°C for eight to 12 hours. The entire sample is then crushed to 90% passing <2 millimetres (10 mesh), split to 0.5 kilograms in a riffle splitter, and pulverised to 95% passing 150# (mesh). The samples are then split again to 50 grams using a rotating splitter/spatula. The crusher and pulveriser are cleaned between each sample. Each fraction retained is returned to Yamana.

All Yamana samples are analyzed for precious metals by fire assay (“FA”) with atomic absorption spectrometry (“AAS”) or ICP finish and for copper by AAS by ALS Chemex, Lima, Peru and/or SGS Geosol, Belo Horizonte, Brazil. Yamana is at arm’s length with these laboratories.

Yamana conducts an industry-standard quality assurance/quality control (“QA/QC”) program for its drill campaigns, which follows written protocols. Its QA/QC program consisted of the insertion of blanks and certified reference materials (“CRMs”) into the sample stream and the running of duplicate field (quarter-core) samples. Later, pulp duplicate samples were re-assayed at a secondary facility.

RPA assessed Yamana’s QA/QC program and found it to be industry-standard with a generally acceptable rate of insertion for CRMs and pulp duplicates. The results of the pulp duplicate assays showed good reproducibility with no discernible grade biases. The insertion of CRMs showed that laboratory results from SGS Geosol and ALS Chemex were acceptable with respect to precision and accuracy. The results from the insertion of blanks are also generally acceptable.

In 1996 Echo Bay became actively involved in the drilling and sampling program for the project. Samples taken by Santa Elina in 1996 were subject to a rigorous QA/QC program. IMC Mining (“IMC”) was contracted to review the historical data. IMC’s review included all historical QA/QC control files and historical data compared with re-assayed data from analytical laboratories in the United States. IMC concluded the historical data was appropriate for estimation of mineral resources.

IMC did a review of the Chapada assay database. IMC did not do any independent assaying, but did review considerable existing data. It was IMC’s opinion that the database was of sufficient quality for a feasibility level study.

A total of 18 Suruca diamond drill holes from Mineração Alonte were re-analysed following Yamana’s procedures. The new assay results were compatible with the historical results.

Based on RPA’s review, it is of the opinion that sampling, sample preparation, and analysis at Chapada are in keeping with industry standards and the assay results within the database are suitable for use in a Mineral Resource estimate.

Samples are transported from the drill rig to Yamana’s core storage facilities at the Chapada project exploration camp by the drilling contractor, where Yamana geological staff log and sample the core. The samples are transported to the independent sample preparation facility by a locally based transport company, after which the samples are sent for preparation in ALS Chemex in Goiania, Brazil and for analysis in Lima, Peru.

The analytical laboratory stores all pulps and coarse rejects for forty-five days and then transports them back to the Chapada project where all samples are stored in the core storage facility for the life of the project.

Based on RPA’s review, it is of the opinion that sample security procedures at the Chapada Mine are in keeping with industry standards.

*Mineral Processing and Metallurgical Testing*

For a discussion of mineral processing and metallurgical testing work completed by Yamana, see “Mining Operations”, below.

*Mineral Resources and Mineral Reserves*

<b>Mineral Resources – December 31, 2016</b> <sup>(1)(2)(3)(4)(5)</sup>									
<b>Category</b>	<b>Tonnes</b>	<b>Au</b>		<b>Tonnes</b>	<b>Ag</b>		<b>Tonnes</b>	<b>Cu</b>	
	(000)	(g/t)	(000 oz)	(000)	(g/t)	(000 oz)	(000)	(%)	(MIB)
Measured	28,094	0.18	162	0	0	0	20,189	0.18	80
Indicated	186,816	0.29	1,727	82,161	1.4	3,775	104,655	0.25	580
Measured + Indicated	214,911	0.27	1,889	82,161	1.4	3,775	124,844	0.24	660
Inferred	98,629	0.27	870	27,553	1.1	982	71,076	0.33	514

Notes:

(1) Mineral resources metals prices and cut-off grades: \$1,500 Au, \$3.5 Cu and \$4.36 NSR cut-off out of pit for Chapada Mine (Main Pit, Corpo Sul and Corpo NE) 0.2 g/t Au cut-off for oxide and 0.3 g/t Au cut-off for sulphide in Suruca Gold Project.

(2) All mineral reserves have been calculated in accordance with the CIM Standards and NI 43-101.

(3) Mineral resources are exclusive of mineral reserves. Mineral resources which are not mineral reserves do not have demonstrated economic viability.

(4) Reported as of December 31, 2016.

(5) Numbers may not add due to rounding.

<b>Mineral Reserves – December 31, 2016<sup>(1)(2)(3)(4)</sup></b>						
<b>Category</b>	<b>Tonnes</b>	<b>Au</b>		<b>Tonnes</b>	<b>Cu</b>	
	(000)	(g/t)	(000 oz)	(000)	(%)	(MIB)
Proven	300,273	0.19	1,809	300,273	0.26	1,745
Probable	318,064	0.22	2,273	259,194	0.26	1,503
Proven + Probable	618,336	0.21	4,081	559,466	0.26	3,248

Notes:

(1) Mineral reserves metal prices and cut-off Grades: \$1,200 Au, \$2.75 Cu, \$4.36 NSR cut-off (Main Pit, Corpo Sul and Cava Norte). \$900 Au; 0.2 g/t Au cut-off for oxide ore and 0.3 g/t Au cut-off for sulphide ore in Suruca Gold Project. Metallurgical recoveries for Cu are 83% and Au ranges from 52% to 85% dependent on zone.

(2) All mineral reserves have been calculated in accordance with the CIM Standards and NI 43-101.

(3) Reported as of December 31, 2016.

(4) Numbers may not add due to rounding.

The methodology of estimating mineral resources by Yamana includes: (a) statistical analysis and variography of gold and copper values in the assay database; (b) construction of a block model using Datamine Studio 3 software; and (c) grade interpolation using a kriging or inverse distance cubed method. The Mineral Resource estimate is based on open pit mining scenarios and Chapada and Corpo Sul mineral resources are constrained by Whittle optimized pits which are based on a copper and gold net smelter return.

Validation of the block models by Yamana included: (a) on screen displays of plans and sections showing composite and block grades; (b) swath plots calculated over “slices” of each zone; (c) comparisons between composite and global block statistics cross validation (Chapada only); and (d) cross-validation.

RPA finds the estimation methods and classification criteria adopted by Yamana are reasonable and sufficient to support the mineral resources reported.

RPA reviewed the reported resources, production schedules, and factors for conversion from mineral resources to mineral reserves. Based on this review, it is RPA’s opinion that the measured and indicated mineral resource within the final pit designs at Chapada can be classified as proven and probable mineral reserves.

RPA also stated that, to the best of their knowledge, the mineral resources were not materially affected by any known environmental, permitting, legal title, taxation, socio-economic, marketing, political or other relevant issues to the best knowledge of the author.

*Mining Operations*

The Chapada Mine is a traditional open pit truck/shovel operation that has been in continuous operation since 2007. The Chapada open pit, which is currently being mined, has ultimate design dimensions of approximately 4.5 kilometres along strike, up to 1.2 kilometres wide, and 200 metres deep. Benches are 10 metres high, doubling to 20 metres towards the limit of the pit, except in upper benches, where the benches are 10 metres high in soil. Six operating phases have been designed to support the mine production from initial topography to the final pit geometry. An in-pit primary crusher was installed, allowing a more flexible operation for ore blending to plant and reducing major truck fleet requirements.

The mine plan includes three open pit mining areas to be developed on the property. Current production is from the Chapada Corpo Principal and Corpo Sul open pits. The Corpo Sul open pit began production in 2014.

The processing plant is located at the northwest end of the Chapada Corpo Principal pit rim. The tailings storage facility is located to the northwest of the open pit, with the pond as close as 0.5 kilometres to the pit rim and the tailings dam being up to five kilometres to the northwest. Waste rock dumps are located to the south and southeast of the open pit. Limits of the waste rock dumps start just past the ultimate pit rim in order to minimize waste haulage distances.

The existing Chapada Mine treatment plant is designed to treat sulphide ore at a nominal rate of 60,000 tpd. The process recoveries for copper and gold averaged approximately 80% and 59%, respectively, from June 2013 to May 2014. Run-of-mine (“ROM”) material from the Suruca mineralization will be treated and incorporated into the system through two separate processes. The oxide ore will be processed using conventional heap leaching technology, and sulphide ore will be processed in the existing plant after some modifications.

### Sulphide Ore

The first step for sulphide material occurs in the primary grinding circuit in two parallel crushing systems. Both systems perform the primary crushing with a P70 of five inches. The ore processed is then transported by conveyor belt to an intermediate stockpile. A feeder conveyor belt delivers the feed to the grinding circuit.

The grinding circuit is divided into four systems:

- Reclaim Ore — Ore taken from the crushed ore stockpile and delivered to the semi-autogenous grinding (“SAG”) mill.
- Primary Grinding and Pre-Classification — SAG mill grinding and pre-classification using cyclones.
- Pebble Crushing — Transportation and crushing coarse pebbles screened from the SAG mill discharge.
- Secondary Grinding and Classification — Ball mill grinding and classification using cyclones.

The ore is then brought to the flotation process in pulp form with approximately 35% solids. There are two flotation cell lines, rougher and rougher/scavenger. Each cell line produces two concentrates. The tailings from the rougher/scavenger system are sent to the final tailings storage facility. The last step in the process is thickening and filtration. The thickening process reduces the ore concentrate moisture content to an average of 8%. This is discharged in the concentrate storage shed to be loaded and shipped to customers.

### Oxide Ore

The crushing circuit consists of two MMD sizers in series and associated equipment. Material is pre-screened ahead of the MMD sizer and crusher product then combines with screen undersize and is conveyed to the crushed product stockpile. Crushed product is then fed to an agglomeration drum. Prior to the drum, cement is added in a controlled fashion and a weak cyanide solution (barren pond solution) is added in the agglomeration drum, and mixed to produce agglomerates which are conveyed and stacked.

The agglomerated material is stacked on pads which are approximately 100 metres wide and 620 metres long. A weak cyanide solution from the barren solution pond is then used to leach the gold from the stacked ore. The solution filters through the agglomerated ore with the gold inherent in the ore leached to produce a gold rich solution. The gold rich solution collects at the base of the pad and is collected in the pregnant solution pond.

Pregnant solution flows through four adsorption columns in series and flows by gravity from one adsorption column to the next. The total residence time in the adsorption columns is in the order of 25 minutes. After acid washing, the loaded carbon is washed and sent to the elution column to remove gold from the loaded carbon. The gold removed from the loaded carbon cools in a flash cell and then reports to the two electrowinning cells in parallel. Gold in solution is removed onto stainless steel cathodes. The stainless steel cathodes are rinsed off with a high pressure washer. The cathode sludge is then filtered, dried in an oven, transferred to the barring furnace and the gold is then poured into molds.

### *Processing and Recovery Operations*

The existing Chapada Mine processing plant is designed to treat sulphide ore at a nominal rate of 60,000 tpd. The process recoveries for copper and gold averaged approximately 80% and 59% respectively from June 2013 to May 2014 inclusive. The processing plant at Chapada currently incorporates a conventional flotation process including the following elements: (i) primary crushing; (ii) semi-autogenous grinding; (iii) secondary grinding (Ball Mill); (iv) flotation; (v) thickening; (vi) filtration; and (vii) tailings disposal

Heap leaching will be introduced to process oxide mineralization from the Suruca deposit, while sulphide ore from Suruca will be processed in the existing plant.

### *Infrastructure, Permitting and Compliance Activities*

The necessary infrastructure is in place to continue the Chapada operation, including: (i) mine and mill infrastructure including office buildings, shops, and equipment; (ii) boytailings storage facility with additional capacity for two years with plans for further expansion; (iii) electric power from the national grid; (iv) haulage roads from the mines to the plant; (iv) stockpile areas; (v) maintenance facilities; (vi) administrative office facilities. Some equipment will require replacement in the future to sustain the operation and equipment replacement is provided for in the LOM plan and budgets.

Yamana has all the environmental permits required to operate the Chapada mine and process plant. Additional permits are occasionally required for expansion or construction projects. Mine closure will include total demobilization and decommissioning of all equipment and installations. The tailings area, waste storage piles, and other affected areas will require revegetation. The closure plan is revised every three years or if there is a material change in mining activities.

Yamana is very active in engaging the local community with a series of cultural, social, and economic programs.

### *Capital and Operating Costs*

RPA estimated the capital and operating costs in the Chapada Technical Report. LOM capital costs included for capital projects, primarily Suruca, and sustaining capital, which includes closure costs. Capital costs are in first Quarter 2014 US dollars. LOM capital costs for Chapada were approximately \$250 million and sustaining costs were approximately \$190 million.

### *Exploration, Development and Production*

The Chapada and Corpo Sul deposits are located on claim numbers 808.923/1974, 808.931/1994 and 860.273/03 (mining licences) encompassing 3,830 hectares. The Suruca deposit is located on claim numbers 860.708/2009 and 860.595/2009 (exploration licences), totaling 845.75 hectares.

Production at the Chapada Mine in 2016 consisted of 107,301 ounces of gold and 259,444 ounces of silver, contained in concentrate compared to 119,059 ounces of gold and 274,533 ounces of silver contained in

concentrate in 2015. Chapada Mine copper production was 115.5 million pounds in 2016 compared to production of 131.0 million pounds of copper in 2015.

The Company completed a total of 61,972 metres of drilling in 753 holes over the course of the year ended December 31, 2016. The near mine program focused on defining and expanding the Sucupira mineral resource immediately adjacent to the main Chapada pit, testing and developing an IP anomaly immediately beneath the pit, targeted infill drilling at Corpo Sul and testing for extensions of the oxide mineral envelopes at Suruca and Hidrothermalito. At Sucupira, 110 drill holes have been completed and have defined a mineralized body 1.85 kilometres in strike length, 80 to 180 metres in thickness and 200 to 400 metres in width. The deposit remains open to the southwest. This mineralization lies within 100 to 200 metres of surface and 100 metres lateral and below the currently designed final Chapada pit.

Adjacent to Sucupira and the main Chapada ore body, the core mine exploration program has discovered a new continuous, low to moderate grade copper and gold mineral body (“Baru”) above and immediately north of the Sucupira mineral body. The newly discovered Baru target is under review by mine geologists and engineers for further work, particularly given its proximity to the plant infrastructure. The impact of this new discovery in relation to the mineability of Sucupira, including the potential near term production impact of Baru, will be the subject of engineering studies during 2017 and 2018. Please refer to the section “Cautionary Note Regarding Forward-Looking Statements”.

## **SCHEDULE “E”**

### **Audit Committee Charter**

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#### **INTRODUCTION**

1. The purpose of the Audit Committee (the “Committee”) is to assist the Board of Directors of the Corporation (the “Board”) in fulfilling its oversight responsibilities by reviewing the financial information which will be provided to shareholders of the Corporation and others, the systems of corporate financial controls which management and the Board have established and the audit process.
2. The Committee will oversee the Corporation’s financial reporting process on behalf of the Board and report the results to the Board.
3. While the Committee has the responsibilities and powers set forth in this mandate, it is not the duty of the Committee to plan or conduct audits or to determine the Corporation’s financial statements are complete and accurate and are in accordance with generally accepted accounting principles. Management is responsible for preparing the Corporation’s financial statements and the independent auditors are ultimately accountable to the Board and the Committee, as representatives of the Corporation’s shareholders.

#### **DEFINITIONS**

4. “Management” refers to the officers of the Corporation, and the other members of the senior management team of the Corporation as may be determined from time-to-time by the Chief Executive Officer and communicated to the Board.
5. “Officers” refer to those employees who are appointed as officers the by the Corporation.

#### **DUTIES AND RESPONSIBILITIES**

6. Financial Reporting
  - a. Review, with management and the independent auditors the financial statements and management discussion and analysis prior to the filing of the Corporation’s Annual and Interim Reports.
    - i. Include in this review discussions regarding their judgment on the quality, not just the acceptability, of significant accounting principles, the reasonableness of significant judgments, and the clarity of the disclosures in the financial statements;
    - ii. Discuss the results of the review and any other matters required to be communicated to the Committee by the independent auditors under generally accepted auditing standards if a review engagement of the interim financial statements is requested by the Committee; and

1. Ensure the Corporation's compliance with legal and regulatory requirements relating to financial disclosure.
  - b. Review any new appointments to senior positions of the Corporation with financial reporting responsibilities;
  - c. Review reports from senior officers of the Corporation outlining any significant changes in financial risks facing the Corporation;
  - d. Review the management letter of the external auditors and the Corporation's responses to suggestions made; and
  - e. Review all financial press releases, earnings guidance and the annual information form.
7. External Audit
  - a. Review the audit plan with the external auditors and discuss the overall scope and plans for the audit, including the adequacy of staffing and compensation;
  - b. Meet separately with the independent auditors, with and without management present, to discuss the results of their examinations and provide sufficient opportunity for the independent auditors to meet privately with the members of the Committee; and
  - c. Annually, review and recommend to the Board the selection of the Corporation's independent auditors, subject to shareholders' approval, and approve the annual fee for the external audit services.
8. Internal Audit
  - a. Annually review the summary report of the internal audit function for the past year; and
  - b. Annually review planned activities and resources of the internal audit function for the coming year.
9. Miscellaneous

Perform any other matters referred to the Committee or delegated to it by the Board.
10. Director Responsibilities and Performance
  - a. Committee Duties

Act honestly and in good faith with a view to the best interests of the Corporation and to exercise the care, diligence and skill that a reasonable prudent person would exercise in comparable circumstances.

- b. Committee Values
  - i. Assist the Corporation to operate in compliance with all corporate policies and codes, and all laws and regulations governing the Corporation; and
  - ii. Maintain strong financial reporting and control processes.
- c. External Auditors
  - i. Ensure that the external auditors are accountable to the Board, as representatives of the shareholders, through the Committee;
  - ii. Recommend the appointment of auditors to the Corporation's shareholders and for the compensation and oversight of the work of the external auditors, including resolution of disagreements between management and the external auditors regarding financial reporting; and
  - iii. Ensure that the external auditors report all material issues or potentially material issues to the Committee.
- d. Reliance on Experts
  - i. Place appropriate reliance in good faith on reports that the financial statements of the Corporation represented to each member of the Committee by an officer of the Corporation or in a written report of the external auditors present fairly the financial position of the Corporation in accordance with Canadian general accepted accounting principles; and on any report of a lawyer, accountant, engineer, appraiser or other person whose profession lends credibility to a statement made by any such person.

#### **IV. OPERATION OF THE COMMITTEE**

##### **11. Reporting**

The Committee shall report to the Board.

##### **12. Composition of Committee**

The Committee shall consist of not less than three directors, all shall qualify as "independent", as defined in multilateral instrument 52-110 Audit Committees.

##### **13. Appointment of Committee Members**

Members of the Committee shall be appointed at a meeting of the Board, typically held immediately after the annual shareholders' meeting, provided that any member may be removed or replaced at any time by the Board and shall in any event cease to be a member of the Committee upon ceasing to be a member of the Board.

14. Vacancies

Where a vacancy occurs at any time in the membership of the Committee, it may be filled by the Board.

15. Chair of the Committee

The Board shall designate the Chair of the Committee. The Chair shall have responsibility for overseeing that the Committee fulfills its mandate and its duties effectively. In the absence of the Chair of the Committee, the members will appoint an acting Chair.

16. Secretary

Unless the Committee otherwise specifies, the secretary of the Corporation will act as secretary of all meetings of the Committee.

17. Committee Meetings

The Committee will meet at least four times annually (or more frequently as circumstances dictate).

Committee meetings may be held in person, by video-conference, by means of telephone or by any combination any of the foregoing.

18. Notice of Meeting

Notice of the time and place of every meeting may be given orally, in writing, by facsimile or by e-mail to each member of the Committee at least 48 hours prior to the time fixed for such meeting.

A member may in any manner waive notice of the meeting. Attendance of a member at the meeting shall constitute waiver of notice of the meeting except where a member attends a meeting for the express purpose of objecting to the transaction of any business on the grounds that the meeting was not lawfully called.

19. Quorum

A quorum will be a majority of the members of the Committee present in person, by video-conference, by telephone or by a combination thereof.

20. Attendance at Meetings

The Chief Financial Officer is expected to be available to attend meetings, but a portion of every meeting can be reserved for in camera discussion with the Chief Financial Officer, or any other member of management, being present.

The Committee may by specific invitation have other resource persons in attendance. The Committee shall have the right to determine who shall and who shall not be present at any time during a meeting of the Committee.

21. Meeting Agenda

Committee meeting agendas shall be set by the Chair of the Committee in consultation with Committee members, management if appropriate, and the external auditors if appropriate.

22. Minutes

The Committee shall keep regular minutes of proceedings and shall cause them to be recorded in books kept for that purpose.

23. Outside Advisors

The Committee is empowered to engage and compensate any outside advisors as it deems advisable to permit it to carry out its duties, at the expense of the Corporation.

24. Reporting to the Board

The Committee, through its Chair, will report regularly to the Board, and in any event no less frequently than on a quarterly basis.

**V. OPERATION OF THE COMMITTEE**

The Governance Committee will review these terms of reference at least every two years or, where circumstance warrants, at such shorter interval as is necessary, to determine if further additions, deletions or amendments are required, and make a recommendation to the Board as to their approval.

**VI. HISTORY**

These Terms of Reference were:

- a. Initially adopted by the Board on September 12, 2007
- b. Reviewed and approved by the Board on December 14, 2016