

# Annual Information Form For the Financial Year Ended December 31, 2017

**Lundin Gold Inc.** 

March 20, 2018

# Important information about this AIF

This annual information form (AIF) provides important information about Lundin Gold Inc. (Lundin Gold or the Company) and its business.

This AIF has been prepared in accordance with Canadian securities laws. It describes the Company's history and its industry, its operations, development projects and plans, its Mineral Resources and Mineral Reserves, its regulatory environment, the risks the Company faces in its business, the market for its shares and its governance, among other things.

This AIF is dated March 20, 2018. Unless stated otherwise, all of the information in this AIF is stated as at December 31, 2017.

This AIF incorporates by reference the Company's:

- management's discussion and analysis for the year ended December 31, 2017 (2017 MD&A), which is available under the Company's profile on the SEDAR website at www.sedar.com (SEDAR); and
- audited consolidated financial statements for the year ended December 31, 2017 (2017 Financial Statements), which are available on SEDAR.

#### **Financial Information**

Unless otherwise specified, all dollar amounts referred to in this AIF are stated in United States dollars. References to CAD\$ mean Canadian dollars.

Financial information is presented in accordance with International Financial Reporting Standards as issued by the International Accounting Standards Board.

# **Caution about forward-looking information**

This AIF and the documents incorporated by reference include statements and information about management's expectations for the future. When discussing strategy, plans and future financial and operating performance or other things that have not yet taken place, management is making statements considered to be forward-looking information or forward-looking statements under Canadian securities laws. They are referred to in this AIF as forward-looking statements.

Forward-looking statements in this AIF:

- typically include words and phrases about the future, such as believe, estimate, anticipate, expect, plan, intend, predict, goal, target, forecast, project, scheduled, potential, strategy and proposed;
- are based on opinions, assumptions, estimates and expectations of management as of the date such statements are made, and they are subject to known and unknown risks,

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uncertainties and other factors which may cause the actual results, performance or achievements of the Company to be materially different from any future results, performance or achievement expressed or implied by such forward-looking statements.

Examples of forward-looking statements included in this AIF are statements relating to:

- the benefits to be derived under the EA and the IPA (defined below)
- the completion of the Private Placement (defined below)
- the use of proceeds received from the Financing (defined below) and the ability to complete the Senior Facility (defined below)
- the Company's updated project plan and expected production
- exploration and development expenditures and reclamation costs
- expectations relating to the receipt of regulatory approvals, permits and licenses under governmental and regulatory regimes
- exploration plans
- future sources of liquidity
- capital costs, operating costs and expenditures and requirements, production and economic returns
- expectations of market prices and costs
- development, construction and operation of FDN
- future tax payments and rates
- cash flows and their uses
- the Company's drill results, geology, and Mineral Resource and Mineral Reserve estimates.

Lundin Gold's actual results could differ materially from those anticipated. The following risk factors could cause actual results to differ materially from those projected in the forward-looking statements:

- the ability to arrange financing and the risk to shareholders of dilution from future equity financings;
- the ability to maintain its obligations under the Financing (defined below) and other debt;
- risks related to carrying on business in Ecuador;
- volatility in the price of gold;
- the timely receipt of regulatory approvals, permits and licenses;
- risks associated with the performance of the Company's contractors;
- risks inherent in the development of an underground mine;
- deficient or vulnerable title to mining concessions and surface rights;
- shortages of critical resources, labour and key executive personnel, such as input commodities, equipment and skilled labour, and the dependence on key personnel;

In this AIF, the Fruta del Norte Project or FDN means the gold project located in southeast Ecuador.

- risks associated with the Company's community relationships;
- unreliable infrastructure;
- volatility in the market price of the Company's shares;
- the potential influence of the Company's largest shareholders;
- uncertainty with the tax regime in Ecuador;
- measures required to protect endangered species;
- the cost of compliance or failure to comply with applicable laws;
- exploration and development risks;
- the accuracy of the Mineral Reserve and Resource estimates for the Fruta del Norte Project
- the Company's reliance on one project;
- risks related to artisanal and illegal mining;
- uncertainty as to reclamation and decommissioning;
- risks associated with the Company's information systems;
- competition in the mining industry;
- the ability to obtain adequate insurance;
- risks of bribery or corruption;
- the potential for litigation; and
- limits of disclosure and internal controls

Many of these uncertainties and contingencies can affect the Company's actual results and could cause actual results to differ materially from those expressed or implied in any forward-looking statements made by, or on behalf of, the Company. The risk factors listed above are discussed in more detail later in this AIF in the section entitled "Risks Factors" starting on page 78.

The Company believes that the expectations reflected in this forward-looking information are reasonable, but no assurance can be given that these expectations will prove to be correct. Readers are cautioned not to place undue reliance on forward-looking statements, and the Company disclaims any obligation to update or revise forward-looking statements if circumstances or management's beliefs, expectations, or opinions should change, except as required by law.

## **About Lundin Gold**

Lundin Gold is a Canadian mining company with its head office located in Vancouver, British Columbia. The Company owns the Fruta del Norte Project located in southeast Ecuador, which is one of the largest and highest grade undeveloped gold projects in the world. Lundin Gold's website address is www.lundingold.com.

#### **Corporate Headquarters**

Lundin Gold Inc. Suite 2000 885 West Georgia Street Vancouver, B.C. V6C 3E8 Canada

Phone: (604) 689-7842

Toll-free: 1-888-689-7842

## **Regional Head Office**

Aurelian Ecuador S.A., a subsidiary of Lundin Gold Inc. Av. Amazonas N37-29 y UNP Edificio Eurocenter, Piso 5

Quito, Ecuador

Phone: 593-2-299-6400

The table below sets out the number of employees of the Company by location for each of the last three financial years, including temporary positions where indicated.

Financial Year	Ecuador Permanent Positions	Ecuador Temporary Positions	Canada	Other	Total
2015	169	16	3	1	173
2016	181	87	8	0	276
2017	195	568	3	0	766

As of the date of this AIF, none of the Company's employees are unionized.

Lundin Gold is a reporting issuer in all of the provinces and territories of Canada other than Québec. The common shares of Lundin Gold (the Shares) are listed on the Toronto Stock Exchange (the TSX) and on NASDAQ Stockholm under the symbol "LUG". The Vancouver office of Computershare Investor Services Inc. acts as the registrar and transfer agent for the Shares. The address for Computershare is 510 Burrard Street, 3rd Floor, Vancouver, B.C. V6C 3B9, and the telephone number is 1-800-564-6253. The registered and records office of Lundin Gold is located at Blake, Cassels & Graydon LLP, Suite 2600, 595 Burrard Street, Vancouver, British Columbia V7X 1L3.

The Company was incorporated in British Columbia in 1986 and in 2002 was continued under the Canada Business Corporations Act. The Company was originally engaged in the information technology sector. In 2004 the Company undertook a change of business and became a mineral exploration company. At the same time, the Company changed its name to Fortress Minerals Corp. The Company was then listed on the TSX Venture Exchange (**TSX-V**) with the trading symbol "FST". Subsequent to 2004, the Company became engaged in precious and base-metal mineral exploration primarily in Russia and also briefly in Mongolia and Nicaragua.

Several years later, the Company wound up its Nicaraguan and Mongolia interests and then in 2010, the Company disposed of its Russian assets. In October 2012, the Company's listing was transferred to the NEX board of the TSX Venture Exchange (**NEX**), and the Shares commenced trading on the NEX under the symbol "FST.H".

In December 2014, the Company undertook a reorganization which involved the acquisition of the Fruta del Norte Project in Ecuador, a major gold development project, from Kinross Gold Corporation (**Kinross**), a name change to Lundin Gold Inc., an equity financing, a convertible debt offering, a graduation from NEX to the TSX and a listing on NASDAQ Stockholm under the symbol "LUG".

# The Company's Structure

Lundin Gold conducts its business through eight subsidiaries, as follows:

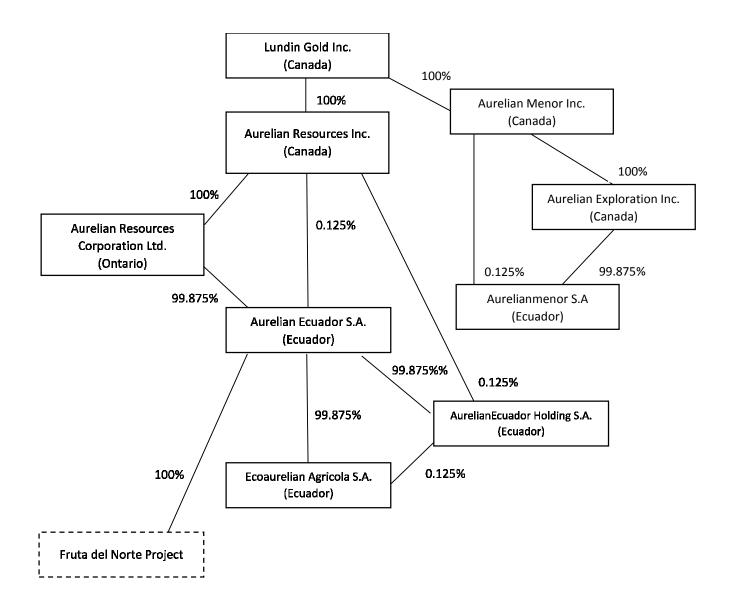
## The **Project Subsidiaries**:

- Aurelian Ecuador S.A. (AESA), which holds the concessions underlying the Fruta del Norte gold project (Fruta del Norte Project or FDN) in Ecuador, is the Company's major operating subsidiary. It is owned by Aurelian Resources Inc. and Aurelian Resources Corporation Ltd., which are both Canadian subsidiaries of Lundin Gold.
- Ecoaurelian Agricola S.A., which owns certain land rights related to the Fruta del Norte Project, is a subsidiary of Aurelian Ecuador Holding S.A. and AESA.

#### The Non-Project Subsidiaries:

 Aurelianmenor S.A. holds the Company's exploration concessions. It is a subsidiary of Aurelian Exploration Inc. and Aurelian Menor Inc., which are both Canadian subsidiaries of Lundin Gold.

The following diagram depicts the corporate structure of Lundin Gold and its subsidiaries as at December 31, 2017, including the name, jurisdiction of incorporation and proportion of ownership interest in each.



# **Developments over the Last Three Years**

#### 2015

During 2015, the Company made a number of changes to strengthen the depth and expertise of its board of directors (**Board**) and its management team and to enhance its governance structure.

On the management side, Nathan Monash was appointed as Vice President, Business Sustainability. The Board was expanded to include Carmel Daniele as a nominee of CD Capital

Natural Resources Fund II (Master) L.P. (**CD Capital**), a significant shareholder of the Company. Later in the year, Ashley Heppenstall was appointed to the Board and then subsequently appointed as Lead director.

The Company also changed its auditor at the start of 2015, with the appointment of PricewaterhouseCoopers LLP (**PwC**).

In this AIF, *NI 43-101* means National Instrument 43-101 -*Standards of Disclosure for Mineral Projects*, Companion Policy 43-101CP and Form 43-

In February 2015, the Company assembled an integrated engineering team for the preparation of the feasibility study for

the Fruta del Norte Project including: Amec Foster Wheeler Americas Limited (Amec Foster Wheeler), NCL Engineering and Construction SpA, Patterson & Cooke Canada Inc., Klohn Crippen Berger S.A. and SRK Consulting (Canada) Inc. (SRK).

Activity in support of the feasibility study commenced immediately in 2015, starting with a 13,902 metre drill program focused on geotechnical, hydrogeology, metallurgical and civil geotechnical in the areas that are in proximity to the proposed plant and tailings facility.

During the balance of 2015, negotiations with the Government of Ecuador (**GOE**) on the exploitation agreement for FDN advanced. The feasibility study for the Fruta del Norte Project also progressed, including the field work, data analysis, engineering work and metallurgical test work. Environmental baseline studies, site fieldwork and document preparation in support of the feasibility study and the submissions in connection with the Environment Impact Assessment (**EIA**) also proceeded in 2015.

#### 2016

In January 2016, Lundin Gold and the GOE successfully completed the negotiation of the definitive form of the exploitation agreement for the Fruta del Norte Project, which subsequently was entered into on December 14, 2016 (the **EA**), as discussed later in this AIF.

Also in January, the Company released the results from its metallurgical test work program for FDN. Based on the results, the Company confirmed the Gravity Float Leach (**GFL**) flowsheet for the Fruta del Norte Project. The metallurgical test programs indicated gold recovery ranging from

91.7% to 94.2% with approximately 30% on average into doré and the remaining 70% into a final concentrate that ranges from 136.7 to 240.0 g/t Au (and 169.5 to 234.1 g/t Ag). The results indicated that the concentrate to be produced is expected to be readily saleable with impurities at controlled levels.

In April 2016, Lundin Gold announced the start of an exploration drilling campaign on five regional targets near FDN. The campaign was completed early in August with 28 holes totaling 8,519 metres. The targets were located 10 to 15 km south of FDN and included the Rio Blanco, Emperador, Robles, Chanchito and El Arco targets. Through this drilling campaign, the Company has determined that the Suarez Pull-Apart Basin (hosting FDN) extends much further south than was previously believed. The length of the basin has now been extended to 16 km (double the previous) with excellent targets, including favorable geochemistry, occurring at numerous targets along its edges.

On June 6, 2016, the Company announced the results of an independent feasibility study for the Fruta del Norte Project. The feasibility study confirmed that FDN will support an economically viable and robust, high grade underground gold mine. On, June 15, 2016 the Company filed an NI 43-101 compliant technical report entitled, "Fruta del Norte Project Ecuador NI 43-101 Technical Report on Feasibility Study" dated June 15, 2016 with an effective date of April 30, 2016 (the **Technical Report**). The report was prepared by Amec Foster Wheeler, with the support of four other globally recognized, leading engineering firms. The feasibility study is discussed later in this AIF under the heading *The Fruta del Norte Project*.

Also in June 2016, the Company secured an \$18 million credit facility (the **2016 Facility**) from Zebra Holdings and Investments S.à.r.l., Luxembourg (**Zebra**), a company owned by a trust whose settlor was the late Adolf H. Lundin. The proceeds of the 2016 Facility were used to initiate work that was identified as essential to the Company's Early Works program of the Fruta del Norte Project. An aggregate of 39,267 Shares were issued to Zebra pursuant to the debenture, in lieu of fees and interest. All amounts outstanding under the 2016 Facility were repaid in full on July 22, 2016 from the proceeds of the 2016 Equity Financing (as defined below).

Effective July 1, 2016, Alessandro Bitelli was appointed as Executive Vice President and Chief Financial Officer of the Company. Mr. Bitelli has extensive project financing experience and over 30 years of experience in the resource industry and in public accounting, having worked both in North America and Europe. At that time, Chester See took over the role of Vice President, Finance.

In June 2016, the Company submitted a Phase Change Application (the **PCA**) for the La Zarza concession (host to the Fruta del Norte Project) to the GOE. On July 13, 2016, the PCA was approved by the GOE, thereby reclassifying the La Zarza concession from the exploration phase to the exploitation phase under Ecuador's mining law. This approval permitted AESA to enter into the EA with the GOE and to proceed with its plans to develop FDN.

On June 27, 2016, the Company entered into an agreement with a syndicate of underwriters (the **Underwriters**), pursuant to which the Underwriters agreed to purchase, on a bought deal basis, 15,000,000 Shares of the Company at a price of CAD\$5.50 per Share, for aggregate gross proceeds of CAD\$82,500,000 (the 2016 Equity Financing). The Company also granted the Underwriters a 15% over-allotment option. On July 19, 2016, the Company closed the first tranche of the 2016 Equity Financing by issuing 10,000,000 Shares of the Company for gross proceeds to the Company of CAD\$55,000,000. On August 9, 2016, the Company closed the second tranche of the 2016 Equity Financing. A total of 5,000,000 Shares were sold under the second tranche at a price of CAD\$5.50 per Share for gross proceeds to the Company of CAD\$27,500,000. In addition, the Underwriters exercised the overallotment option in full and purchased 2,250,000 additional Shares, representing 15% of the total offering, at the offering price for additional gross proceeds to the Company of CAD\$12,375,000. The total gross proceeds raised under the offering were CAD\$94,875,000. The net proceeds of the 2016 Equity Financing were used to fund the Early Works program at the Fruta del Norte Project, basic engineering and additional field drilling programs to support the basic engineering program and general corporate purposes. An aggregate of \$8 million from the closing of the first tranche was used to repay the full amounts owing under the 2016 Facility.

On October 13, 2016, the GOE approved the EIA for the Fruta del Norte Project. The process of approval of the EIA started with the submission of a draft EIA in April 2016, followed by a public participation process coordinated and developed with the Ministry of Environment, and the delivery of a final EIA to the Ministry of Environment in August 2016. At the end of October 2016, the related environmental license (the **Environmental Licence**) was issued. The Environmental Licence covers all of the planned activities for the construction and operations phases of the Fruta del Norte Project and also includes conceptual closure plans. The closure plan will be updated and approved two years prior to the commencement of mine closure. The Environmental Licence is not subject to renewal; its term runs until FDN is complete.

On December 14, 2016, the Company signed the EA for the Fruta del Norte Project. The EA, combined with existing laws and regulations, establishes the fiscal, operational and commercial terms and conditions for the development of FDN. The key features of the EA are:

- The right to develop and produce gold from FDN for 25 years, which may be renewed.
- Advance royalty payments totalling \$65 million to the GOE, of which \$25 million was paid
  on execution of the EA. An additional \$20 million was paid on the first anniversary of the
  signing of the agreement and the balance is due on the second anniversary of signing.
- A royalty equal to 5% of net smelter revenues from production. The advance royalty
  payment is deductible against future royalties payable. It will be deductible against the
  lesser of 50% of the actual future royalties payable in a six-month period or 10% of the
  total advance royalty payment.

- The establishment of extraordinary revenue tax (the Windfall Tax), which will be calculated in the event that market prices exceed a stipulated base price for gold and for silver. The GOE will tax the difference between net smelter revenue and what revenue would be using the base price at a rate of 70%. The base price, which will be determined on a monthly basis, will be equal to the trailing 10-year average of the daily price of gold or silver, escalated by the U.S. Consumer Price Index, plus one standard deviation. The Windfall Tax will not be applied until a company has recouped the cumulative investment in a mining project from its inception until the start of production, plus four years.
- Provision that the GOE's share of cumulative benefits derived from FDN will not be less than 50%. To the extent that the GOE's cumulative benefit falls below 50%, the Company will be required to pay an annual sovereign adjustment. Each year, the benefits to the Company will be calculated as the net present value of the actual cumulative free cash flows of FDN from its inception. The GOE's benefit will be calculated as the present value of cumulative sum of taxes paid including corporate income taxes, royalties, Windfall Tax, labour profit sharing paid to the State, non-recoverable VAT, and any previous sovereign adjustment payments.
- A mechanism for correcting any economic imbalance to the key terms which are the result of changes in taxes, laws and regulations as provided under EA.

On December 19, 2016, the Company signed the Investment Protection Agreement (the **IPA**) with the GOE for the Fruta del Norte Project. The IPA provides further legal and tax stability to Lundin Gold in conjunction with the EA including, among other items, fixing the income tax rate applicable to the Company at 22% and exempting payments of principal and interest to financial institutions outside of Ecuador from the capital outflow tax. The execution of the IPA enhances the Company's ability to finance the development of FDN and gives the Company the right to any benefits that are granted pursuant to future investment protection agreements entered into by the GOE with third parties for similar projects in the country.

In December 2016, the Company also completed an exploration geophysical Induced Polarity (IP) Survey on the Reina, Guacamayo, and Marquesa concessions (RGM block) covering areas of interest previously outlined by soil geochemical surveys. As a result of this work, three new significant targets have been defined in these concessions outside of the pull-apart basin area including the Gata Salvaje, Oso Manso, and Las Nubes targets.

#### 2017

In January 2017, Lundin Gold obtained a \$35 million short-term credit facility (**2017 Facility**) from Zebra. The 2017 Facility was evidenced by a debenture, which was unsecured and was due on the earlier of the closing of a financing by the Company or May 31, 2017, then extended to July

31, 2017. An aggregate of 247,867 Shares were issued to Zebra pursuant to the debenture, in lieu of fees and interest. The proceeds from the 2017 Facility were used for the ongoing Early Works program and for general corporate purposes. All amounts outstanding under the 2017 Facility were repaid in full in July 2017 from the proceeds of the Financing (as defined below).

On February 21, 2017, the Company awarded the mine development contract for FDN to a consortium comprising Ingenieria y Construcciones Mas Errazuriz Limitada y Filiales of Chile and Sevilla y Martinez Ingenieros C.A. Semaica of Ecuador (the **Consortium**); pursuant to this contract, the Consortium is responsible for the mine portals, soft tunneling work and the development of the twin declines in preparation for operations. The Consortium mobilized to site and construction of the mine portals began on May 1, 2017 followed by the start of soft tunneling in September 2017. In December 2017, mine development transitioned from soft tunneling to hard rock in both declines.

On March 16, 2017, the Board approved an increase in the number of directors from eight to nine directors and appointed Chantal Gosselin to the Board. This appointment brought the number of independent directors to six and increased the representation of women on the Company's Board to 22%.

In May 2017, the Company submitted its draft EIA report for the Fruta del Norte Project's powerline to the Ministry of Environment in Ecuador. The EIA received final approval in December 2017 and the Environmental License was granted in January 2018.

In May 2017, the Company announced the start of construction of the mine development support facilities at the Fruta del Norte Project, as well as a project update based on advancing the design and estimates from the Feasibility Study. The update included a revised mine plan, updated capital and operating costs and a new execution plan based on a self-perform approach versus engineering, procurement and contract management (**EPCM**). See "Project Update" at page 65.

On May 30, 2017, the Company secured a project finance package of \$400 to \$450 million (the **Financing**) with the Orion Mine Finance Group **(Orion)** and Blackstone Tactical Opportunities (**Blackstone**). The Financing is comprised of a gold prepay credit facility for \$150 million (the **Prepay Loan**), a stream loan credit facility of \$150 million (the **Stream Loan**), an offtake agreement and participation of \$100 to \$150 million to future equity financings. As of the date of this AIF, the full amount of the Prepaid and Stream Loans has been drawn. Orion's participation in future equity financings is being satisfied under the Private Placement described below.

Pursuant to the Financing, the Company and the Project Subsidiaries are subject to a number of non-financial covenants while amounts remain outstanding. The Prepay and Stream Loans are secured by way of a first ranking charge over the Project Subsidiaries' assets, pledges of the shares of the Project Subsidiaries and guarantees of the Company and the Project Subsidiaries.

On June 1, 2017, the Company held its Annual General and Special Meeting of Shareholders. Mr. Cambon did not stand for re-election and the size of the Board was decreased from nine to eight directors. At this same meeting, the Company's shareholders approved amendments to the Company's Stock Option Plan.

On July 1, 2017, the Fruta del Norte Project began its transition from the Early Works phase into the Project Execution phase.

In October of 2017, the Company announced that long-lead time processing plant equipment had been ordered. Additionally, the Company announced that detailed engineering contracts for the process plant, tailings facility and water management were awarded. Lundin Gold also awarded an engineering, procurement and construction contract for the power transmission line from the Bomboiza substation to the Fruta del Norte Project and preparation of the EIA for the new Mountain Pass Quarry was completed and submitted.

In November of 2017, the Company began an exploration drill program at the El Puma target (**El Puma**). El Puma is located approximately 12 kilometres south of the Fruta del Norte Project. The Company planned 4,000 metres of diamond drilling under the program, which is expected to be completed in early 2018. Soil sampling and two drill holes completed during the Company's 2016 exploration drilling campaign indicate that El Puma has a similar epithermal geochemical signature to the Fruta del Norte deposit.

Also in November, the Company announced that it had been recognized by the United Nations Global Compact Networks of Columbia and Ecuador at the Best Practice Awards for Sustainable Development for its work undertaken jointly with the Lundin Foundation and Catering Las Peñas, the supplier of food preparation, cleaning and laundry services to FDN.

In December 2017, the Company began underground development in hard rock, having completed the soft tunneling portion of the twin mine declines.

#### **Current Year**

On January 22, 2018, the Company announced it had received commitments from a syndicate of five senior lenders (the **Senior Lenders**) for a senior secured project finance facility of \$300 million to fund the development and construction of the Project (the **Senior Facility**). The Senior Facility will include two tranches: Tranche A of \$100 million, to be guaranteed by an export credit agency satisfactory to the Senior Lenders and Tranche B of \$200 million. The term of the Senior Facility will be eight and a half years. There are no mandatory requirements for gold hedging associated with the Senior Facility. The Senior Facility is subject to completion of definitive documentation, which will include customary project finance terms, fees and conditions, a comprehensive inter-creditor agreement and completion of ongoing due diligence.

On February 25, 2018, the Company announced a \$400 million equity private placement financing (the **Private Placement**), at a weighted average subscription price of CAD\$5.44 per Share. Subscribers to the Private Placement include the following: (i) Newcrest Canada Inc., an affiliate of Newcrest Mining Limited (**Newcrest**); (ii) Orion through its affiliate Orion Co-V Holdings Pte Ltd.; (iii) Zebra; and (iv) Lorito Holdings S.à.r.l. (**Lorito**), a company owned by a trust whose settlor was the late Adolf H. Lundin.

Pursuant to the Private Placement, Newcrest and, together, Zebra and Lorito have agreed to subscribe for \$250 million and \$50 million, respectively, at a price of CAD\$5.50 (\$4.33 at a CAD/USD foreign exchange of 1.27) per Share. Orion has agreed to subscribe for \$100 million at a price of CAD\$5.25 (\$4.13) per Share. Upon closing of the Private Placement, Newcrest will own 27.1% of Lundin Gold's outstanding Shares, Lorito and Zebra together will own 22.3% and Orion will own 11.4%. The Company will be issuing an aggregate of 93,497,140 Shares pursuant to the Private Placement, which represents 78.1% of its current issued and outstanding Shares.

The Private Placement, if completed, will materially affect control of the Company under TSX rules, since Newcrest, at the closing of the Private Placement, will hold greater than 20% of the issued and outstanding shares and become the largest shareholder of the Company, and therefore required shareholder approval under TSX rules. The Company has obtained such approval through the solicitation of written consents in a form acceptable to the TSX. The threshold for approval by way of consent is approval by beneficial shareholders owning, in the aggregate, more than 50% of the outstanding shares.

The Private Placement is expected to close on or around March 26, 2018 and is subject to regulatory and other customary approvals, including TSX approval. The Company filed a listing prospectus with the Swedish Financial Supervisory Authority on March 19, 2018 in respect of the Shares issuable under the Private Placement.

Also, on February 25, 2018, the Company announced that it had signed a binding heads of agreement with Newcrest to form a joint venture company to explore eight early stage concessions held by Lundin Gold's subsidiary, Aurelianmenor S.A. These concessions are to the north and south of Fruta del Norte and exclude the large block of concessions surrounding the Fruta del Norte deposit. Newcrest can earn up to a 50% interest in the joint venture company by spending \$20 million over a five-year period. Newcrest will be the operator of the joint venture.

In February 2018, the Company began construction of the process plant with the commencement of construction of the concrete foundations for the grinding mills. The Company's negotiations on access rights necessary for the construction of the powerline are well advanced. The Company also continues to pursue the issuance of industrial and domestic water permits.

## **Lundin Gold's Business**

## Gold Industry Overview<sup>1</sup>

The Company routinely monitors the state of the gold industry and any related current trends. However, it recognizes that first production at FDN is not expected until Q4 2019 and current industry conditions may not reflect the conditions that will be present at that time.

#### **Gold Demand**

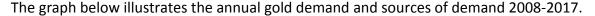
In 2017, total gold demand declined 7% to 131 million oz. from 140 million oz. in 2016. Investment inflows to exchange traded funds (ETFs), although positive, lagged the significant growth in 2016, which offset a slight increase in physical demand. Overall physical demand from the jewelry and technology sectors climbed from a seven year low in 2016 and was up 4% from 2016. Jewelry fabrication continued to be the largest source of physical demand and experienced its first increase in demand since 2013. Jewelry demand increased 4% over 2016 to 68.7 million oz. but the sector remains weak in terms of historical demand. The increase in 2017 demand was driven by recovery in India, the U.S. and China with increases in demand of 12%, 3% and 3%, respectively. These three markets together accounted for 95% of the overall increase in demand in this sector.

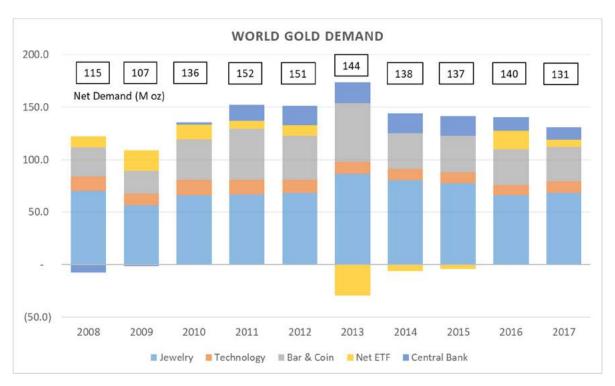
The other source of physical gold demand is in the technology, industrial and dentistry sectors. In this sector, demand for gold saw an overall gain of 3% to 10.7 million oz. in 2017. This represents the first year over year increase in this sector since 2010. The fourth quarter was particularly strong. Demand was up in the electronics and industrial sectors, offset by a decline in the much smaller dentistry sector. Overall, electronics makes up approximately 80% of the total demand. The wireless sector was the outperformer due to increasing number of 3D sensors embedded in smartphones, and the high level of wafer output among wireless chip manufacturers.

Investment demand was down 23% in 2017, from 51.3 million oz. in 2016 to 39.6 million oz. Annual inflows into gold-backed ETFs was down approximately 63% from a stellar 2016, when demand was the second highest on record. In 2017, demand from ETFs was estimated at 6.5 million oz. versus 17.6 million oz. in 2016. Bar and coin investment was down 2% year over year. Weak coin demand accounted for most of the fall, with losses concentrated on the U.S., whereas bar demand was relatively stable. The U.S. recorded the largest drop in demand of any country, falling to its lowest level since 2007 of approximately 1.3 million oz.

<sup>&</sup>lt;sup>1</sup> Except as otherwise indicated, gold industry data in this section is sourced from GFMS Gold Survey 2017 Q4 Update and Outlook, Thomson Reuters and the Gold Demand Trends 2017, World Gold Council.

In 2017, central banks made net purchases of 11.9 million oz. of gold, down 5% over 2016. 2017 was the eighth consecutive year of net central bank demand, but the lowest annual total since 2010. Growth in global central bank reserves were dominated by a small number of large purchasers including Russia, Turkey and Kazakhstan. Germany was the only significant seller.





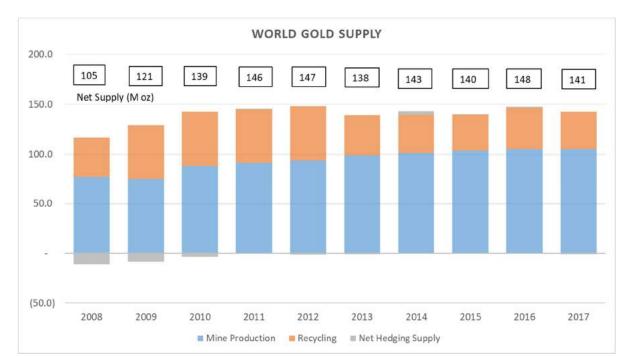
Source: World Gold Council

#### **Gold Supply**

Gold production comes from two principal sources: mine supply and recycling of scrap supply. For 2017, a decline in the gold recycling sector drove total gold supply 4% lower from 148 million oz. to 141 million oz.

Mine production in 2017 increased marginally from 2016, to 105.1 million oz. from 104.9 million oz. The 2017 mine production represents the highest level of production to date. Offsetting the slight increase, was a drop in supply from recycling from 41.6 million oz. to 37.3 million oz. year over year, despite the gold price performing relatively well in many currencies in 2017.

Net producer hedging activity, another component of mine supply, decreased effective mine supply in 2017 by 1.0 million oz., bringing an end to three consecutive years of positive hedging activity. As of the end of 2017, the global hedgebook is estimated at approximately 7.1 million oz.



The following figure illustrates annual gold supply 2008-2017.

Source: World Gold Council

#### **Markets and Outlook**

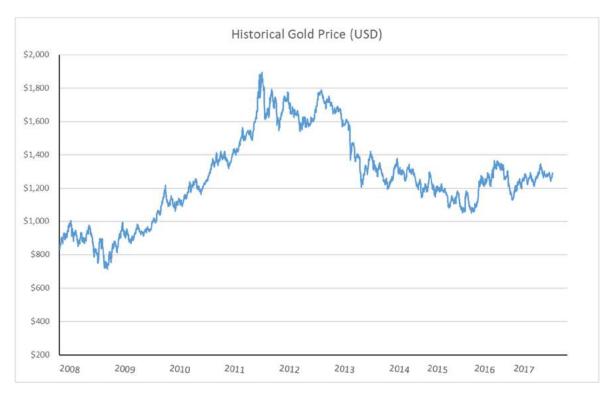
In 2017, the overall gold market surplus increased 18.5% from 9.2 million oz. to 10.9 million oz. This represents the largest surpluses since 2009.

The price of gold has been relatively volatile over the last 10 years. The price of gold began in 2008 at \$833/oz., continuing a rising trend, which began to move at a more rapid pace in the third quarter of 2008. Gold reached a high of \$1,900/oz. in 2011. From 2012 to mid-2015 the price of gold depreciated to a low of \$1,080 per oz. reached in July 2015, before the price began to rebound. In mid-2016, the gold price had risen to \$1,370/oz., a level not seen since March 2014. From early July, through to the end of September, gold traded from \$1,310 to \$1,350/oz. In early October gold fell through the \$1,300 level, falling to \$1,250/oz. and continued to decline through to the end of the year, other than a brief rise from \$1,250 to \$1,300/oz. leading up to the U.S. election. Gold relinquished some of its gains following the election ending the year at \$1,146/oz.

In 2017, the gold price ended the year up 13% at \$1,291/oz. Based on annual averages the price of gold was up less than 1%, from \$1,251/oz. in 2016, to \$1,257/oz. in 2017. Through most of the year the gold price was in the \$1,200 to \$1,300/oz. range, testing \$1,300/oz. several times. In late August the price finally broke through the \$1,300/oz. level staying there until the end of

September and then falling below \$1,300 for the remainder of the year. The highest peak in September was \$1,346/oz.

A chart illustrating the gold price for the period of 2008-2017 is shown below. On the date of this AIF, the price of gold was \$1,311.31/oz., as reported by Bloomberg.



Source: Bloomberg

Looking forward, global mine supply is forecast to continue to decline due to lower production at more mature operations and a lack of new mines coming on stream. On the demand side, volatility in the gold price is expected, on account of the volatile political climate around the globe combined with potential downward pressure due to continued forecast interest rate increases in the United States in 2018. Forecasts also project continued dampened demand in the important Asian markets. Overall, demand is forecast to be flat to declining given the volatile and offsetting factors.

## **Mining in Ecuador**

Ecuador is a Spanish-speaking democratic republic located in western South America, bordered by Colombia to the north and Peru to the east and south. It has a population of approximately 16.4 million. Since 2007, the national poverty rates have been reduced from 38% to 22.9% in

2016, with unemployment reduced from 7.7% in 2006 to 5.8% in fourth quarter of 2017 (vs. 6.5% in Chile, 7.3% in Peru, 12.2% in Brazil, and 11.8% in Colombia).

Ecuador's real GDP-growth slipped to -1.6% in 2016 and is estimated to have rebounded to a modest growth of 0.9% in 2017. The increase in GDP was due primarily to an improvement in oil price combined with the weakness of the U.S. dollar. Ecuador adopted the U.S. dollar as its official currency in 2000. Ecuador is an OPEC member with over 50% of national export value and 40% of public sector revenues from petroleum. The GOE continues to prop up the country's growth by continued high levels of public spending to stimulate the economy and develop national and social infrastructure.

Ecuador holds South America's third-largest oil reserves and untapped copper and gold resources, similar to Chile and Peru (the world's top producers). Several large international players have operations or hold concessions in Ecuador, including Repsol, Synopec and Agip, among others, with the majority of petroleum production coming from the state oil company (60-70%). The reliance on oil has been cited by the GOE as a problem, while the increase in mining sector activity is viewed as an avenue for diversification and a source of foreign direct investment. Over the past three years, the GOE has made significant efforts to encourage foreign direct investment and access to global capital markets, through various policy reforms. Due to the current oil price environment and reliance on the U.S. dollar, the economy continues to have limited growth or is in a recession, depending on government statistics.

A national election was held in February 2017. Based on the inconclusive results, a run-off election was held in April 2017 with candidates from Alianza Pias, the incumbent party, and CREO. The election was won by Alianza Pias and in May 2017, Lenin Moreno was inaugurated as President of Ecuador, succeeding Rafael Correa. The policies of Lenin Moreno's government affecting the mining industry have remained consistent, to date, with the previous administration.

In February 2018, a National Referendum was held which dealt with many different issues. One of the questions was focused on mining. The question related to a ban on metallic mining in protected areas, intangible zones or urban centers. Under the existing Mining Law, mining in these same areas was, in principle, also forbidden. Companies could take out concessions for exploration in protected areas, intangible zones or urban centers; in the case of a major discovery, the concession holder could seek a special approval for exploitation from the National Assembly. With the results of the referendum, it is now explicit that no mining activity may be undertaken in the specified areas/zones. This question had no impact on Fruta del Norte as Fruta del Norte is not located within protected areas, intangible zones or urban centers.

Starting in 2012, the GOE worked to revise the mining laws and agreements with foreign mining companies and encouraged investment in the mining sector. In 2014, Wood Mackenzie, a global energy, metals and mining research and consultancy group, was commissioned by the GOE to

compare Ecuador's mining policy to those of other prominent Latin American mining jurisdictions and make recommendations for potential improvements.

With the establishment of the Mining Ministry in 2015, amendments to the Mining Law and improvements in the fiscal regime, combined with the excellent geological potential, Ecuador has seen significant growth in the mining sector across the country. With two large scale projects well into construction (Mirador and FDN), and several other projects in the feasibility and exploration phases, the prominence of the mining industry is increasing. There are currently an estimated 30 mining companies from all over the world applying for concessions, making investments and considering opportunities in Ecuador.

Under current Ecuadorian mining law, there are three stages of development prior to the Exploitation stage, each with a maximum statutory period, including:

- i) Initial Exploration (48 months);
- ii) Advanced Exploration (48 months); and
- iii) Economic Evaluation (24 months with potential to extend for an additional 24 months).

During the Economic Evaluation stage, a company may commence the negotiation of an exploitation agreement in order to obtain an exploitation permit, and it can voluntarily enter into an investment protection agreement with the GOE. The exploitation agreement defines fiscal terms, establishes mining rights and title to concessions and sets out the concessionaire's and the GOE's respective obligations. The investment protection agreement is focused on the legal framework, contractual rights, tax incentives and guarantees.

# **Lundin Gold's Mining Terms**

The La Zarza concession, which is host to FDN, is currently in the Exploitation Phase. During 2015 and 2016, Lundin Gold and the GOE worked collaboratively to establish the fiscal terms and conditions for the development of the Fruta del Norte Project, thereby moving FDN closer to development. In July 2016, the PCA for the La Zarza concession was approved by the GOE, moving the concession from the Economic Evaluation phase to the Exploitation Phase. In October 2016, the Company announced the completion and approval of the EIA, and in December 2016, Lundin Gold signed both the EA and the IPA with the GOE.

The Company now has all major agreements and permits with the GOE. Both the EA and the IPA are publicly available on the Company's profile on the SEDAR website at <a href="https://www.sedar.com">www.sedar.com</a>. The key terms of the EA and the IPA are summarized below in the section entitled "Material Contracts".

# **Taxes**

Below is a summary of the additional payments and taxes expected to be required in connection with the Fruta del Norte Project under Ecuadorian law and legal and tax stability granted to the Company under the IPA.

Applicable Payment or Tax	Description
Income Tax	The mining concessionaire will be subject to 22% corporate income tax on its gross income less deductible costs, including operating expenses and certain investments and fiscal charges applicable to revenues and pre-tax profits (see below), including transfer pricing adjustments.
Profit Sharing Contributions	The mining concessionaire must make a total profit sharing payment equal to 15% of its pre-tax income, less deductible costs. Of this amount, 3% is distributed to the mining concessionaire's employees and 12% is paid to the GOE, to be used for social investment projects involving health, education and housing through local organizations in the area surrounding the Fruta del Norte Project.  Profit sharing payments are a deductible expense for income tax purposes.
Value Added Tax	The mining concessionaire must pay VAT on goods and services purchased within Ecuador or imported from abroad, subject to certain exclusions for items such as Ecuadorian payroll, fuel, power, food and medicines.
	The standard rate of VAT is 12%. VAT paid by the Company after January 1, 2018 will be refunded once the Company begins to generate export sales.
	VAT paid on acquisitions of goods and services that has not been offset as a tax credit or refunded will be credited against Sovereign Adjustment liabilities.

Applicable Payment or Tax	Description
Royalty	The mining concessionaire is subject to a 5% net smelter royalty from production.
	In accordance with the Exploitation Agreement, an advance royalty payment of \$25 million was paid upon signing of the EA in December 2016. This payment was followed by a subsequent advance royalty payment of \$20 million on the first anniversary of the execution of the EA. The third and final advance royalty payment of \$20 million is due in December 2018.
	The advance royalty payments totaling \$65 million are deductible against future royalties payable at a rate equal to the lesser of 50% of the actual future royalties payable in a six-month period or 10% of the total advance royalty payment.
Windfall Tax	Windfall Tax will be calculated in the event that market prices exceed a stipulated base price for gold and for silver. The GOE will tax the difference between net smelter revenue and what revenue would be using the base price at a rate of 70%. The base price, which will be determined on a monthly basis, will be equal to the trailing 10-year average of the daily price of gold or silver, escalated by the U.S. Consumer Price Index, plus one standard deviation.  Windfall Tax will not be applicable until the Company has recouped the cumulative investment in the Fruta del Norte Project from its inception until the start of production, plus four years.

Applicable Payment or Tax	Description
Sovereign Adjustment	To the extent that the GOE's cumulative benefit falls below 50%, AESA will be required to pay an annual sovereign adjustment. Each year, the benefits to AESA will be calculated as the net present value of the actual cumulative free cash flows of the Fruta del Norte Project from its inception. The GOE's benefit will be calculated as the present value of the cumulative sum of taxes paid including corporate income taxes, royalties, Windfall Tax, labour profit sharing paid to the State, non-recoverable value-added tax, and any previous sovereign adjustment payments.
Other Taxes	The mining concessionaire is also subject to other taxes common to businesses operating in Ecuador including customs duties, capital outflow tax, municipal fees and property tax.

#### 2015 Tax Amendments

The GOE enacted various amendments to Ecuador's income tax laws and regulations, including the introduction of the taxation of capital gains, under the law titled *Organic Law for Production Incentives and Prevention of Tax Fraud* (the **2015 Tax Reform**), which enactment became effective on December 29, 2014.

The 2015 Tax Reform includes provisions for a capital gains tax on the profits derived from the direct or indirect sale of shares, ownership interests, other rights to capital representation, or other rights, that allow for exploration, exploitation, concession or similar activities by companies either domiciled or with permanent establishments in Ecuador.

# The Fruta del Norte Project

On June 15, 2016, Lundin Gold released the results of a NI 43-101 Technical Report, prepared by Amec Foster Wheeler. The firms and consultants who are providing Qualified Persons (QPs) responsible for the content of the Technical Report, which is based on a feasibility study completed in 2016 (the 2016 FS) and supporting documents prepared for the 2016 FS, are, in alphabetical order, Amec Foster Wheeler and Amec Foster Wheeler E&C Services Inc., Klohn Crippen Berger Ltd. (KCB), MM Consultores, NCL, and Roscoe Postle Associates Inc. (RPA). The QPs responsible for the Technical Report are as follows: Mr. Ignacy (Tony) Lipiec, P.Eng., Director, Process Engineering, Amec Foster Wheeler; Ms. Juleen Brown, MAusIMM CP, Mining Sector Lead

- Environment, Amec Foster Wheeler; Mr. Simon Allard, P.Eng., Principal Consultant and Study Manager, Amec Foster Wheeler; Mr. Charles Masala, P.Eng., Associate Water Resources Engineer, Amec Foster Wheeler; Ms. Stella Searston, RM SME, Principal Geologist, Amec Foster Wheeler; Mr. Bryan D. Watts, P.Eng., Chairman and Principal, KCB; Mr. Alejandro Sepúlveda, RM CMC, Principal and Project Director, NCL; Mr. Anthony (Tony) R. Maycock, P.Eng., MM Consultores; and Mr. David A. Ross, P.Geo., Director, Resource Estimation, Principal Geologist, RPA. The Technical Report has been filed with Canadian securities regulatory authorities on SEDAR (available at www.sedar.com).

Except as where stated otherwise, the information below is stated as of the Technical Report effective date. The information contained in this section has been derived from the Technical Report, is subject to certain assumptions, qualifications and procedures described in the Technical Report and is qualified in its entirety by the full text of the Technical Report. Reference should be made to the full text of the Technical Report.

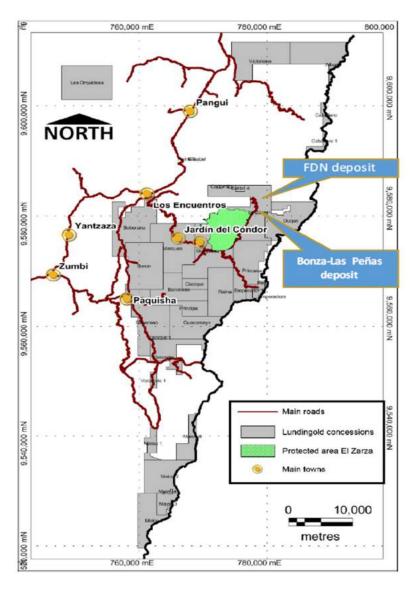
#### **Project Description and Location**

The Fruta del Norte Project deposit is located within a 150 km long copper—gold metallogenic sub-province located in the Cordillera del Cóndor region. The nearest city to the Fruta del Norte Project area is Loja, the fourth-largest city in Ecuador. The Fruta del Norte Project is situated about 139 km east—northeast of Loja. Vehicular access from Loja to the Fruta del Norte Project site is via a 150 km long paved highway to the town of Los Encuentros. A 40 km long gravel road connects Los Encuentros to the Fruta del Norte Project site.



#### **Mineral Tenure**

At the Technical Report effective date, Lundin Gold's mineral tenure holdings comprised 31 mining concessions that cover an area of approximately 74,855 ha. As of the date of this AIF, Lundin Gold's properties in Ecuador consist of 27 metallic mining concessions and three material concessions, covering an area of approximately 64,427 hectares. These concessions are currently registered in the name of the Company's subsidiaries, AESA and Aurelianmenor S.A. See "Mineral Exploration" at page 67. The location of the La Zarza concession, which hosts the FDN deposit, is illustrated below.



At the Technical Report effective date, all of Lundin Gold's concessions in Ecuador were held in the name of AESA, an indirect, wholly-owned subsidiary of Lundin Gold. In 2017, concessions not related to the Project were transferred to another Lundin Gold subsidiary, Aurelianmenor S.A.

The concessions were originally issued under Ecuador's old mining laws with a 30-year term. With the reformation of the country's mining laws in 2009, Lundin Gold's concessions were registered in the Mining Registry and now have different expiry dates, ranging from 21–23 years from the date of registration. The majority of the concessions form a large contiguous block that extends from the Nangaritza River eastward to the international border with Peru.

Under the current mining law, medium and large mining concession terms are divided into two stages: exploration and exploitation. The exploration stage is further subdivided into shorter phases based on the achievement of stipulated milestones. Obligations that must be met to retain the concessions include payment of annual conservation fees, completion of annual reports on exploration completed, and proposed investment plans. Any failure to achieve these milestones and successfully advance to the next stage by the deadline can result in a forfeiture of the concession. In the final stage of exploration, referred to as the economic evaluation stage, an application for exploitation can be made to the GOE. If successful, a concessionaire can then enter into an exploitation agreement with the GOE, and the concession term is the one negotiated under the agreement.

At the Technical Report effective date, four of Lundin Gold's metallic concessions, including Duque, Princesa, Emperador 1 and Emperadora, were required to advance to the economic evaluation stage or be surrendered by Lundin Gold. Subsequent to the date of the Technical Report, three of these (Princesa, Emperador 1, and Emperadora) were combined and renamed the Emperador Concession; this concession was then converted to a small mining concession, and therefore not subject to the requirement to advance to economic evaluation. Applications were made to formally return the Duque, Caballero, Caballero 1, Reina Isabel and Rey concessions. The remaining 22 metallic concessions need to advance to the economic evaluation stage by December 2018, be surrendered or be registered as small-scale mining concessions.

Surface rights must be obtained to support mining project development either through the land acquisition or by an easement (agreed with the land titleholder or imposed by the Ministry of Mining). As of the Technical Report effective date, 61 public deeds for required surface rights had been signed, covering a collective area of approximately 4,145 ha. Since then one additional public deed has been signed.

At the Technical Report effective date, seven land easements were concluded; these cover areas including the access road and construction of surface infrastructure to support mining activities. The term granted is equivalent to the duration of the La Zarza concession term, or the term and extensions of the EA between AESA and the GOE. Since then, all of the land easements required for the Project site have been obtained. The Company is currently negotiating easement rights required for construction of the power transmission line.

Lundin Gold concluded one concession easement agreement with Cóndor Gold S.A. (**Cóndor Gold**) in 2017, to support construction and operation of the access road. The easement agreement is valid for as long as the underlying mining concessions held by Cóndor Gold remain

current. In addition, subsequent to the Technical Report effective date an easement agreement was concluded with the Ecuadorian military to support construction of a road between the construction camp and the project site.

Lundin Gold holds seven water rights under a number of water tenures that collectively allow for 97.25 L/s of extraction. Six rights were granted for exploration purposes, and one water right allows for human consumption.

#### Agreements and Encumbrances

A 1% net revenue royalty is payable in perpetuity on production from Lundin Gold's current mining concessions, including the La Zarza concession, under a royalty agreement dated November 16, 2007 among Lundin Gold's subsidiaries (Aurelian Resources Inc., Aurelian Resources Corporation Ltd., and AESA) and two individuals, being Keith M. Barron and Patrick F.N. Anderson.

A 2% net smelter royalty is payable for any metallic minerals mined from the Rio Zarza/Val del Inca 1 concession acquired Cóndor Gold, pursuant to a net smelter royalty agreement dated August 4, 2017.

There are no other third-party royalties, back-in rights, payments, or other encumbrances on Lundin Gold's concessions in Ecuador.

## Significant Factors That May Affect Access, Title, or the Ability to Work

During 2015, Lundin Gold, through AESA, and the GOE worked collaboratively to establish the fiscal terms and conditions for the development of the Fruta del Norte Project. At the start of 2016, Lundin Gold announced that it had completed negotiations with the GOE and had settled the EA terms for the Fruta del Norte Project.

Subsequent to the Technical Report effective date, the Company signed the EA with the GOE on December 14, 2016. The key terms of the EA have been summarized later in this AIF. Coincident with the signing of the EA, Lundin Gold entered into the IPA with the GOE, the objective of which is to provide legal and fiscal stability and protection to AESA for its investment in the Fruta del Norte Project.

#### **History**

The Cordillera del Cóndor was first explored by Spanish conquistadors in the 1500s. There is evidence that pre-Columbians mined both hard rock and alluvial gold in the area. Spanish mining activity ceased about 1620, following conflict with local Indian tribes that had been enslaved to work in the mines. Artisanal alluvial miners began to prospect the Cordillera del Cóndor as early as 1935, both in Peruvian and Ecuadorian territory.

Companies involved prior to Lundin Gold's project interest included Minerales del Ecuador S.A., from 1986–1992; Amlatminas S.A. from 1996–2002; Minera Climax del Ecuador (Climax), a subsidiary of Climax Mining Ltd. of Australia from 1996–1998; Aurelian Resources Corporation Ltd. from 2003–2008; and Kinross from 2008–2014.

Completed activities have included stream sediment, rock chip, grab, soil and trench sampling, reconnaissance exploration, geological and structural mapping, ground and airborne geophysical surveys, genesis and modelling studies, core drilling, metallurgical testwork, project design studies, and preliminary marketing assessments. Kinross completed a pre-feasibility study in 2009 (2009 Kinross PFS), and a feasibility study in 2011 (2011 Kinross FS). Lundin Gold undertook the 2016 FS in 2015–2016, the results of which are documented in the Technical Report.

No commercial production has occurred from the Fruta del Norte Project; however, there have been periods of active artisanal mining within the Fruta del Norte Project boundaries.

## Regional, Local and Property Geology

The Fruta del Norte Project deposit is located in the Cordillera del Cóndor region. The deposit is hosted by andesites of the Misahuallí Formation and feldspar porphyry intrusions. The Cordillera del Cóndor region consists of sub-Andean deformed and metamorphosed Palaeozoic and Mesozoic sedimentary and Mesozoic arc-related lithologies that formed between the eastern flank of the Cordillera Real, and west of the flat-lying strata of the Amazon basin. Intruding the sub-Andean rocks is a composite I-type batholith, the Zamora Batholith, which has an elongate north—northeast axis that parallels the Ecuadorian Andes for over 200 km, extending into northern Peru. The batholith is considered to be the plutonic expression of a Jurassic-aged, subduction-related, continental magmatic arc established on the western margin of the Amazon craton. In the area of the Fruta del Norte Project deposit, the batholith consists of phases of monzonite, diorite and granodiorites with local porphyritic and aplitic dikes and breccia zones.

The Fruta del Norte Project deposit is an intermediate sulphidation epithermal gold—silver deposit measuring approximately 1,670 m along strike, 700 m down dip and generally ranging between 150 m and 300 m wide. The top of the deposit is located beneath approximately 200 m of post-mineralization cover rocks. The eastern and western limits of the deposit are defined by two faults that together form part of the Las Peñas fault system that is thought to control the gold—silver mineralization. The southern limit of the mineralization along the fault system has not been fully defined by exploration activities.

## Mineralization

Mineralization is characterized by intense, multi-phase quartz—sulphide ± carbonate stockwork veining and brecciation over broad widths, typically between 100–150 m wide in the coherent central and northern parts of the system where the gold and silver grades are highest.

Mineralized shoots are typically present within dilatant zones developed along inflections of vein strike or dip where the geometry permits maximum opening at the time of mineralization.

The mineralogy of Fruta del Norte Project consists of chalcedonic to crystalline quartz, manganese-carbonates, calcite, adularia, barite, marcasite, and pyrite, as well as subordinate sphalerite, galena, and chalcopyrite, and traces of tetrahedrite and silver sulphosalts. The bulk of the gold is microscopic and associated with quartz, carbonates and sulphides. Much of the gold is free milling, but the mineralization is moderately refractory, with approximately 40% of the gold locked in sulphides. However, coarse visible gold is commonly observed. Individual gold grains range from discrete specks less than 0.1 mm in size to broccoli-like, arborescent crystals >10 mm across. Visible gold occurs in all mineralized zones, in quartz or carbonate, as well as within pyrite or silver sulphosalt clusters.

Exploration has delineated a number of additional epithermal-style targets and prospects.

In the opinion of the QPs, the knowledge of the deposit settings, lithologies, mineralization style and setting, ore controls, and structural and alteration controls on mineralization is sufficient to support Mineral Resource and Mineral Reserve estimation.

## **Deposit Types**

The setting, alteration mineralogy and mineralization characteristics of the Fruta del Norte Project deposit are consistent with an intermediate sulphidation epithermal system. Some deposits with mostly low-sulphidation characteristics with respect to their alteration mineral assemblages have sulphide ore mineral assemblages that represent a sulphidation state between that of high-sulphidation and low-sulphidation deposits. Such deposits tend to be more closely spatially associated with intrusions, it has been suggested that intermediate sulphidation may be used for these deposits.

Intermediate-style epithermal systems are typically hosted in arc-related andesitic and dacitic rocks. Mineralization is silver- and base metal-rich, and associated with Mn-carbonates and barite. Sulphide assemblages in intermediate-style epithermal systems typically comprise tennantite, tetrahedrite, hematite-pyrite-magnetite, pyrite, chalcopyrite, and iron-poor sphalerite. Quartz can be massive or display comb textures. Sericite is common as an alteration mineral, but the adularia, more typical of low sulphidation systems, is rare to absent. Fluid inclusions range from 3–5% to 10–20% sodium chloride.

The Fruta del Norte Project deposit and many prospects that have been identified in close proximity to the deposit are classified as intermediate sulphidation-style epithermal systems on the basis of:

 The abundance of manganese-rich carbonate at Fruta del Norte Project and the elevated base metal content (typically as iron-poor sphalerite and subsidiary tetrahedrite and chalcopyrite), are consistent with an intermediate sulphidation state;

- The extensional tectonic setting of mineralizing fluid emplacement and the affiliation with intermediate magma types also complements the classification in terms of redox states;
- Multiphase quartz-sulphide ± carbonate stockwork veining and brecciation over broad widths. Veins typically exhibit classic space-filling epithermal textures including intricate crustiform-colloform banding, and cockade and bladed calcite textures;
- Mineralization comprises apparently free gold, refractory gold in sulphides, and is silverrich;
- Alteration comprises silica—pyrite alteration that grades outward and downward to silica—illite—pyrite alteration, and then to a silica (quartz, chalcedony)—illite—pyrite (±marcasite), carbonate mineral assemblage; and
- Sulphide assemblages include hematite—pyrite—magnetite and pyrite. Arsenopyrite, chalcopyrite, sphalerite, and galena have been noted.

Exploration programs that have used epithermal-style deposits as the geological model target have shown success in the Fruta del Norte Project area, having discovered the Fruta del Norte Project deposit and a number of prospects.

Two prospects have been identified that may be indicative of porphyry–style mineralization, and a porphyry model is also applicable as an exploration geological model target in the wider project area.

#### **Exploration**

#### Kinross Exploration Grid

The Kinross exploration grid consisted of a north–south cut baseline with 100 m spaced eastwest cut lines. The grid is based on UTM coordinates. The datum used in the survey network was originally the PSAD56 (Provisional South American) system applied to Zone 17S. Most data have been subsequently projected to UTM Zone 17S WGS84 using the using the EGM96 geoid to reference elevation. As part of the 2009 Kinross PFS 159 of the then total of 165 drill hole collars were re-surveyed. In addition, Leiva Engineering of Quito (Leiva) duplicated the northings and eastings of 25 road monuments and some of the old drill hole collars that had been surveyed by Kinross. It was found that the Kinross surveys corrected to an ellipsoid surface as opposed to EGM96 mean sea level; this resulted in the Leiva surveys having a 20 m difference from those of Kinross. As the 2009 Kinross PFS modelling efforts had begun using the ellipsoidal-corrected elevations, new infill-hole Z-coordinates used a 20 m constant addition to stay consistent with the original database. All initial collar coordinates have been recalculated in the EGM96 system. Leiva also established additional regional geodetic points in the Colibrí and Emperador concessions.

#### **Ground Control Points**

A ground control point at Las Peñas camp was established, guaranteeing a fixed "zero point" designated as GCP-01 (**Ground Control Point-01**). An Instituto Geográfico Militar (**IGM**) tie-in was set up on IGM point Los Encuentros-1 located 17.59 km west—northwest of Las Peñas, established (by the IGM) at Escuela Gabriela Mistral, in the village of Los Encuentros, Zamora. The Los Encuentros-1 data were purchased from the IGM in Quito. A tie-in to the International GPS System was performed by the AUSPOS processing engine of the University of New South Wales, Australia.

## **LiDAR Surveys**

In February 2008, AESA contracted Network Mapping UK to conduct a light detection and ranging (LiDAR)/orthophotographic survey of a priority area in the Fruta del Norte Project covering 402 km². An integral part of the LiDAR survey was the establishment of an independent survey network using long (>1 hour) static observation sessions using a dual frequency differential receiver.

A digital terrain model survey set was acquired from IGM in 2005 that covers an area of 79.8 km<sup>2</sup>. LiDAR data were acquired in February 2008 from a helicopter-mounted scanner. In 2010, Kinross commissioned Walsh Consultants (**Walsh**) to reprocess the LiDAR data with the purpose of reconstituting contours with corrected elevations. The LiDAR topography, orthophotos, Kinross survey and Leiva surveys have good agreement in northings and eastings; however, Walsh used the ellipsoidal-corrected elevations as a base reference.

#### <u>Database Re-projection</u>

The 2010 exploration grid was based on UTM Zone 17S coordinates using the PSAD56 datum. All data has since been re-projected to UTM Zone 17S using the EGM96 geoid to reference elevation. In 2010, Kinross retained Tetra Tech Wardrop (Wardrop) to assess the impact of implementing a new datum on collar coordinates, and on the subsequent translation of the geological interpretation (wireframes) to the new datum. Wardrop's assessment included various comparisons of re-surveyed holes and a visual verification of the corrected database with the LiDAR produced surface. No significant offsets were noted between the corrected data set and the LiDAR surface. Geological wireframe translation was based on the average offset from the drill hole coordinates.

#### **Geological Mapping**

Geological and structural mapping have been completed from regional (1:25,000 scale) to prospect scale (1:2,000). Mapping results were used to identify areas of quartz veining, silicification and sulphide outcrop that warranted additional work. Data from remote sensing, geophysics, geological mapping and drilling were integrated to prepare an interpretation of the

regional fault configurations. Analysis of Radarsat data showed that major topographic lineaments and regional geological contacts commonly trend north to south and northeast to southwest. The gaps in Cretaceous cover depicted from Radarsat are interpreted to coincide with pre- and/or post-Cretaceous fault zones. Geophysical data also defined a north—south-oriented fabric in proximity to Fruta del Norte. A more complex picture of lineament configurations was revealed from high-resolution Ikonos images where drainage patterns, in particular, showed systematically corrugated traces that may reflect localized offsets of the regional fault/lineament fabric.

## **Geochemical Sampling**

Approximately 27,489 surface samples had been taken over the entire project area to the end of April 2016. Surface sampling was used as a first-pass exploration tool to identify areas of geochemical anomalies; some of these anomalies remain to be followed up.

Soil (6,252 samples), stream sediment (3,266 samples) and channel, adit, panel, pit, grab and rock sampling (3,015 samples) were collected between 1997 and 2007 by AESA and its predecessor companies to evaluate mineralization potential and generate targets for core drilling.

The soil geochemical surveys are very effective in outlining new areas of interest, while rock samples (boulders and outcrop) help to evaluate the potential of these areas and define targets for future drilling.

Five key targets, previously identified by their geochemical anomalies were planned to be drilled in 2016 in the Princesa, Emperador 1, and Emperadora concessions, based on additional work done by Lundin Gold. These areas of interest were anomalous to various extents in arsenic, antimony, gold, and/or mercury amongst other elements, all of which were key indicators of blind mineralization at Fruta del Norte.

## Geophysics

Ground geophysical programs completed to date within the Fruta del Norte Project area include gradient array, pole—dipole array IP resistivity and chargeability surveys. These have been effective in identifying intrusive rocks, faults, basin fill materials, zones of silicification, and pyriterich zones at depth. These methods are particularly effective at the regional level to help define geological and structural context in areas of interest. Because of the thick tropical vegetation and the very limited outcrop exposure in the Fruta del Norte Project area, IP has been very useful in defining the local geological context in order to help to better understand target areas. In addition, IP surveys are mainly used to identify zones of resistivity, which can be related to hydrothermal alteration (silicification), and zones of chargeability, which can be related to the presence of sulphides. The airborne geophysical program completed to date has included high-sensitivity airborne aeromagnetic and radiometric surveys. Both magnetic and radiometric data are useful at the regional scale to identify areas of interest, major boundaries which can be

related to faults, or define geological domains, and large scale targets. Zones of anomalously low magnetic signature can be associated with hydrothermal alteration when hydrothermal fluids destroy magnetic minerals in the rocks. Zones of anomalously high radiometric values (gammarays) may be related to potassic alteration (clays).

#### Pits and Trenches

Trenching was performed by Climax in 1996–1997 to evaluate areas of artisanal mine workings in the Castillo and Bonza–Las Peñas areas. These trenches were later re-opened by AESA All trenches were geologically mapped and channel sampled. In 2016, Lundin Gold performed new trenching on the Emperador and Robles targets. In the case of the Emperador target, the intent was to better expose the sinter discovered in outcrop in 2015 in the principal target area. In the case of the Robles target, trenching was performed to follow up on highly gold-anomalous surface outcrop samples.

## Petrology, Mineralogy, and Research Studies

## **Kinross and Aurelian Studies**

Preliminary microprobe studies were completed to support gold fineness assessments. Mineralogical studies were commissioned during 2007 to verify minerals associated with veining, in particular to determine the presence of adularia. Samples of hydrothermal minerals (molybdenite, marcasite and adularia) and igneous units were selected and submitted to the Colorado State University for radiometric isotope dating by rhenium/osmium ratios and to the University of British Columbia for dating by argon-argon and uranium/lead methods (Ar40/Ar39, U/Pb). Extensive mineralogical and mineral deportment studies were also completed as part of the 2009 Kinross PFS and the 2011 Kinross FS.

#### SRK Alteration Study

SRK conducted an alteration study and associated modelling exercise during 2015 to:

- Characterize the extent of the degradation zones within the Suárez Formation conglomerate; postulate causes;
- Characterize zones of hydrothermal sericite and clay minerals within and surrounding the gold mineralization; extrapolate for exploration vectoring in other concession areas; and
- Quantify total clay contents within the gold mineralization using a suite of X-ray mineral liberation clay quantification analyses.

SRK conducted a degradation survey involving graphic logging of the Suárez Formation conglomerate intercepts and collection of associated infrared spectra. Data was collected at a spacing of one spectrum per box for the entire length of 83 historical drill holes. Graphic logging data were compiled into a digital database, and a comparison of current and historical core box

photographs was completed in PowerPoint format for 58 of the 83 drill holes examined during the degradation survey.

An inspection of drill core indicates that degradation within the Suárez Formation conglomerate is inhomogeneous and does not involve significant volume increase through the production of swelling clays. Degradation is strongest in intervals that are observed or interpreted as containing disseminated pyrite. It is interpreted that the pyrite breakdown upon exposure to air or water leads to the generation of sulphuric acid, which promotes acid attack and further breakdown of pyrite and clay minerals.

The products of core degradation include the residual (i.e. pre-existing) clay minerals paragonite, illite, and minor smectite, and an enhanced concentration of fine-grained silica. The fine-grained silica is interpreted to be amorphous silica that becomes concentrated upon destruction of the smectite. Silicification in the lower parts of the Suárez conglomerate prevents degradation.

The speed of reactions that lead to degradation of the Suárez Formation conglomerate is uncertain. Systematic monitoring and collection of photographs and infrared spectra from the Suárez Formation conglomerate sections of 2015 MET1 holes is necessary in order to determine the speed of degradation.

## **Exploration Potential**

Exploration along the Las Peñas fault zone remains the first priority in the region, since the discovery of the Fruta del Norte gold–silver deposit. Exploration in 2011 continued to focus on the Las Peñas fault zone, more specifically in the La Zarza, Princesa, Sachavaca and Colibrí concessions where epithermal (and possibly mesothermal) systems were targeted.

Since acquiring AESA from Kinross in 2014 to the Technical Report effective date, Lundin Gold exploration work mainly focused on concessions outside of La Zarza and included prospecting, geological mapping, trenching, rock sampling and associated geochemistry, as well as a geophysical survey of key exploration targets. Among epithermal targets selected for further exploration within the La Zarza concession are the FDN SW, Alejandro and Fruta del Norte East targets, all of which have received some previous work.

Additionally, although historically not a principal commodity focus for AESA, stand-alone, porphyry-hosted deposits, both associated with and proximal to the Las Peñas fault zone, provided secondary tier objectives for future exploration programs. Porphyry-related targets include the Tranca-Loma, Sandia and Papaya targets.

Since the Technical Report effective date, expanded geochemical sampling, geological mapping and geophysical surveys continue to identify a number of anomalies, a portion of which have been drill tested. Exploration programs conducted are appropriate to the work phase conducted at the time. The methods used were adequate for the models used of epithermal- and porphyry-

style deposits, and the results were instrumental in properly outlining the extent of the mineralization and defining the Fruta del Norte Project deposit and other prospects. There is considerable remaining exploration potential within the Fruta del Norte Project area.

#### **Drilling**

At the Technical Report effective date, drilling completed within the Fruta del Norte Project area to 1 December 2015 totalled 479 core holes (171,831.03 m). Within these programs, the drill campaigns completed on the La Zarza concession between 1997 and 1 December 2015 consisted of 438 holes (162,200 m) completed at the Fruta del Norte Project deposit, on areas with potential to host infrastructure, and on a number of exploration prospects within the La Zarza concession. A total of 284 holes (126,708 m) were completed at the Fruta del Norte Project deposit. No drilling occurred on the Fruta del Norte Project between 1 December 2015 and 25 April 2016.

Drilling has been by core methods. Core sizes drilled include HQ (63.5 mm core diameter) and NQ-sized core (47.6 mm) for exploration purposes, and lesser diameter HQ3–NQ3 (for geotechnical purposes), NTW (56 mm) and BTW (42 mm) core sizes.

Following arrival at camp, the core was photographed, recovery was measured, and the core was geotechnically logged. Lithological logging followed with the geologist recording a detailed description of the lithology, texture, alteration, mineral assemblage and intensity and level of oxidation/weathering. A graphic log column with a sketch of the geology was also included.

Drill recoveries were acceptable. Lower recoveries during the 2015 drilling (with respect to previous programs) may in part be due to the number of the 2015 drill holes drilled to the west of the Fruta del Norte Project deposit, and others drilled outside the Fruta del Norte Project deposit to better define known fault zones where lower core recovery and drill hole problems could be expected.

During the 2005 to 2007 drill programs, professional Ecuadorian surveyors using a Total Station survey instrument located drill hole collars. During the same programs, the existing Climax drill collars were surveyed, where they could be located. Drill holes completed since 2009 were surveyed by AESA–Kinross or Lundin Gold personnel using Total Station survey instruments. As part of the quality assurance and quality control (QA/QC) process, at the end of the Lundin Gold drill program the local engineering firm Leiva was contracted to survey the drill collars using differential double frequency GPS equipment.

Core holes from the Climax programs were surveyed by either acid tests or Tropari tests. The initial AESA–Kinross programs used a Sperry Sun or Tropari single shot survey instrument taking a measurement every 50 m, or a Flexit digital multi-shot survey instrument with a reading every 30 m down the drill hole. Later programs used Flexit and Reflex digital multi-shot survey

instruments. For the 2015 Lundin Gold drilling program, a Reflex EZ-TRAC digital down hole survey instrument was used.

The deposit was systematically drilled out on 50 m to 100 m sections between lines 2500N and 3900N. The grade and mineralization intensity characteristics clearly delineated zones of high grade and high tonnage mineralization in the north versus more disperse, albeit locally high grade mineralization, in the south. Infill drilling on 50 m centres was focused over 300 m of strike between 3300N and 3600N. The drilling tactic typically involved fan drilling from the pad collar to facilitate between 50 m and 25 m infill drilling before stepping out across strike to define the up or down dip geometry. Even though the majority of AESA core holes were drilled with an easterly (approximately 090°) azimuth and the dominant dip of the mineralized system is west, no single method or percentage adequately describes the complex relationship between down hole (core) length and the true width of the intersected mineralized zones. Drill hole inclinations vary significantly (from -45° to -84°) and the mineralized zones have variable dips from moderate to steep westerly to steep easterly dips. Therefore, most drill holes intersect the mineralized zones at an angle, and the drill hole intercept widths reported for the Fruta del Norte Project are greater than true widths.

The density determination methodology consisted of the water-displacement method. Measurements were made from every hole at an interval rate of approximately 50 m in unmineralized rock and every 20 m in the mineralized system. Rock density is relatively constant within specific lithologies and shows only minimal variation between different lithological groups.

During the Climax drill program, core was sawn in half and sampled at 2 m intervals, regardless of geology. Each sample consisted of 2 m composites of half core, with the exception of the first and last intervals in each hole. AESA–Kinross and Lundin Gold core was sampled using the following criteria:

- Maximum sample length of 2 m in un-mineralized lithologies;
- Maximum sample length of 1 m in mineralized lithologies;
- Smaller samples may be selected around high-grade, visible gold-bearing veins; and
- Minimum sample length of 20 cm.

Drill core was split along the long axis using core saws. Areas of very soft rock were cut using a machete and sections of very broken core were sampled using spoons. The right hand side of the core was always sampled.

#### Sampling, Quality Control Measures and Data Verification Procedures

## Sample Preparation Methods and Quality Control Measures Employed Before Dispatch

A number of independent laboratories were used during the core drilling exploration and delineation phases. Sample preparation facilities included ALS Quito, Inspectorate Quito, and SGS Santiago; analytical facilities included ALS Vancouver, ALS Lima, Inspectorate Lima, SGS

Toronto, and SGS Antofagasta. Sample preparation included drying the sample, crushing to initially >70% passing 2 mm, and later changed to 90% passing, then pulverizing to better than 85% (90%) passing 75  $\mu$ m in the initial programs, which changed to pulverizing to better than 90% passing 100  $\mu$ m.

The quality control (**QC**) program implemented has varied considerably over time in terms of the frequency of insertion and the source of the certified reference materials (**CRMs**) or standard reference materials (**SRMs**). Programs typically included submission of blank samples, CRMs/SRMs, field and reject duplicates and pulp check assaying. Ongoing monitoring of the program was performed by the operators, with spurious results being investigated and changes implemented when required.

The quantity and quality of the lithological, geotechnical, collar and downhole survey data collected in the exploration and infill drill programs conducted by AESA–Kinross and Lundin Gold are sufficient to support Mineral Resource and Mineral Reserve estimation. Sample collection, sample preparation, analytical methods and sample security for all AESA–Kinross and Lundin Gold drill programs are in line with industry-standard methods for epithermal gold–silver deposits and can support Mineral Resource and Mineral Reserve estimates.

During the Lundin Gold programs, drill core was delivered to the camp where it was labelled, photographed, logged and sampled under the supervision of staff geologists.

After the geologist marked out the sample intervals, drill core was split. The following standard sampling procedures were employed:

- After cutting, half the core was placed in a new plastic sample bag and half was returned to the core box;
- Samples were clearly and securely bagged and tagged and QC samples inserted into the sequence; and
- Batches of core samples were bagged, tagged, and packed in plastic buckets for shipment.

# Sample Shipment and Security

Once ready for shipment, a list of sample batches and included samples were sent via electronic mail to camp administration and logistics, to the sample preparation laboratory, and to camp security, before the sample batches left camp. The Las Peñas camp has 24-hour security, which includes monitoring of the core shed area. Drilling samples were then transported from camp overland by a transport company truck directly to Quito where the custody of the samples was transferred to laboratory personnel. During transport camp security maintained communication with the transport company driver in order to track the progress and safety of the transport truck.

No AESA, Kinross or Lundin Gold personnel conducted any sample preparation. Preparation and analysis of the Fruta del Norte Project samples were completed at independent laboratories.

# Assaying and Analytical Procedures

Pulp reject samples were submitted to Inspectorate in Lima and SGS in Toronto from 2006 to 2008, and to Inspectorate in Lima during 2015. Check assays prior to 2015 were not supported through the inclusion of blank and CRM samples with sample submissions. As of 2015, CRM samples were included in the check assay sample batches.

The results of the secondary and tertiary laboratory testing were analyzed using basic statistics, scatter, quantile-quantile, and percent relative difference plots, separately for each primary laboratory, and considering the method type employed, for both gold and silver.

The results of the check assay review demonstrate overall good correlation of the ALS Vancouver laboratory with results from both Inspectorate Lima and SGS Toronto. A slight high bias is observed between the primary laboratory and SGS Toronto at grades above approximately 5 g/t Au and Inspectorate Lima above approximately 18 g/t Au. The Inspectorate Lima data set is less scattered than SGS Toronto.

The original ALS Lima gold results were compared with the results from the secondary and tertiary laboratories, considering the analytical method employed at the primary laboratory. The results indicate an improvement in correlation with the adoption of method code AU-AA24 (fire assay with atomic absorption spectroscopy finish) from method code ICP22 (fire assay with inductively-coupled plasma – atomic emission spectroscopy or "ICP-AES" finish) by ALS Lima; however, both methods compare well, particularly below 10 g/t Au. The slight positive bias observed in the ALS Vancouver laboratory remains present in the ALS Lima laboratory, where assays were finished using ICP-AES. Following the ALS Lima method code switch to AU-AA24, the bias is no longer present.

Comparative statistics of the silver assay results demonstrated mixed results, depending on the assay method employed. During 2006, a small number of pulp reject samples were submitted to Inspectorate Lima for four-acid digestion and to SGS Toronto using method code FA-ICP-OES, in addition to the standard method codes. The SGS Toronto FA-ICP-OES results are particularly poor; however, the laboratory utilizes a separate analytical technique that differs from the standard technique. Good correlation exists between ALS Vancouver with both Inspectorate Lima and SGS Toronto, although ALS Vancouver results assay slightly higher than Inspectorate Lima. This bias was reduced to a negligible amount following the 2007 switch to ALS Lima as the primary assaying facility.

# Quality Assurance and Quality Control

The quantity and quality of the lithological, geotechnical, collar and downhole survey data collected in the exploration and infill drill programs conducted by AESA–Kinross and Lundin Gold are sufficient to support Mineral Resource and Mineral Reserve estimation. Sample collection, sample preparation, analytical methods and sample security for all AESA–Kinross and Lundin Gold

drill programs are in line with industry-standard methods for epithermal gold—silver deposits and can support Mineral Resource and Mineral Reserve estimates.

At the end of the 2009 and 2010 infill programs, AESA–Kinross site personnel compiled and checked all certificates against the database for all elements. The comparison showed no errors. Kinross also did a manual 5% check of the 2010 drill assay data on site in June 2010. No errors were identified.

RPA performed database audits in support of Mineral Resource estimates in 2009, 2014, 2015, and 2016, and in support of compilation of a technical report in 2014. Data verification activities included detailed reviews of the standard operating protocols, drill hole spacings, core diameters used, how the final collar coordinates were determined, down hole surveying procedures, drill core logging protocols, core recovery, collection of bulk density data, sample layout, sample preparation and sample security procedures, and QA/QC protocols. During site visits in 2009, 2014, and 2016, RPA reviewed drill core from numerous drill holes and compared observations with assay results and descriptive log records made by AESA–Kinross geologists. In addition to reviewing core, RPA examined outcrops, drill rigs, sampling procedures and other general exploration protocols. RPA is of the opinion that database verification procedures for the Fruta del Norte Project comply with industry standards and are adequate for the purposes of Mineral Resource and Mineral Reserve estimation.

# **Mineral Processing and Metallurgical Testing**

Metallurgical testwork commenced in 2006. Initial testwork and project design by AESA–Kinross focused on a pressure oxidation (**POX**) flowsheet. Prior to the 2015–2016 metallurgical programs, Kinross conducted a metallurgical program to assess the potential of a flowsheet to produce a saleable concentrate in conjunction with the production of doré from cyanidation of a gravity concentrate and flotation tailings. This work assessed the differences between a gravity, flotation, leach (**GFL**) versus a gravity, leach, flotation (**GLF**) flowsheet. The outcome of the testwork indicated that the GFL flowsheet was the preferred option due to improved metal recoveries and lower capital and operating costs. Amec Foster Wheeler reviewed the Kinross data and, due to the capital costs associated with a POX plant, concurred with the GFL flowsheet approach. As a result, much of the initial POX-related testwork is not relevant to the current design.

During the 2016 FS, the Early MET, Fruta del Norte MET1 (MET1) and Fruta del Norte MET4 (MET4) testwork programs were carried out under the supervision of Amec Foster Wheeler. Metallurgical testwork programs were completed at SGS Minerals S.A. in Santiago, Chile for Met 1 and at SGS Lakefield in Ontario, Canada, for Early MET and MET4 programs. The results of each testwork program were independently reported by each SGS laboratory. While the Early MET program provided early confirmation of the GLF flowsheet, the MET1 and MET4 programs provide the basis of the new design.

Physical characterization testwork was carried out on selected drill core intervals for both the MET1 and MET4 programs. The characterization work included semi-autogenous grind (SAG) comminution (SMC) testing and Bond ball mill work indices. In total, 24 MET1 and 14 MET4 samples were submitted for SMC testing and representative samples of each MET1 composite were submitted for Bond ball mill work indices. Based on the individual SMC results, the orebody can be classified as moderately hard in comparison to the Julius Kruttschnitt Mineral Research Centre database. These results remain consistent with the previous testwork programs and historical data on the deposit.

Both MET1 (composite and variability) and MET4 samples were submitted to gravity concentration using laboratory scale Knelson concentrators. The Knelson concentrator feed size was approximately 150 µm for both MET1 and MET4 programs. The amount of gold that potentially can be recovered by gravity in this deposit is considered high, as supported by the global recovery results of the gravity testwork and automated scanning electron microscopy of the head feed. Of note is the additional recovery of silver, suggesting that a large proportion of free gold is in the form of electrum. Leaching characteristics of the gravity concentrates were also investigated. Gold extraction rates were found to be consistent with industry norms. MET1 and MET4 composite samples tested achieved between 94% and 98% leached gold recovery from the gravity concentrates produced.

A sulphide flotation test program was developed for the production of a gold- and silver-rich concentrate, knowing that flotation tailings would be subsequently cyanide leached. The objective of the flotation circuit was to recover fine free gold and gold associated sulphides to produce a saleable concentrate. During the MET1 program each variability sample was subjected to an open circuit flotation test to determine the optimal flotation conditions. Subsequently, the MET1 composite sample and MET4 sample were submitted to locked cycle test at the optimal conditions, using the same flowsheet. All samples tested reported only moderate gold recoveries. The overall flotation process requires lengthy residence time and relatively high reagent dosage as a result of the middlings gold being a combination of sulphide and quartz associations. Analysis of the flotation tailings indicates, fine free gold, gold associated sulphide and gold associated quartz occlusions, which cannot be recovered by conventional sulphide flotation. Final concentrates showed reasonable gold and silver grades, with mid-level impurities. Overall, the concentrates produced are considered suitable for sale to a smelter for further processing.

Bottle roll leaching tests were performed on each variability and composite sample (including MET4). During the MET1 composite testing, kinetic studies were carried out using air and oxygen injection methods. In addition, a pre-oxidation stage was tested to determine the optimal leaching conditions. Kinetic testing of each composite showed negligible difference between using air, oxygen and pre-oxidation. Ultimate leach recoveries between 51.3% and 64.4% were obtained after 24 hours of leaching. The MET4 program leaching results confirmed the ultimate recoveries obtained in the MET1 program. Cyanide consumption during the leach tests was low due to the recovery of sulphides to the concentrate during the flotation stage.

Additional testwork in support of the plant and process design included cyanide detoxification testing, using the Inco SO2/air process, and settling testwork on detoxified MET1 tailings composite samples to determine the optimal flocculant dosage and corresponding settling rate.

The metallurgical testwork completed to-date is based on samples which adequately represent the variability of the proposed mine plan.

Gold recovery relationships were developed for the flotation circuit (grade/recovery curves) and for the total number of gold units reporting as doré (via gravity recovery and flotation tailings carbon-in-leach (CIL)). All recovery relationships are bounded by the condition of the Au−S ratio of the flotation feed ≤10 g/t Au:% S. The boundary was checked against the monthly reported grades and resulting Au−S ratios of the feasibility study mine plan. All monthly values reported in the mine plan were found to fit within this boundary.

Current recovery estimates are based on the MET program testwork results. The LOM plan (LOMP) average gold metallurgical recovery is set at 91.7%. Actual gold recoveries are expected to range between 91.4–92.1%, peaking in 2023 when high-grade ore is processed, then reducing until 2031. The recovery projections increase again for the last two years of operations.

The two products of the plant, the concentrate and the doré, are considered saleable without major penalties. The level of arsenic and mercury in the flotation concentrate is expected to be able to be maintained at acceptable levels.

#### **Mineral Resource Estimates**

# Quantity and Quality of Minerals in Resource Estimate

A total of 246 drill holes support the estimate. There was no drilling on the Fruta del Norte Project in the years 2013 to 2014 inclusive. Assay results from the 2015 drilling were not available at the time of the resource estimate update. Therefore, the most recent drill holes used to estimate Mineral Resources were drilled in 2012, and the effective date of the current Mineral Resource model is 1 December, 2015.

Forty-nine holes totalling 12,529 m were drilled in 2015 for various purposes including geotechnical, metallurgical, and structural geology. Assay data for these holes were not available at the time of resource grade interpolation and therefore were not included in the estimates. Subsequent to the completed estimate, RPA has tested these new data against the block model and has confirmed that these holes have no significant effect on the Mineral Resource estimate results.

Mineral Resources are summarized in Table 1 and have been classified using the 2014 Canadian Institute of Mining and Metallurgy Definition Standards for Mineral Resources and Mineral Reserves (the **2014 CIM Definition Standards**).

Mineral Resources are reported inclusive of Mineral Reserves at a block cut-off grade of 3.5 g/t Au, assuming underground mining methods. Silver was not included in the cut-off grade calculation due to its relatively low grade and small contribution to the value of the mineralization.

Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.

Table 1 - Summary of Mineral Resources

Category	Tonnage (M t)	Grade (g/t Au)	Contained Metal (M oz Au)	Grade (g/t Ag)	Contained Metal (M oz Ag)
Indicated	23.8	9.61	7.35	12.9	9.89
Inferred	11.6	5.69	2.13	10.8	4.05
Notes:					

- (1) The QP for the estimate is Mr. David Ross, P.Geo., an employee of RPA. The estimate has an effective date of 31 December 2015.
- (2) Mineral Resources are reported inclusive of Mineral Reserves; Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.
- (3) Mineral Resources are reported at a cut-off grade of 3.5 g/t Au; which was calculated using a long-term gold price of \$1,500/oz.
- (4) Mineral Resources are constrained within underground mineable shapes that assume a minimum thickness of 2 m; metallurgical recovery of 94%; total operating costs of \$145/t milled (mining cost of \$60/t milled; process costs of \$35/t milled; G&A costs of \$15/t milled; surface infrastructure costs of \$28/t milled; concentrate transport and treatment costs of \$7/t milled); royalties of \$71/oz and selling costs of \$65/oz.
- (5) Numbers may not sum due to rounding.

# Key Assumptions, Parameters and Methods Used to Estimate

Factors which may affect the Mineral Resource estimates include: metal price and exchange rate assumptions, changes to the assumptions used to generate the cut-off grade value, changes in local interpretations of mineralization geometry and continuity of mineralization zones, density and domain assignments, changes to design parameter assumptions that pertain to stope designs, changes to geotechnical, mining and metallurgical recovery assumptions, assumptions as to the continued ability to access the site, retain mineral and surface rights titles, obtain environmental and other regulatory permits, and obtain the social licence to operate.

Logged rock types were grouped into one of 13 lithological units. These units were then divided into four main geological domains based on lithology, alteration and grade criteria. Each domain is distinctive in mineralogical, textural and geochemical character as well as in gold distribution.

The four zones are believed to represent distinct hydrothermal events starting with the Xp\_Ip domain, which is associated with late porphyry events. This was followed by the silica—(arsenopyrite)—marcasite alteration associated with hydrothermal brecciation (Xh) in the up-flow zone centred on section 3400N and "mushrooming" out below the Suárez Formation

unconformity. The later-stage quartz—carbonate phase (Vn) appears to have formed in the northern section of the deposit, wrapping partially around a flexure in the feldspar porphyry contact. Xh and Vn were grouped together for resource domaining purposes.

Leapfrog and GEMS software were used to build the wireframe models representing the domains. Given the selected block size of 4 m by 10 m by 10 m, a 2 m composite was selected for grade interpolation purposes.

The Fruta del Norte Project metal capping review consisted of disintegration analysis of the composite values in conjunction with histogram, log probability, and mean variance plots. In order to preserve the grades within the high-grade zones with intense veining of domain Xh\_Vn, composites were left uncapped, and instead a restricted search for gold values greater than 60.0 g/t was applied. A capping value was applied to the silver grades for this domain.

The resource database includes 3,511 density measurements. Density data were reviewed by lithology and alteration type. The average values were assigned to the block model to convert volumes to tonnes.

Variography was carried out within a 450 m long segment of the deposit with closely-spaced drilling, between northings 9,583,300N and 9,583,750N.

Grade interpolations for gold and silver were performed using the ordinary kriging algorithm and using search strategies individually adapted to each domain. The search ellipses generally have the same orientations, striking north—northeast, dipping west, and plunging north—northeast. A two-pass approach was used, with the first pass search ranges approximately equivalent to the variogram ranges at 80% of the sill. The first pass used a minimum of two drill holes. The second pass used a larger search with a one drill hole minimum. Both hard and soft boundaries were used, based on various contact analyses and the geological interpretation. Pass 1 applied a hard boundary between domains. Pass 2 used a soft boundary between domains. The interpolation parameters for silver were similar to those for gold.

Mineral Resources were classified into the Indicated or Inferred categories based on drill hole spacing and the apparent continuity of mineralization. Variography has suggested a range of 35 m at 75% of the total sill. Infill drilling in 2010 was designed at 35 m spacing. In general, areas of 35 m spacing or shorter were classified into the Indicated category. Other factors that were taken into consideration include the search distance to the nearest composite, estimation by the first pass search ellipse, visual examination and general considerations of drill fan spacings. Parts of the Xh\_Vn and Xp\_Ip domains were classified as Indicated Mineral Resources. All of the M\_South domain was classified as Inferred Mineral Resources. Due to the lack of exposures of mineralization for inspection on the surface or underground, there are no Measured Mineral Resources at this time.

#### **Mineral Reserve Estimates**

# Quantity and Quality of Minerals in Reserve Estimate

The resource block model was provided by RPA and consisted of density, grades, rock types (geometallurgical resource domains), resource category and other impurities.

The geotechnical block model was developed by SRK. It utilized assessments of lithology, alteration and structure to model three domains that encompassed Poor, Fair-Poor, and Good–Fair rock mass conditions. This model was built in Leapfrog.

The Mineral Reserve block model was prepared by combining the resource block model and the geotechnical block model.

The models were imported by NCL via ASCII files into DESWIK software. Validation was carried out with 99.9% of the original block model data for Indicated and Inferred Resources in terms of tonnes, gold ounces and silver ounces. The Inferred Mineral Resources grades were set to zero for the purposes of Mineral Reserves estimation.

The mining methods for the Fruta del Norte Project will be long-hole transverse stoping (**TS**) with paste backfill in Fair to Good ground, and drift and fill (**D&F**) stoping with cemented rock fill in Poor ground. Dilution was applied following the geotechnical recommendations. The shape optimizer from DESWIK was used to determine practical mining shapes. The deposit was divided into horizons that were classified both vertically and by mining method.

The dilution material for the TS primary stopes was estimated using the resource block model; dilution material for lateral stopes was assumed to be zero grade on one side and the grade from the resource block model on the other side. The total maximum dilution reaches 16.9% (sill pillar starting stope); for scheduling and reporting purposes the waste dilution is applied (a maximum of 7.7% in sill pillar lateral stopes) so as not to duplicate tonnage because of the stope arrangement. The grade dilution factor applied for TS stopes is a factor by which grades are adjusted because of dilution; in this case the waste reduces the grades because it adds no content for the following elements: gold, silver, mercury, lead, sulphur and antimony. The D&F dilution estimate includes the primary, secondary and tertiary drifts. A grade dilution factor of 95.3% was used for D&F.

Overall, in primary TS stopes, the total mining losses are estimated to be 8.8%, resulting in a mining recovery factor of 91.2%. In secondary TS stopes, the total mining losses are estimated to be 11.9%, resulting in a mining recovery factor of 88.1%. Sill pillar recovery is assumed to be 50%, and for D&F, recovery was assumed to be 100%.

The final LOMP weighted-average dilution applied in the estimation (including TS, D&F and development) is 5.63%. The final LOMP weighted-average mining recovery applied to the estimate is 90.9%.

Two different cut-off grades (**COG**) have been used, the breakeven COG (**BECOG**) and the mill COG (**MCOG**). The BECOG is one of the key parameters needed for mine and stope design. The estimate of BECOG considers mining, processing, royalties and overhead operating costs. The

MCOG is applied after the stopes and the accesses are defined, because at this stage there could be some low-grade material that has to be mined and hauled to surface. A decision has to be made whether to send this material to the process plant or to the waste dump. If the material has sufficient grade to pay for processing and other surface costs, it is assumed to be sent to the process plant (the mining cost is considered a sunk cost). A BECOG of 4.7 g/t Au was used for TS and an elevated BECOG of 6.8 g/t Au was used for D&F. A MCOG value of 2.7 g/t Au, excluding the mining costs, was used where production development was already built.

Mineral Reserves have been classified using the 2014 CIM Definition Standards and are summarized in Table 2.

Material Source	Tonnage (k t)	Au (g/t)	Au (koz)	Ag (g/t)	Ag (koz)
Long-Hole Stope	8,404	8.97	2,423	10.4	2,813
Drift & Fill	5,533	11.15	1,984	16.9	3,003
Development >4.7 g/t Au	1,158	9.70	361	11.6	434
Development >2.7 g/t Au	394	3.72	47	7.4	94
Total	15,490	9.67	4,816	12.7	6,344

Table 2 - Probable Mineral Reserves Statement

#### Notes:

- (1) The QP for the Mineral Reserve estimate is Mr. Alejandro Sepúlveda, RM CMC an NCL employee.
- (2) Mineral Reserves have an effective date of 30 April 2016. All Mineral Reserves in this table are Probable Mineral Reserves. No Proven Mineral Reserves were estimated
- (3) Mineral Reserves were estimated using a \$1,250/oz gold price. Mining cost assumptions for TS \$61.0/t; mining costs for D&F stoping \$80/t. Other costs and factors common to both mining methods were process and other costs \$75.80/t, dilution factor of 10%, concentrate transport and treatment charges of \$6.70/t. A royalty of \$71.10/oz/t Au and a gold metallurgical recovery of 93.9% was assumed.
- (4) Gold cut-off grades were 4.7 g/t for TS and 5.3 g/t (elevated to 6.8 g/t) for the D&F.
- (5) Silver was not used in the estimation of cut-off grades but is recovered and contributes to the revenue stream. The average silver metallurgical recovery is 81.6%. The silver price assumption was \$20/oz.
- (6) Tonnages are rounded to the nearest 1,000 t, gold grades are rounded to two decimal places, and silver grades are rounded to one decimal place. Tonnage and grade measurements are in metric units; contained gold and silver are reported as thousands of troy ounces
- (7) Rounding as required by reporting guidelines may result in summation differences.

#### Key Assumptions, Parameters and Methods Used to Estimate

The process plant feed will start in February 2020. Throughput was set at 3,320 t/d for three years, and then will reach 3,500 t/d.

# Factors That May Affect the Mineral Reserve Estimate

Factors that may affect the Mineral Reserves include:

- Long-term commodity price assumptions;
- Long-term exchange rate assumptions; and

Long-term consumables price assumptions.

Other factors that can affect the estimates include changes to the Mineral Resources input parameters, constraining stope designs, cut-off grade assumptions, geotechnical and hydrogeological factors, metallurgical and mining recovery assumptions, and the ability to control unplanned dilution.

# **Mining Methods**

The following key considerations influenced the mine design:

- The Fruta del Norte Project is located in an environmentally sensitive area. Although an open pit mining method or a caving method might be possible, the subsequent impacts were assessed not to be feasible. Hence, selective underground mining was considered for the 2016 FS;
- The host rock for the deposit appears competent but the resource zone is less competent
  with a small portion in Poor rock (less than 10%). Geomechanically, the rock mass quality
  varies from Poor to Fair (RMR range 40 to 55) with the intact rock strength averaging 60
  MPa. The deposit is also relatively close to surface (within 140 m of surface in some
  locations);
- Given the variable conditions likely to be encountered, a range of methods and or support regimes was considered appropriate for the Fruta del Norte Project. The primary methods of extraction selected are TS in the better ground conditions and D&F in the more challenging areas;
- Incorporation of backfill to reduce the risk of geotechnical failure and maximize extraction; and
- Consideration of dewatering requirements and proximity of the Machinaza River.

# **Geotechnical Considerations**

The faults present in the 2015–2016 structural model form a complex network of west–northwest- to northeast-trending, moderate dipping to sub-vertical faults that variably truncate and offset lithology and gold mineralization. Faults generate the widest zones of gouge and breccia where they cross the Suárez Formation. In comparison, faults have well defined margins where they cross the Misahuallí Formati on. The West, Central, and portions of the East Fault are significant fault structures that represent a risk to the stability of an open stoping method and subsequently these areas are considered suitable only for a limited man-entry mining method such as D&F where conditions can be well controlled.

Degradation of Suárez Formation conglomerate results in difficult mining conditions that can be mitigated through extraordinary ground support (full shotcrete lining and invert), which will be a high mining cost with slow advance rates. The mine layout has been optimized to avoid intersecting the Suárez Formation.

Stress measurements are not currently available for the Fruta del Norte Project. In the absence of this information, a stress regime based on SRK's evaluation of the structural geological setting

and the World Stress Map have been used to provide a range of estimates. The ground stress is relatively low based on the shallow depth, and rock damage due to higher mining induced stress concentrations is only anticipated in high extraction or sequence closure areas, and weaker rock mass areas. However, reduction in the mining stresses around excavations is likely to adversely affect the stability of large open span areas. Tensile failure and gravity induced unravelling are foreseen as the main failure mechanisms.

The Fruta del Norte Project deposit is in a structurally complex, clay-altered, porphyry environment, adjacent to a river. Rock mass conditions in the infrastructure and production areas vary from Poor to Fair quality (RMR 20 to 60) with the poorest conditions present within major structures that run longitudinally through and bound to the deposit. Outside of these fault areas, rock mass conditions are generally Fair (RMR 40 to 60; intact rock strength 50 to 70 MPa); however, localized zones of Poor ground potentially associated with secondary structures or locally elevated alteration intensity are present throughout the planned mining area.

Excavation stability assessments were completed using industry-accepted empirical relationships, with reference to analogue operational mines where possible. The rock mass conditions in the Poor to Fair and Good domains are considered suitable for open stoping mining methods. The ground conditions within the Poor domain (and crown pillar area) are considered suitable only for a limited man-entry method.

Ground support design considers industry-standard empirical guidelines and SRK's experience in variable ground conditions. Compromises have been made in the extraction sequence as a result of the need to balance grade and production profiles, extraction of wide orebody areas, and other geotechnical constraints. Ultimately several aspects of the sequence may not be geotechnically optimal, and additional design may be required.

### Groundwater

Groundwater is expected to inflow into the underground mine from the fractured bedrock around the mine itself and from geological structures. The total groundwater inflow will not be large compared with many other mines around the world, and could be dealt with by in-mine pumping, but the combination of the water with poor ground conditions and the mining methods could have an influence on mining productivity. Rock within the mining area is potentially acid-generating; hence, water that flows through the mine is assumed to need treatment before being discharged to the environment.

Groundwater inflow risks and potential effects will be managed in multiple ways, including cover and probe drilling, localized grouting, dewatering wells, and underground drainage galleries. As mine development proceeds, the groundwater system will start to drain down, but since the geological units only have moderate hydraulic conductivity and flow will be fracture controlled, it is expected that drainage performance will be highly variable over different parts of the mine. The combination of dewatering wells and drainage galleries with drain holes provides flexibility

and some degree of redundancy to reduce the risk of areas not being sufficiently dewatered prior to production mining.

# Water Management

All the water flow generated in the mine (infiltrated, industrial and paste fill water) will be managed in a single dewatering system. The system assumes that water flows running on ramps, declines and drifts are collected by gravity in a sump on each production level. Where gravity flow is not possible, a sump pump will be used to conduct water to the sumps.

# Mine Designs

SRK recommended TS where there is no Poor domain rock quality. The recommended dimensions for TS are 12 m wide x 20 m long x 25 m high.

For excavations within the Poor ground a D&F method is recommended. Dimensions for this method are 4.0 m wide x 4.0 m high.

The crown pillar will be from the 1240 L (south area of the mine) to the 1270L (north area of the mine). Because of instability risk associated mainly with the rock quality, the mining method for these areas will be D&F.

A sill pillar was included between the TS horizons 1080L and 1170L at 1155L, which allows for earlier production. The mining method for this sill pillar will be TS with a stope height of 15 m (instead of the 25 m to be used in the regular stopes).

The Company began the development of the twin declines in Q4 2017. The twin declines will use a spiral to gain depth to maximize the distance from the surface, so that a vertical distance of approximately 155 m below the Machinaza River can be obtained. The mine ramp will be located central to, and will be approximately 50 m offset from, the main workings to the east of the deposit. The ramp configuration will enable haulage trucks to achieve higher average haul speeds and maintain safety standards. The ramp will be developed nominally at a 15% gradient.

Levels will be developed to access the strike extents of the deposit and connect the development to the return air raise (RAR in the north) and fresh air raise (FAR in the south) in order to establish flow-through ventilation.

Stope cross-cuts are required to access sill development from the haulage drifts, as well as connecting sill development within a given stope line separated by waste. Development will be centrally located within a given stope. The top development in a stope will initially serve as the drill horizon for the stope below, and then as the mucking horizon for the stope above. The bottom development in a stope will serve as the mucking horizon for the stope above.

# Mine Operating Assumptions

An experienced, qualified mining contractor will be required to develop the declines. Contract mining will continue until the critical underground infrastructure has been constructed. The contractor will then demobilize. There will be a transition period as Owner mining equipment is introduced when access to additional ventilation and the mineralized zone is reached. Owner mining will eventually operate both development and production equipment.

# Ventilation

The ventilation system proposed is a mechanical exhaust ventilation system (pull) where fresh air will enter by suction. The mine ventilation system will consist of the FAR and RAR. The raises will have a diameter of 5 m; the RAR will have an overall length of 290 m, and the FAR will have an overall length of 345 m. The remaining sections of the mine ventilation system will consist of the two declines, the mine ramp and the internal raises connecting levels.

# **Production Plan**

Criteria and assumptions used in preparing the production plan include:

- The production plan has been developed on a monthly basis from Year 2017 to Year 2022 and annually thereafter;
- The mine will operate 360 d/a with five days allowed for delays due to weather conditions;
- The plant is scheduled to operate 365 d/a;
- Production will be a combination of TS and D&F methods; and
- The process plant is designed to treat 3,500 t/d.

# <u>Backfill</u>

The following backfill capacities and strength targets were set:

- The paste plant has been designed to cater for a nominal throughput of 70 m³/h and will operate at an average utilization rate of approximately 60%;
- The nominal design production rate of the CRF plant is 180 m<sup>3</sup>/h;
- Main pour target strength of 300 kPa after 14 days with a plug pour target strength of 434 kPa after three days; and
- CRF target strength of 3 MPa to 5 MPa after seven days.

The paste plant will be a batch-type backfill plant. All tailings leaving the process plant will be thickened to about 55%m solids. When no paste fill is required underground, the entire tailings stream will be pumped to the TSF. When paste fill is scheduled for underground, approximately half of the tailings stream will be pumped 3.4 km to the paste plant for further dewatering. Excess process water will be pumped back from the paste plant to the process plant using a second pipeline.

# **Underground Infrastructure Facilities and Services**

It is proposed to keep material handling as simple as possible, relying on mobile equipment for transport instead of permanent infrastructure and facilities. Minimal storage will be developed underground. Haul trucks will be repaired in a surface maintenance facility. Load—haul—dump vehicles (LHDs), drills, explosive carriers and scissor trucks will be repaired/maintained underground or driven/hauled to the surface shop for major work. Most of the mobile equipment, trucks and LHDs, and vehicles parked on surface will be fuelled from the surface facility. The rest of the fleet will be fuelled by the fuel/service vehicles or at the underground service facility. The radio communication system is based on laying leaky cable feeder antenna. A fibre-optic network will provide a communication highway for control systems and data management inside the mine. The air compressor system will consist of two compressors in operation and one on standby. Explosive and detonator magazines will be located on a selected level underground.

# **Mining Equipment**

Mine operations will use the same equipment for development for TS and for D&F. Drilling, support, loading and hauling equipment are the same for both methods. Different equipment is required for loading for production because TS is 5 m wide x 5 m high and D&F is only 4 m wide x 4 m high. A maximum of four 10 yd3 LHDs, four 12 yd3 LHDs and nine 45 t trucks will be required for production and development. Additional equipment will include a rammer-jammer, jumbos and explosive loaders. Support equipment will include a scissor lift, crew and rescue vehicles, shotcrete sprayer and transmixer, jacklegs, scaler, boom truck, telehandler, core drill, Kubota tractors, rock breaker, dozer, grader, fuel and lube truck, and a front-end loader.

# Mine Waste Stockpile Design

As part of the underground development at the Fruta del Norte Project approximately 2.03 Mt of waste material will be generated. Of this, approximately 1.29 Mt (64%) will be returned underground as part of the backfill management strategy. The remaining 0.74 Mt of material will need to be permanently stored on surface. An area to the south of the process plant has been allocated to accommodate waste from the underground mine. Two different types of waste will be produced:

- Potentially acid rock drainage or potentially acid generating; and
- Non-potentially acid generating.

#### Ore and Low Grade Stockpiles

There are three types of stockpiled material based on grade:

- High grade (>7 g/t Au): almost never stockpiled;
- Medium grade (4.7 g/t Au to 7 g/t Au): maximum 30,000 t; and
- Low grade (2.7 g/t Au to 4.7 g/t Au): maximum 170,000 t late in the mine life (Year 2033).

The area allocated for these stockpiles is close to the crusher station at the process plant. Stockpiled material will be consumed by the time the mine closes.

# **Processing and Recovery Operations**

# **Recovery Methods**

The Fruta del Norte Project process plant feed will contain gold in the following forms:

- Fine free gold;
- Coarse free gold;
- Gold contained in sulphides (refractory); and
- Gold contained in other forms (e.g. silicates).

The GFL flowsheet was selected for the Fruta del Norte Project because of the nature of the gold in the plant feed. The up-front gravity circuit is essential to recover the coarse free gold and small amounts of fine free gold. The gravity circuit will reduce spikes in coarse gold content in the feed, ensuring that the flotation feed grade stays relatively uniform. The flotation circuit is capable of recovering the gold associated in sulphides (pyrite). The flotation circuit will reduce spikes in sulphide gold grade and provide a consistent feed to the CIL circuit. Typically, CIL circuits function best on a uniform feed; this can be provided by the combined gravity and the flotation circuits.

Run-of-mine (**ROM**) ore will be transported to ROM stockpiles. Feed will be reclaimed from the pile, transferred to an apron feeder, processed through a jaw crusher and the product conveyed to the coarse ore stockpile. Ore will be recovered from the stockpile to feed the primary SAG mill. Oversize from the SAG mill discharge screen will be recycled back to the SAG feed. The SAG circuit product will be fed to a cyclone cluster which will be in closed circuit with the gravity concentrators and ball mill. Oversize from the gravity concentrator feed screen will be fed into the ball mill discharge which is pumped to the cyclone feed. Undersize will feed the gravity concentrators. Gravity concentrate will report to the intensive leach reactor and the gravity concentrator tailings will return to the cyclone feed.

The intensive leach reactor (**ILR**) will produce pregnant solution, which will be directed to electrowinning cells to produce a gold–silver precipitate. After washing, the barren slurry will report to the flotation regrind circuit.

The overflow from the grinding cyclones will report to the flotation circuit. The flotation circuit will consist of three stages of flotation and regrind. Rougher and scavenger concentrate combined with ILR barren slurry will be directed to a regrind mill in closed circuit with a cyclone cluster. Final concentrate from the third cleaning stage of the flotation circuit will be thickened, filtered and bagged as product. Overflow from the concentrate thickener will be recycled to the process water tank.

Flotation tailings will be thickened and then report to the leach circuit while the thickener overflow will be recycled to the process water tank. The thickener underflow slurry will continue through pH conditioning before reporting to a series of CIL tanks where the slurry is leached with cyanide. Discharge from the leach train will report to cyanide destruction.

The loaded carbon generated from the CIL tanks will be pumped to the carbon elution and regeneration circuit. Once gold has been eluted, the carbon will be sent to regeneration. After quenching and screening to remove small particles, the reactivated carbon will be reintroduced to the CIL circuit.

Gold eluate will be sent to electro-winning cells using stainless steel cathodes to produce a gold–silver sludge. This is combined with sludge from the separate ILR electro-winning cell, filtered and dried. It is then mixed with fluxes and smelted to produce gold-silver doré.

Slurry discharged from the CIL tanks will report to cyanide destruction. A two-stage Inco SO2/air process will be employed with the addition of lime. Sulphur dioxide will be provided as sodium metabisulphite. Slurry discharged from cyanide destruction will report to the tailings thickener. Underflow from the thickener will be sent to the tailings storage facility (**TSF**) and/or the paste backfill plant. Overflow from the thickener will be recycled back to the process water tank.

The process control system (**PCS**) will have redundancy and will allow dependable, simple and effective control of the plant processes. The PCS will monitor and act over continuous analogue loops, on/off valves, motors, variable frequency drives and programmable logic controllers. The PCS will also signal alarms for abnormal conditions and store process data.

An in-house maintenance crew will maintain the surface operation areas. The maintenance team will be shared by the surface operations areas including the process plant, paste backfill plant, cemented rock fill plant, water treatment plants, tailings storage facility and operations buildings.

The concentrate production rate is expected to be 160 t/d at a feed rate of 3,320 t/d and 140 t/d at a feed rate of 3,500 t/d. The actual concentrate quality could vary from month to month based on ore variability, mine planning and sequencing as well as the geometallurgy.

The total gold expected to be produced as doré varies from 90 koz to 145 koz per year during steady state, and is 1,323 koz during the LOM. The doré is expected to contain above 98% precious metals with the remainder made up of base metals and impurities. The precious metals portion is expected to contain approximately 70% gold and 30% silver.

# **Infrastructure, Permitting and Compliance Activities:**

# Infrastructure and Logistic Requirements for the Fruta del Norte Project

# <u>Access</u>

The planned route to access the Fruta del Norte Project site is by the Troncal Amazonica road to Los Encuentros and from this point to the Fruta del Norte Project site by a new main access road (a section of public road near the El Pindal village, and another section of road through the Ecuadorean jungle). As of the date of this AIF, the Company has determined that after km 8, the new 21 km road will be used exclusively for access to the Fruta del Norte Project site.

The main port for international cargo arrival will be Guayaquil. The Port of Bolivar may be used as an alternative.

# On-site Infrastructure

On-site non-process services such as the camp, greenhouse, sewage treatment plant and mobile equipment will support the operation. There will be fresh water, domestic water and process water systems and a fire detection and protection system. The utilities and services include compressed air supply and distribution, process control system, closed circuit television system, supervisory control and data acquisition system, waste management systems and fuel storage and distribution. Mobile equipment for maintenance, operations services and transportation includes tractors and loaders for stockpile rehandling, mobile cranes, buses and utility vehicles.

# **Camps and Accommodation**

As of the date of this AIF, it has been determined that the camp facilities will be located close to the existing Las Penas camp, at an altitude below 1,500 masl. The camp will have a peak accommodations capacity of approximately 1,000 persons. The existing Las Penas exploration camp will be expanded to about a capacity of about 700 persons and will be used for both exploration and construction.

### Aggregate Source

At the Technical Report effective date, it was proposed that Lundin Gold would exploit the Hollín Borrow Pit to provide aggregate materials for construction and mine backfill, from construction through to mine closure. Since then, the Company has undertaken a re-evaluation of the plan to mine materials from the Hollín Borrow Pit and has selected an alternative location closer to existing infrastructure. In addition, testwork of the new source of aggregate has shown that it will be of a higher quality. The source is called the Mountain Pass Quarry.

# Tailings Storage Facility

The facility will be located in the uppermost portion of the valley, to minimize the catchment area and to maximize the separation distance from the Zarza River downstream. The tailings dam will be an earth-and-rock-fill structure constructed with a maximum dam height of 63 m measured at the dam centre line. The ultimate dam will have a crest width of 6 m and a length of 700 m at final grade. A starter dam will be initially constructed to store start-up water for the mill and create sufficient storage for the tailings in the first year of operation, and to safely contain the probable maximum flood (PMF). The TSF dam will be raised continuously throughout the service life until reaching the ultimate elevation. Each dam raise will be completed at least one year before the maximum tailings pond elevation required each year; currently dam raises are contemplated at Years 0, 2, 5, 10 and 14 (ultimate). A total of 12.15 Mt of GFL tailings will be pumped to the TSF at 55% solids over the mine life. Excess water will be reclaimed to the mill by a floating barge. The sludge produced from the treatment of contact water from the mine at the water treatment plant (WTP) will be delivered at a rate of 4 m3/h and stored in the TSF. Sediments removed from ponds located in the mine infrastructure area will also be stored in the TSF and will be delivered at a rate of 8 m3/h. The TSF design incorporates sufficient dam freeboard at all times during operations to accommodate the sloping tailings beach and to contain the PMF and any excess water volumes in the tailings basin without discharge. Diversions will be constructed on the east side of the TSF catchment to divert non-contact water. These channels will be lined to limit erosion and are designed to convey peak catchment runoff from the 1:100 year storm event.

# Off-site Facilities

In order to reduce the impact of the Fruta del Norte Project footprint, some support facilities are planned be located off the main project site. Lundin Gold has also established administration offices in Quito and in Los Encuentros. These existing offices provide administrative and logistics support to the Fruta del Norte Project and are not part of the Fruta del Norte Project capital costs.

#### Power

The Ecuadorian electrical system is based on a high quality electricity service matrix, the distribution system is called the Sistema Nacional de Distribución (SND, National Distribution System). The SND is controlled by CELEC EP Transelectric, a government institution in charge of power transmission and distribution. The Fruta del Norte Project site is located within the supply concession area of the Empresa de Energia Regional del Sur (EERSA, Regional Electric Company of the South). Lundin Gold is participating in a public infrastructure investment to reinforce the SND matrix in the area and will be contributing financially to the installation costs of the transmission line between Taday and Bomboiza.

As of the date of this AIF, the contract for the transmission line has been awarded to Cointec S.A. Ingenieros Contratistas and Energía y Petróleos Enerpetrol, S.A. A 42.6 km single-circuit, 230 kV dedicated transmission line will be built from the Bomboiza substation to FDN. The transmission line will connect to a new substation that will be built at the Project site, near the process plant. This substation will step down the power to 13.8 kV and distribute power throughout the Project site at that voltage. As of the date of this AIF, the annual average power demand is estimated to be approximately 145,000 MWh.

### Communications

The communications system for the Fruta del Norte Project will consist of a fibre-optic network infrastructure, telephony system, radio communications, mobile telephony, and satellite communications. The data management system will be connected to the communications systems.

# **Environmental, Permitting and Social Considerations**

# **Baseline Studies**

The physical (abiotic), biotic, social, economic, and cultural baseline has been characterized for the Fruta del Norte Project using primary information gathered in the field, and secondary information from official sources such as Government records. Field studies and data gathering for the baseline studies were undertaken between 2008 and 2016.

#### Waste Management

The waste management centre (**WMC**) was sized to receive waste during operations and manage the waste temporarily until final disposal by an authorized contractor. The WMC is designed to handle waste from one month of operations.

# Water Management

Four main types of water will need to be managed during construction and operations:

- Non-contact water: Water (either runoff from precipitation or flowing in natural streams)
   whose quality is not impacted by the Fruta del Norte Project infrastructure and activities;
- Unaffected contact water: Water that is likely to have had a sediment load increase but not subject to chemical/biological impact requiring treatment other than total suspended solids (TSS) removal in order to meet water quality regulations. Requires TSS removal only, prior to discharge to a natural water course; no water treatment plant is required;
- Affected contact water: Water that must be sent to a water management pond and a water treatment plant prior to being discharged to the environment; and

Neutral water: Groundwater collected above the orebody at the underground mine.
 Requires TSS removal and/or primary treatment only (depending on the quality parameters) prior to being discharged.

Four water treatment plants are planned, and will include:

- Two domestic water treatment plants: one will be located at the camp site and the other at the process plant;
- A sewage treatment plant will be located at the camp site. The process plant sewage will be managed using septic tanks; and,
- A main effluent water treatment plant that will be located at the process plant site and will treat the affected contact water from the site;

Four water management work types are proposed:

- Diversion works: To divert non-contact storm water to prevent it from reaching the site during the construction and operations phases of the Fruta del Norte Project. These comprise riprap interception works, lined channels and creek riprap discharge works. They also include slope drainage systems for mass earthworks;
- Contact water works: To manage affected and unaffected water during the construction and operations phases. These comprise sumps, water management ponds, chutes (steep slope conduits), energy dissipaters, water treatment plants, pumping systems and emergency discharge works to natural water courses;
- Neutral water works: To deal with groundwater from the dewatering wells above the deposit. These comprise a pumping system, a water management pond and a discharge to the Machinaza River; and
- Secondary and minor drainage networks: To be located within the facilities for noncontact and contact water, including small sumps, downspouts, and minor collecting pipes. These works have not been designed at the feasibility level.

A water balance model and a water quality model were developed in support of a water management plan (**WMP**) for the site:

- The purpose of the site-wide water balance model was to simulate the water management plan for the mine site. The model tracks water from the sources, through collection and conveyance systems, usage, storage, treatment and discharge to the environment. The results of the water balance model demonstrate that the proposed water management plan at the site is feasible; and
- The purpose of the site-wide water quality model was to simulate the water quality elements of the project, identifying sources of loading, assessing the mixing of different inflows and estimating the resulting water quality concentrations in each flow. The water quality results determined which water flows met discharge requirements and which flows did not meet discharge requirements and will require water treatment. Water quality parameters requiring treatment in each flow component were identified. The water quality model focused on parameters of concern identified from the surface water

quality assessment (aluminium, arsenic, copper, cobalt, cyanide, iron, magnesium, potassium, manganese, lead, selenium and zinc) as well as sulphate and total dissolved solids. The results of the water quality model demonstrate that the proposed WMP for the site is feasible and will meet regulatory requirements for discharge to the receiving water bodies.

The general purpose of the WMP was to outline an integrated water management strategy to be followed at the Fruta del Norte site Project during the design, construction, and operations phases, and to demonstrate a feasible, rational, sustainable, and environmentally-friendly plan to deal with both surface water and groundwater.

# Closure Plan

Closure planning has been undertaken to a conceptual level, and will be continually updated throughout the Fruta del Norte Project life. The conceptual Closure Plan has been developed in accordance with Article 125 of the Ecuadorian Environmental Regulations for Mining Activities (RAAM) and Title X of the Mining Safety Regulations. The closure activities will cover closure aspects related to environmental factors such as soil, air and water that are directly related to the community health and safety. Aspects related to economic and cultural dynamics of the communities have not been considered in the current conceptual plan. The definitive Closure Plan must be presented two years prior to cessation of operations. Under RAAM, mine closure monitoring should last for at least five years after the mining operations are complete. The closure cost estimate in the conceptual Closure Plan is \$28.8 million.

# **Permitting**

Permitting requirements were evaluated by project phase, including before construction (16 permits), the most important being the updated Environmental Licence, during construction (six permits), and before operations (three permits). The Environmental Design Criteria, updated through October, 2015, are based on Ecuadorian law, quality criteria and regulations, as well as international standards such as those issued by the International Finance Corporation, the World Bank, the World Health Organization, the International Cyanide Management Code, the International Network on Acid Prevention, and the International Council of Mining and Metals.

# **Social Considerations**

The Fruta del Norte Project's indirect influence is expected to extend to some neighbouring communities, including the parish of Los Encuentros and two communities from neighbouring parishes. Los Encuentros is a rural parish located in Yantzaza county, characterized by the existence of one main population centre (the parish seat and home of the parish government) where the population has consolidated. There are also several scattered population centres, known as communities, neighborhoods and sectors. Some cultural sites have been recorded in the study area, but the Fruta del Norte Project is not expected to impact any cultural heritage,

and strict archaeological protocols are in place in consultation with the National Cultural Patrimony Institute. Although perceptions of artisanal mining are low, the community is very supportive of the Fruta del Norte Project, and the primary concern is access to employment. There is currently no large-scale mining in Ecuador. A community relations program has been defined based on the Community Development Support Program (PADC, Plan de Apoyo a Desarrollo de la Communidad) which seeks to implement corporate responsibility strategies, to maintain a social licence with the communities, and to comply with socio-environmental legislation applicable to AESA's operations. The PADC is based on the principles of community participation, sustainable development and human development.

# **Capital and Operating Costs**

# **Capital Cost Estimates**

The methodology used in the development of the capital cost estimate and the level of engineering definition result in the estimate having an accuracy of ±10% to ±15% including the contingency based on the 80% confidence level. The estimate combined inputs from Amec Foster Wheeler, KCB, Lundin Gold, NCL, and Paterson and Cooke (**P&C**). The cost estimate was divided into capital costs (direct, indirect and Owner's costs, and contingency) and sustaining and closure costs:

- Direct costs: costs for productive works and permanent infrastructure. Includes productive infrastructure, services and equipment required for the extractive process;
- Indirect costs: costs needed to support the construction of the facilities included in the direct costs. Includes EPCM services, EPCM temporary facilities (infrastructure) and construction management, construction camp and associated services, capital spare parts, freight and logistics;
- Owner's costs: costs associated with Lundin Gold's project administration, geological studies, support infrastructure, safety and environmental, community relations, administration and finance, human resources and others; and
- Contingency: includes variations in quantities, differences between estimated and actual
  equipment and material prices, labour costs and site specific conditions. Also accounts
  for variation resulting from uncertainties that are clarified during detail engineering,
  when basic engineering designs and specifications are finalized,
- Sustaining and closure costs
- Capital expenditures after the start of operations include costs for the tailings dam wall
  growth, mine and other equipment replacement and the paste fill plant, plus closure
  costs. These costs are included in the financial analysis in the year in which they are
  incurred. The capital cost estimate includes construction activity costs to Q1 2020. Costs
  after this are classified as sustaining capital.

The initial Implementation Phase capital cost, as displayed in Table 3, is estimated to be \$668.7 million. The sustaining capital is estimated to be \$291.9 million.

Table - 3: Implementation Phase Capital Cost Summary by Area

Description	Amount (\$ M)	% of Total
Underground mine	120.5	18.0
Ore handling	7.5	1.1
Process plant	74.3	11.1
Tailings/ reclaim water facilities	30.8	4.6
On-site infrastructure	121.4	18.2
Off-site infrastructure	71.2	10.6
Aggregate borrow pit	0.4	0.1
Indirect costs	126.1	18.9
Owners' costs	49.3	7.4
Contingency	67.3	10.1
Total Cost	668.7	100.0

Note:

(1) Totals may not sum due to rounding

# **Operating Cost Estimates**

The operating cost estimate in the Technical Report was based on Q1 2016 assumptions. The estimate combined inputs from Amec Foster Wheeler, KCB, Lundin Gold, NCL, and P&C, and has an overall accuracy of ±10%. The operating cost estimate is inclusive of site costs during the operational period (commencing once the commissioning with load/performance testing certificates are signed) until site closure. Variable costs were based on a mine plan provided by NCL. The overall LOM operating cost estimate is \$118/t, and includes base costs, non-recoverable taxes and leasing. Operating costs are estimated at \$414/oz Au, including all site costs. Mining costs are the greatest contributors to the overall operating cost, followed, in order of contribution, by process, general and administrative (G&A) and surface infrastructure costs, as displayed in Table 4.

Table - 4: Operating Cost Summary

Area	LOM Total \$ (million)	\$/tonne	\$/oz Au
Mining	934.4	60.30	211.50
Process	516.9	33.40	117.00
Surface Infra.	142.8	9.20	32.30
G&A	234.2	15.10	53.00
Total	1,828.3	118.00	413.80

Table - 5 Operating Statistics

	Units	Year 1	Year 2	Year 3	Avg. Y1-10	LOM
Metal Production						_
Au recovered	koz	149	308	390	345	4,418
Ag recovered	koz	141	329	431	389	5,177
AISC Costs and Profit Margins per oz payable						
Au price	\$/oz	1,250	1,250	1,250	1,250	1,250
Cash cost sub-total (operating cost)	\$/oz	823.82	585.78	473.08	541.78	552.56
Sustaining and closure costs	\$/oz	701.12	63.77	35.86	102.92	70.87
AISC costs/oz Au payable	\$/oz	1,524.94	649.55	508.94	644.70	623.43
Operating Margin/oz Au payable	\$/oz	-274.94	600.45	741.06	585.52	626.57

# **Economic Analysis**

The Fruta del Norte Project has been evaluated using a discounted cash flow analysis. Cash inflows consist of annual revenue projections. Cash outflows include capital expenditures (including the three years of pre-production costs), operating costs, taxes, and royalties. These are subtracted from the inflows to arrive at the annual cash flow projections. Cash flows are taken to occur at the mid-point of each period.

To reflect the time value of money, annual net cash flow projections are discounted back to the Fruta del Norte Project valuation date using 5% to produce the base case. The discount rate appropriate to a specific project depends on many factors, including the type of commodity; and the level of project risks (e.g. market risk, technical risk and political risk). The discounted, present values of the cash flows are summed to arrive at the Fruta del Norte Project's net present value (**NPV**).

In addition to the NPV, the IRR and the payback period are also calculated. The IRR is defined as the discount rate that results in an NPV equal to zero. The payback period is calculated as the time required to achieve positive cumulative cash flow for the Fruta del Norte Project.

The financial model includes consideration of metal prices, transport costs, royalties and taxes, and working capital. An amount of \$430 million of historical costs is considered in the financial model. These historical costs provide a shield against taxes and profit-sharing expenses.

The after-tax NPV at a 5% discount rate over the estimated mine life is \$676 million. The after-tax IRR is 15.7%. The after-tax payback of the initial capital investment is estimated to occur 4.5 years after the start of production. A summary of the financial analysis is presented in Table 7, with the base case discount rate highlighted. The life of mine all-in sustaining cost (AISC) per ounce of gold is \$623.

Table - 6: Key Outcomes

Project economics at a gold price of \$1,250/oz and a silver price of \$20/oz					
Item Units Pre-tax After-tax					
NPV <sub>5</sub>	\$ million	1,283	676		
IRR	Percent	23.8	15.7		
Capital payback after commencement of production	Years	3.7	4.5		

Cashflow (\$ million)					
	2020	2021	2022	Average Years 1–10	Life-of-Mine
Doré revenue	62	121	151	133	1,669
Concentrate revenue	117	247	314	280	3,631
Total revenue	179	368	465	414	5,301
Operating costs	107	151	149	147	1,961
Operating profit	72	216	316	267	3,339
Taxes and royalties	16	(6)	16	59	914
Capital cost estimate	139	16	11	28	975
Changes in working capital	46	8	11	6	
Cash flow (after tax)	(129)	198	279	174	1,449

Table - 7: Financial Analysis Summary (base case is highlighted)

Indicator	Units	LOM Value
Pre Tax		
NPV 4%	\$ million	1,452
NPV 5%	\$ million	1,283
NPV 8%	\$ million	879
NPV 10%	\$ million	675
Payback period from start of production	Years	3.7
IRR	%	23.8
After Tax		
NPV 4%	\$ million	791
NPV 5%	\$ million	676
NPV 8%	\$ million	402
NPV 10%	\$ million	264
Payback period from start of production	Years	4.5
IRR	%	15.7

# Sensitivity Analysis

A sensitivity analysis was performed on the base case NPV after taxes to examine the sensitivity to gold price, operating costs, capital costs and labour costs. In the pre-tax and after-tax evaluations, the Fruta del Norte Project is most sensitive to changes in gold price, less sensitive to changes in operating costs, and least sensitive to capital cost and labour cost changes. Figure 1 shows the results of the after-tax analysis. The gold grade is not presented in the sensitivity graph because the impact of changes in the gold grade mirrors the impact of changes in the gold price.

Table - 8 Sensitivity Analysis

Sensitivity analysis (\$100/oz variation from the base case gold price; silver held at \$20/oz)

Item	Units	\$1,150/oz Au	Base Case \$1,250/oz Au	\$1,350/oz Au
NPV <sub>5</sub>	\$ million	506	676	844
IRR	Percent	13.4	15.7	17.8
Payback	Years	5.0	4.5	4.2

Figure - 1: After-Tax Sensitivity Analysis (NPV 5%)



Note:

(1) Figure prepared by Amec Foster Wheeler, 2016.

# **Execution Plan**

The Fruta del Norte Project schedule entails significant project activity durations, some of which may run concurrently, including a duration of 11 months for the engineering, procurement, contracting and preliminary construction of Early Works, 12 months for the construction of the access road and bridge over the Zamora River, 34 months for construction of the twin declines,

six months to develop the aggregate borrow pit and plant, nine months for the mass earthworks and 20 months for the construction of the process plant and facilities.

The implementation strategy for the Fruta del Norte Project is dictated by the duration of the construction of the twin declines, which will provide access to the deposit; the estimated duration for this construction is 34 months. It is possible to build all the surface facilities including the process plant and associated infrastructure during this period. Therefore, the construction of the mine access is the critical path and the Early Works to expedite the construction of the access are also critical. The objective of the Early Works is to build access and platforms for the start of construction of the portals and declines, and to provide support facilities. The Early Works have been given special attention in the execution plan because they will need to start very soon after approval of the 2016 FS, if the proposed project schedule is to be met.

#### **Recommendations and Conclusions**

Under the assumptions utilized in the Technical Report, the Fruta del Norte Project returns a positive economic outcome. Additional permit grants by the GOE will also be required. A two-phase work program is proposed for the Fruta del Norte Project. Phase 1 is designed to provide information to support the Early Works and complete the construction phases associated with the Early Works. Phase 2 comprises additional data collection in specific technical disciplines and will support basic engineering and refinement of the capital cost estimates. The work phases can be carried out in parallel. As information from a discipline area becomes available, it will be reviewed to determine if any revisions to the existing project assumptions, Early Works or project schedule may be required. The Phase 1 program is estimated at \$32.7 million; Phase 2 is provisionally estimated at approximately \$7.9–\$13.7 million.

# **Phase 1: Early Works**

The main objective of the Early Works program is to provide the infrastructure, services and facilities to support the start of construction of the mine twin declines. The scheduled start for the decline construction is May 2017. The Early Works field programs consist mainly of infrastructure, environmental and preliminary civil works such as the construction of access and on-site roads, platforms, water management infrastructure, the expansion of the existing Las Peñas camp, biotic rescue, archeological rescue, deforestation, survey, geotechnical drilling and tendering of the portal construction and mine contractor contracts. In addition to the fieldwork, basic engineering of the process plant and surface infrastructure will also be undertaken.

The Early Works programs began subsequent to the Technical Report effective date, in September 2016, and are anticipated to be completed in July 2017. The Early Works are split for estimation purposes between planning for project development and basic engineering-related Early Works activities, and Early Works in support of mine access and implementation:

Planning and engineering services for Early Works and contracts: drawings; bids; contract
awards; engineering support, construction management; early contracts to support
project implementation, including the access road; bridge over the Zamora River;

construction camp. Since the Technical Report effective date, Lundin Gold has awarded a service contract to G Mining. Pursuant to this agreement, Lundin Gold and G Mining have formed an integrated project team to manage all aspects of the project, covering optimization of all areas of the project design and execution plan, basic engineering, detailed engineering, procurement, construction and commissioning.

• Early Works in support of portal mine access construction: surveys; geotechnical; biotic rescue; storage areas for forest products and topsoil; contractor mobilization; expanding the exploration camp; laydown areas; road construction and upgrades; mine portal platforms; water management infrastructure.

#### Phase 2: Additional Data Collection

# **Hydrogeology**

Recommendations for future hydrogeology work include:

- Complete large-scale (minimum one month duration at maximum possible pumping rate) pumping tests at two of the proposed dewatering well locations;
- Collect additional water samples from the pumping tests and confirm water quality for discharge to the Machinaza River;
- Conduct hydraulic testing in any planned geotechnical drill holes;
- Re-calibrate the groundwater numerical model based on results of the pumping tests and revise estimates of groundwater inflow;
- Revise design of dewatering wells based on results of the pumping tests;
- Optimize the underground groundwater management plan based on results of the recalibrated groundwater model and any updates to the mine plan; and
- Continue monitoring existing groundwater instrumentation and collection of groundwater samples.

# Geotechnical

Recommendations for future geotechnical work include:

- Complete early works drilling to complete investigations at the North Portal box-cut and decline, North Decline spiral area, and North and South ventilation shafts;
- Further optimization of the global mine extraction sequence to reduce areas with longer duration temporary access excavation;
- Implement the underground cover drilling program as the twin declines are advanced to verify geotechnical and hydrogeological conditions under the Machinaza River, at the base of the North and South shafts, workshop location, and east infrastructure areas;
- Update ground support designs based on the results of underground cover drilling program; and

• Complete in situ stress testing during the early construction phases to verify assumptions made on the pre-mining stress field, and adjust design if required.

# **Process**

Recommendations in support of further flowsheet development include:

- The application of centrifugal gravity concentration to either the flotation rougher concentrate or the cleaner scavenger tailings to improve the recovery of fine free gold.
   The recovered fine gold could be added to the intensive leach reactor to produce doré or the final flotation concentrate, resulting in a higher-grade product; and
- The foundation recommendations for the process plant are still at the feasibility stage because drilling has not been done in the deepest part of the excavation to confirm that the soil profile is as expected.

### **Tailings Management**

Recommendations in support of TSF design and tailings management include:

- Hydrogeological study of the TSF area to judge whether high groundwater pressures can result from blinding of the upper elevations by the tailings deposit;
- Establish monthly monitoring of all major streams in the tailings area;
- Investigations along the upstream toe of the dam for the detailed design of the cut-off trench and upstream toe of the starter dam;
- Review the potential for alternative geosynthetic filters for the dam;
- Compaction test fill to establish the true compaction characteristics of the saprolite;
- Investigation of the sorption capacity of the saprolite clays in the TSF basin;
- Geotechnical investigations to confirm undrained shear strength of foundation materials with depth; and
- Preparation of lining system sequencing, construction drawings and specifications.

# On-Site Infrastructure and Services

Recommendations in support of on-site infrastructure and services include:

- Further field investigations should be executed in the next phase of the Fruta del Norte
  Project to confirm the geotechnical and hydrogeological conditions on the northern side
  of the process plant site and to investigate other on-site facilities including the paste
  plant, aggregate crushing plant, temporary camp sites, soil stripping stockpiles and Hollín
  Borrow Pit waste dump; and
- The layout and size of the paste plant presents an opportunity for improvement.

# **Project Update**

In May 2017, the Company completed an internal project update for the Fruta del Norte Project which advanced the design and estimates from the Feasibility Study. The update included a revised mine plan, updated capital and operating costs and a new execution plan based on a self-perform approach versus engineering, procurement and contract management (**EPCM**). The results of this update must be read in conjunction with the Technical Report.

Highlights of the project update compared to the feasibility study were as follows:

- The Company's first gold production is scheduled for Q4 2019, versus Q1 2020, reflecting
  a four-month schedule contraction driven by modeling of ground conditions, relocation
  of certain infrastructure and better than anticipated contractor rates;
- The mining rate is expected to ramp up quicker, over a twelve-month period, to an extraction rate of 3,500 tonnes per day (tpd) until 2022, when the extraction rate is planned to reach 3,600 tpd;
- Commercial production is expected to be achieved over six months sooner than anticipated in the feasibility study;
- Average annual gold production is again anticipated to exceed 300,000 ounces over 15 years (compared to 13 years in the Feasibility Study) at an average life of mine ("LOM") total cash cost of \$561/oz and a LOM all-in sustaining cash cost ("AISC") of \$609/oz compared to \$553/oz and \$623/oz respectively in the Feasibility Study;
  - LOM production is still expected to be approximately 4.5 million ounces of gold and 5.5 million ounces of silver;
  - Estimated capital cost for the Fruta del Norte Project, including contingency and preproduction costs and revenues, is \$684 million, net of taxes, compared to \$669 million in the Feasibility Study. This revised estimate includes the cost of mining equipment and the paste plant, estimated at \$58 million, which was previously included in sustaining capital;
  - Sustaining capital costs are estimated to be \$168 million compared to \$263 million in the Feasibility Study.
- Project economics show an improvement over the Feasibility Study (in the Table below, Feasibility Study numbers shown in brackets), at the same gold and silver price assumptions used in the Feasibility Study (\$1,250/ounce of Au and \$20/ounce of Ag):

	Pre-Tax	After Tax
Net Present Value at a 5% discount rate (NPV5)	\$1,323 million (\$1,283 million)	\$717 million (\$676 million)
Internal Rate of Return (IRR)	24.7% (23.8%)	16.3% (15.7%)
Capital Payback (yrs)	3.1 (3.7)	4.0 (4.5)

#### Notes:

- 1. All figures are reported on a 100% equity project basis valuation. Capital payback is calculated based on start of commercial production.
- 2. Economic valuation is presented using a start date of July 1, 2017.

# **Summary of Changes to Probable Mineral Reserves**

Ron F. Hochstein, P. Eng., Lundin Gold's President and Chief Executive Officer and Director, who is a "Qualified Person" within the meaning of this term in NI 43-101, is responsible for the Company's estimates of mineral reserves and mineral resources on the Company's mineral properties and all disclosure of scientific and technical information concerning mineral reserves and mineral resources in this AIF.

As a result of changes in operating cost estimates and cut-off grade calculations made in the Company's project update in 2017, the Company adjusted its estimates for Probable Mineral Reserves slightly by 124,098 ounces compared to the estimates contained in the Technical Report. The following tables show the Company's estimate of Probable Mineral Reserves at the Fruta del Norte Project as of December 31, 2017, compared to those estimated in the Technical Report and summarized later in this AIF.

Technical	Report <sup>(2)</sup>
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As at December 31, 2017<sup>(3)(4)</sup>

Material Source	Tonnes (k t)	Au Grade (g/t)	Au Ounces (koz)	Tonnes (k t)	Au Grade (g/t)	Au Ounces (koz)
Long-Hole Stope	8,404	8.97	2,423	11,685	8.82	3,314
OH Drift & Fill	5,533	11.15	1,984	3,905	10.36	1,301
UH Drift & Fill	-	-	-	711	10.77	246
Development Ore >4.7 g/t	1,158	9.70	361	96	11.02	34
Development LG >2.7 Au	394	3.72	47	375	3.70	45
Total	15,490	9.67	4,816	16,774	9.16	4,940

#### Notes:

- (1) All Mineral Reserves in this table are Probable Mineral Reserves. No Proven Mineral Reserves were estimated.
- (2) The Probable Mineral Reserve estimate information is reported in the Technical Report and discussed in greater detail in this AIF. See "The Fruta del Norte Project" at page 22.
- (3) Mineral Reserves were estimated using a \$1,250/oz gold price. Mining cost assumptions for TS \$57/t; mining costs for D&F Overhand \$79/t. mining costs for D&F Underhand \$85/t. Other costs and factors common to both mining methods were process and other costs \$58/t, dilution factor of 10%, concentrate transport and treatment charges of \$9/t. A royalty of \$71/oz/t Au and a gold metallurgical recovery of 91.7% was assumed.
- (4) Gold cut-off grades were 4.1 g/t for TS, 4.8 g/t for D&F Overhand and 5.1 g/t for D&F Underhand. An increased cut-off grade was used in the Overhand D&F for the initial years from 4.8 to 6.5 g/t.

- (5) Tonnages are rounded to the nearest 1,000 t; gold grades are rounded to two decimal places. Tonnage and grade measurements are in metric units; contained gold is reported as thousands of troy ounces (ozt).
- (6) Rounding as required by reporting guidelines may result in summation differences.

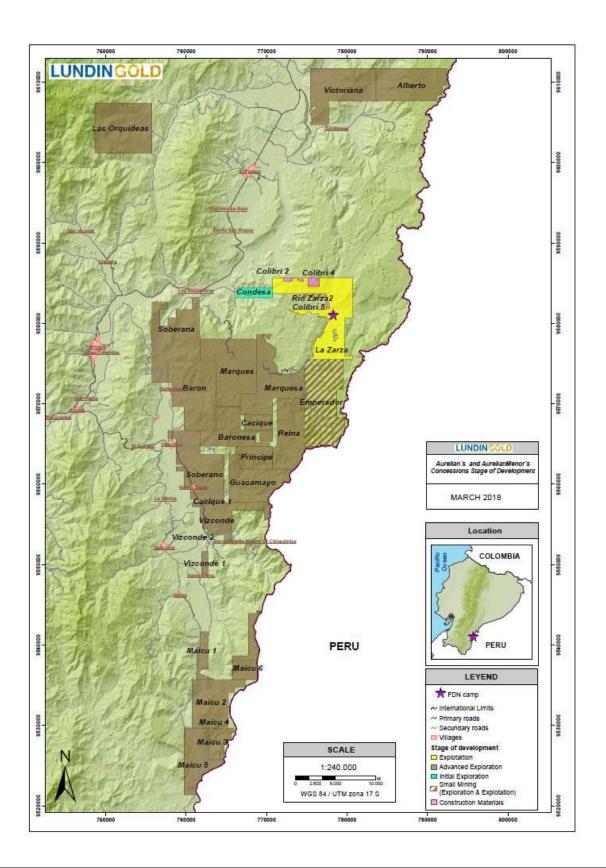
# **Additional Metallurgical Testwork**

In 2017, another metallurgical test program was carried out on new core samples, which were blended to represent the average ore grade and type. The program included all aspects of the flow sheet with the objectives to: confirm recovery from gravity, flotation and leach circuits; evaluate optimization of flotation circuit configuration and regrind; produce concentrate samples for shipment to potential smelters; and, produce tailings sample for further testwork for paste back fill optimization. This MET5 program confirmed the previous MET1 results in terms of anticipated recovery and concentrate quality. The program also resulted in minor modifications to the flotation/regrind flowsheet.

# **Mineral Exploration**

As of the date of this AIF, Lundin Gold's properties in Ecuador consist of 27 metallic mining concessions and three materials concessions, covering an area of approximately 64,427 hectares. These concessions are currently registered in the name of the Company's subsidiaries. AESA holds those concessions related to the development of FDN, including La Zarza, Colibri 2, Colibri 4, Colibri 5, Rio La Zarza 1, Valle del Inca 2 and Condesa. The balance of Lundin Gold's concessions is held by Aurelianmenor S.A.

The map below shows the Company's holdings and their respective stage of development under the mining law, as at the date of this AIF.



Significant drilling has been undertaken in the FDN region pre and post FDN discovery in 2006. The Las Peñas structural corridor has been the primary focus for exploration with several targets drilled in the La Zarza concession dating as far back as 1996.

Following the discovery of FDN, exploration continued to focus in the Las Peñas structural belt, more specifically in the La Zarza, Princesa, Sachavaca and Colibrí concessions where epithermal and possibly mesothermal systems were targeted. Additionally, although historically not a principal commodity focus of Kinross or Aurelian, stand-alone, porphyry-hosted deposits, both associated with and proximal to the Las Peñas belt, provide secondary tier objectives for future exploration programs.

Since acquiring Aurelian in 2014, Lundin Gold has focused its exploration efforts almost entirely on key exploration targets outside of the La Zarza concession. Lundin Gold exploration activities in 2015 included prioritizing exploration concessions, geophysical surveys (IP), detailed prospecting and mapping of known targets, and initial exploration of concessions with favourable geology but little data. The principal objective was to better rank and define key targets and prepare these for drilling in 2016. The most prospective epithermal targets outside of the La Zarza concession were considered to be Emperador, Robles, Chanchito, El Arco, and Rio Blanco targets.

Geophysical IP surveys conducted in 2015 (Gradient Array and Pole – Dipole) over previously defined soil geochemical anomalies greatly helped in defining structural context of individual targets as well as identifying resistivity and chargeability anomalies coincident with surface geochemistry. Additional geological mapping and prospecting combined with the previous IP surveys provided key information to optimize future drilling campaigns and improve confidence in the targets. Siliceous sinter (much like the one at FDN) was found in outcrop over the Emperador target indicating its location in the upper-most levels of an epithermal system.

In 2016, Lundin Gold continued exploration activities on some of its higher priority concessions.

The program tested five key targets located 10 to 15 km south of the Fruta del Norte Project. In total, 28 holes were drilled on the Rio Blanco (El Puma), Emperador, Robles, El Arco and Chanchito targets for a total of 8,519m.

Although intersected mineralization did not return high grades over significant intersections, the styles of alteration and mineralization confirms important epithermal systems at four of the five targets tested, which justify future follow-up work.

The Rio Blanco target (now named El Puma) was highly anomalous in arsenic, moly, and antimony, while the Chanchito target was highly anomalous in silica, mercury and moly. The

Robles and Emperador targets were rich in all the previous elements as well as anomalous in gold and silver. Illite alteration was the dominant alteration associated to all mineralized zones. These represent the full suite of trace pathfinder elements and hydrothermal alteration which characterize the Fruta del Norte Project like many other low to intermediate sulphidation epithermal deposits.

Detailed review of the Rio Blanco drill holes, and follow-up mapping in the area showed that the Suarez Pull-Apart Basin (hosting FDN) extends much further south than previously believed. The length of the basin has now been extended to 16km (double the previous) with excellent targets, including favorable geochemistry, occurring at numerous targets along its edges. These FDN-like targets include Alejandro, Puente Princesa, Barbasco and El Puma (Rio Blanco).

Other field programs continued including Geophysical Induced Polarity (completed in December 2016), soil geochemical surveys, detailed mapping and prospecting on new areas of interest to define high priority targets for drilling in 2017. So far three new significant targets have been found outside of the pull-apart basin area including Gata Salvaje, Oso Manso, and Las Nubes in the RGM Block (Reina, Guacamayo, and Marquesa concessions). These include Epithermal Au-Ag, Au-Skarn, and potential Porphyry Cu-Au systems, strengthening our firm belief in the exploration potential of our extensive land package.

In 2017, the Company's exploration activities were focused on advancing targets to the drill testing stage. The El Puma, Barbasco and Fruta del Norte SW Epithermal gold-silver targets within the Suarez pull-apart basin were better defined; while outside of the basin, the Gata Salvaje, Las Nubes, and El Quimi targets were also advanced. The drilling program, which includes 4,800 meters of diamond drilling for the El Puma target, located approximately 12 kilometers south of FDN, is expected to be completed in early 2018. Soil sampling and two drill holes completed during the Company's 2016 exploration drilling campaign indicated that El Puma has a similar epithermal geochemical signature to the Fruta del Norte Project deposit.

A helicopter ZTEM (Z-Tipper Axis Electromagnetic) resistivity geophysical survey of the Suarez pull-apart basin and surrounding terrain was completed in December 2017 with the processing of data expected be completed early in 2018. This system utilizes the Earth's natural electromagnetic fields and can be used to map large, deeply buried targets and structures. Preliminary results indicate there may be large areas of porphyry related alteration at depth (>800m) below the southern basin at the El Puma and Barbasco targets.

The Company plans to continue to advance key targets to drill readiness stage and to evaluate and perform preliminary reconnaissance on other concessions of Lundin Gold's large land holdings in order to prioritize additional exploration efforts to the most prospective concessions. At the same time, the Company will continuously improve its knowledge of FDN in order to define

high quality brown field targets near FDN and within the Suarez Pull-Apart Basin for drilling when convenient to do so.

All of the Company's exploration technical information is obtained, verified and compiled under a formal QA/QC program in Ecuador. The following details the protocols used by Lundin Gold's staff and consultants, which largely follows procedures and processes previously implemented by Aurelian and Kinross for the FDN deposit. These have been updated to include recommendations by third party consultants over the years and to meet standard industry best-practices. They apply most importantly to drilling but also as described to samples for surface geochemistry and prospecting.

# Sampling Method and Approach

Drill core boxes are marked with hole number and depth at the drill site, then delivered to the Las Peñas camp in closed core boxes where the core is labelled, photographed, logged and sampled under the supervision of FDN staff geologists. Data is recorded directly into the database using iPads and includes rock quality designation (RQD), recovery, hardness estimate, structure, lithology, texture, alteration, mineral assemblage, visual estimate of visible gold abundance and intensity, and level of oxidation/weathering. Log sheets are also used to record basic drill hole data including collar coordinates, core size and depth, drilling dates and sample number series. Occurrences of visible gold is marked on the core using wax crayons. Down hole survey data is recorded digitally and downloaded directly to the database.

After the geologists mark out the sample intervals, drill core is split along the long axis using an electrically-powered bench saw. Occasionally, when necessary, areas of very soft rock (clay) are cut using a machete and sections of very broken core are sampled using spoons. The following standard sampling procedures are employed:

- Normal core intervals are 1m in mineralized intervals (+/-0.1m) and 2m in non-mineralized intervals (+/-0.1m), although these can be modified by geologist to cut intervals at lithological or mineralization contacts. Under no circumstances should sample intervals be under 0.2m in length.
- Sample numbers are marked by geologist on the core as well as on the core boxes.
- The right hand side of the core is always sampled.
- After cutting, half the core is placed in a new plastic sample bag and half is returned to the core box.
- Between each sample, the core saw and sampling table areas are washed to ensure there is no contamination between samples.
- After cutting samples containing visible gold, a piece of quartz sandstone is partially cut to clean the diamond blade.

- Samples are clearly and securely bagged and tagged and quality control (QC) samples inserted into the sequence.
- Batches of approximately ten samples are packed in plastic buckets (drill core samples) or in poly-weave sacks (surface samples) for ground shipment to ALS, Quito for eventual sample preparation.
- Sample shipment batches are grouped together where possible in groups of 75 samples including QA/QC samples, reflecting the number of client samples that can go into the fire assay oven in one batch.
- No sample preparation (crushing or pulverization) or sample analysis is conducted by Lundin Gold staff.
- A detailed procedure (Protocolo de Aseguriameinto y Control de Calidad) regarding sampling and QAQC for drilling has been prepared by Lundin Gold and has been implemented on-site.

Previously, most data were originally recorded as hard copy. Since late 2015 geological data is directly entered into the database using iPads. Technicians later enter the following information into the database: sample number, sequence, interval, QA/QC data and other geological information such as collar information, depth of drill size reduction, date, and drill company details. Basic database checks are also carried out by the database administrator as well as the implemented system to assure the integrity of the database.

# Sample Preparation

#### ALS – Quito, Ecuador

ALS Quito is accredited to ISO 9001:2008 for its quality management system. This laboratory is used for preparation of samples for:

- Exploration Drilling
- Geochemical Sampling (Rocks, Soils, & Streams Sediments)

# Procedure:

- Oven dry the sample on steel trays (<80°C)</li>
- Crush entire sample to better than 70% passing -2 mm or 10 mesh
- Clean Crusher with air gun between all samples and with quartz flush between every 10 samples as a minimum. This frequency can be increased for specific intervals if high grades are expected.
- Riffle split 300 g
- Pulverize split to better than 85% passing -75 microns or 200 mesh
- Clean pulverizers with an air gun between samples
- 150 g pulps sent in kraft bags by prep lab to analytical labs in Lima for analysis

### Sample Analysis

# ALS – Lima, Peru

ALS Lima is accredited to ISO 9001:2008 for their quality management systems and to ISO/IEC 17025:2005 for their competence of laboratory testing. This laboratory is used as a primary analytical laboratory for:

- Exploration Drilling
- Geochemical Sampling (Rocks, Soils, & Streams Sediments)

# Procedure:

- Gold determined by 50 g fire assay with an AAS finish for drill samples<sup>1</sup> (method code AU-AA24), and with ICP-AES<sup>2</sup> finish for field rock samples (method code AU-ICP22). Minimum detection limit for AAS finish procedure is 0.005 g/t Au and for ICP is 0.001 g/t Au. Maximum detection limit in both cases is 10 g/t Au.
- If gold assays greater than 10 g/t is detected for either drill or field samples then over-limit re-assays are completed using a 50 g fire assay with a gravimetric finish, method code AU-GRA22. The detection range for this procedure is 0.05 g/t Au to 1,000 g/t Au.
- Multi-element analysis is performed on all samples using method code ME-MS41, consisting in an aqua regia digestion and ICP-AES<sup>2</sup> and ICP-MS<sup>3</sup> finish. 51 Elements are analyzed, including gold and silver. The silver detection range for this procedure is 0.01 ppm to 100 ppm.
- If silver assays greater than 100 ppm then over-limit re-assays are completed with aqua regia digestion and AAS finish (AG-AA46, detection limit 1-1,500ppm). When Cu, Pb, or Zn assays exceed 10,000 ppm re-assays are completed (Cu-AA46, 0.001-50%; Pb-AA46, 0.001-30%; Zn-AA46, 0.001-60%).

#### Notes:

- 1. AAS: Atomic absorption spectroscopy
- 2. ICP-AES: Inductively-coupled plasma atomic emission spectroscopy
- 3. ICP-MS: Inductively-coupled plasma mass spectrometry

### Inspectorate - Lima, Peru

Inspectorate Lima is accredited to ISO 9001:2008 for its quality management system and to ISO/IEC 17025:2005 for its competence of laboratory testing. Currently this laboratory is used for QAQC check assays for gold only from pulp duplicates related to:

- Exploration Drilling
- Geochemical Sampling (Rocks)

#### Procedure:

• Gold determined by 50 g fire assay with an AAS¹ finish for drill samples using method code FA450-Au, which has a detection range from 0.005 g/t Au to 10 g/t Au. For

- surface samples fire assays are done with ICP-AES<sup>2</sup> finish using method code FA350-Au 50g, which has a detection range from 0.002 g/t Au to 10 g/t Au.
- If gold assays greater than 10 g/t were detected using the above technique, then over-limit re-assay using a 50 g fire assay with a gravimetric finish (method code FA550-Au). The detection range for this procedure is 0.9 g/t Au to 1,000 g/t Au.

#### Notes:

- 1. AAS: Atomic absorption spectroscopy
- 2. ICP-AES: Inductively-coupled plasma atomic emission spectroscopy

# Chain of Custody and Security

Once sealed, core boxes are transported from the drill site to the Las Peñas exploration camp. At the camp, core is checked by geologists and stored in the core shed during the logging and sampling process. Samples are sealed in plastic bags using single-use plastic cable-ties; the sealed sample bags are placed in plastic buckets and then stored in a locked shed until shipment. Lundin Gold personnel do not participate in any sample preparation activities beyond cutting core samples.

Once ready for shipment, a list of sample batches and included samples is sent via electronic mail to camp administration and logistics, to the sample preparation laboratory, and to camp security, before the sample batches leave camp. The Las Peñas camp has 24-hour security, which includes monitoring activities in the core shed area. Drilling samples are then transported from camp overland by a transport company truck directly to Quito where the custody of the samples is transferred to laboratory personnel. During transport camp security maintains communication with the transport company driver in order to track the progress and safety of the transport truck.

In the case of surface exploration samples (rocks and soils), these are sealed in plastic bags with single use cable-ties, packed in rice bags, and these are delivered by light truck to a transport company in the city of Loja for transport to Quito. The samples are then picked up from the transport company's terminal in Quito by Lundin Gold personnel and delivered to the preparation laboratory.

Signatures for responsible parties are required at every step of the process and records are archived at the Las Peñas camp. When samples are received at the sample preparation laboratory, the sample are laid out on the laboratory floor and reviewed by laboratory personnel. If the samples are received in good order and consistent with the sample list of the work order, the laboratory sends by electronic mail confirmation of sample reception. If laboratory personnel observe any variations with respect to the list of samples or if there were any problems with sample integrity, Lundin Gold is advised by the laboratory by electronic mail before any further action is taken.

Once prepared the 150g pulp samples are packaged by the sample preparation laboratory for shipment to their analytical facility in Lima. Before shipment, Lundin Gold personnel insert CRMs

in the sample batch at the sample preparation laboratory. In the case of pulp duplicates for outside check assays, previously these sample batches were picked up by Lundin Gold personnel, and delivered to the Inspectorate sample preparation laboratory in Quito for shipment to their Lima analytical laboratory. Effective immediately, Lundin will task ALS to insert the CRMs in the check assay batches and deliver these directly to Inspectorate (without any Lundin Gold intervention).

Digital laboratory assay data is distributed by electronic mail to project managers and to the resource database administrator via electronic mail. The laboratory assay data is received in 2 separate files. The first file is an electronic certificate of the sample assays in PDF format while the second is an Excel table for uploading into the database. That assay data is manually uploaded to the database where it is automatically merged with the appropriate sample data. The resource database system requires users to be logged on to the system. Each user is assigned privileges that are dependent on their duties.

### **Bulk Density Measurements**

After core is sampled, intervals of solid core (10 cm to 20 cm in length) are selected for bulk density determinations. Measurements are made from every hole at an interval rate of approximately 50 m in un-mineralized intervals and every 20 m in mineralized intervals. The procedure used is the Marcy Method, where the sample is dried, weighed, waxed and then weighed in water.

# Quality Assurance and Quality Control

Quality assurance (QA) provides evidence to demonstrate that the assay data has precision and accuracy within generally accepted limits for the sampling and analytical method(s) used in order to have confidence in a resource estimate. Quality control (QC) consists of procedures used to ensure that an adequate level of quality is maintained in the process of collecting, preparing and assaying the exploration drilling samples.

In general, QA/QC programs are designed to prevent or detect contamination and allow assaying (analytical), precision (repeatability) and accuracy to be quantified. In addition, a QA/QC program can disclose the overall sampling-assaying variability of the sampling method itself.

Lundin Gold has implemented a thorough QA/QC program, largely following previous practices by Kinross and Aurelian, which included the regular insertion of blank samples, certified reference material (CRM), field and reject duplicates and check assaying from pulp duplicates. The operators perform ongoing monitoring of the program, with spurious results being investigated and changes implemented when required. Insertion rates and procedures employed by Lundin Gold are shown in the following table.

CRM	1 of 25
Blanks - Coarse Rock	1 in 20
Field Duplicate	1 in 50 (both halves sent)
Coarse Reject Duplicate	1 in 50 samples submitted to ALS Lima
Check Assay (Pulp	1 in 10 samples submitted to ALS Lima are also
Duplicates)	assayed at Inspectorate Lima

### Certified Reference Material

Results of the regular submission of certified and uncertified reference material (standards) are used to identify problems with specific sample batches and long-term biases associated with the primary assay laboratory. The FDN project site sourced certified reference material (CRM) from Rocklabs in New Zealand. New CRM materials may be sourced in the future from Rocklabs or from other recognized providers.

CRM material is included in the sample stream at a rate of 1 in 25.

CRMs submitted for a project validate the precision and accuracy of results within the grade range of interest by approximating the cut-off grade, the average grades and the high grades for the project. For FDN the gold grades of interest are approximately 3 g/t (cut-off grade), 9 g/t (average grade) and over 20 g/t (high grade). Silver grades of interest, although supplemental to gold, are from 10 g/t to 20 g/t. The ranges of expected values of the submitted CRMs for gold is from 0.819 g/t Au to 30.14 g/t Au and for silver is from 11.02 g/t to 58.38 g/t.

Failure rates, defined as a gold value reporting more than three standard deviations from the expected value, or two consecutive gold values reporting more than two standard deviations from the expected values.

Control charts are prepared for each of the CRMs used on the project, and reviewed for individual laboratory bias, precision and accuracy, as well as changes and drift of assayed grades over short and long time spans.

### Blank Material

The regular submission of blank material is used to assess contamination during sample preparation and to identify sample numbering errors. Blank material is sourced from Hollin Formation sandstone.

Anomalous results are usually interpreted as contamination or a sample switch. Site operators consistently monitor the results of blank samples and follow up spurious results with respective investigations. Assay values of greater than 0.05 g/t Au for blank material are considered failures or 10 times detection limit.

Blank material is included in the sample stream at a rate of 1 in 20 (minimum) and may be increased where visible gold is observed or very high grades are expected.

# **Control Sample Failures**

When a control sample (CRM or Blank) fails to return the expected value an entry is made into the table of failures, the control sample as well as 10 samples previous to, and 10 samples afterward are immediately re-assayed from pulp and rejects duplicates. Based on a review of the failure and the re-assays, a description of the failure analysis is documented into the table of failures together with the actions taken (signed off by Exploration Manager), which may include substituting the initial results with re-assays. If samples adjacent to the failed control sample are non-mineralized, decision may be taken to take no further actions with approval of the Exploration Manager. When assays of duplicate samples exceed 30% variation with respect to the original sample (for samples with significant grade, the same failure methodology is followed.

# **Duplicates**

Duplicate samples help to monitor preparation and assay precision and grade variability as a function of sample homogeneity and laboratory error.

Since 2016, field duplicate samples are collected as both halves of core samples. For every 50-field/core sample, a minimum of one field duplicate is inserted in the batch. As our batches are based of 75 samples (including QC samples) 2 field duplicates are included in every full batch.

Coarse reject samples are collected as an additional split from the crushed reject material (better than 70% passing -2 mm or 10 mesh). As for field duplicates, a minimum of one field duplicate is inserted in for every 50-field/core samples.

### **Check Assays**

Pulp duplicates are sent for check assays to Inspectorate Laboratory in Lima with a frequency of one pulp duplicate for every 10-field/core samples. The 150g pulp duplicate samples are split from the 300g of pulverized rock (85% passing -75 microns or 200 mesh) prepared by ALS Quito as previously described. Lundin Gold inserts a minimum of one CRM for every 25 pulp duplicates and the samples are normally sent in batches of 75 samples. Lundin Gold currently delivers these to Inspectorate offices in Quito who take responsibility of sending the samples to their Lima laboratory. Effective immediately, Lundin will task ALS to insert the CRMs in the check assay batches and deliver these directly to Inspectorate (without any Lundin Gold intervention).

# **Risk Factors**

There are a number of factors that could negatively affect Lundin Gold's business and the value of the Shares, including the factors listed below. The following information pertains to the outlook and conditions currently known to Lundin Gold that could have a material impact on the financial condition of the Company. Other factors may arise that are not currently foreseen by management of Lundin Gold that may present additional risks in the future. Current and prospective security holders of Lundin Gold should carefully consider these risk factors.

# **Financing Requirements**

The development of FDN requires substantial additional capital. When such additional capital is required, Lundin Gold may need to pursue various financing transactions or arrangements, including equity financing, debt financing, joint venturing of projects or other means. The Company's debt and other mezzanine financing has and may further involve a pledge of Lundin Gold's assets, which pledge is senior to interests of the Company's shareholders. If Lundin Gold raises additional funding by issuing equity, such financing may substantially dilute the interests of shareholders and reduce the value of their investment. Moreover, Lundin Gold may not be successful in closing the Private Placement or locating suitable additional or alternate financing when required or at all or, if available, Lundin Gold may incur substantial fees and costs and the terms of such financing might not be favourable to Lundin Gold. A failure to raise capital when needed would have a material adverse effect on Lundin Gold's business, financial condition and results of operations.

# Ability to Maintain Obligations under the Financing and Other Debt

Lundin Gold and its subsidiaries are subject to restrictive covenants under the Financing. The Prepay and the Stream Loans are secured by a first ranking charge over the assets of the Project Subsidiaries, by a pledge of the shares of the Project Subsidiaries and by guarantees of Lundin Gold and the Project Subsidiaries. In addition, Lundin Gold may from time to time enter into other arrangements to borrow money to fund its development plans for FDN, and such arrangements may include covenants that have similar obligations or that restrict its business in some way. Events may occur in the future, including events out of Lundin Gold's control, that could cause Lundin Gold to fail to satisfy its obligations under the Financing or other debt instruments that may arise. In such circumstances, the amounts drawn under Lundin Gold's debt agreements may become due and payable before the agreed maturity date, and Lundin Gold may not have the financial resources to repay such amounts when due. If Lundin Gold were to default on its obligations under the Financing or other secured debt instruments in the future, the lender(s) under such debt instruments could enforce their security and seize Lundin Gold's assets.

# **Instability in Ecuador**

The Company is subject to certain risks and possible political and economic instability specific to Ecuador, arising from political unrest, labour disputes, invalidation of government orders, permits or property rights, risk of corruption, military repression, war, civil disturbances, criminal

and terrorist acts, arbitrary changes in laws, expropriation, nationalization, renegotiation or nullification of existing agreements and changes to monetary or taxation policies. The occurrence of any of these risks may adversely affect the mining industry, mineral exploration and mining activities generally or the Company and, among impacts, could result in the impairment or loss of mineral concessions or other mineral rights.

Exploration, development or production may also be affected to varying degrees by government regulations with respect to, but not limited to, restrictions on future exploitation and production, price controls, export controls, income taxes, labour and immigration, and by delays in obtaining or the inability to obtain necessary permits, opposition to mining from environmental and other non-governmental organizations, limitations on foreign ownership, expropriation of property, ownership of assets, environmental legislation, labour relations, limitations on repatriation of income and return of capital, high rates of inflation, increased financing costs and site safety. These factors may affect both Lundin Gold's ability to undertake exploration and development activities in respect of future properties in the manner contemplated, as well as its ability to continue to explore, develop and operate those properties in which it has an interest or in respect of which it has obtained exploration and development rights to date.

Any shifts in political attitudes or changes in laws that may result in, among other things, significant changes to mining laws or any other national legal body of regulations or policies are beyond the control of Lundin Gold and may adversely affect its business. The Company faces the risk that governments may adopt substantially different policies, which might extend to the expropriation of assets or increased government participation in the mining sector. In addition, changes in resource development or investment policies, increases in taxation rates, higher mining fees and royalty payments, revocation or cancellation of mining concession rights or shifts in political attitudes in Ecuador may adversely affect Lundin Gold's business.

#### **Gold Price**

The price of gold is affected by numerous factors beyond Lundin Gold's control, including levels of supply and demand, global or regional consumptive patterns, sales by government holders, metal stock levels maintained by producers and others, increased production due to new mine developments and improved mining and production methods, speculative activities related to the sale of metals, availability and costs of metal substitutes, international economic and political conditions, interest rates, currency values and inflation.

A decrease in the gold price could negatively impact Lundin Gold's business, financial condition and results of operations in a number of ways. The development of FDN requires substantial additional capital. Variations in the gold price may impact the availability and the terms of additional financing required to develop the Project. The estimation of economically viable identified Mineral Reserves requires certain assumptions, including gold price. A revised estimate of identified Mineral Reserves due to a substantial decline in the gold price could result in the decrease in the estimates of the Company's Mineral Reserves, subsequent write downs

and negative impact on mine life. If FDN is developed to production, the majority of Lundin Gold's revenue will be derived from the sale of gold. Therefore, fluctuations in the prices of this commodity may affect Lundin Gold's future operations and potential profitability. Such decreased revenues may also increase the requirements for capital.

# **Government or Regulatory Approvals**

Lundin Gold's exploration and development activities and its operations depend on its ability to obtain, sustain or renew various mineral rights, licenses, permits, authorizations and regulatory approvals (collectively, **Rights** and individually a **Right**) from various governmental and quasi-governmental authorities. Lundin Gold's ability to obtain, sustain or renew such Rights on acceptable terms and on a timely basis is subject to changes in regulations and policies and to the discretion of the applicable governmental and quasi-governmental bodies. Lundin Gold may not be able to obtain, sustain or renew its Rights or its Rights may not be obtainable on reasonable terms or on a timely basis.

Additional Rights that are necessary to permit Lundin Gold to commercially exploit the deposit at FDN may be subject to unfavourable terms, may be delayed or may not be obtained at all. A delay in obtaining any such Rights, the imposition of unfavourable terms or conditions on any Rights or the denial of any Right may have a material adverse effect on Lundin Gold's business, financial condition, results of operations and prospects and, in particular, the development of FDN.

# **Contractor and Consultant Performance**

As the Company proceeds with the development of FDN, the timely and cost-effective completion of the work will depend on a large degree to the satisfactory performance of Lundin Gold's contractors, as well as the design and engineering consultants who are responsible for the different elements of the site and mine plan. If any of these contractors or consultants do not perform to accepted or expected standards, Lundin Gold may be required to hire different contractors to complete tasks, which may impact schedules and add costs to the Project and, in some cases lead to significant risks and losses. A major contractor default or the failure to properly manage contractor performance could have a material impact on Lundin Gold's results.

# **Risks with Underground Development**

The Company's activities related to the development of the mine at FDN are subject to risks inherent in the mining industry generally, including unexpected problems associated with increased water flow, water quality retention and treatment, surface and underground conditions, equipment performance, accidents, labour disputes, force majeure risks and natural disasters. Particularly with underground development, inherent risks include variations in rock structure and strength as it impacts on construction of the mine, de-watering and water handling requirements and unexpected local ground conditions. Hazards, such as unusual or unexpected rock formations, rock bursts, pressures, collapses, flooding or other conditions, may be encountered during construction. Such risks could result in personal injury or fatality; damage

to or destruction of the mine, processing facilities or equipment; environmental damage; delays, suspensions or permanent cessation of activities; monetary losses; and possible legal liability.

# **Title Matters and Surface Rights and Access**

There is a risk that title to the mining concessions, the surface rights and access rights comprising FDN and the necessary infrastructure, may be deficient or subject to dispute. The procurement or enforcement of such rights can be costly and time consuming. In areas where there are local populations or land owners, it may be necessary, as a practical matter, to negotiate surface access. Despite having the legal right to access the surface and carry on construction and mining activities, Lundin Gold may not be able to negotiate satisfactory agreements with existing landowners/occupiers for such access, and therefore it may be unable to carry out activities as planned. In addition, in circumstances where such access is denied, or no agreement can be reached, Lundin Gold may need to rely on the assistance of local officials or the courts in such jurisdictions, which may delay or impact mining activities as planned.

There is also a risk that the Company's exploration, development and mining authorizations and surface rights may be challenged or impugned by third parties. In addition, there is a risk that Lundin Gold will not be able to renew some or all its licenses in the future. Inability to renew a license could result in the loss of any project located within that license.

Finally, there is a risk that developing laws and movements respecting the acquisition of lands and other rights of indigenous communities may alter the arrangements made by prior owners of the lands where FDN is located. Future laws and actions could have a material adverse effect on Lundin Gold's operations at FDN or on its financial position, cash flow and results of operations.

# **Shortages of Critical Resources**

Lundin Gold's ability to acquire critical resources such as supplies, consumables and equipment due to worldwide demand may cause unanticipated cost increases and delays in delivery times, thereby impacting operating costs, capital expenditures and development schedules.

In addition, as Lundin Gold continues with the development of FDN and its activities increase, Lundin Gold will require additional skilled labour, such as construction, operations, financial and geologic personnel. There is a risk that Lundin Gold will not be successful in attracting, training and retaining qualified personnel as competition for persons with these skill sets increases and availability in country is limited. If Lundin Gold is not successful in attracting, training and retaining qualified personnel, the development of FDN and the efficiency of Lundin Gold's operations could be impaired, which could have an adverse impact on Lundin Gold's future cash flows, earnings, results of operations and financial condition.

# **Key Talent Retention**

Recruiting and retaining qualified personnel is critical to Lundin Gold's success. Lundin Gold is dependent on the services of key executives, including its President and Chief Executive Officer, and other highly skilled and experienced executives and personnel focused on managing Lundin Gold's interests. The number of persons skilled in the financing, development and management of mining properties is limited and competition for such persons is intense. The inability of Lundin Gold to successfully attract and retain highly skilled and experienced executives and personnel could have a material adverse effect on Lundin Gold's business, financial condition and results of operations.

### **Community Relations**

The Company's relationship with communities in which it operates is critical to the construction and development of the Project. FDN is located near rural communities, some of which contain groups that have been opposed to mining activities from time to time in the past, which may affect Lundin Gold's ability to develop FDN in the short and long term. Furthermore, local communities may be influenced by external entities, groups or organizations opposed to mining activities. In recent years, anti-mining nongovernmental organization (NGO) activity in Ecuador has increased. These communities and NGOs have taken such actions as road closures, work stoppages and law suits for damages. These actions relate not only to current activities but often in respect to the mining activities by prior owners of mining properties. Such actions by communities and NGOs may have a material adverse effect on Lundin Gold's operations at FDN and on its financial position, cash flow and results of operations. Lundin Gold does not presently maintain political risk insurance for FDN.

#### Infrastructure

Mining, processing, development and exploration activities depend, to one degree or another, on adequate infrastructure. Reliable roads, bridges, power sources and water supply are important elements of infrastructure, which affect capital and operating costs. The lack of availability on acceptable terms or the delay in the availability of any one or more of these items could prevent or delay the development of FDN. If adequate infrastructure is not available in a timely manner, there is a risk that (i) the development of FDN will not be completed on a timely basis, or at all, (ii) the resulting operations will not achieve the anticipated production volume or (iii) the anticipated construction costs and ongoing operating costs associated with the development of FDN will be higher than anticipated. Furthermore, unusual or infrequent weather phenomena, sabotage, government or other interference in the maintenance or provision of necessary infrastructure could adversely affect Lundin Gold's operations and profitability.

### Market Price of the Company's Shares

Securities of mineral companies have experienced substantial volatility in the past, often based on factors unrelated to the financial performance or prospects of the companies involved. These factors include macroeconomic conditions in North America and globally, and market

perceptions of the attractiveness of particular industries or sectors. The price of the Company's Shares is also likely to be significantly affected by short-term changes in gold prices, other mineral prices, currency exchange fluctuations, or its financial condition or results of exploration activities on its projects. Other factors unrelated to the performance of the Company that may have an effect on the price of the Company's Shares include: the extent of analyst coverage available to investors concerning the business of the Company may be limited if investment banks with research capabilities do not follow the Company; lessening in trading volume and general market interest in the Company's Shares may affect an investor's ability to trade significant numbers of Shares of the Company; the size of the Company's public float and whether it is included in market indices may limit the ability of some institutions to invest in the Company's Shares; and, a substantial decline in the price of the Shares of the Company that persists for a significant period of time could cause the Company's Shares to be delisted from an exchange, further reducing market liquidity. If an active market for the Shares does not continue, the liquidity of an investor's investment may be limited, and the price of the Company's Shares may decline. If an active market does not exist, investors may lose their entire investment in the Company. As a result of any of these factors, the market price of the Company's Shares at any given point in time may not accurately reflect the long-term value of the Company. Securities class-action litigation often has been brought against companies following periods of volatility in the market price of their securities. The Company may in the future be the target of similar litigation. Securities litigation could result in substantial costs and damages and divert management's attention and resources.

# **Control of Lundin Gold**

As at the date hereof, Zebra and Lorito, who report their security holdings as joint actors, is a control person of Lundin Gold. The Private Placement, if completed, will materially affect control of the Company, since Newcrest will hold approximately 27% of the issued and outstanding Shares upon closing, thereby becoming the largest shareholder of the Company and a control person. Zebra and Lorito will remain a control person, holding approximately 22% of the Shares after the Private Placement. As long as these shareholders maintain their significant positions in Lundin Gold, they will have the ability to exercise influence with respect to the affairs of Lundin Gold and significantly affect the outcome of matters upon which shareholders are entitled to vote.

As a resulting of the holdings in the Company of control persons, there is a risk that the Company's securities are less liquid and trade at a relative discount compared to circumstances where these persons did not have the ability to influence or determine matters affecting Lundin Gold. Additionally, there is a risk that their significant interests in Lundin Gold discourages transactions involving a change of control of Lundin Gold, including transactions in which an investor, as a holder of the Company's securities, would otherwise receive a premium for its Company's securities over the then-current market price.

# Tax Regime in Ecuador

Tax regimes in Ecuador may be subject to differing interpretations and are subject to change without notice. The Company's interpretation of tax law as applied to its transactions and activities may not coincide with that of the tax authorities. As a result, the taxation applicable to transactions and operations may be challenged or revised by the tax authorities, which could result in significant additional taxes, penalties and/or interest.

There is a risk that restrictions on the repatriation of earnings from Ecuador to foreign entities will be imposed in the future and Lundin Gold has no control over withholding tax rates. In addition, there is a risk that new laws and regulations in Ecuador may result in a capital gains tax on profits derived from the sale of shares, ownership interests and other rights, such as exploration rights, of companies with permanent establishments in the country. The Company will not likely be able to comply with this law as currently drafted as it does not have access to the information requested by the law. It is unknown at this time what, if any, liability the Company or its subsidiaries may be subject to as a result of the application of this law. There is a risk that the Company's access to financing may be limited as a result of the indirect taxation.

### **Measures to Protect Endangered Species**

Ecuador is a country with a diverse and fragile ecosystem and the federal government, regional governments and NGOs are vigilant in their protection of endangered species. The existence or discovery of an endangered species at FDN would likely have a number of adverse consequences to the Company's plans and operations. For instance, the presence of an endangered species could require the Company to modify its design plans and construction, to take extraordinary measures to protect the species or to cease its activities at FDN temporarily or permanently, all of which would delay FDN's development and production and would have an adverse economic impact on the Company, which could be material. The existence or discovery of an endangered species at FDN could also ignite NGO and local community opposition to FDN, which would be a further barrier to development of FDN and could impact the Company's global reputation.

### **Non-Compliance and Compliance Costs**

Lundin Gold, its subsidiaries, its business and its operations are subject to various laws and regulations. The costs associated with compliance with such laws and regulations may cause substantial delays and require significant cash and financial expenditure, which may have a material adverse effect on the Company or the development of FDN.

There is a risk that the Company may fail to comply with a legal or regulatory requirement, which may lead to the revocation of certain rights or to penalties or fees and in enforcement actions thereunder, including orders issued by regulatory or judicial authorities causing operations to cease or be curtailed and may include corrective measures requiring capital expenditures, installation of additional equipment, or remedial actions. In addition, the Company may be required to compensate those suffering loss or damage arising from its non-compliant activities

and may have civil or criminal fines or penalties imposed for violations of applicable laws or regulations and, in particular, environmental laws. Any of the foregoing may have a material adverse effect on the Company or the development of FDN.

# **Exploration and Development Risks**

The exploration for, and development of, mineral deposits involves significant risks which, even with a combination of careful evaluation, experience and knowledge, may not be eliminated. Few exploration properties are ultimately developed into producing mines. Major expenses may be required to locate and establish Mineral Reserves, to develop metallurgical processes, and to construct mining and processing facilities at a particular site. There is a risk that the exploration or development programs of Lundin Gold will not result in a profitable commercial mining operation.

Whether a mineral deposit will be commercially viable depends on a number of factors, including but not limited to: the particular attributes of the deposit, such as quantity and quality of the minerals, metallurgy and proximity to infrastructure and labour; mineral prices, which are highly cyclical; and government regulations, including regulations relating to prices, taxes, royalties, land tenure, land use, importing and exporting of minerals, and environmental protection. The exact effect of these factors cannot be accurately predicted but could have a material adverse effect upon Lundin Gold's operations.

There is a risk that the expenditures made by Lundin Gold towards the search and evaluation of precious metals and other minerals will not result in discoveries of additional Mineral Resources, Mineral Reserves or any other mineral occurrences. There is a risk that even if commercial quantities of ore are discovered, the new ore body will not be developed and brought into commercial production. Development projects are subject to, but not limited to, the successful completion of final feasibility studies, issuance of necessary permits and other government approvals and receipt of adequate financing.

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

Mineral Reserve and Mineral Resource figures are estimates, and there is a risk that any of the Mineral Resources and Mineral Reserves identified at FDN to date will not be realized. Until a deposit is actually mined and processed, the quantity of Mineral Resources and Mineral Reserves and grades must be considered as estimates only. In addition, the quantity of Mineral Resources and Mineral Reserves may vary depending on, among other things, precious metal prices. Any material change in quantity of Mineral Resources, Mineral Reserves or percent extraction of those Mineral Reserves recoverable by underground mining techniques may affect the economic viability of any project undertaken by Lundin Gold. In addition, there is a risk that metal recoveries in small scale laboratory tests will not be duplicated in a larger scale test under on-site conditions or during production.

Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability, and there is a risk that they will never be mined or processed profitably. Further, there is a risk that Inferred Mineral Resources will not be upgraded to proven and probable Mineral Reserves as a result of continued exploration.

Fluctuations in gold prices, results of drilling, metallurgical testing and production and the evaluation of studies, reports and plans subsequent to the date of any estimate may require revision of such estimate. Any material reductions in estimates of Mineral Reserves could have a material adverse effect on Lundin Gold's results of operations and financial condition.

# **Dependence on Single Project**

Currently, Lundin Gold currently has only one project, Fruta del Norte, and, in the absence of additional mineral projects, it is solely dependent upon its development for its future revenue and profits. Should the development of FDN not be possible or practicable for political, engineering, technical or economic reasons, then Lundin Gold's business and financial position will be significantly and adversely affected.

# **Artisanal and Illegal Mining**

Mining by illegal and artisanal miners occurs on some of Lundin Gold's mineral concessions in Ecuador. While this activity is monitored by both the Company and the government, the operations of artisanal and illegal miners could interfere with Lundin Gold's activities and could result in conflicts. These potential activities could cause damage to FDN, including pollution, environmental damage or personal injury or death, for which Lundin Gold could potentially be held responsible. The presence of artisanal and illegal miners can lead to project delays and disputes regarding the development or operation of gold deposits. Artisanal and illegal mining can also result in mine stoppages, environmental issues and could have a material adverse effect on Lundin Gold's results of operations or financial condition.

# **Reclamation Obligations**

Reclamation requirements are designed to minimize long-term effects of mining exploitation and exploration disturbance by requiring the operating company to control possible deleterious effluents and to re-establish to some degree pre-disturbance land forms and vegetation. Lundin Gold is subject to such requirements in connection with its activities at FDN and may be liable for actions and activities and disturbances caused by artisanal and illegal miners on the Company's property. Any significant environmental issues that may arise, however, could lead to increased reclamation expenditures and could have a material adverse impact on Lundin Gold's financial resources. Furthermore, environmental hazards may exist on the properties in which Lundin Gold holds interests which are unknown to Lundin Gold at present and which have been caused by previous or existing owners or operators of the properties.

There can also be no assurance that closure estimates prove to be accurate. The amounts recorded for reclamation costs are estimates unique to a property based on estimates provided

by independent consulting engineers and Lundin Gold's assessment of the anticipated timing of future reclamation and remediation work required to comply with existing laws and regulations. Actual costs incurred in future periods could differ from amounts estimated. Additionally, future changes to environmental laws and regulations could affect the extent of reclamation and remediation work required to be performed by Lundin Gold. Any such changes in future costs could materially impact the amounts charged to operations for reclamation and remediation.

# **Information Systems and Cyber Security**

The Company's operations depend on information technology (IT) systems. These IT systems could be subject to network disruptions caused by a variety of sources, including computer viruses, security breaches and cyber-attacks, as well as disruptions resulting from incidents such as cable cuts, damage to physical plants, natural disasters, terrorism, fire, power loss, vandalism and theft. The Company's operations also depend on the timely maintenance, upgrade and replacement of networks, equipment, IT systems and software, as well as pre-emptive expenses to mitigate the risks of failures. Any of these and other events could result in IT system failures, delays and/or increase in capital expenses. The failure of IT systems or a component of information systems could, depending on the nature of any such failure, adversely impact the Company's reputation and results of operations.

Although to date the Company has not experienced any material losses relating to cyber-attacks or other information security breaches, there can be no assurance that the Company will not incur such losses in the future. The Company's risk and exposure to these matters cannot be fully mitigated because of, among other things, the evolving nature of these threats. As a result, cyber security and the continued development and enhancement of controls, processes and practices designed to protect systems, computers, software, data and networks from attack, damage or unauthorized access remain a priority. As cyber threats continue to evolve, the Company may be required to expend additional resources to continue to modify or enhance protective measures or to investigate and remediate any security vulnerabilities.

#### **Industry Competition**

The mining industry is intensely competitive in all its phases. Lundin Gold competes with many companies that have greater financial and technical resources than Lundin Gold for the acquisition of mineral properties, recruitment and retention of qualified employees and access to equipment required for exploration, development and production. There is a risk that competition adversely affects Lundin Gold's future exploration and development of the Fruta del Norte Project or other projects it may acquire.

# **Insurance and Uninsured Risks**

The business of Lundin Gold is subject to a number of risks and hazards generally, including adverse environmental conditions, industrial accidents, labour disputes, unexpected geological conditions, ground or slope failures, cave-ins, rock bursts, changes in the regulatory environment and natural phenomena such as inclement weather conditions, floods and earthquakes. Such

occurrences could result in damage to mineral properties, personal injury or damage to the properties of Lundin Gold or the properties of others, delays in mining, monetary losses and possible legal liability. Lundin Gold's current insurance does not cover all the potential risks associated with an exploration or development company's operations. Lundin Gold may also be unable to maintain insurance to cover certain risks at economically feasible premiums. Insurance coverage may not continue to be available or may not be adequate to cover any resulting liability. Moreover, insurance against risks such as environmental pollution or other hazards as a result of exploration and production is not generally available to Lundin Gold or to other companies in the mining and exploration industry on acceptable terms. Lundin Gold might also become subject to liability for pollution or other hazards which it may not be insured against or which Lundin Gold may elect not to insure against because of premium costs or other reasons. Losses from these events may cause Lundin Gold to incur significant costs that could have a material adverse effect upon its consolidated financial performance and results of operations.

### **Violation of Anti-Bribery Laws**

Lundin Gold is required to comply with anti-corruption and anti-bribery laws which apply to its business. If Lundin Gold finds itself subject to an enforcement action or is found to be in violation of such laws, this may result in significant penalties, fines, sanctions or other consequences imposed on Lundin Gold or its subsidiaries, resulting in a material adverse effect on Lundin Gold.

# **Claims and Legal Proceedings**

Lundin Gold may be subject to claims or legal proceedings in multiple jurisdictions covering a wide range of matters that arise in the ordinary course of its current business or the Company's previous business activities which could materially adversely impact Lundin Gold's financial position, cash flow and results of operations.

# **Internal Controls**

Internal controls over financial reporting are procedures designed to provide reasonable assurance that transactions are properly authorized, assets are safeguarded against unauthorized or improper use, and transactions are properly recorded and reported. A control system, no matter how well designed and operated, can only provide reasonable, not absolute, assurance with respect to the reliability of financial reporting and financial statement preparation.

# **Lundin Gold's Securities**

# The Shares

The Company is authorized to issue an unlimited number of Shares. As of December 31, 2017, Lundin Gold had an aggregate of 119,666,840 Shares issued and outstanding. As of the date of this AIF, Lundin Gold had an aggregate of 119,666,840 Shares issued and outstanding.

All of the Company's Shares rank equally as to voting rights. Shareholders are entitled to receive notice of, and to one vote per Share at, every meeting of shareholders, to receive such dividends as the Board declares and to share equally in the assets of Lundin Gold remaining upon the liquidation, dissolution or winding up of Lundin Gold after the creditors of Lundin Gold have been satisfied and after the payment of the aggregate liquidation preference of any Preference Shares (as defined herein) then outstanding. The Shares do not carry any pre-emptive, subscription, redemption of conversion rights, nor do they contain any sinking or purchase fund provisions. Any alteration of the rights attached to the Shares must be approved by at least two-thirds of the Shares voted at a meeting of the Company's shareholders.

Shareholders are entitled to receive dividends if, as and when declared by the Board. The directors have adopted a policy of dedicating cash flow to reinvestment in the business of the Company. Accordingly, no dividends have been declared to date.

In 2017, the Company issued 302,500 Shares on account of option exercises pursuant to the Company's stock option plan. An aggregate of 247,867 Shares were issued to Zebra pursuant to the 2017 Facility. An aggregate of 430,938 Shares were issued to a third party in August 2017 as part of the consideration for the acquisition of concession and easement rights required for FDN.

### **Preference Shares**

The Company is also authorized to issue, from time to time in one or more series, an unlimited number of preferred shares (the **Preference Shares**). As of December 31, 2017, and the date of this AIF, no Preference Shares have been issued.

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

The Preference Shares of any series may be purchased for cancellation or made subject to redemption as determined by the Board. The holders of Preference Shares shall be entitled to notice of meetings called for the purpose of authorizing the dissolution of Lundin Gold or the sale, lease or exchange of substantially all of its assets but shall not be entitled to vote thereat, except as provided by applicable law.

# **Price Range and Trading Volume**

Lundin Gold's primary listing of the Shares is on the TSX, where they trade under the symbol "LUG". The following table sets forth, for the periods indicated, the reported intra-day high and low sales prices and aggregate volume of trading of the Shares on the TSX in 2017.

Month (2017)	High (CAD\$) TSX	Low (CAD\$) TSX	Volume
January	5.84	5.22	1,762,781
February	6.00	5.11	1,287,112
March	6.37	5.28	1,499,793
April	6.23	5.79	498,062
May	6.50	5.79	1,918,921
June	6.20	5.44	779,701
July	5.48	4.59	1,071,513
August	5.42	4.60	1,180,776
September	5.57	4.89	1,168,408
October	5.56	4.77	636,203
November	5.26	4.57	922,888
December	4.70	4.07	1,915,053

Source: TMX Datalinx

# **Prior Sales during 2017**

# Debentures

In January 2017, the Company issued a debenture evidencing the 2017 Facility from Zebra which was repaid in July 2017.

# **Options**

The following table summarizes the Options that were issued by the Company, during the most recently completed financial year:

Date	Reason for Issuance	Number of Securities underlying Options	Exercise Price (CAD\$) per Security
February 28, 2017	Stock Option Grant	1,232,000	\$5.15
March 17, 2017	Stock Option Grant	37,000	\$5.94
November 9, 2017	Stock Option Grant	50,000	\$4.82
TOTAL		1,319,000	\$5.16

# **Lundin Gold's Management**

# The Board

The following table sets out the names and the provinces or states and countries of residence of each of the directors of Lundin Gold as of the date hereof, their respective positions and offices held with Lundin Gold and their principal occupations during the five preceding years. The following table also identifies the members of each committee of the Board.

Name and Province and Country of Residence	Principal Occupation and Employment for Past Five Years	Director Since <sup>(1)</sup>
CARMEL DANIELE <sup>(4)</sup> London, UK	Founder and Chief Investment Officer of CD Capital UK Ltd., the fund manager of a number of private equity and mining funds, since 2006.	2015
IAN W. GIBBS <sup>(4,7)</sup> British Columbia, Canada	Chief Financial Officer, Africa Oil Corp., a TSX and NASDAQ Stockholm listed Canadian oil and gas company with assets in Kenya and Ethiopia, since 2009.	2008
CHANTAL GOSSELIN <sup>(2,3,6)</sup> Ontario, Canada	Corporate Director; Vice President and Portfolio Manager at Goodman Investment Counsel, from 2011 - 2013.	2017
ASHLEY HEPPENSTALL <sup>(2,3,8)</sup> Hong Kong, China	Lead Director of the Board since 2015; Prior: President and CEO of Lundin Petroleum AB, an oil and gas exploration and production company with core operations in Norway and South East Asia, from 2002-2015.	2015
RON F. HOCHSTEIN <sup>(5,6)</sup> British Columbia, Canada	President and Chief Executive Officer of the Company since 2014; Chairman of the Company from 2008-2014; Prior: Executive Chairman of Denison Mines Corp. ( <b>Denison</b> ) in 2015; President and Chief Executive Officer of Denison from 2009-2014; Director of Denison since 2000.	2004
Lukas H. Lundin Geneva, Switzerland	Chairman of the Board since 2014; prior President and Chief Executive Officer of the Company from 2008-2014; Mining Executive.	2008
PAUL MCRAE <sup>(9,10)</sup> Algarve, Portugal	Senior Vice-President, Projects of Lundin Mining Corp, a diversified base metals mining company since 2012; prior Project Manager at Amec Corp., a British multinational consultancy, engineering and project management company from 2009-2011.	2014

Name and Province and Country of Residence	Principal Occupation and Employment for Past Five Years	Director Since <sup>(1)</sup>
Pablo J. Mir <sup>(5)</sup>	Lawyer, Partner of the Chilean law firm Bofill Mir &	2014
Santiago, Chile	Alvarez Jana.	2014

#### Notes:

- (1) The term of office of each of the directors will expire at the Annual General Meeting of the Shareholders to be held on June 1, 2018.
- (2) Member, Audit Committee
- (3) Member, Compensation Committee
- (4) Member, Corporate Governance and Nominating Committee
- (5) Member, Environment, Health and Safety Committee
- (6) Member, Project Advisory Committee
- (7) Chair, Audit Committee and Chair, Compensation Committee
- (8) Chair, Corporate Governance and Nominating Committee
- (9) Chair, Environment, Health and Safety Committee
- (10) Chair, Project Advisory Committee

#### **Lundin Gold's Executive Officers**

The following table sets out the names and the provinces or states and countries of residence of each of the executive officers of Lundin Gold as of the date hereof, their respective positions and offices held with Lundin Gold and their principal occupations during the five preceding years. Mr. Hochstein, the President and Chief Executive Officer of the Company, is discussed under "Directors" above.

Name and Province and						
<b>Country of Residence</b>	Position with Lundin Gold and Employment for Past Five Years					
ALESSANDRO BITELLI British Columbia, Canada	Executive Vice President and Chief Financial Officer since 2016; prior: Chief Financial Officer of Orca Gold Inc. from 2013-2016; Chief Financial Officer of RB Energy Inc. from 2011-2014.					
SHEILA COLMAN British Columbia, Canada	Vice President, Legal and Corporate Secretary since 2015; prior: General Counsel and Corporate Secretary, Denison from 2004-2015.					
DAVID DICAIRE British Columbia, Canada	Vice President, Projects since 2016; prior: Project Director for Freeport-McMoRan Inc. from 2013-2016, General Manager for Xstrata Copper (now Glencore plc) from 2011-2013.					

Name and Province and	
Country of Residence	Position with Lundin Gold and Employment for Past Five Years
Nathan Monash	Vice President, Business Sustainability since 2015; prior: Vice
Quito, Ecuador	President, Sustainability, Americas, AngloGold Ashanti from 2011-2014.
Iliana Rodriguez Quito, Ecuador	Vice President, Human Resources since 2016; prior: Human Resources Director for the Company from 2015-2016; various management positions with Kinross from 2011-2014.
CHESTER SEE British Columbia, Canada	Vice President, Finance since 2016; prior: Chief Financial Officer of the Company 2013-2016; Chief Financial Officer for NGEx Resources Inc., from 2013-2016; Financial Controller, Lucara Diamond Corp., from 2011-2013.

The directors and executive officers of Lundin Gold, as a group, beneficially own, or control or direct, directly or indirectly, 11,258,469 Shares, representing approximately 9.4% of the outstanding Shares as of the date of this AIF. This information was obtained from publicly disclosed information and has not been independently verified by Lundin Gold.

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

Other than as referred to below, no director or officer of the Company:

- (a) is, as at the date of this AIF, or has, within the previous ten year period, been a director, chief executive officer, or chief financial officer of any company (including Lundin Gold) that:
  - (i) was subject to a cease trade or similar order or an order that denied the relevant company access to any exemption under securities legislation that was in effect for a period of more than 30 consecutive days that was issued (A) while that person was acting in such capacity or (B) after that person ceased to act in such capacity but which resulted from an event that occurred while that person was acting in that capacity; or
  - (ii) became bankrupt, made a proposal under any legislation relating to bankruptcy or insolvency or was subject to or instituted any proceedings, arrangement or compromise with creditors or had a receiver, receiver manager or trustee appointed to hold its assets

- (A) while that person was acting in such capacity or (B) within a year of that person ceasing to act in such capacity, or
- (b) has, within the previous ten-year period, 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 such person's assets; or
- (c) is, or has been, subject to any penalties or sanctions (i) imposed by a court relating to securities legislation or by a securities regulatory authority or has entered into a settlement agreement with a securities regulatory authority, or (ii) imposed by a court or regulatory body that would likely be considered important to a reasonable security holder in making an investment decision.

Ron Hochstein, Lukas Lundin and Pablo Mir were all directors of Sirocco Mining Inc. (Sirocco). Pursuant to a plan of arrangement completed on January 31, 2014, Canadian Lithium Corp. acquired Sirocco. Under the plan of arrangement, Canadian Lithium Corp. amalgamated with Sirocco to form RB Energy Inc. (RBI).

In October 2014, RBI commenced proceedings under the *Companies' Creditors Arrangement Act* (**CCAA**). CCAA proceedings continued in 2015 and Duff & Phelps Canada Restructuring Inc., now KSV Advisory Inc., was appointed in May 2015 to administer and realize upon the assets of RBI. The TSX de-listed RBI's common shares in November 24, 2014 for failure to meet the continued listing requirements of the TSX. Since that time, RBI's common shares have been suspended from trading.

Lukas Lundin was never a director, officer or insider of RBI. Lukas Lundin, however, was a director of Sirocco within the 12-month period prior to RBI filing under the CCAA. Both Pablo Mir and Ron Hochstein were directors of RBI from the time of the plan of arrangement with Canadian Lithium Corp. to October 3, 2014. Alessandro Bitelli was the chief financial officer of RBI from the time of the plan of arrangement with Canadian Lithium Corp. until May 8, 2015.

### **Conflicts of Interest**

Some of Lundin Gold's directors are also directors and officers of other natural resource companies and, consequently, there exists the possibility for such directors and officers to be in a position of conflict relating to any future transactions or relationships between the Company or common third parties. However, the Company is unaware of any such pending or existing conflicts between these parties. Any decisions made by any of such directors and officers involving the Company are made in accordance with their duties and obligations to deal fairly and in good faith with the Company and such other companies and their obligations to act in the best interests of Lundin Gold's shareholders. In addition, each of the directors of the Company

discloses and refrains from voting on any matter in which such director may have a conflict of interest.

None of the present directors or senior officers of the Company, and no associate or affiliate of any of them, has any material interest in any transaction of the Company or in any proposed transaction which has materially affected or will materially affect the Company except as described herein.

- Investor relations, administrative service fees and other expenses of \$351,000 were incurred during the financial year ended December 31, 2017 with Namdo Management Services Ltd, a company that Ron Hochstein owns. These services were incurred in the normal course of operating a public company.
- Legal fees of \$56,000 were incurred during the financial year ended December 31, 2017 with Bofill, Mir & Alvarez Jana, a law firm of which Pablo Mir is a partner.

# **Interest of Management and Others in Material Transactions**

Other than as disclosed in this AIF, no director or executive officer of Lundin Gold, no person or company that beneficially owns, controls or directs, indirectly or directly, more than 10% of the Shares, and no associate or affiliate of any of them, has or has had, within the three most recently completed financial years or during the current financial year, any material interest, direct or indirect, in any transaction which materially affects or is reasonably expected to materially affect Lundin Gold, except as disclosed below.

- Lorito and Zebra, who report their shareholdings as joint actors, acquired 4,000,000 pursuant to the 2016 Equity Financing.
- Zebra also acquired 39,267 Shares and 247,867 Shares pursuant to the 2016 Facility and the 2017 Facility, respectively. As of the date of this AIF, Zebra and Lorito together own or control 35,920,608 Shares representing approximately 30.02% of the issued and outstanding Shares.
- Pursuant to the Private Placement, Zebra has agreed to acquire 8,083,141 Shares and Lorito has agreed to acquire 3,464,203 Shares. After the completion of the Private Placement, Lorito and Zebra will together own 47,467,952 Shares, representing approximately 22.3% of the issued and outstanding Shares.

# **Standing Committees of the Board**

#### **The Audit Committee**

The Audit Committee of the Board is principally responsible for:

- recommending to the Board the external auditor to be nominated for election by the Company's shareholders at each annual meeting and negotiating the compensation of such external auditor;
- overseeing the work of the external auditor;
- reviewing the Company's annual and interim financial statements, its accompanying management's discussion and analyses in respect thereof and press releases regarding earnings before they are reviewed and approved by the Board and publicly disseminated by the Company; and
- reviewing the Company's financial reporting procedures for the Company's public disclosure of financial information extracted or derived from its financial statements.

The Board has adopted an audit committee mandate (the **Mandate**), which sets out the Audit Committee's mandate, organization, powers and responsibilities. The complete Mandate is attached as Schedule A to this AIF.

Below are the details of each Audit Committee member, including his or her name, whether she or he is independent and financially literate as such terms are defined under National Instrument 52-110 - *Audit Committees* of the Canadian Securities Administrators (**NI 52-110**) and his or her education and experience as it relates to the performance of his or her duties as an Audit Committee member. All three audit committee members are financially literate under NI 52-110. The qualifications and independence of each member is discussed below.

Member Name	Independent <sup>(1)</sup>	Financially Literate <sup>(2)</sup>	Education & Experience relevant to performance of audit committee duties			
IAN W. GIBBS, Chair	Yes	Yes	Mr. Gibbs has a Bachelor of Commerce degree from the University of Calgary and is a member of the Canadian Institute of Chartered Accountants Mr. Gibbs has spent over 15 years working with public and private energy companies with international operations and has served as the Chief Financial Officer for several Canadian public oil companies since September 2004.			
CHANTAL GOSSELIN	Yes	Yes	Ms. Gosselin has a Master of Business Administration from Concordia University and a Chartered Investment Manager (CIM) designation from the Canadian Securities Institute. She has worked in the capital markets for more than 10 years as an analyst and portfolio manager. She also completed the Institute of Corporate Directors – Directors Education Program in 2016.			
Ashley Heppenstall	Yes	Yes	Mr. Heppenstall has extensive experience in the finance world. From 1984 to 1990, Mr. Heppenstall worked as a commercial bank executive where he was involved in project financing of oil and mining businesses. He served as Chief Financial Officer of Lundin Oil AB from 1997 until his appointment as CEO of Lundin Petroleum AB in 2001. Mr. Heppenstall has attended numerous credit and accounting courses and has a degree in Mathematics from Durham University.			

# Notes:

- (1) To be considered independent, a member of the committee must not have any direct or indirect "material relationship" with Lundin Gold. A material relationship is a relationship which could, in the view of the Lundin Gold Board, reasonably interfere with the exercise of a member's independent judgment.
- (2) To be considered financially literate, a member of the committee must have the ability to read and understand a set of financial statements that present a breadth and level of complexity of accounting issues that are

generally comparable to the breadth and complexity of the issues that can reasonably be expected to be raised by Lundin Gold's financial statements.

Since the commencement of the Company's most recently completed financial year, there has not been a recommendation of the Audit Committee to nominate or compensate an internal auditor which was not adopted by the Board.

The Audit Committee has adopted specific policies and procedures for the engagement of non-audit services as described in Section 4 of the Mandate.

The following table discloses the fees billed to the Company by its auditor, PwC, during the last two fiscal years. Services were billed and paid in Canadian dollars and have been translated into U.S. dollars using an average annual exchange rate of: \$0.7701 for 2017 and \$0.7548 for 2016.

Financial Year		Audit-Related					
Ending	Audit Fees(1)		Fees (2)		Tax Fees (3)		All Other Fees(4)
December 31, 2016	\$ 61,422	\$	16,228	\$	8,572	\$	41,610
December 31, 2017	74,664		41,174		11,950		-

#### Notes:

- (1) The aggregate fees billed for audit services of the Company's consolidated financial statements. Audit Fees include an aggregate of \$33,672 and \$46,907 paid to PwC's office in Ecuador in 2016 and 2017, respectively.
- (2) The aggregate fees billed for assurance and related services that are reasonably related to the performance of the audit or review of the Company's financial statements and are not disclosed in the Audit Fees column. Fees relate to reviews of interim consolidated financial statements and specified audit procedures not included as part of the audit of the consolidated financial statements.
- (3) The aggregate fees billed for tax compliance, tax advice, and tax planning services, such as transfer pricing and tax return preparation.

# **Other Board Committees**

The Board currently has four other standing committees in addition to the Audit Committee, namely the Corporate Governance and Nominating Committee, the Compensation Committee the Environment, Health and Safety Committee and the Project Advisory Committee. Each standing committee of the Board operates according to its mandate, which is approved by the Board and sets out the committee's duties and responsibilities. A discussion of each committee and its composition can be found in the most recent management information circular prepared in connection with the Company's Shareholder meeting.

# **Corporate Governance**

As a Canadian reporting issuer with its Shares listed on the TSX, Lundin Gold has in place a system of corporate governance practices which is responsive to applicable Canadian requirements, including National Policy 58-201 — *Corporate Governance Guidelines* of the Canadian Securities Administrators (the **Guidelines**). Reference is made to the Corporate Governance Practices section of the most recent management information circular prepared in connection with the Company's Shareholder meeting, which contains a description of the Company's system of corporate governance practices with reference to the Guidelines.

# **Legal and Regulatory Proceedings**

There are no legal proceedings to which either the Company or any of its subsidiaries is a party. The Company, as of the date of this AIF, is not aware that any such proceedings are contemplated.

There are no: (a) penalties or sanctions imposed against Lundin Gold by a court relating to securities legislation or by a securities regulatory authority; (b) other penalties or sanctions imposed by a court or regulatory body against Lundin Gold that would likely be considered important to a reasonable investor in making an investment decision in Lundin Gold; or (c) settlement agreements Lundin Gold entered into before a court relating to securities legislation or with a securities regulatory authority.

# **Material Contracts**

Reference is made to the material contracts that have been filed by Lundin Gold with the Canadian securities regulatory authorities on the SEDAR.

Below are the particulars of each contract, other than those entered into in the ordinary course of business, that is material to Lundin Gold and that was entered into between January 1, 2017 and December 31, 2017 or was entered into before those dates but is still in effect.

 Exploitation Agreement between the GOE and AESA, with respect to the Development of the Fruta del Norte Project dated December 14, 2016, as amended on July 10, 2017 and filed on SEDAR on September 6, 2017.

The EA, combined with existing laws and regulations, establishes the fiscal, operational and commercial terms and conditions for the development of FDN. The key terms of the EA are as follows:

- Through its wholly owned subsidiary in Ecuador, Lundin Gold has negotiated the right to develop and produce gold from the Fruta del Norte Project for 25 years, which may be renewed.
- The Company and the GOE have agreed to an advance royalty payment of \$65 million.
- Lundin Gold has agreed to pay the GOE a royalty equal to 5% of net smelter revenues from production. The advance royalty payment is deductible against future royalties payable. It will be deductible against the lesser of 50% of the actual future royalties payable in a six-month period or 10% of the total advance royalty payment.
- The Windfall Tax will be calculated in the event that market prices exceed a stipulated base price for gold and for silver. The GOE will tax the difference between net smelter revenue and what revenue would be using the base price at a rate of 70%. The base price, which will be determined on a monthly basis, will be equal to the trailing 10-year average of the daily price of gold or silver, escalated by the U.S. Consumer Price Index, plus one standard deviation.

- The Windfall Tax will not be applicable until the Company has recouped the cumulative investment in the Fruta del Norte Project from its inception until the start of production, plus four years.
- The GOE's share of cumulative benefits derived from the Fruta del Norte Project will not be less than 50% (the Sovereign Adjustment). To the extent that the GOE's cumulative benefit falls below 50%, the Company will be required to pay an annual sovereign adjustment. Each year, the benefits to the Company will be calculated as the net present value of the actual cumulative free cash flows of the Fruta del Norte Project from its inception. The GOE's benefit will be calculated as the present value of cumulative sum of taxes paid including corporate income taxes, royalties, Windfall Tax, labour profit sharing paid to the State, non-recoverable VAT, and any previous sovereign adjustment payments.
- The GOE and Lundin Gold have agreed on a mechanism for correcting any economic imbalance to these key terms which are the result of changes in taxes, laws and regulations as provided under the agreement.
- 2. Investment Protection Agreement between the GOE and AESA, with respect to the Development of the Fruta del Norte Project dated December 19, 2016.

The IPA provides further legal and tax stability for the Company, in conjunction with the EA and existing laws in Ecuador. The key terms of the EA are as follows:

- Income tax rate fixed at 22%.
- Exemption from the capital outflow tax of 5% on payments of principal and interest to financial institutions outside of Ecuador.
- The ability to obtain benefits granted by the GOE through future investment protection agreements with other investors in similar projects in Ecuador.
- No restrictions to transfer or assign all or part of the investment, including the right to assign its rights to any financing parties.
- Other benefits granted to the Company include no restriction to:
  - i. produce and sell minerals;
  - ii. import and export goods; and
  - iii. establish, maintain, control, or transfer funds abroad, provided statutory remittances and obligations have been met.
- 3. Gold Prepay Credit Agreement dated as of May 30, 2017 among AESA, as borrower, Orion, in its capacity as administrative agent (the **Administrative Agent**) and the lenders party thereto from time to time, as amended on December 4, 2017, with respect to the provision of a secured loan facility in the amount of \$150 million.

Pursuant to the Prepay Loan, the lenders have made available to AESA a non-revolving term facility in the amount of \$150 million to be used exclusively for Fruta del Norte

Project costs (except for amounts required to repay the 2017 Facility). Under the Prepay Loan, AESA must repay quarterly the cash equivalent of 11,500 gold ounces based on spot price at time of payment, with the initial repayment commencing on December 31, 2020. If AESA elects to defer repayment to the earlier of the commercial production date and December 31, 2021, AESA must repay quarterly the cash equivalent of 11,500 gold ounces plus an amount equal 250 ounces times the number of quarters deferred. Re-borrowing repaid amounts is not permitted under the Prepay Loan.

As security, AESA has granted a first ranking security over all of its property. The agreement contains customary representations and warranties of AESA as well as a suite of positive covenants, negative covenants, reporting requirements and events of default. Of note, AESA is restricted (except as expressly permitted) from (i) any direct or indirect change its ownership, (ii) disposing of its assets or Project property, (iii) paying royalty payments except as permitted, (iv) encumbering its property, (v) paying dividends until six months after the commercial production date or (vi) taking actions that would make it impractical for AESA to deliver gold as required by the Offtake Agreement (discussed below).

Events of default under the Prepay Loan include (i) any change of any control of any of the Project Subsidiaries or, in the case of Lundin Gold, any change of control involving 50% ownership or ability to control the Board (subject to certain permitted transactions and prescribed timing in the case of Lundin Gold), (ii) failure to fully fund the Project by June 30, 2018, as extended to up to December 31, 2018 upon closing of the Newcrest Subscription Agreement, by way of debt or equity, (iii) default under the Stream Loan or the Offtake Agreement, (iv) transferring or encumbering any property or assets that are collateral other than as permitted, (v) insolvency of AESA or the commencement of any insolvency proceedings in respect of AESA, (vi) the imposition of exchange controls or restriction on the importation or exportation of gold or silver leading to an AESA is unable to timely effect the transfer of payments when due, (vii) material default under or termination of any material contract as defined, (viii) material damage to collateral and the insurer not agreeing to pay appropriate proceeds, (ix) the occurrence of a materially adverse effect in respect of AESA or the Fruta del Norte Project, (x) the occurrence and continuance of an expropriation event, (xi) failure to deliver to the Administrative Agent copies of the executed Senior Facility documents prior to June 30, 2018, and (xii) the commercial production date not having occurred prior to December 31, 2021.

The occurrence and continuance of an event of default may (at the discretion of the majority lenders, being more than 50%) result in an acceleration of the debt and the enforcement of the secured collateral.

4. Stream Credit Facility Agreement dated as of May 30, 2017 among AESA, as borrower, the Administrative Agent, and the lenders party thereto from time to time, as amended on December 4, 2017, with respect to the provision of a secured loan facility in the amount of \$150 million.

Pursuant to the Stream Loan, the lenders have made available to AESA a non-revolving term facility in the amount of \$150,000,000, to be used exclusively for Fruta del Norte Project costs. The terms of the Stream Loan are substantially the same as the Prepay Loan, except for the repayment terms.

The Stream Loan is repayable in variable monthly instalments equivalent to the value of 7.75% of gold production less \$400 per oz. (the **Gold Base Price**) and 100% of the silver production less \$4 per oz. (the **Silver Base Price**) upon the start of commercial production at the Fruta del Norte Project, up to a maximum of 350,000 oz. of gold and six million oz. of silver. The Gold Base Price and Silver Base Price will increase by 1% per annum starting on the third anniversary of the commercial production date. The monthly gold and silver quantities and associated maximum deliverable ounces are subject to increase by set percentages if commercial production is not achieved by December 31, 2020 until October 1, 2021. In addition, the Company has the option to repay (i) 50% of the remaining Stream Loan on June 30, 2024 for \$150 million and / or (ii) the other 50% of the remaining Stream Loan on June 30, 2026 for \$225 million.

5. Investment Agreement dated May 30, 2017 between Orion and Lundin Gold, with respect to the committed participation by Orion in the Company's equity financings.

Under the Investment Agreement, Lundin Gold and Orion have agreed on the Company's commitment to raise future equity funding and on Orion's equity investment commitments in the Fruta del Norte Project, being that Orion has agreed to a minimum committed participation of 20% in any equity financings raising more than \$100 million. Further, Orion has committed to subscribing for no less than \$100 million and no more than \$150 million (at its option) in the aggregate.

6. Offtake Agreement dated as of May 30, 2017 among AESA and Orion, Gryphus Pte Ltd., an affiliate of Blackstone, and the purchasers thereunder from time to time, whereby Orion and Blackstone have been granted the right to purchase 50% of Fruta del Norte gold production, up to a maximum of 2,500,000 ounces.

Pursuant to the Offtake Agreement, AESA agreed to sell to the purchasers, and the Purchasers have agreed to purchase from AESA, up to 2,500,000 ounces of Refined Gold (gold bars or coins that is refined to standards meeting or exceeding 995 parts per 1,000 fine gold) produced from doré from FDN. Each of Orion and Blackstone have agreed to purchase 50% of the Refined Gold to be settled through delivery of Refined Gold by AESA

or by cash payment by AESA of a settlement amount where there is a delivery shortfall, until an aggregate of 2,500,000 ounces of Refined Gold has been delivered or settled pursuant to the agreement.

The purchase price payable by a purchaser to AESA for each ounce of Refined Gold delivered to such Purchaser under the agreement (net of the settlement amount, if any) is equal to such Purchaser's choice of any one of the following prices: (i) the a.m. LBMA Gold Price in US dollars per ounce quoted by the LBMA on any day during the Quotational Period; (ii) the p.m. LBMA Gold Price in US dollars per ounce quoted by the LBMA on any day during the Quotational Period; and (iii) the COMEX (1st Position) Settlement gold price in US dollars per ounce quoted by COMEX (a division of CME Group, Inc.) on any day during the Quotational Period.

7. Guaranty dated as of May 30, 2017 among Lundin Gold Inc., Aurelian Ecuador Holding S.A., Ecoaurelian Agrícola S.A., Aurelian Resources Inc. and Aurelian Resources Corporation Ltd. (collectively, the **Guarantors**), and The Bank of Nova Scotia, in its capacity as Offshore Collateral Agent, with respect to the guarantee the obligations of AESA in connection with the Financing.

Pursuant to the Guaranty, the Guarantors have guaranteed for the benefit of the lenders the obligations of AESA in connection with the Financing, including all obligations under the Prepay Loan and the Stream Loan, as well as the obligations of each other guarantor under the Guaranty. Any future direct or indirect subsidiaries of Lundin Gold with a direct or indirect interest in the Project is required to provide such guarantee.

The Guaranty is joint and several and unlimited in recourse except in respect of Lundin Gold, against whom the Guaranty is limited in recourse automatically after the later of Project completion or commercial production. The other guarantors will remain as guarantors with full recourse until no later than December 31, 2025.

Lundin Gold will no longer be restricted by the positive and negative covenants applicable to it following the later to occur of (i) the commercial production date and (ii) the date on which Lundin is released from its obligations under any guaranty, equity support agreement or other similar instrument provided for the benefit of the holders of the Senior Facility.

Key negative covenants for each Guarantor include (i) no transfers of equity interests whereby any of the equity interests in AESA or any guarantor would directly or indirectly become the property of any other person, (ii) no dispositions of assets except as permitted in the Guaranty, (iii) no restricted payments such as payments of dividends or distributions except as permitted in the Guaranty, (iv) no incursion of debt except as specifically permitted in the Guaranty, (v) no further encumbrances on any of any

Guarantor's property except as specifically permitted in the Guaranty, (vi) no purchases or dispositions with any related party other than another Guarantor, (vii) no actions that would make it impractical for AESA to deliver refined gold pursuant to the Offtake Agreement, (viii) other than Lundin Gold, no conducting business or engaging in activities other than (a) holding of capital stock of another obligor and other assets as held on the closing date, (b) performing its obligations under the financing documents and other transaction documents, (c) making equity investments in the other obligors provided certain conditions are met and (d) maintaining deposit accounts permitted or required pursuant to the terms of the security documents.

Each of the guarantors (other than Lundin Gold) under the Guaranty has provided security over all of their assets, and both Lundin Gold and Aurelian Resources Inc. have pledged their interests in the shareholdings of Aurelian Resources Inc. and Aurelian Resources Corporation Ltd. respectively.

8. Subscription Agreement between Lundin Gold and Newcrest, dated February 24, 2018 with respect to the Private Placement (the **Newcrest Subscription Agreement**).

Pursuant to the Newcrest Subscription Agreement, Newcrest will subscribe for 57,736,721 Shares at a price of \$4.33 per share in cash for an aggregate subscription price of \$250 million. Using an exchange rate of CAD\$1.00=US\$0.7868, this represents an aggregate subscription price of CAD\$317.7 million (or CAD\$5.50 per Share).

Pursuant to, and subject to the terms and conditions of, the Newcrest Subscription Agreement, upon closing of the Private Placement, Newcrest will be granted certain rights by Lundin Gold including, but not limited to, the following:

- i. For so long as Newcrest continues to hold at least 20% of the issued and outstanding Shares, Newcrest will be entitled to nominate two directors to the Board and will be entitled to nominate one director to the Board for so long as Newcrest holds between 10% and 20% of the issued and outstanding Shares.
- ii. Provided that Newcrest continues to hold at least 10% of the issued and outstanding Shares, Newcrest will be entitled to appoint a nominee to the Project Advisory Committee of the Board.
- iii. Provided Newcrest continues to hold more than 15% of the issued and outstanding Lundin Gold's Shares, it will have the right to assign three staff members to the Project.
- iv. For so long as Newcrest continues to hold at least 10% of the issued and outstanding Shares, Newcrest will have certain anti-dilution rights and will also be entitled to exercise pre-emptive rights with respect to future equity financings and in respect of non-cash issuances of Shares (other than certain significant transactions) in order to permit Newcrest to maintain its percentage ownership interest in Lundin Gold.

- v. For so long as Newcrest continues to hold at least 15% of the issued and outstanding Shares, Newcrest will have customary demand registration rights if the Fruta del Norte Project does not achieve commercial production by December 31, 2021 and customary piggyback registration rights from and after December 31, 2021 (or earlier upon the occurrence of certain events).
- vi. For so long as Newcrest continues to hold at least 15% of the issued and outstanding Shares, Lundin Gold will not be permitted to take certain actions without the prior approval of Newcrest, including with respect to:
  - a. the issuance of any preferred shares, the creation of any new shares or the amendment to the terms of the Shares of Lundin Gold;
  - b. share transfers or issuances by any of Lundin Gold's material subsidiaries;
  - c. joint ventures, co-ownership or similar arrangements in respect of the Fruta del Norte Project;
  - d. subject to certain exceptions, commodity-based financings with respect to the Fruta del Norte Project; and
  - e. until the date that commercial production is achieved at the Fruta del Norte Project, any amalgamation, merger, arrangement, corporate reorganization, share or asset purchase or other business transaction involving Lundin Gold or its subsidiaries, other than (i) *de minimus* transactions that would result in the issuance of less than 10% of Lundin Gold's then issued and outstanding Shares and (ii) a transaction that would result in a change of control of Lundin Gold (being the acquisition of more than 50% of the Company's Shares).
- vii. Newcrest has agreed to certain restrictions on buying securities of the Company beyond a 32% ownership in Lundin Gold for a period of eight years. The standstill obligation falls away in certain situations including but not limited to: a takeover bid for Lundin Gold by a third party or Newcrest; a significant M&A transaction not supported by Newcrest; certain significant changes in ownership of Lorito and Zebra in Lundin Gold; and Lundin Gold defaulting on its financing agreements.
- 9. Subscription Agreement between Lundin Gold and Orion, dated February 24, 2018 with respect to the Private Placement (the **Orion Subscription Agreement**).

Pursuant to the Orion Subscription Agreement, Orion will subscribe for 24,213,075 Shares at a price of \$4.13 per share in cash for an aggregate subscription price of \$100 million. Using an exchange rate of CAD\$1.00=US\$0.7868, this represents an aggregate subscription price of CAD\$127.1 million (or CAD\$5.25 per Share).

Pursuant to, and subject to the terms and conditions of, the Orion Subscription Agreement, upon closing of the Private Placement, Orion will be granted certain rights by Lundin Gold including, but not limited to, the following:

i. For so long as Orion continues to hold at least 10% of the issued and outstanding Shares, Orion will be entitled to nominate one director to the Board.

- ii. For so long as Orion continues to hold at least 10% of the issued and outstanding Shares, Orion will have certain anti-dilution rights and will also be entitled to exercise pre-emptive rights with respect to future equity financings and in respect of non-cash issuances of Shares (other than certain significant transactions) in order to permit Orion to maintain its percentage ownership interest in Lundin Gold.
- 10. Subscription Agreement between Lundin Gold and Zebra, dated February 24, 2018 with respect to the Private Placement (the **Zebra Subscription Agreement**).

Pursuant to the Zebra Subscription Agreement, Zebra will subscribe for 8,083,141 Shares at a price of \$4.33 per share in cash for an aggregate subscription price of \$35 million. Using an exchange rate of CAD\$1.00=US\$0.7868, this represents an aggregate subscription price of CAD\$44.5 million (or CAD\$5.50 per Share).

11. Subscription Agreement between Lundin Gold and Lorito, dated February 24, 2018 with respect to the Private Placement (the **Lorito Subscription Agreement**).

Pursuant to the Lorito Subscription Agreement, Lorito will subscribe for 3,464,203 Shares at a price of \$4.33 per share in cash for an aggregate subscription price of \$15 million. Using an exchange rate of CAD\$1.00=US\$0.7868, this represents an aggregate subscription price of CAD\$19.1 million (or CAD\$5.50 per Share).

# Names and Interests of Experts

The Company's independent auditor is PwC, Chartered Professional Accountants, who have issued an independent auditor's report dated February 15, 2018, in respect of Lundin Gold's consolidated financial statements as at December 31, 2017 and 2016. PwC has advised that it is independent with respect to the Company within the meaning of the Institute of Chartered Professional Accountants of British Columbia Code of Professional Conduct.

Ron F. Hochstein, P. Eng., Lundin Gold's President and Chief Executive Officer and Director, is a "Qualified Person" within the meaning of this term in NI 43-101 and has reviewed and approved sections of this AIF that are of a scientific or technical nature pertaining to the Company's Fruta del Norte Project and has verified the data disclosed herein. To the knowledge of Lundin Gold, Ron Hochstein is the registered or beneficial owner, directly or indirectly, of less than one percent of the outstanding Shares.

Stephen Leary, MAusIMM CP(Geo), a consultant to the Company, is a "Qualified Person" within the meaning of this term in NI 43-101 and has prepared, reviewed and approved sections of this AIF that are of a scientific or technical nature and has verified the data disclosed therein. To the

knowledge of Lundin Gold, Stephen Leary is the registered or beneficial owner, directly or indirectly, of less than one percent of the outstanding Shares.

The Technical Report was prepared by Amec Foster Wheeler. The firms and consultants who are providing QPs responsible for the content of the Technical Report, which is based on the 2016 FS and supporting documents prepared for the 2016 FS, are, in alphabetical order, Amec Foster Wheeler and Amec Foster Wheeler E&C Services Inc., Klohn Crippen Berger Ltd., MM Consultores, NCL, and Roscoe Postle Associates Inc. The QPs responsible for the Technical Report are as follows: Mr. Ignacy (Tony) Lipiec, P.Eng., Director, Process Engineering, Amec Foster Wheeler; Ms. Juleen Brown, MAusIMM CP, Mining Sector Lead - Environment, Amec Foster Wheeler; Mr. Simon Allard, P.Eng., Principal Consultant and Study Manager, Amec Foster Wheeler; Mr. Charles Masala, P.Eng., Associate Water Resources Engineer, Amec Foster Wheeler; Ms. Stella Searston, RM SME, Principal Geologist, Amec Foster Wheeler; Mr. Bryan D. Watts, P.Eng., Chairman and Principal, KCB; Mr. Alejandro Sepúlveda, RM CMC, Principal and Project Director, NCL; Mr. Anthony (Tony) R. Maycock, P.Eng., MM Consultores; and Mr. David A. Ross, P.Geo., Director, Resource Estimation, Principal Geologist, RPA. All of the authors of the technical report are independent of Lundin Gold. To the knowledge of Lundin Gold as of the date hereof, the partners, employees and consultants of Amec Foster Wheeler, KCB and RPA, who participated in the preparation of the Technical Report or who were in a position to influence the outcome of such report and Amec Foster Wheeler, KCB and RPA are the registered or beneficial owner, directly or indirectly, of less than one percent of the outstanding Shares.

# **Additional Information**

Additional information regarding the Company is available on the SEDAR website at <a href="www.sedar.com">www.sedar.com</a>. Further information concerning the Company, including directors' and officers' remuneration and indebtedness, principal holders of the Company's securities, options to purchase securities and interests of insiders in material transactions, where applicable, will be contained in the information circular for the Company's most recent annual meeting of shareholders that involves the election of directors. Additional financial information is provided in the 2017 Financial Statements and the 2017 MD&A.

A copy of this AIF, as well as the Company's information circular and such other information and documentation that the Company makes available via SEDAR, can be found at <a href="https://www.sedar.com">www.sedar.com</a>.

In addition, certain of this information will be distributed to shareholders in connection with Lundin Gold's Annual General Meeting of Shareholders. The Company will provide any of the foregoing documents subject to its rights to require people who are not security holders of the Company to pay a reasonable charge. Copies of these documents may be obtained by writing to the Corporate Secretary at:

Lundin Gold Inc. 2000-885 West Georgia Street Vancouver, BC, Canada V6C 3E8 +1 604 689-7842 Main +1 604 689-4250 Fax

Email: info@lundingold.com

#### Schedule A



#### **CHARTER OF THE AUDIT COMMITTEE**

# 1. Purpose of the Audit Committee

The Audit Committee oversees the accounting and financial reporting processes of the Corporation and its subsidiaries and all audits and external reviews of the financial statements of the Corporation on behalf of the Board, and has general responsibility for oversight of internal controls, accounting and auditing activities of the Corporation and its subsidiaries.

# 2. Members of the Audit Committee

- 2.1. The Audit Committee shall be appointed annually by the Board and shall be composed of three members, each of whom must be a director of the Corporation.
- 2.2. Each member of the Audit Committee shall hold office as such until the next annual meeting of shareholders after his or her appointment, provided that any member of the Audit Committee may be removed or replaced at any time by the Board and shall at any time cease to be a member of the Audit Committee on ceasing to be a director.
- 2.3. From this date forward, every Audit Committee member must be independent, within the meaning of National Instrument 52-110 (NI 52-110).
- 2.4. Every Audit Committee member must be financially literate, within the meaning of NI 52-110.

# 3. Meeting Requirements

- 3.1. The times of and the places where meetings of the Audit Committee will be held and the calling of and the procedure at those meetings shall be determined from time to time by the Audit Committee, but in any event, the Audit Committee will meet on a regular basis at least once every quarter; provided that notice of every such meeting shall be given to the Auditor (as defined in paragraph 4.1.1 below) of the Corporation and that meetings shall be convened whenever requested by the Auditor or any member of the Audit Committee in accordance with the Canada Business Corporations Act.
- 3.2. Two members of the Audit Committee shall constitute a quorum.

# 4. Duties and Responsibilities

- 4.1. Appointment, Oversight and Compensation of Auditor
  - 4.1.1. The Audit Committee shall recommend to the Board:
    - a) the auditor (the Auditor) to be nominated for the purpose of preparing or issuing an auditor's report or performing other audit, review or attest services for the Corporation; and
    - b) the compensation of the Auditor.
    - In making such recommendations, the Audit Committee shall evaluate the Auditor's performance and review the Auditor's fees for the preceding year.
  - 4.1.2. The Auditor shall report directly to the Audit Committee.
  - 4.1.3. The Audit Committee shall be directly responsible for overseeing the work of the Auditor, including the resolution of disagreements between management and the Auditor regarding financial reporting.
  - 4.1.4. The Audit Committee shall review information, including written statements from the Auditor, concerning any relationships between the Auditor and the Corporation or any other relationships that may adversely affect the independence of the Auditor and assess the independence of the Auditor.

#### 4.2. Non-Audit Services

- 4.2.1. All auditing services and non-audit services provided to the Corporation or the Corporation's subsidiaries by the Auditor shall, to the extent and in the manner required by applicable law or regulation, be pre-approved by the Audit Committee. In no circumstances shall the Auditor provide any non-audit services to the Corporation that are prohibited by applicable law or regulation.
- 4.3. Review of Financial Statements etc.
  - 4.3.1. The Audit Committee shall review the Corporation's:
    - a) interim and annual financial statements and Management's Discussion and Analysis (MD&A), intended for circulation among shareholders; and
    - b) Annual Information Form only to the extent that it contains financial information or projections,
    - and shall report on them to the Board.
  - 4.3.2. The Audit Committee shall satisfy itself that the audited financial statements and interim financial statements present fairly the financial position and results of operations in accordance with generally accepted accounting principles and that the auditors have no reservations about such statements.

4.3.3. The Audit Committee shall review changes in the accounting policies of the Corporation and accounting and financial reporting proposals that are provided by the Auditor that may have a significant impact on the Corporation's financial reports, and report on them to the Board.

# 4.4. Review of Public Disclosure of Financial Information

- 4.4.1. The Audit Committee shall review the Corporation's annual and interim press releases relating to financial results and any earnings guidance (provided by the Corporation) before the Corporation publicly discloses this information.
- 4.4.2. The Audit Committee must be satisfied that adequate procedures are in place for the review of the Corporation's public disclosure of financial information extracted or derived from the Corporation's financial statements, other than the public disclosure referred to in subsection 4.4.1, and must periodically assess the adequacy of those procedures.

### 4.5. Review of Annual Audit

- 4.5.1. The Audit Committee shall review the nature and scope of the annual audit, and the results of the annual audit examination by the Auditor, including any reports of the Auditor prepared in connection with the annual audit.
- 4.5.2. The Audit Committee shall satisfy itself that there are no unresolved issues between management and the Auditor that could affect the audited financial statements.
- 4.5.3. The Audit Committee shall satisfy itself that, where there are unsettled issues that do not affect the audited financial statements (e.g. disagreements regarding correction of internal control weaknesses, or the application of accounting principles to proposed transactions), there is an agreed course of action leading to the resolution of these matters.
- 4.5.4. The Audit Committee shall satisfy itself that there is generally a good working relationship between management and the Auditor.

# 4.6. Review of Quarterly Review Engagements

- 4.6.1. The Audit Committee shall review the nature and scope of any review engagements for interim financial statements, and the results of such review engagements by the Auditor, including any reports of the Auditor prepared in connection with such review engagements.
- 4.6.2. The Audit Committee shall satisfy itself that there are no unresolved issues between management and the Auditor that could affect any interim financial statements.
- 4.6.3. The Audit Committee shall satisfy itself that, where there are unsettled issues that do not affect any interim financial statements (e.g. disagreements regarding correction of

internal control weaknesses, or the application of accounting principles to proposed transactions), there is an agreed course of action leading to the resolution of these matters.

#### 4.7. Internal Controls

- 4.7.1. The Audit Committee shall have responsibility for oversight of management reporting and internal control for the Corporation and its subsidiaries.
- 4.7.2. The Audit Committee shall satisfy itself that there are adequate procedures for review of interim statements and other financial information prior to distribution to shareholders.

# 4.8. Complaints and Concerns

- 4.8.1. The Audit Committee shall establish procedures for:
  - a) the receipt, retention and treatment of complaints received by the Corporation regarding accounting, internal accounting controls, or auditing matters; and
  - b) the confidential, anonymous submission by employees of the Corporation of concerns regarding questionable accounting or auditing matters.

# 4.9. Hiring Practices

4.9.1. The Audit Committee shall review and approve the Corporation's hiring policies regarding partners, employees and former partners and employees of the present and former Auditors of the Corporation.

#### 4.10. Other Matters

- 4.10.1. The Audit Committee shall be responsible for oversight of the effectiveness of management's interaction with and responsiveness to the Board;
- 4.10.2. The Audit Committee shall review and monitor all related party transactions which may be entered into by the Corporation.
- 4.10.3. The Audit Committee shall approve, or disapprove, material contracts where the Board determines it has a conflict.
- 4.10.4. The Audit Committee shall satisfy itself that management has put into place procedures that facilitate compliance with the provisions of applicable securities laws and regulations relating to insider trading, continuous disclosure and financial reporting.
- 4.10.5. The Audit Committee shall oversee and annually review the Corporation's Code of Business Conduct and Ethics, and review and recommend to the Board the members of the Disclosure Committee from time to time and where a vacancy occurs at any time in the membership of the Disclosure Committee.

- 4.10.6. The Audit Committee shall periodically review the adequacy of this Charter and recommend any changes to the Board.
- 4.10.7. The Board may refer to the Audit Committee such matters and questions relating to the financial position of the Corporation and its affiliates as the Board from time to time may see fit.

# 5. Rights and Authority of the Audit Committee and the Members Thereof

- 5.1. The Audit Committee has the authority:
  - a) To engage independent counsel and other advisors as it determines necessary to carry out its duties;
  - b) To set and require the Corporation to pay the compensation for any advisors employed by the Audit Committee; and
  - c) To communicate directly with the Auditor and, if applicable, the Corporation's internal auditor.
- 5.2. The members of the Audit Committee shall have the right, for the purpose of performing their duties, to inspect all the books and records of the Corporation and its affiliates and to discuss those accounts and records and any matters relating to the financial position of the Corporation with the officers and Auditor of the Corporation and its affiliates, and any member of the Audit Committee may require the Auditor to attend any or every meeting of the Audit Committee.

#### 6. Miscellaneous

Nothing contained in this Charter is intended to extend applicable standards of liability under statutory or regulatory requirements for the directors of the Corporation or members of the Audit Committee. The purposes, responsibilities, duties and authorities outlined in this Charter are meant to serve as guidelines rather than as inflexible rules and the Committee is encouraged to adopt such additional procedures and standards as it deems necessary from time to time to fulfill its responsibilities.