# Consolidated Financial Statements

## For the Years Ended December 31, 2017 and December 31, 2016

## MANAGEMENT'S RESPONSIBILITY FOR FINANCIAL STATEMENTS

The accompanying consolidated financial statements of Golden Star Resources Ltd. (the "Company") and all information in this financial report are the responsibility of management. The consolidated financial statements have been prepared in accordance with International Financial Reporting Standards and, where appropriate, include management's best estimates and judgments.

Management maintains a system of internal control designed to provide reasonable assurance that assets are safeguarded from loss or unauthorized use, and that financial information is timely and reliable. However, any system of internal control over financial reporting, no matter how well designed and implemented, has inherent limitations and may not prevent or detect all misstatements.

The Board of Directors is responsible for ensuring that management fulfills its responsibilities for financial reporting and is ultimately responsible for reviewing and approving the consolidated financial statements.

The Board carries out this responsibility principally through its Audit Committee. The Board of Directors appoints the Audit Committee, and all of its members are independent directors. The Audit Committee meets periodically with management and the auditors to review internal controls, audit results, accounting principles and related matters. The Board of Directors approves the consolidated financial statements on recommendation from the Audit Committee.

PricewaterhouseCoopers LLP, an independent firm of Chartered Professional Accountants, was appointed by the shareholders at the last annual meeting to examine the consolidated financial statements and provide an independent professional opinion. PricewaterhouseCoopers LLP has full and free access to the Audit Committee.

*"Samuel T. Coetzer"*
Samuel T. Coetzer
President and Chief Executive Officer

*"André van Niekerk "*
André van Niekerk
Executive Vice President and Chief Financial Officer

Toronto, Canada
February 20, 2018

## Report of Independent Registered Public Accounting Firm

**To the Board of Directors and Shareholders of**
**Golden Star Resources Ltd.**

**Opinions on the financial statements and internal control over financial reporting**
We have audited the accompanying consolidated balance sheets of Golden Star Resources Ltd. and its subsidiaries, (together, the company) as of December 31, 2017 and 2016, and the related consolidated statements of operations and comprehensive income/loss, changes in shareholders' equity and cash flows for the years then ended, including the related notes (collectively referred to as the consolidated financial statements). We also have audited the company's internal control over financial reporting as of December 31, 2017, based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).
In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the company as of December 31, 2017 and 2016, and the results of their operations and their cash flows for the years then ended in conformity with International Financial Reporting Standards as issued by the International Accounting Standards Board. Also in our opinion, the company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2017, based on criteria established in Internal Control - Integrated Framework (2013) issued by the COSO.

**Basis for opinions**
The company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in Management's Report on Internal Control over Financial Reporting on page 26 of the 2017 Management's Discussion and Analysis. Our responsibility is to express opinions on the company's consolidated financial statements and on the company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk.

Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

**Definition and limitations of internal control over financial reporting**
A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of consolidated financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of consolidated financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the consolidated financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

**(Signed) "PricewaterhouseCoopers LLP"**

**Chartered Professional Accountants, Licensed Public Accountants**

February 20, 2018

Toronto, Canada

We have served as the company's auditor since at least 1992. We have not determined the specific year we began serving as auditor of the company.

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**GOLDEN STAR RESOURCES LTD.**

**CONSOLIDATED STATEMENTS OF OPERATIONS AND COMPREHENSIVE INCOME/(LOSS)**
**(Stated in thousands of U.S. dollars except shares and per share data)**

| | Notes | For the Years Ended December 31, | |
|---|---|---|---|
| | | 2017 | 2016 |
| **Revenue** | 17 | $ 315,497 | $ 221,290 |
| Cost of sales excluding depreciation and amortization | 18 | 226,482 | 172,616 |
| Depreciation and amortization | | 31,792 | 21,160 |
| Mine operating margin | | 57,223 | 27,514 |
| **Other expenses/(income)** | | | |
| Exploration expense | | 1,871 | 1,818 |
| General and administrative | | 25,090 | 25,754 |
| Finance expense, net | 19 | 8,485 | 7,832 |
| Other income | 20 | (4,346) | (3,349) |
| (Gain)/loss on fair value of financial instruments, net | 5 | (2,057) | 25,676 |
| Loss on repurchase of 5% Convertible Debentures, net | 5 | — | 11,594 |
| Loss/(gain) on conversion of 7% Convertible Debentures, net | 12 | 165 | (48) |
| **Income/(loss) before tax** | | 28,015 | (41,763) |
| Deferred income tax recovery | 8 | (12,944) | — |
| Net income/(loss) and comprehensive income/(loss) | | $ 40,959 | $ (41,763) |
| Net income/(loss) attributable to non-controlling interest | | 2,188 | (2,116) |
| Net income/(loss) attributable to Golden Star shareholders | | $ 38,771 | $ (39,647) |
| Net income/(loss) per share attributable to Golden Star shareholders | | | |
| Basic | 16 | $ 0.10 | $ (0.13) |
| Diluted | 16 | $ 0.10 | $ (0.13) |
| Weighted average shares outstanding-basic (millions) | | 373.5 | 294.1 |
| Weighted average shares outstanding-diluted (millions) | | 441.0 | 294.1 |

The accompanying notes are an integral part of the consolidated financial statements.

**GOLDEN STAR RESOURCES LTD.**

**CONSOLIDATED BALANCE SHEETS**
**(Stated in thousands of U.S. dollars)**

| | Notes | As of December 31, 2017 | As of December 31, 2016 |
|---|---|---|---|
| **ASSETS** | | | |
| CURRENT ASSETS | | | |
| Cash and cash equivalents | | $ 27,787 | $ 21,764 |
| Accounts receivable | | 3,428 | 7,299 |
| Inventories | 6 | 50,653 | 44,381 |
| Prepaids and other | | 5,014 | 3,926 |
| **Total Current Assets** | | 86,882 | 77,370 |
| RESTRICTED CASH | | 6,505 | 6,463 |
| MINING INTERESTS | 7 | 254,058 | 215,017 |
| DEFERRED TAX ASSETS | 8 | 12,944 | — |
| **Total Assets** | | $ 360,389 | $ 298,850 |
| | | | |
| **LIABILITIES** | | | |
| CURRENT LIABILITIES | | | |
| Accounts payable and accrued liabilities | 9 | $ 94,623 | $ 92,900 |
| Derivative liabilities | 5 | — | 2,729 |
| Current portion of rehabilitation provisions | 10 | 6,566 | 5,515 |
| Current portion of deferred revenue | 11 | 17,894 | 19,234 |
| Current portion of long term debt | 12 | 15,864 | 15,378 |
| Current portion of other liability | 15 | 13,498 | 2,073 |
| **Total Current Liabilities** | | 148,445 | 137,829 |
| REHABILITATION PROVISIONS | 10 | 64,146 | 71,867 |
| DEFERRED REVENUE | 11 | 92,062 | 94,878 |
| LONG TERM DEBT | 12 | 79,741 | 89,445 |
| LONG TERM DERIVATIVE LIABILITY | 5 | 10,963 | 15,127 |
| LONG TERM OTHER LIABILITY | 15 | 6,786 | 10,465 |
| **Total Liabilities** | | 402,143 | 419,611 |
| | | | |
| **SHAREHOLDERS' EQUITY** | | | |
| SHARE CAPITAL | | | |
| First preferred shares, without par value, unlimited shares authorized. No shares issued and outstanding | | — | — |
| Common shares, without par value, unlimited shares authorized | 13 | 783,167 | 746,542 |
| CONTRIBUTED SURPLUS | | 35,284 | 33,861 |
| DEFICIT | | (794,180) | (832,951) |
| **Shareholders' equity/(deficit) attributable to Golden Star shareholders** | | 24,271 | (52,548) |
| NON-CONTROLLING INTEREST | | (66,025) | (68,213) |
| **Total Deficit** | | (41,754) | (120,761) |
| **Total Liabilities and Shareholders' Equity** | | $ 360,389 | $ 298,850 |

The accompanying notes are an integral part of the consolidated financial statements.

Signed on behalf of the Board,

*"Timothy C. Baker"*
Timothy C. Baker, Director

*"Robert E. Doyle"*
Robert E. Doyle, Director

**GOLDEN STAR RESOURCES LTD.**

**CONSOLIDATED STATEMENTS OF CASH FLOWS**
**(Stated in thousands of U.S. dollars)**

| | Notes | For the Years Ended December 31, 2017 | 2016 |
|---|---|---|---|
| **OPERATING ACTIVITIES:** | | | |
| Net income/(loss) | | $ 40,959 | $ (41,763) |
| **Reconciliation of net income/(loss) to net cash provided by operating activities:** | | | |
| Depreciation and amortization | | 31,823 | 21,173 |
| Share-based compensation | 15 | 12,554 | 13,850 |
| Deferred income tax recovery | 8 | (12,944) | — |
| (Gain)/loss on fair value of 7% Convertible Debentures embedded derivative | 5 | (2,095) | 3,812 |
| Loss on fair value of 5% Convertible Debentures | 5 | 317 | 17,235 |
| Loss on repurchase of 5% Convertible Debentures, net | 5 | — | 11,594 |
| Recognition of deferred revenue | 11 | (14,156) | (11,267) |
| Proceeds from Royal Gold stream | 11 | 10,000 | 60,000 |
| Reclamation expenditures | 10 | (5,992) | (5,527) |
| Other | 24 | 2,158 | 6,350 |
| Changes in working capital | 24 | (7,448) | (22,208) |
| Net cash provided by operating activities | | 55,176 | 53,249 |
| **INVESTING ACTIVITIES:** | | | |
| Additions to mining properties | | (632) | (2,108) |
| Additions to plant and equipment | | (649) | (613) |
| Additions to construction in progress | | (67,591) | (81,635) |
| Change in accounts payable and deposits on mine equipment and material | | 1,103 | (2,794) |
| Increase in restricted cash | | (41) | — |
| Proceeds from sale of assets | | — | 657 |
| Net cash used in investing activities | | (67,810) | (86,493) |
| **FINANCING ACTIVITIES:** | | | |
| Principal payments on debt | 12 | (2,198) | (29,345) |
| Proceeds from debt agreements | 12 | 10,000 | 3,000 |
| Proceeds from 7% Convertible Debentures, net | 12 | — | 20,714 |
| 5% Convertible Debentures repayment | 12 | (13,611) | (19,941) |
| Shares issued, net | 13 | 24,456 | 45,450 |
| Exercise of options | | 10 | 22 |
| Net cash provided by financing activities | | 18,657 | 19,900 |
| Increase/(decrease) in cash and cash equivalents | | 6,023 | (13,344) |
| Cash and cash equivalents, beginning of period | | 21,764 | 35,108 |
| Cash and cash equivalents, end of period | | $ 27,787 | $ 21,764 |

See Note 24 for supplemental cash flow information.

The accompanying notes are an integral part of the consolidated financial statements.

## GOLDEN STAR RESOURCES LTD.

## CONSOLIDATED STATEMENTS OF CHANGES IN SHAREHOLDERS' EQUITY
**(Stated in thousands of U.S. dollars except share data)**

| | Number of Common Shares | Share Capital | Contributed Surplus | Deficit | Non-Controlling Interest | Total Shareholders' Equity |
|---|---|---|---|---|---|---|
| **Balance at December 31, 2015** | **259,897,095** | **$ 695,555** | **$ 32,612** | **$ (793,304)** | **$ (66,097)** | **$ (131,234)** |
| Shares issued | 75,360,692 | 55,180 | — | — | — | 55,180 |
| Shares issued under DSUs | 39,744 | 9 | (9) | — | — | — |
| Shares issued under options | 58,919 | 39 | (17) | — | — | 22 |
| Options granted net of forfeitures | — | — | 751 | — | — | 751 |
| Deferred share units granted | — | — | 524 | — | — | 524 |
| Share issue costs | — | (4,241) | — | — | — | (4,241) |
| Net loss | — | — | — | (39,647) | (2,116) | (41,763) |
| **Balance at December 31, 2016** | **335,356,450** | **$ 746,542** | **$ 33,861** | **$ (832,951)** | **$ (68,213)** | **$ (120,761)** |
| Shares issued (see Note 13) | 40,809,502 | 35,682 | — | — | — | 35,682 |
| Shares issued under DSUs | 1,167,689 | 521 | (521) | — | — | — |
| Shares issued under options | 23,750 | 16 | (6) | — | — | 10 |
| Shares issued under warrants (see Note 13) | 3,223,684 | 2,450 | — | — | — | 2,450 |
| Options granted net of forfeitures | — | — | 1,229 | — | — | 1,229 |
| Deferred share units granted | — | — | 387 | — | — | 387 |
| Performance and restricted share units granted | — | — | 334 | — | — | 334 |
| Share issue costs | — | (2,044) | — | — | — | (2,044) |
| Net income | — | — | — | 38,771 | 2,188 | 40,959 |
| **Balance at December 31, 2017** | **380,581,075** | **$ 783,167** | **$ 35,284** | **$ (794,180)** | **$ (66,025)** | **$ (41,754)** |

The accompanying notes are an integral part of the consolidated financial statements.

## 1. NATURE OF OPERATIONS

Golden Star Resources Ltd. ("Golden Star" or "the Company" or "we" or "our") is a Canadian federally-incorporated, international gold mining and exploration company headquartered in Toronto, Canada. The Company's shares are listed on the Toronto Stock Exchange (the "TSX") under the symbol GSC, the NYSE American (formerly NYSE MKT) under the symbol GSS and the Ghana Stock Exchange under the symbol GSR. The Company's registered office is located at 150 King Street West, Sun Life Financial Tower, Suite 1200, Toronto, Ontario, M5H 1J9, Canada.

Through a 90% owned subsidiary, Golden Star (Wassa) Limited, we own and operate the Wassa open-pit gold mine, the Wassa underground mine and a carbon-in-leach ("CIL") processing plant (collectively, "Wassa"), located northeast of the town of Tarkwa, Ghana. Through our 90% owned subsidiary Golden Star (Bogoso/Prestea) Limited, the Company owns and operates the Bogoso gold mining and processing operations ("Bogoso"), the Prestea open-pit mining operations and the Prestea underground development project located near the town of Prestea, Ghana. We hold and manage interests in several gold exploration projects in Ghana and in Brazil.

## 2. BASIS OF PRESENTATION

### Statement of compliance

The consolidated financial statements have been prepared in accordance with International Financial Reporting Standards ("IFRS"), as issued by the International Accounting Standards Board ("IASB") and with interpretations of the International Financial Reporting Interpretations Committee ("IFRIC") which the Canadian Accounting Standards Board has approved for incorporation into Part 1 of the CPA Canada Handbook – Accounting.

These consolidated financial statements were approved by the Board of Directors of the Company on February 20, 2018.

### Basis of presentation

These consolidated financial statements include the accounts of the Company and its subsidiaries, whether owned directly or indirectly. The financial statements of the subsidiaries are prepared for the same period as the Company using consistent accounting policies for all periods presented. All inter-company balances and transactions have been eliminated. Subsidiaries are entities controlled by the Company. Non-controlling interests in the net assets of consolidated subsidiaries are a separate component of the Company's equity.

These consolidated financial statements have been prepared on a going concern basis, which contemplates the realization of assets and discharge of all liabilities in the normal course of business.

The consolidated financial statements have been prepared on a historical cost basis, except for derivative financial instruments which are measured at fair value through profit or loss.

## 3. SUMMARY OF ACCOUNTING POLICIES

### Cash and cash equivalents

Cash includes cash deposits in any currency residing in chequing and sweep accounts. Cash equivalents consist of money market funds and other highly liquid investments purchased with maturities of three months or less. Investments with maturities greater than three months and up to one year are classified as short-term investments, while those with maturities in excess of one year are classified as long-term investments. Cash equivalents and short-term investments are stated at amortized cost, which typically approximates market value.

### Inventories

Inventory classifications include "stockpiled ore," "in-process inventory," "finished goods inventory" and "materials and supplies". The stated value of all production inventories include direct production costs and attributable overhead and depreciation incurred to bring the materials to their current point in the processing cycle. General and administrative costs for corporate offices are not included in any inventories.

Stockpiled ore represents coarse ore that has been extracted from the mine and is stored for future processing. Stockpiled ore is measured by estimating the number of tonnes (via truck counts or by physical surveys) added to, or removed from the stockpile, the number of contained ounces (based on assay data) and estimated gold recovery percentage. Stockpiled ore value is based on the costs incurred (including depreciation and amortization) in bringing the ore to the stockpile. Costs are added to the stockpiled ore based on current mining costs per tonne and are removed at the average cost per tonne of ore in the stockpile.

In-process inventory represents material that is currently being treated in the processing plants to extract the contained gold and to transform it into a saleable product. The amount of gold in the in-process inventory is determined by assay and by measure of the quantities of the various gold-bearing materials in the recovery process. The in-process gold is valued at the average of the beginning inventory and the cost of material fed into the processing stream plus in-process conversion costs including applicable mine-site overheads, depreciation and amortization related to the processing facilities.

Finished goods inventory is saleable gold in the form of doré bars. Included in the costs are the direct costs of the mining and processing operations as well as direct mine-site overheads, amortization and depreciation.

Materials and supplies inventories consist mostly of equipment parts and other consumables required in the mining and ore processing activities.

All inventories are valued at the lower of average cost or net realizable value.

**Property, plant and equipment**

Property, plant and equipment assets, including machinery, processing equipment, mining equipment, mine site facilities, buildings, vehicles and expenditures that extend the life of such assets, are initially recorded at cost including acquisition and installation costs. Property, plant and equipment are subsequently measured at cost, less accumulated depreciation and accumulated impairment losses.

The costs of self-constructed assets include direct construction costs and direct overhead during the construction phase. Indirect overhead costs are not included in the cost of self-constructed assets.

Depreciation for mobile equipment and other assets having estimated lives shorter than the estimated life of the ore reserves is calculated using the straight-line method at rates which depreciate the cost of the assets, less their anticipated residual values, if any, over their estimated useful lives. Mobile mining equipment is amortized over a five year life. Assets, such as processing plants, power generators and buildings, which have an estimated life equal to or greater than the estimated life of the ore reserves, are amortized over the life of the proven and probable reserves of the associated mining property using a units-of-production amortization method, less their anticipated residual values, if any. The net book value of property, plant and equipment assets is charged against income if the mine site is abandoned and it is determined that the assets cannot be economically transferred to another project or sold.

The residual values, useful lives and method of depreciation of property, plant and equipment are reviewed at each reporting period end, and adjusted prospectively if appropriate.

Gains and losses on the disposal of an item of property, plant and equipment are determined by comparing the proceeds from disposal with the carrying amount, and are recognized net in the consolidated statement of operations.

**Mining properties**

Mining property assets, including property acquisition costs, tailings storage facilities, mine-site development and drilling costs where proven and probable reserves have been established, pre-production waste stripping, condemnation drilling, roads, feasibility studies and wells are recorded at cost. The costs of self-constructed assets include direct construction costs, direct overhead costs and allocated interest during the construction phase. Indirect overhead costs are not included in the cost of self-constructed assets.

Mining property assets are amortized over the life of the proven and probable reserves to which they relate, using a units-of-production amortization method. At open pit mines the costs of removing overburden from an ore body in order to expose ore during its initial development period are capitalized.

**Underground mine development costs**

Underground mine development costs include development costs to build new shafts, drifts and ramps that will enable the Company to physically access ore underground. The time over which the Company will continue to incur these costs depends on the mine life. These underground development costs are capitalized as incurred. Capitalized underground development costs incurred to enable access to specific ore blocks or areas of the underground mine, and which only provide an economic benefit over the period of mining that ore block or area, are depreciated on a units-of-production basis, whereby the denominator is estimated ounces of gold in proven and probable reserves and the portion of resources within that ore block or area that is considered probable of economic extraction. If capitalized underground development costs provide an economic benefit over the entire mine life, the costs

are depreciated on a units-of-production basis, whereby the denominator is the estimated ounces of gold in total accessible proven and probable reserves and the portion of resources that is considered probable of economic extraction.

**Borrowing costs**

Borrowing costs attributable to the acquisition, construction or production of a qualifying asset are capitalized. Qualifying assets are assets that require a significant amount of time to prepare for their intended use, including projects that are in the exploration and evaluation, development or construction stages. Capitalized borrowing costs are considered an element of the cost of the qualifying asset which is determined based on gross expenditures incurred on an asset. Capitalization ceases when the asset is substantially complete or if active development is suspended or ceases. Where the funds used to finance a qualifying asset form part of general borrowings, the amount capitalized is calculated using a weighted average of rates applicable to the relevant borrowings during the period. Where funds borrowed are directly attributable to a qualifying asset, the amount capitalized represents the borrowing costs specific to those borrowings. Other borrowing costs are recognized as an expense in the period in which they are incurred.

**Impairment of long-lived assets**

The Company assesses at each reporting period whether there is an indication that an asset or group of assets may be impaired. When impairment indicators exist, the Company estimates the recoverable amount of the asset and compares it against the asset's carrying amount. The recoverable amount is the higher of its fair value less cost of disposal ("FVLCD") and the asset's value in use ("VIU"). If the carrying amount exceeds the recoverable amount, an impairment loss is recorded in the consolidated statement of operations.

In assessing VIU, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset not already reflected in the estimates of future cash flows. The cash flows are based on best estimates of expected future cash flows from the continued use of the asset and its eventual disposal.

FVLCD is best evidenced if obtained from an active market or binding sale agreement. Where neither exists, the fair value is based on the best estimates available to reflect the amount that could be received from an arm's length transaction.

Future cash flows are based on estimated quantities of gold and other recoverable metals, expected price of gold (considering current and historical prices, price trends and related factors), production levels and cash costs of production, capital and reclamation costs, all based on detailed engineered life-of-mine plans.

Numerous factors including, but not limited to, unexpected grade changes, gold recovery variances, shortages of equipment and consumables, and equipment failures could impact our ability to achieve forecasted production schedules from proven and probable reserves. Additionally, commodity prices, capital expenditure requirements and reclamation costs could differ from the assumptions used in the cash flow models used to assess impairment. The ability to achieve the estimated quantities of recoverable minerals from exploration stage mineral interests involves further risks in addition to those factors applicable to mineral interests where proven and probable reserves have been identified, due to the lower level of confidence that the identified mineralized material can ultimately be mined economically.

If an impairment loss reverses in a subsequent period, the carrying amount (post reversal) of the related asset is increased to the revised estimate of recoverable amount to the extent that the increased carrying amount does not exceed the carrying amount that would have been determined had no impairment loss been recognized for the asset previously. Reversals of impairment losses are recognized in the statement of operations in the period the reversals occur.

Material changes to any of the factors or assumptions discussed above could result in future asset impairments.

**Rehabilitation provisions**

The Company records a liability and corresponding asset for the present value of the estimated costs of legal and constructive obligations for future site reclamation and closure where the liability is probable and a reasonable estimate can be made of the obligation. The estimated present value of the obligation is reassessed on a periodic basis or when new material information becomes available. Increases or decreases to the obligation usually arise due to changes in legal or regulatory requirements, the extent of environmental remediation required, methods of reclamation, cost estimates, inflation rates, or discount rates. Changes to the provision for reclamation and remediation obligations related to operating mines, which are not the result of current production of inventory, are recorded with an offsetting change to the related asset. Changes to the provision for reclamation and remediation obligations related to suspended mine operations are recognized in the consolidated statements of operations and comprehensive loss. The present value is determined based on current market assessments of the time value of money using discount rates based on the risk-free rate maturing approximating the timing of expected expenditures to be incurred, and adjusted for country related risks. The periodic unwinding of the discount is recognized in the consolidated statement of operations as a finance expense.

**Deferred revenue**

Deferred revenue consists of payments received by the Company for future delivery of payable gold under the terms of the Company's Streaming Agreement. As deliveries are made, the Company will record a portion of the deferred revenue as sales, on a unit of production basis over the volume of gold expected to be delivered during the term of the streaming arrangement. The amount by which the deferred revenue balance is reduced and recognized into revenue is based on a rate per ounce of gold delivered under the stream. This rate per ounce of gold delivered is based on the remaining deferred revenue balance divided by the ounces that are expected to be delivered under the Stream Arrangement over the life of the arrangement. This estimate is re-evaluated at each reporting period with any resulting changes in estimate reflected prospectively.

The Streaming Agreement has been recorded as a contract for the future delivery of gold ounces at the contracted price. The upfront payments are accounted for as prepayments of yet-to-be delivered ounces under the contract and are recorded as deferred revenue. The initial term of the contract is 40 years and the deposit bears no interest.

IFRS 15 *Revenue from Contracts with Customers* was amended with the changes having an effective date of January 1, 2018. While these amendments do not impact these financial statements, they will impact the Company's accounting for its streaming arrangement with RGLD Gold AG ("RGLD") as a result of a significant financing component in the contract as defined by IFRS 15. The impact will be recognized in the Company's 2018 financial statements.

**Foreign currency transactions**

The Company's presentation currency of its consolidated financial statements is the U.S. dollar, as is the functional currency of its operations. The functional currency of all consolidated subsidiaries is the U.S. dollar. All values are rounded to the nearest thousand, unless otherwise stated.

Monetary assets and liabilities denominated in foreign currencies are translated into U.S. dollars at period end exchange rates. Non-monetary assets and liabilities denominated in foreign currencies that are measured at fair value are translated into U.S. dollars at the exchange rate at the date that the fair value was determined. Income and expense items are translated at the exchange rate in effect on the date of the transaction. Exchange gains and losses resulting from the translation of these amounts are included in net loss, except those arising on the translation of available-for-sale investments that are recorded in other comprehensive income. Non-monetary assets and liabilities denominated in foreign currencies that are measured at historical cost are translated at the exchange rate in effect at the transaction date.

**Income taxes**

Income taxes comprise the provision for (or recovery of) taxes actually paid or payable (current taxes) and for deferred taxes.

Current taxes are based on taxable earnings in the year. Current tax is calculated using tax rates and laws that were enacted or substantively enacted at the balance sheet date in the respective jurisdictions.

Current income tax assets and current income tax liabilities are only offset if a legally enforceable right exists to offset the amounts and the Company intends to settle on a net basis or to realize the asset and settle the liability simultaneously.

Deferred income tax assets and liabilities are recognized for the expected future tax consequences attributable to temporary differences between the tax basis of assets and liabilities and their reported amounts in the financial statements. Deferred income tax assets and liabilities are computed using enacted or substantially enacted income tax rates in effect when the temporary differences are expected to reverse. The effect on the deferred tax assets and liabilities of a change in tax rates is recognized in the period of substantial enactment. The provision for or the recovery of deferred taxes is based on the changes in deferred tax assets and liabilities during the period.

The carrying amount of deferred income tax assets is reviewed at the end of each reporting period and recognized to the extent that it is probable that taxable earnings will be available against which deductible temporary differences can be utilized.

**Net income/(loss) per share**

Basic income/(loss) per share of common stock is calculated by dividing income available to Golden Star's common shareholders by the weighted average number of common shares issued and outstanding during the period. In periods with earnings, the calculation of diluted net income per common share uses the treasury stock method to compute the dilutive effects of stock options, warrants, convertible debentures and other potentially dilutive instruments. In periods of loss, diluted net loss per share is equal to basic income per share.

**Revenue recognition**

Revenue from the sale of metal is recognized when the significant risks and rewards of ownership have passed to the purchaser. This occurs when the amount of revenue can be measured reliably, the metal has been delivered, title has passed to the buyer and it is probable that the economic benefits associated with the transaction will flow to the entity. All of our spot sales of gold are transported to a South African gold refiner who locates a buyer and arranges for sale of our gold on the same day that the gold is

shipped from the mine site. The sales price is based on the London P.M. fix on the day of shipment. Title and risk of ownership pass to the buyer on the day doré is shipped from the mine sites. Revenue recognition for our stream arrangement is disclosed in the accounting policy for deferred revenue.

**Share-based compensation**

Under the Company's Fourth Amended and Restated 1997 Stock Option Plan, common share options may be granted to executives, employees, consultants and non-employee directors. Compensation expense for such grants is recorded in the consolidated statements of operations and comprehensive loss, with a corresponding increase recorded in the contributed surplus account in the consolidated balance sheets. The expense is based on the fair value of the option at the time of grant, measured by reference to the fair value determined using a Black-Scholes valuation model, and is recognized over the vesting periods of the respective options on a graded basis. Consideration paid to the Company on exercise of options is credited to share capital.

Under the Company's Deferred Share Unit ("DSU") plan, DSUs may be granted to executive officers and directors. Compensation expense for such grants is recorded in the consolidated statements of operations and comprehensive loss with a corresponding increase recorded in the contributed surplus account in the consolidated balance sheets. The expense is based on the fair values at the time of grant and is recognized over the vesting periods of the respective DSUs. Upon exercise the Company's compensation committee may, at its discretion, issue cash, shares or a combination thereof.

Under the Company's Share Appreciation Rights ("SARs") plan allows SARs to be issued to executives, employees and directors. These awards are settled in cash on the exercise date equal to the Company's stock price less the strike price. Since these awards are settled in cash, the Company marks-to-market the associated expense for each award at the end of each reporting period using a Black-Scholes model. The Company accounts for these as liability awards and marks-to-market the fair value of the award until final settlement.

Under the Company's Performance Share Units ("PSU") plan, PSUs may be granted to executives, employees and non-employee directors. Each PSU represents one notional common share that is redeemed for cash based on the value of a common share at the end of the three year performance period, to the extent performance and vesting criteria have been met. The PSUs vest at the end of a three year performance. The cash award is determined by multiplying the number of units by the performance adjusting factor, which ranges from 0% to 200%. The performance factor is determined by comparing the Company's share price performance to the share price performance of a peer group of companies as listed in the PSU plan. As the Company is required to settle these awards in cash, they are accounted for as liability awards with corresponding compensation expense recognized. Long term PSU liability is recognized on the balance sheet as Long Term Other Liability and the current portion is recorded as Other Liability.

Under the Company's 2017 performance and restricted share unit plan (the "2017 PRSU Plan"), performance share units ("2017 PSUs") and restricted share units ("2017 RSUs" and, together with the 2017 PSUs, the "Share Units") may be issued to any employee or officer of the Company or its designated affiliates. Share Units may be redeemed for: (i) common shares issued from treasury; (ii) common shares purchased in the secondary market; (iii) a cash payment; or (iv) a combination of (i), (ii) and (iii).

Each PRSU represents one notional common share that is redeemed for common shares or common shares plus cash subject to the consent of the Company based on the value of a common share at the end of the three year performance period, to the extent performance and vesting criteria have been met. The PRSUs vest at the end of a three year performance period. The award is determined by multiplying the number of Share Units by the performance adjustment factor, which ranges from 0% to 200%. The performance adjustment factor is determined by comparing the Company's share price performance to the share price performance of a peer group of companies as listed in the 2017 PRSU Plan. As the Company is required to settle these awards in common shares or common shares plus cash subject to the consent of the Company, they are accounted for as equity awards with corresponding compensation expense recognized.

**Leases**

Leases that transfer substantially all of the benefits and risks of ownership to the Company are recorded as finance leases and classified as property, plant and equipment with a corresponding amount recorded with current and long-term debt. All other leases are classified as operating leases under which leasing costs are expensed in the period incurred.

**Financial instruments**

The Company recognizes all financial assets initially at fair value and classifies them into one of the following three categories: fair value through profit or loss ("FVTPL"), available-for-sale ("AFS") or loans and receivables, as appropriate. The Company has not classified any of its financial assets as held to maturity.

The Company recognizes all financial liabilities initially at fair value and classifies them as either FVTPL or loans and borrowings, as appropriate. The Company has not classified any of its derivatives as hedging instruments in an effective hedge.

*5% Convertible Debentures*

The Company's 5% Convertible Debentures were considered financial instruments at FVTPL. The convertible debentures contained embedded derivatives that significantly modified the cash flows that otherwise would be required by the contract. The convertible debentures were recorded at fair value based on unadjusted quoted prices in active markets when available, otherwise by valuing the embedded derivative conversion feature and the debt component separately. The conversion feature was valued using a Black-Scholes model and the value of the debt was determined based on the present value of the future cash flows. Changes in fair value were recorded in the consolidated statement of operations. Upfront costs and fees related to the convertible debentures were recognized in the statement of operations as incurred and not deferred. The Company's 5% Convertible Debentures were fully settled during the year ended December 31, 2017.

*Warrants*

The Company's warrants were considered financial instruments at FVTPL. Prior to the holder exercising the warrants in full in 2017, the holder of the warrants had an option to request a cashless exercise. As a result, the warrants were classified as financial liability instruments and were recorded at fair value at each reporting period end using a Black-Scholes model. Warrant pricing models required the input of certain assumptions including price volatility and expected life. All warrants were exercised during the year ended December 31, 2017.

*Derivatives*

From time to time the Company may utilize foreign exchange and commodity price derivatives to manage exposure to fluctuations in foreign currency exchange rates and gold prices, respectively. The Company does not employ derivative financial instruments for trading purposes or for speculative purposes. Our derivative instruments are recorded on the balance sheet at fair value with changes in fair value recorded in the consolidated statement of operations. The Company did not have any foreign exchange derivatives outstanding at December 31, 2017.

*7% Convertible Debentures embedded derivative*

The Company's 7% Convertible Debentures embedded derivative is considered a financial instrument at FVTPL. The embedded derivative was recorded at fair value on the date of debt issuance. It is subsequently remeasured at fair value at each reporting date, and the changes in the fair value are recorded in the consolidated statement of operations. The fair value of the embedded derivative is determined using a convertible note valuation model, using assumptions based on market conditions existing at the reporting date.

**Share capital**

Common shares are classified as equity. Costs directly attributable to the issue of new shares or share options are shown in equity as a deduction, net of tax, from the gross proceeds.

**Changes in accounting policies**

The Company has adopted the following new and revised standards, effective January 1, 2017. These changes were made in accordance with the applicable transitional provisions.

IAS 7 *Statement of cash flows - Disclosures related to financing activities* was amended to require disclosures about changes in liabilities arising from financing activities, including both changes arising from cash flows and non-cash changes. As a result of the adoption of IAS 7, the Company has included additional disclosure on non-cash changes of debt amounts in Note 24.

IAS 12 *Income taxes - Deferred tax* was amended to clarify (i) the requirements for recognizing deferred tax assets on unrealized losses; (ii) deferred tax where an asset is measured at a fair value below the asset's tax base, and (iii) certain other aspects of accounting for deferred tax assets. The adoption of this amendment did not result in any impact to the Company's financial statements.

**Standards, interpretations and amendments not yet effective**

IFRS 9 *Financial Instruments* was issued in July 2014 and includes (i) a third measurement category for financial assets - fair value through other comprehensive income; (ii) a single, forward-looking "expected loss" impairment model; and (iii) a mandatory effective date of annual periods beginning on or after January 1, 2018. There will be no material impact to the financial statements on adoption of this standard.

IFRS 15 *Revenue from Contracts with Customers* was amended to clarify how to (i) identify a performance obligation in a contract; (ii) determine whether a company is a principal or an agent; and (iii) determine whether the revenue from granting a license should be recognized at a point in time or over time. In addition to the clarifications, the amendments include two additional reliefs to reduce cost and complexity for a company when it first applies the new standard. The amendments have the same effective date as the standard, which is January 1, 2018. The Company has reviewed its contracts with customers with respect to the applications to IFRS 15. The Company does not expect that the timing or amounts of revenue currently recognized on our bullion spot sales

will be affected by IFRS 15. It is anticipated that the accounting for the Company's streaming arrangement with RGLD, will be impacted by the adoption of IFRS 15 as a result of a significant financing component in the contract as defined by IFRS 15. It is expected that the finance costs and revenue will increase on adoption of this standard. The Company will use the modified retrospective approach of adoption.

IFRS 2 *Share-based payments* was amended to address (i) certain issues related to the accounting for cash settled awards, and (ii) the accounting for equity settled awards that include a "net settlement" feature in respect of employee withholding taxes effective for years beginning on or after January 1, 2018. There will be no impact to the financial statements on adoption of this standard.

IFRS 16 *Leases* specifies how an IFRS reporter will recognize, measure, present and disclose leases. The standard provides a single lessee accounting model, requiring lessees to recognize assets and liabilities for all leases unless the lease term is 12 months or less or the underlying asset has a low value. Lessors continue to classify leases as operating or finance, with IFRS 16's approach to lessor accounting substantially unchanged from its predecessor, IAS 17. IFRS 16 was issued in January 2016 and applies to annual reporting periods beginning on or after January 1, 2019. The Company is still assessing the impact of this standard.

IFRIC 23 *Uncertainty over income tax treatments* clarifies how the recognition and measurement requirements of IAS 12, Income Taxes, are applied where there is uncertainty over income tax treatments effective for years beginning on or after January 1, 2019. The Company is still assessing the impact of this standard.

## 4. CRITICAL ACCOUNTING JUDGEMENTS, ESTIMATES AND ASSUMPTIONS

Preparation of our consolidated financial statements in conformity with IFRS requires management to make judgments, estimates and assumptions that can affect reported amounts of assets, liabilities, revenues and expenses and the accompanying disclosures. Estimates and assumptions are continuously evaluated and are based on management's historical experience and on other assumptions we believe to be reasonable under the circumstances. However, uncertainty about these judgments, estimates and assumptions could result in outcomes that require a material adjustment to the carrying amount of assets or liabilities affected in future periods.

**Inventory valuation**

Inventories are recorded at the lower of average cost or net realizable value ("NRV"). The allocation of costs to ore in stockpiles and the determination of NRV involve the use of estimates. Stockpiled ore represents coarse ore that has been extracted from the mine and is stored for future processing. Stockpiled ore is measured using estimates such as the number of tonnes (via truck counts or by physical surveys) added to, or removed from the stockpile, the number of contained ounces (based on assay data) and estimated gold recovery percentage. Timing and recovery of stockpiled ore can vary significantly from the estimates.

The net realizable value of materials and supplies is recorded based on the expected usage of the inventory items, salvage value and condition of the inventory items, all of which are based on management estimates and judgments.

**Mineral reserves**

Determining mineral reserves and resources is a complex process involving numerous variables and is based on a professional evaluation using accepted international standards for the assessment of mineral reserves. Estimation is a subjective process, and the accuracy of such estimates is a function of the quantity and quality of available data, the assumptions made and judgments used in engineering and geological interpretation. Mineral reserve estimation may vary as a result of changes in the price of gold, production costs, and with additional knowledge of the ore deposits and mining conditions.

Differences between management's assumptions including economic assumptions such as metal prices and market conditions could have a material effect in the future on the Company's results and financial position, particularly a change in the rate of depreciation and amortization of the related mining assets and the recognition of deferred revenue.

**Units of production depreciation**

The mineral properties and a large portion of the property, plant and equipment is depreciated/amortized using the units of production method over the expected operating life of the mine based on estimated recoverable ounces of gold, which are the prime determinants of the life of a mine. Estimated recoverable ounces of gold include proven and probable mineral reserves. Changes in the estimated mineral reserves will result in changes to the depreciation charges over the remaining life of the operation. A decrease in the mineral reserves would increase depreciation and amortization expense and this could have a material impact on the operating results. The amortization base is updated on an annual basis based on the new mineral reserve estimates.

**Carrying value of assets and impairment charges**

The Company undertakes a review of its assets at each reporting period to determine whether any indication of impairment exists. Where an indicator of impairment exists, a formal estimate of the recoverable amount of the asset or cash-generating unit ("CGU") is made, which is considered to be the higher of its FVLCD and VIU. An impairment loss is recognized when the carrying value

of the asset or CGU is higher than the recoverable amount. In undertaking this review, management of the Company is required to make significant estimates of, amongst other things, discount rates, future production and sale volumes, metal prices, reserves and resource quantities, future operating and capital costs and reclamation costs to the end of the mine's life. These estimates are subject to various risks and uncertainties, which may ultimately have an effect on the expected recoverability of the carrying values of the asset or CGU. In determining a CGU, management has examined the smallest identifiable group of assets that generates cash inflows that are largely independent of cash inflows from other assets or group of assets.

**Rehabilitation provisions**

Environmental reclamation and closure liabilities are recognized at the time of environmental disturbance, in amounts equal to the discounted value of expected future reclamation and closure costs. The estimated future cash costs of such liabilities are based primarily upon environmental and regulatory requirements of the various jurisdictions in which we operate as well as any other constructive obligations that exist. The liability represents management's best estimates of cash required to settle the liability, inflation, assumptions of risks associated with future cash flows and the applicable risk-free interest rates for discounting the future cash outflow. The liability is reassessed and remeasured at each reporting date.

**Fair value of financial instruments, including embedded derivatives**

Where the fair value of financial assets and financial liabilities recorded in the financial statements cannot be derived from active markets, their fair value is determined using valuation techniques including the discounted cash flow model. The inputs to these models are taken from observable markets where possible, but where this is not feasible, a degree of judgment is required in establishing fair values. The judgments include considerations of inputs such as liquidity risk, credit risk and volatility. Changes in assumptions about these factors could affect the reported fair value of financial instruments.

When measuring the fair value of an asset or liability, the Company uses observable market data to the greatest extent possible. Fair values are categorized into different levels in a fair value hierarchy based on the inputs used in the valuation techniques as follows:

Level 1: quoted prices (unadjusted) in active markets for identical assets or liabilities

Level 2: inputs other than quoted prices included in Level 1 that are observable for the asset or liability, either directly (i.e. as prices) or indirectly (i.e. derived from prices)

Level 3: inputs for the asset or liability that are not based on observable market data (unobservable inputs)

**Income taxes**

We deal with uncertainties and judgments in the application of complex tax regulations in the various jurisdictions where our properties are located. The amount of taxes paid is dependent upon many factors, including negotiations with taxing authorities in the various jurisdictions and resolution of disputes arising from our international tax audits. We recognize potential liabilities and record tax liabilities for anticipated tax audit issues in our various tax jurisdictions based on our best estimate of additional taxes payable. We adjust these tax estimates in light of changing facts and circumstances, however, due to the complexity of some of these uncertainties, the ultimate resolution may result in payment that is materially different from our estimates of our tax liabilities. If our estimate of tax liability proves to be less than the ultimate assessment, an additional charge to expense would result. If the estimate of tax liabilities proves to be greater that the ultimate assessment, a tax benefit is recognized.

A deferred tax asset is recognized to the extent that it is probable that taxable earnings will be available against which deductible temporary differences can be utilized.

**Deferred revenue**

Significant judgment is required in determining the appropriate accounting for the Streaming Agreement that has been entered into. Management has determined that based on the agreements reached that it assumes significant business risk associated with the timing and amount of ounces of gold being delivered. As such, the deposits received have been recorded as deferred revenue liabilities in the consolidated balance sheet. Deferred revenue is recognized as revenue based on the percentage of ounces delivered in the period over the total estimated ounces to be delivered over the life of the Streaming Agreement.

**Commencement of commercial production**

Prior to the period when a mine has reached management’s intended operating levels, costs incurred as part of the development of the related mining property are capitalized and any gold sales during the development period are offset against the cost capitalized. The Company defines the commencement of commercial production as the date that a mine has achieved a consistent level of production. Depreciation/amortization of capitalized costs for mining properties begins when operating levels intended by management has been reached.

There are a number of factors the Company considers when determining if conditions exist for the commencement of commercial production of an operating mine. Management examines the following factors when making that judgement:

- All major capital expenditures to bring the mine to the condition necessary for it to be capable of operating in the manner intended by management have been completed;
- The completion of a reasonable period of testing of the mine properties;
- The mine and/or mill has reached a pre-determined percentage of design capacity; and
- The ability to sustain ongoing production of ore.

## 5. FINANCIAL INSTRUMENTS

The following tables illustrate the classification of the Company's recurring fair value measurements for financial instruments within the fair value hierarchy and their carrying values and fair values as at December 31, 2017 and December 31, 2016:

| | | December 31, 2017 | | December 31, 2016 | |
|---|---|---|---|---|---|
| | Level | Carrying value | Fair value | Carrying value | Fair value |
| **Financial Liabilities** | | | | | |
| Fair value through profit or loss | | | | | |
| 5% Convertible Debentures | 3 | $ — | $ — | $ 13,294 | $ 13,294 |
| Warrants | 2 | — | — | 2,729 | 2,729 |
| 7% Convertible Debentures embedded derivative | 3 | 10,963 | 10,963 | 15,127 | 15,127 |

There were no non-recurring fair value measurements of financial instruments as at December 31, 2017.

The three levels of the fair value hierarchy are:

Level 1 - Unadjusted quoted prices in active markets for identical assets or liabilities;

Level 2 - Inputs other than quoted prices that are observable for the asset or liability either directly or indirectly; and

Level 3 - Inputs that are not based on observable market data.

The Company's policy is to recognize transfers into and transfers out of the fair value hierarchy levels as of the date of the event or change in circumstances that caused the transfer. During the year ended December 31, 2017, there were no transfers between the levels of the fair value hierarchy.

(Gain)/loss on fair value of financial instruments in the Statement of Operations includes the following components:

| | For the Years Ended December 31, | |
|---|---|---|
| | 2017 | 2016 |
| Loss on fair value of 5% Convertible Debentures | $ 317 | $ 17,235 |
| (Gain)/loss on fair value of warrants | (86) | 2,322 |
| Gain on warrant exercise | (193) | — |
| (Gain)/loss on fair value of 7% Convertible Debentures embedded derivative | (2,095) | 3,812 |
| Unrealized loss on non-hedge derivative contracts | — | 2,307 |
| | $ (2,057) | $ 25,676 |

The valuation techniques that are used to measure fair value are as follows:

*5% Convertible Debentures*

On May 26, 2017, $13.6 million principal and $0.3 million interest was paid in full settlement of the 5% Convertible Debentures.

The debt component of the 5% Convertible Debentures was valued based on discounted cash flows and the conversion feature was valued based on a Black-Scholes model. The risk free interest rate used in the fair value computation was the interest rate on US treasury bills with maturity similar to the remaining life of the 5% Convertible Debentures. The discount rate used was determined by adding our risk premium to the risk free interest rate. A market-based volatility rate was applied to the fair value computation.

The following table presents the changes in the 5% Convertible Debentures for the year ended December 31, 2017:

| | Fair value |
|---|---|
| **Balance, December 31, 2016** | $ 13,294 |
| Repayment | (13,611) |
| Loss on fair value in the period included in earnings | 317 |
| **Balance, December 31, 2017** | $ — |

*Warrants*

As part of the term loan transaction with Royal Gold, Inc. ("RGI"), 5,000,000 warrants to purchase Golden Star shares were issued to RGI. The warrants had a $0.27 exercise price and an expiry date of July 28, 2019, being the fourth year anniversary of the date of issuance. These instruments were fair valued based on a Black-Scholes model.

On August 30, 2017, the Company issued 3,223,684 common shares upon a cashless exercise of all 5,000,000 warrants held by RGI. The Company recorded a $2.5 million increase in equity, $2.7 million decrease in warrant liability and a $0.2 million gain on exercise.

The following table presents the changes in the warrants for the year ended December 31, 2017:

| | Fair value |
|---|---|
| **Balance, December 31, 2016** | $ 2,729 |
| Exercise | (2,643) |
| Gain on fair value of warrants | (86) |
| **Balance, December 31, 2017** | $ — |

*7% Convertible Debentures embedded derivative*

The debt component of the 7% Convertible Debentures is recorded at amortized cost using the effective interest rate method, and the conversion feature is classified as an embedded derivative measured at fair value through profit or loss.

The embedded derivative was valued at December 31, 2017 and December 31, 2016 using a convertible note valuation model. The significant inputs used in the convertible note valuation are as follows:

| | December 31, 2017 | December 31, 2016 |
|---|---|---|
| **Embedded derivative** | | |
| Risk premium | 7.9% | 12.9% |
| Borrowing costs | 15.0% | 10.0% |
| Expected volatility | 45.0% | 45.0% |
| Remaining life (years) | 3.6 | 4.6 |

The following table presents the changes in the 7% Convertible Debentures embedded derivative for the year ended December 31, 2017:

| | Fair value |
|---|---|
| **Balance, December 31, 2016** | $ 15,127 |
| Gain on conversions | (2,069) |
| Gain on fair value of 7% Convertible Debentures embedded derivative | (2,095) |
| **Balance, December 31, 2017** | $ 10,963 |

If the risk premium increases by 5%, the fair value of the 7% Convertible Debentures embedded derivative would decrease and the related gain in the Statement of Operations would increase by $0.03 million at December 31, 2017.

If the borrowing costs increases by 10%, the fair value of the 7% Convertible Debentures embedded derivative would decrease and the related gain in the Statement of Operations would decrease by $0.4 million at December 31, 2017.

If the expected volatility increases by 10%, the fair value of the 7% Convertible Debentures embedded derivative would decrease and the related gain in the Statement of Operations would increase by $0.9 million at December 31, 2017.

## 6. INVENTORIES

Inventories include the following components:

| | As of December 31, 2017 | As of December 31, 2016 |
|---|---|---|
| Stockpiled ore | $ 22,998 | $ 23,833 |
| In-process ore | 4,014 | 5,008 |
| Materials and supplies | 22,677 | 14,824 |
| Finished goods | 964 | 716 |
| **Total** | $ 50,653 | $ 44,381 |

The cost of inventories expensed for the year ended December 31, 2017 and 2016 was $209.2 million and $160.5 million, respectively.

During the year ended December 31, 2017, $3.5 million of net realizable value adjustments were recorded for stockpiled ore (year ended December 31, 2016 - $1.2 million).

## 7. MINING INTERESTS

The following table shows the breakdown of the cost, accumulated depreciation and net book value of plant and equipment, mining properties and construction in progress:

| | Plant and equipment | Mining properties | Construction in progress | Total |
|---|---|---|---|---|
| **Cost** | | | | |
| **As of December 31, 2015** | $ 452,645 | $ 729,746 | $ 71,902 | $ 1,254,293 |
| Additions | 613 | 2,108 | 75,375 | 78,096 |
| Transfers | 9,379 | 12,749 | (22,128) | — |
| Capitalized interest | — | — | 6,260 | 6,260 |
| Change in rehabilitation provision estimate | — | 2,054 | — | 2,054 |
| Disposals and other | (1,199) | — | — | (1,199) |
| **As of December 31, 2016** | $ 461,438 | $ 746,657 | $ 131,409 | $ 1,339,504 |
| Additions | 649 | 632 | 63,072 | 64,353 |
| Transfers | 24,269 | 48,122 | (72,391) | — |
| Capitalized interest | — | — | 5,285 | 5,285 |
| Change in rehabilitation provision estimate | — | 3,022 | — | 3,022 |
| Disposals and other | (7,142) | — | (452) | (7,594) |
| **As of December 31, 2017** | $ 479,214 | $ 798,433 | $ 126,923 | $ 1,404,570 |
| | | | | |
| **Accumulated depreciation** | | | | |
| **As of December 31, 2015** | $ 423,665 | $ 680,779 | $ — | $ 1,104,444 |
| Depreciation and amortization | 8,673 | 12,010 | — | 20,683 |
| Disposals and other | (640) | — | — | (640) |
| **As of December 31, 2016** | $ 431,698 | $ 692,789 | $ — | $ 1,124,487 |
| Depreciation and amortization | 12,385 | 20,431 | — | 32,816 |
| Disposals and other | (6,791) | — | — | (6,791) |
| **As of December 31, 2017** | $ 437,292 | $ 713,220 | $ — | $ 1,150,512 |
| | | | | |
| **Carrying amount** | | | | |
| As of December 31, 2015 | $ 28,980 | $ 48,967 | $ 71,902 | $ 149,849 |
| As of December 31, 2016 | $ 29,740 | $ 53,868 | $ 131,409 | $ 215,017 |
| **As of December 31, 2017** | $ 41,922 | $ 85,213 | $ 126,923 | $ 254,058 |

As at December 31, 2017, equipment under finance leases had net carrying amounts of $1.6 million (December 31, 2016 - $1.1 million). The total minimum lease payments are disclosed in Note 12 - Debt.

No depreciation is charged to construction in progress assets. For the year ended December 31, 2017, the general capitalization rate for borrowing costs was 7%.

## 8. INCOME TAXES

We recognize deferred tax assets and liabilities based on the difference between the financial reporting and tax basis of assets and liabilities using the tax rates enacted or substantively enacted when the temporary differences are expected to reverse. Deferred tax assets are fully recognized when we conclude sufficient positive evidence exists to demonstrate that it is probable that a deferred tax asset will be realized. These factors included, but not limited to, (a) historic and expected future levels of taxable income; (b) tax plans that affect whether tax assets can be realized; and (c) the nature, amount and expected timing of reversal of taxable temporary differences. Levels of future income are affected by market price of gold, forecasted future costs of production and quantities of proven and probable gold reserves. If these factors or other circumstances changes, the Company records an adjustment

to the recognition of deferred tax asset to reflect the Company's latest assessment of the amount of deferred tax asset that is probable to be realized.

Our net deferred tax assets at December 31, 2017 and December 31, 2016 include the following components:

| | As of December 31, 2017 | As of December 31, 2016 |
|---|---|---|
| **Deferred tax assets** | | |
| Tax losses carried forward | $ 17,773 | $ 9,349 |
| Deductible temporary differences relating to provisions | 4,821 | — |
| **Deferred tax liabilities** | | |
| Mine property costs | 9,650 | 9,349 |
| **Net deferred tax assets** | $ 12,944 | $ — |

The Company has recognized $12.9 million of net deferred tax assets for the year ended December 31, 2017 following an assessment of future profitability of the Company's subsidiary Golden Star (Wassa) Limited and concluded the realization of the net deferred tax assets is probable. Developments at Wassa during 2017 included (i) achievement of commercial production of the Wassa Underground Mine, (ii) winding down the open pit operation and (iii) increase in profitability of the Wassa Underground Mine. The net deferred tax assets recognized include $17.8 million which relates to carried forward tax losses of Wassa. The Company has concluded that the deferred tax assets will be recoverable using estimated future taxable income based on the winding down of the open pit mining operation and operating Wassa as an underground-only operation. Wassa is expected to generate taxable income from 2018 onwards. The Company expects the deferred tax assets from Wassa's non-capital loss carryovers to be realized within the next two years.

The composition of our unrecognized deferred tax assets by tax jurisdiction is summarized as follows:

| | As of December 31, 2017 | As of December 31, 2016 |
|---|---|---|
| **Deductible temporary differences** | | |
| Canada | $ 12,755 | $ 12,421 |
| U.S. | — | — |
| Ghana | 44,232 | 49,777 |
| | $ 56,987 | $ 62,198 |
| | | |
| **Tax losses** | | |
| Canada | $ 48,411 | $ 41,731 |
| U.S. | 311 | 309 |
| Ghana | 257,771 | 262,719 |
| | $ 306,493 | $ 304,759 |
| | | |
| **Total unrecognized deferred tax assets** | | |
| Canada | $ 61,166 | $ 54,152 |
| U.S. | 311 | 309 |
| Ghana | 302,003 | 312,496 |
| | $ 363,480 | $ 366,957 |

The income tax recovery includes the following components:

| | For the years ended December 31, | |
|---|---|---|
| | 2017 | 2016 |
| **Current tax recovery** | | |
| Current tax on net earnings | $ — | $ — |
| **Deferred tax recovery** | | |
| Recovery of previously unrecognized deferred tax assets | (12,944) | — |
| **Income tax recovery** | $ (12,944) | $ — |

A reconciliation of expected income tax on net loss before minority interest at statutory rates with the actual income tax recovery is as follows:

| | For the years ended December 31, | |
|---|---|---|
| | 2017 | 2016 |
| Net income/(loss) before tax | $ 28,015 | $ (41,763) |
| Statutory tax rate | 26.5% | 26.5% |
| Tax benefit at statutory rate | $ 7,424 | $ (11,067) |
| | | |
| Foreign tax rates | (10,629) | (12,555) |
| Expired loss carryovers | — | 3,052 |
| Other | 74 | (30) |
| Non taxable/deductible items | (20) | 641 |
| Change in unrecognized deferred tax assets due to exchange rates | (1,180) | (894) |
| Change in unrecognized deferred tax assets | (8,613) | 20,853 |
| **Deferred income tax recovery** | $ (12,944) | $ — |

At December 31, 2017, the Company had a tax pool and loss carryovers expiring as follows:

| | Canada | Ghana | Other |
|---|---|---|---|
| 2018 | $ — | $ 46,540 | $ — |
| 2019 | — | 33,488 | — |
| 2020 | — | 109,841 | — |
| 2021 | — | 12,822 | — |
| 2026 | 9,563 | — | — |
| 2027 | 13,339 | — | — |
| 2028 | 12,039 | — | — |
| 2029 | 18,255 | — | 2 |
| 2030 | 16,317 | — | — |
| 2031 | 30,612 | — | — |
| 2032 | 14,818 | — | — |
| 2033 | 6,378 | — | 402 |
| 2034 | — | — | 364 |
| 2035 | 8,725 | — | 1 |
| 2036 | 14,225 | — | 120 |
| 2037 | 17,777 | — | — |
| Indefinite | 37,510 | 584,577 | — |
| Total | $ 199,558 | $ 787,268 | $ 889 |

$736.5 million of the Ghana tax pool is usable against taxable income generated at Bogoso/Prestea, with the remaining amount totaling $50.8 million usable against taxable income generated at Wassa.

## 9. ACCOUNTS PAYABLE AND ACCRUED LIABILITIES

Accounts payable and accrued liabilities include the following components:

| | As of December 31, 2017 | As of December 31, 2016 |
|---|---|---|
| Trade and other payables | $ 44,048 | $ 48,591 |
| Accrued liabilities | 40,165 | 35,998 |
| Payroll related liabilities | 10,410 | 8,311 |
| **Total** | $ 94,623 | $ 92,900 |

## 10. REHABILITATION PROVISIONS

At December 31, 2017, the total undiscounted amount of future cash needs for rehabilitation was estimated to be $77.9 million. A discount rate assumption of 2% and an inflation rate assumption of 2% were used to value the rehabilitation provisions. The changes in the carrying amount of the rehabilitation provisions are as follows:

| | For the Years Ended December 31, | |
|---|---|---|
| | 2017 | 2016 |
| **Beginning balance** | $ 77,382 | $ 79,685 |
| Accretion of rehabilitation provisions | 1,245 | 1,368 |
| Changes in estimates | (1,923) | 1,856 |
| Cost of reclamation work performed | (5,992) | (5,527) |
| **Balance at the end of the period** | $ 70,712 | $ 77,382 |
| | | |
| Current portion | $ 6,566 | $ 5,515 |
| Long term portion | 64,146 | 71,867 |
| **Total** | $ 70,712 | $ 77,382 |

For the year ended December 31, 2017, the Company has recorded a change of estimate of $1.9 million on its rehabilitation provisions of the mine sites. The impact of the changes of estimates were a decrease of $0.7 million to the reclamation provisions for Wassa and a decrease of $1.2 million to the reclamation provisions for Bogoso/Prestea. The rehabilitation provision for Wassa was $17.4 million (2016 - $19.3 million). The Company expects the payments for reclamation to be incurred between 2018 to 2026. A decrease in estimate for Wassa of $0.7 million was recorded due to a revision in the timing of payments. The rehabilitation provision for Bogoso/Prestea was $53.3 million (2016 - $58.1 million). The Company expects the payments for reclamation to be incurred between 2018 to 2027. The decrease in estimate for Bogoso/Prestea of $1.2 million relates to a $4.9 million reduction in expected reclamation costs relating to the refractory liability and a $3.8 million increase in the expected reclamation costs relating to the non-refractory operation. The reduction of $4.9 million was primarily a result of a reduction in water treatment liability from ongoing treatment and a negative water balance. The reduction was recorded as other income since the carrying value of the underlying refractory assets were $nil after suspension of its operation in 2015.

## 11. DEFERRED REVENUE

On July 28, 2015, the Company through its subsidiary Caystar Finance Co. completed a $130 million gold purchase and sale agreement ("Streaming Agreement") with RGLD, a wholly-owned subsidiary of RGI. This Streaming Agreement was subsequently amended on December 30, 2015 to provide an additional $15 million of streaming advance payment with an option, subject to Golden Star satisfying certain conditions, to access a further $5 million (this option was not exercised and has expired). The Streaming percentages were adjusted as follows to reflect the $15 million additional advance payment: From January 1, 2016, the Company will deliver 9.25% of the Mines' production to RGLD at a cash purchase price of 20% of spot gold. From the earlier of January 1, 2018 or commercial production of the underground mines, Golden Star will deliver 10.5% of production at a cash purchase price of 20% of spot gold until 240,000 ounces have been delivered. Thereafter, 5.5% of production at a cash purchase price of 30% of spot gold will be delivered.

The upfront payments are accounted for as prepayments of yet-to-be delivered ounces under the contract and are recorded as deferred revenue. The initial term of the contract is 40 years and the deposit bears no interest.

During the year ended December 31, 2017, the Company sold 24,404 ounces of gold to RGLD. Revenue recognized on the ounces sold to RGLD during the year ended December 31, 2017 consisted of $6.1 million of cash payment proceeds and $14.2 million of deferred revenue recognized in the period (see Note 17). The Company has delivered a total of 54,769 ounces of gold to RGLD since the inception of the Streaming Agreement.

| | For the Years Ended December 31, | |
|---|---|---|
| | 2017 | 2016 |
| **Beginning balance** | $ 114,112 | $ 65,379 |
| Deposits received | 10,000 | 60,000 |
| Deferred revenue recognized | (14,156) | (11,267) |
| **Balance at the end of the period** | $ 109,956 | $ 114,112 |
| | | |
| Current portion | $ 17,894 | $ 19,234 |
| Long term portion | 92,062 | 94,878 |
| **Total** | $ 109,956 | $ 114,112 |

## 12. DEBT

The following table displays the components of our current and long term debt instruments:

| | As of December 31, 2017 | As of December 31, 2016 |
|---|---|---|
| Current debt: | | |
| Equipment financing credit facility | $ 147 | $ 931 |
| Finance leases | 1,229 | 1,153 |
| Ecobank Loan III | 2,222 | — |
| 5% Convertible Debentures at fair value (see Note 5) | — | 13,294 |
| Vendor agreement | 12,266 | — |
| **Total current debt** | $ 15,864 | $ 15,378 |
| Long term debt: | | |
| Equipment financing credit facility | $ — | $ 188 |
| Finance leases | 269 | 806 |
| Ecobank Loan III | 7,337 | — |
| 7% Convertible Debentures | 42,515 | 47,617 |
| Royal Gold loan | 18,817 | 18,496 |
| Vendor agreement | 10,803 | 22,338 |
| **Total long term debt** | $ 79,741 | $ 89,445 |
| | | |
| Current portion | $ 15,864 | $ 15,378 |
| Long term portion | 79,741 | 89,445 |
| **Total** | $ 95,605 | $ 104,823 |

**Equipment financing credit facility**

Bogoso/Prestea and Wassa maintained an equipment financing facility with Caterpillar Financial Services Corporation, with Golden Star as the guarantor of all amounts borrowed. The facility provided credit financing for mining equipment at a fixed interest rate of 6.5%. Amounts drawn under this facility are repayable over a period of two to five years. Each outstanding equipment loan is secured by the title of the specific equipment purchased with the loan until the loan has been repaid in full.

**Finance leases**

The Company financed mining equipment at Wassa and Bogoso/Prestea through equipment financing leases. These finance leases are payable in equal installments over a period of 60 months and have implicit interest rates of 6.9%. Each outstanding finance lease is secured by the title of the specific equipment purchased with the lease until the lease has been repaid in full.

During the year ended December 31, 2017, the Company entered into a $0.8 million financing lease agreement for a period of 24 months.

**Ecobank Loan III**

On February 22, 2017, the Company through its subsidiary Golden Star (Wassa) Limited closed a $25 million secured Medium Term Loan Facility ("Ecobank Loan III") with Ecobank Ghana Limited. Ecobank Loan III has a term of 60 months from the date of initial drawdown and is secured by, among other things, Wassa's existing plant, and certain machinery and equipment having a specified value. The interest rate on the loan is three month LIBOR plus 8%, per annum, payable monthly in arrears beginning a month following the initial drawdown. Repayment of principal commences six months following the initial drawdown and is thereafter payable quarterly in arrears. The Company has twelve months to drawdown the loan.

During the year ended December 31, 2017, the Company drew down $10.0 million on Ecobank Loan III. In January 2018, the Company drew down the remaining $15.0 million on Ecobank Loan III.

**5% Convertible Debentures**

On May 26, 2017, $13.6 million principal and $0.3 million interest was paid in full settlement of the remaining balance of the 5% Convertible Debentures.

The 5% Convertible Debentures were issued on May 31, 2012, in the amount of $77.5 million, in exchange for $74.5 million of our 4% convertible senior unsecured debentures (the "4% Convertible Debentures") in privately negotiated transactions with certain holders of the 4% Convertible Debentures.

During the year ended December 31, 2016, the Company entered into exchange and purchase agreements with two holders of its 5% Convertible Debentures to exchange $42.0 million principal amount of the outstanding convertible debentures for an equal principal amount of newly issued 7% Convertible Debentures. As at December 31, 2016, the fair value of the 5% Convertible Debentures was valued at $13.3 million with a loss on fair value of $17.2 million and a loss on repurchase of $11.6 million recorded in the year ended December 31, 2016.

**7% Convertible Debentures**

The 7% Convertible Debentures were issued on August 3, 2016, in the amount of $65.0 million due August 15, 2021. The Company entered into exchange and purchase agreements with two holders of its 5% Convertible Debentures due June 1, 2017 to exchange $42.0 million principal amount of the outstanding 5% Convertible Debentures for an equal principal amount of 7% Convertible Debentures (the "Exchange"), with such principal amount being included in the issuance of the $65.0 million total aggregate principal amount of the 7% Convertible Debentures. The Company did not receive any cash proceeds from the Exchange. The 7% Convertible Debentures are governed by the terms of an indenture dated August 3, 2016, by and between the Company and The Bank of New York Mellon, as indenture trustee.

The 7% Convertible Debentures are senior unsecured obligations of the Company, bear interest at a rate of 7.0% per annum, payable semi-annually on February 1 and August 1 of each year, beginning on February 1, 2017, and will mature on August 15, 2021, unless earlier repurchased, redeemed or converted. Subject to earlier redemption or purchase, the 7% Convertible Debentures are convertible at any time until the close of business on the third business day immediately preceding August 15, 2021 at the option of the holder, and may be settled, at the Company's election, in cash, common shares of the Company, or a combination of cash and common shares based on an initial conversion rate. The initial conversion rate of the 7% Convertible Debentures, subject to adjustment, is approximately 1,111 common shares of the Company per $1,000 principal amount of 7% Convertible Debentures being converted, which is equivalent to an initial conversion price of approximately $0.90 per common share. The initial conversion rate is subject to adjustment upon the occurrence of certain events. If the 7% Convertible Debentures are converted before August 1, 2019, the Company will, in addition to the consideration payable with the conversion, be required to make a conversion make-whole payment in cash, common shares of the Company or a combination thereof, at the Company's election, equal to the present value of the remaining scheduled payments of interest that would have been made on the 7% Convertible Debentures converted had such debentures remained outstanding from the conversion date to August 1, 2019, subject to certain restrictions. The present value of the remaining scheduled interest payments will be computed using a discount rate equal to 2.0%.

Prior to August 15, 2019, the Company may not redeem the 7% Convertible Debentures except in the event of certain changes in applicable tax law. On or after August 15, 2019, the Company may redeem all or part of the outstanding 7% Convertible Debentures at the redemption price, only if the last reported sales price of the Company's common shares for 20 or more trading days in a period of 30 consecutive trading days ending on the trading day prior to the date the Company provides the notice of redemption

to holders exceeds 130% of the conversion price in effect on each such trading day. The redemption price is equal to the sum of (1) 100% of the principal amount of the 7% Convertible Debentures to be redeemed, (2) any accrued and unpaid interest to, but excluding, the redemption date, and (3) a redemption make-whole payment, payable in cash, common shares of the Company or a combination thereof, at the Company's election, equal to the present value of the remaining scheduled payments of interest that would have been made on the 7% Convertible Debentures to be redeemed had such debentures remained outstanding from the redemption date to August 15, 2021 (excluding interest accrued to, but excluding, the redemption date, which is otherwise paid pursuant to the preceding clause (2)).

The conversion feature referred to above is an embedded derivative. The Company selected to bifurcate the conversion feature from the host instrument, thereby separating it from the debt component. The debt component is recorded at amortized cost, and the embedded derivative is accounted for at fair value. At August 3, 2016, the date of the debt issuance, the fair value of the embedded derivative was $12.3 million. At December 31, 2017, the fair value of the embedded derivative was $11.0 million (December 31, 2016 - $15.1 million). The revaluation gain of $2.1 million (year ended December 31, 2016 - revaluation loss of $3.8 million) and gain on conversions of $2.1 million (year ended December 31, 2016 - $0.9 million) is recorded in the Statement of Operations.

During the year ended December 31, 2016, $5.0 million principal amount of the 7% Convertible Debentures was converted for 5,556,667 common shares. The Company recorded a net gain on conversions of $0.05 million for the year ended December 31, 2016. As at December 31, 2016, $60.0 million principal amount of 7% Convertible Debentures remained outstanding.

During the first quarter of 2017, a total of 9,445,552 shares were issued on conversion of $8.5 million principal amount of 7% Convertible Debentures. The Company recorded a net loss on conversions of $0.2 million. The Company also made make-whole interest payments of $1.4 million as a result of the conversions. There were no conversions during the rest of 2017. As at December 31, 2017, $51.5 million principal amount of 7% Convertible Debentures remains outstanding.

The changes in the carrying amount of the 7% Convertible Debentures are as follows:

| | For the Years Ended December 31, | |
|---|---|---|
| | 2017 | 2016 |
| **Beginning balance** | $ 47,617 | $ — |
| Principal value of debt issued | — | 65,000 |
| Embedded derivative fair value at debt issuance | — | (12,259) |
| Transaction costs | — | (2,271) |
| Conversions | (6,947) | (3,708) |
| Accretion of 7% Convertible Debentures discount | 1,845 | 855 |
| **Balance at the end of the period** | $ 42,515 | $ 47,617 |

**Royal Gold loan**

In July 2015, the Company through its subsidiary Caystar Finance Co. closed a $20.0 million term loan with RGI and subsequently drew down $20.0 million of the facility. The loan has a term of 4 years and is secured by, among other things, assets of Wassa and Bogoso/Prestea. Interest is payable based on the average daily London Bullion Market Association ("LBMA") gold price multiplied by 62.5% divided by 10,000 to a maximum interest rate of 11.5% per annum. Interest payments are to be made on the last business day of each fiscal quarter, commencing in the quarter which the funding occurred. For the year ended December 31, 2017, the interest rate was approximately 8% with a total of $1.6 million paid during the year. The fair value of the loan is determined net of initial valuation of the warrants issued to RGI and financing fees incurred. Commencing June 30, 2017, the excess cash flow provision came into effect. No excess cash flow repayments have been required to date.

**Vendor agreement**

On May 4, 2016, the Company entered into an agreement with a significant account creditor to settle $36.5 million of current liabilities. Under this agreement, the Company paid $12.0 million and deferred the payment of the remaining $24.5 million until January 2018, after which the outstanding balance will be repaid in equal installments over 24 months commencing on January 31, 2018. Interest of 7.5% will accrue and be payable beginning in January 2017. A $2.7 million gain was recognized in Other Income on remeasurement of the deferral during the second quarter of 2016.

Schedule of payments on outstanding debt as of December 31, 2017:

| | Year ending December 31, 2018 | Year ending December 31, 2019 | Year ending December 31, 2020 | Year ending December 31, 2021 | Year ending December 31, 2022 | Maturity |
|---|---|---|---|---|---|---|
| Equipment financing loans | | | | | | |
| Principal | $ 147 | $ — | $ — | $ — | $ — | 2018 |
| Interest | 4 | — | — | — | — | |
| Finance leases | | | | | | |
| Principal | 1,229 | 269 | — | — | — | 2019 |
| Interest | 63 | 8 | — | — | — | |
| Ecobank Loan III | | | | | | |
| Principal | 2,222 | 2,222 | 2,222 | 2,500 | 834 | 2022 |
| Interest | 831 | 629 | 429 | 245 | 56 | |
| 7% Convertible Debentures | | | | | | |
| Principal | — | — | — | 51,498 | — | August 15, 2021 |
| Interest | 3,605 | 3,605 | 3,605 | 3,605 | — | |
| Royal Gold loan | | | | | | |
| Principal [1] | — | 20,000 | — | — | — | 2019 |
| Interest [2] | 1,625 | 948 | — | — | — | |
| Vendor agreement | | | | | | |
| Principal | 12,266 | 12,266 | — | — | — | 2019 |
| Interest | 1,418 | 498 | — | — | — | |
| **Total principal** | $ 15,864 | $ 34,757 | $ 2,222 | $ 53,998 | $ 834 | |
| **Total interest** | 7,546 | 5,688 | 4,034 | 3,850 | 56 | |
| | $ 23,410 | $ 40,445 | $ 6,256 | $ 57,848 | $ 890 | |

[1] Beginning with the three months ending June 30, 2017, the excess cash flow provision of the Royal Gold loan came into effect. The excess cash flow provision as defined in the Royal Gold loan agreement requires the Company to make mandatory repayments of 25% of excess cash flow for the remainder of 2017 and mandatory repayments of 50% excess cash flow beginning 2018 until maturity. The excess cash flow calculation is dependent upon factors some of which are beyond the Company's control such as gold price. No excess cash flow repayments have been required to date. The schedule of payments shows the total principal amount outstanding settled at maturity.

[2] Interest payments on the Royal Gold loan are based on the average daily LBMA gold price multiplied by 62.5% divided by 10,000 to a maximum interest rate of 11.5% per annum. The estimated interest payments are calculated based on $1,300 per ounce LBMA gold price.

## 13. SHARE CAPITAL

| | | Number of Common Shares | Share Capital |
|---|---|---|---|
| **Balance at December 31, 2015** | | **259,897,095** | **$ 695,555** |
| Bought deal | | 22,750,000 | 15,015 |
| Equity offering | | 46,000,000 | 34,500 |
| Conversion of 7% Convertible Debentures | | 6,610,692 | 5,665 |
| Shares issued under DSUs | | 39,744 | 9 |
| Shares issued under options | | 58,919 | 39 |
| Share issue costs | | — | (4,241) |
| **Balance at December 31, 2016** | | **335,356,450** | **$ 746,542** |
| Bought deal | a | 31,363,950 | 26,203 |
| Conversion of 7% Convertible Debentures | b | 9,445,552 | 9,479 |
| Shares issued under DSUs | | 1,167,689 | 521 |
| Shares issued under options | | 23,750 | 16 |
| Shares issued under warrants | c | 3,223,684 | 2,450 |
| Share issue costs | | — | (2,044) |
| **Balance at December 31, 2017** | | **380,581,075** | **$ 783,167** |

a. On February 7, 2017, the Company closed a bought deal offering of 31,363,950 common shares, which includes shares issued upon full exercise of the over-allotment option, at a price of C$1.10 per share, for net proceeds to the Company of $24.5 million.

b. During the year ended December 31, 2017, a total of 9,445,552 common shares were issued on conversion of $8.5 million principal amount of 7% Convertible Debentures. The Company recorded a $9.5 million increase in equity offset by capitalized share issue costs of $0.3 million, resulting in a net equity increase of $9.2 million. The Company recorded a net loss on conversions of $0.2 million.

c. On August 30, 2017, the Company issued 3,223,684 common shares upon a cashless exercise of all 5,000,000 warrants held by RGI. The Company recorded a $2.5 million increase in equity, $2.7 million decrease in warrant liability and a $0.2 million gain on exercise.

## 14. COMMITMENTS AND CONTINGENCIES

Our commitments and contingencies include the following items:

**Environmental bonding in Ghana**

The Ghana Environmental Protection Agency ("EPA") requires environmental compliance bonds that provide assurance for environmental remediation at our Bogoso/Prestea and Wassa mining operations. To meet this requirement the Company has environmental bonds totaling $9.6 million and $8.1 million for Wassa and Bogoso/Prestea respectively with a commercial bank in Ghana. These bonds are guaranteed by Golden Star Resources Ltd. There is also a cross guarantee between Wassa and Bogoso/Prestea. The Company also held cash deposits of $3.5 million and $3.0 million for each operation, which are recorded as restricted cash on the consolidated balance sheets.

**Government of Ghana's rights to increase its participation**

Under Act 703, the Government of Ghana has the right to acquire a special share in our Ghanaian subsidiaries at any time for no consideration or such consideration as the Government of Ghana and such subsidiaries might agree, and a pre-emptive right to purchase all gold and other minerals produced by such subsidiaries. A special share carries no voting rights and does not participate in dividends, profits or assets. If the Government of Ghana acquires a special share, it may require us to redeem the special share at any time for no consideration or for consideration determined by us. To date, the Government of Ghana has not sought to exercise any of these rights at our properties.

**Royalties**

*Government of Ghana*

The Government of Ghana receives a royalty equal to 5% of mineral revenues earned by Bogoso/Prestea and Wassa.

*Dunkwa Properties*

As part of the acquisition of the Dunkwa properties in 2003, the Company agreed to pay the seller a net smelter return royalty on future gold production from the Mansiso and Asikuma properties. As per the acquisition agreement, there will be no royalty due on the first 200,000 ounces produced from Mampon which is located on the Asikuma property. The amount of the royalty is based on a sliding scale which ranges from 2% of net smelter return at gold prices at or below $300 per ounce and progressively increases to 3.5% for gold prices in excess of $400 per ounce. Since the ounces mined at Mampon were below the 200,000 ounces threshold, we are not required to pay a royalty on this property.

**Operating leases and capital commitments**

The Company is a party to certain contracts relating to operating leases, office rent and capital commitments. Future minimum payments under these agreements as at December 31, 2017 are as follows:

| | | |
|---|---|---|
| Less than 1 year | $ | 3,541 |
| Between 1 and 5 years | | 602 |
| More than 5 years | | — |
| Total | $ | 4,143 |

## 15. SHARE-BASED COMPENSATION

Non-cash employee compensation expenses, recognized in general and administrative expense in the Statements of Operations and Comprehensive Income, are as follows:

| | For the Years Ended December 31, | |
|---|---|---|
| | 2017 | 2016 |
| Share options | $ 1,229 | $ 751 |
| Deferred share units | 387 | 524 |
| Share appreciation rights | 482 | 616 |
| Performance share units | 10,456 | 11,959 |
| | $ 12,554 | $ 13,850 |

**Share options**

On May 5, 2016, the Fourth Amended and Restated 1997 Stock Option Plan (the "Stock Option Plan") was approved by shareholders to (i) reserve an additional 10,000,000 common shares for the Stock Option Plan, thereby increasing the total number of common shares issuable from 25,000,000 Common Shares to 35,000,000 common shares under the Stock Option Plan; (ii) provide for the grant of "incentive stock options" (being stock options designated as "incentive stock options" in an option agreement and that are granted in accordance with the requirements of, and that conforms to the applicable provisions of, Section 422 of the Internal Revenue Code); and (iii) to make such other changes to update the provisions of the Stock Option Plan in light of current best practices. Options granted are non-assignable and are exercisable for a period of ten years or such other period as is stipulated in a stock option agreement between Golden Star and the optionee. Under the Plan, we may grant options to employees, consultants and directors of the Company or its subsidiaries for up to 35,000,000 shares, of which 10,572,586 are available for grant as of December 31, 2017 (December 31, 2016 - 11,107,216). The exercise price of each option is not less than the closing price of our shares on the Toronto Stock Exchange on the day prior to the date of grant. Options typically vest over periods ranging from immediately to four years from the date of grant. Vesting periods are determined at the discretion of the Compensation Committee.

The fair value of option grants is estimated at the grant dates using the Black-Scholes option-pricing model. Fair values of options granted during the year ended December 31, 2017 and 2016 were based on the weighted average assumptions noted in the following table:

| | For the Years Ended December 31, | |
|---|---|---|
| | 2017 | 2016 |
| Expected volatility | 73.70% | 72.40% |
| Risk-free interest rate | 1.86% | 1.28% |
| Expected lives | 5.99 years | 4.86 years |

Expected volatilities are based on the mean reversion tendency of the volatility of Golden Star's shares. Golden Star uses historical data to estimate share option exercise and employee departure behavior and this data is used in determining input data for the Black-Scholes model. Groups of employees that have dissimilar historical behavior are considered separately for valuation purposes. The expected term of the options granted represents the period of time that the options granted are expected to be outstanding. The risk-free rate for periods within the contractual term of the option is based on the Bank of Canada administered interest rates in effect at the time of the grant.

The weighted average fair value per option granted during the year ended December 31, 2017 was $0.84 (year ended December 31, 2016 - $0.35). As at December 31, 2017, there was $0.5 million of share-based compensation expense (December 31, 2016 - $0.3 million) relating to the Company's share options to be recorded in future periods. For the year ended December 31, 2017, the Company recognized an expense of $1.2 million (year ended December 31, 2016 - $0.8 million).

A summary of option activity under the Company's Stock Option Plan during the year ended December 31, 2017 are as follows:

| | Options ('000) | Weighted–Average Exercise price ($CAD) | Weighted–Average Remaining Contractual Term (Years) |
|---|---|---|---|
| **Outstanding as of December 31, 2015** | 13,911 | 1.48 | 5.9 |
| Granted | 3,245 | 0.62 | 8.7 |
| Exercised | (59) | 0.48 | 8.7 |
| Forfeited | (610) | 1.09 | 5.4 |
| Expired | (368) | 3.25 | 0.0 |
| **Outstanding as of December 31, 2016** | 16,119 | 1.29 | 5.7 |
| Granted | 2,352 | 1.28 | 9.7 |
| Exercised | (24) | 0.55 | 7.3 |
| Forfeited | (648) | 2.27 | 1.8 |
| Expired | (1,170) | 2.19 | 0.0 |
| **Outstanding as of December 31, 2017** | 16,629 | 1.19 | 5.9 |
| | | | |
| Exercisable as of December 31, 2016 | 11,738 | 1.55 | 4.8 |
| Exercisable as of December 31, 2017 | 12,803 | 1.28 | 5.1 |

The number of options outstanding by strike price as of December 31, 2017 is shown in the following table:

| | Options outstanding | | | Options exercisable | |
|---|---|---|---|---|---|
| Range of exercise price (Cdn$) | Number outstanding at December 31, 2017 ('000) | Weighted-average remaining contractual life (years) | Weighted-average exercise price (Cdn$) | Number outstanding at December 31, 2017 ('000) | Weighted-average exercise price (Cdn$) |
| 0.30 to 0.50 | 3,084 | 7.0 | 0.38 | 2,501 | 0.38 |
| 0.51 to 1.00 | 5,921 | 7.0 | 0.73 | 4,393 | 0.77 |
| 1.01 to 1.50 | 2,664 | 8.6 | 1.28 | 949 | 1.26 |
| 1.51 to 2.50 | 3,452 | 2.3 | 1.80 | 3,452 | 1.80 |
| 2.51 to 3.50 | 1,278 | 2.6 | 2.94 | 1,278 | 2.94 |
| 3.51 to 5.00 | 230 | 2.2 | 3.53 | 230 | 3.53 |
| | 16,629 | 5.9 | 1.19 | 12,803 | 1.28 |

The number of options outstanding by strike price as of December 31, 2016 is shown in the following table:

| | Options outstanding | | | Options exercisable | |
|---|---|---|---|---|---|
| Range of exercise price (Cdn$) | Number outstanding at December 31, 2016 ('000) | Weighted-average remaining contractual life (years) | Weighted-average exercise price (Cdn$) | Number outstanding at December 31, 2016 ('000) | Weighted-average exercise price (Cdn$) |
| 0.30 to 0.50 | 3,096 | 8.0 | 0.38 | 1,690 | 0.38 |
| 0.51 to 1.00 | 5,837 | 7.9 | 0.73 | 2,929 | 0.80 |
| 1.01 to 1.50 | 547 | 5.5 | 1.24 | 480 | 1.27 |
| 1.51 to 2.50 | 4,780 | 2.6 | 1.84 | 4,780 | 1.84 |
| 2.51 to 3.50 | 1,434 | 3.5 | 2.97 | 1,434 | 2.97 |
| 3.51 to 5.00 | 425 | 2.4 | 3.69 | 425 | 3.69 |
| | 16,119 | 5.7 | 1.29 | 11,738 | 1.55 |

**Deferred share units ("DSUs")**

On March 9, 2011 the Board adopted a Deferred Share Unit Plan ("DSU Plan") which was subsequently approved by shareholders at the May 2011 annual meeting of shareholders. The DSU Plan provides for the issuance of Deferred Share Units ("DSUs"), each representing the right to receive one Golden Star common share upon redemption. DSUs may be redeemed only upon termination of the holder's services to the Company, and may be subject to vesting provisions. DSU awards are granted at the sole discretion of the Company's Compensation Committee. The DSU Plan allows directors, at their option, to receive all or any portion of their director retainer by accepting DSUs in lieu of cash.

The Compensation Committee may also award DSUs to executive officers and/or directors in lieu of cash as a component of their long term performance compensation, the amount of such awards being in proportion to the officer's or director's achievement of pre-determined performance goals. As with DSU awards for directors' retainers, DSUs received as performance compensation are redeemable only upon termination of the holder's services to the Company. The Company may, at its option, provide cash in lieu of common shares upon a holder's redemption, the cash value being established by the share price on the DSU redemption date, less all applicable tax withholding.

For the year ended December 31, 2017, the DSUs that were granted vested immediately and a compensation expense of $0.4 million was recognized for these grants (year ended December 31, 2016 - $0.5 million). As of December 31, 2017, there was no unrecognized compensation expense related to DSUs granted under the Company's DSU Plan.

A summary of DSU activity during the year ended December 31, 2017 and 2016:

| | For the Years Ended December 31, | |
|---|---|---|
| | 2017 | 2016 |
| Number of DSUs, beginning of period ('000) | 5,733 | 4,496 |
| Granted | 527 | 1,277 |
| Exercised | (1,168) | (40) |
| Number of DSUs, end of period ('000) | 5,092 | 5,733 |

**Share appreciation rights ("SARs")**

On February 13, 2012, the Company adopted a Share Appreciation Rights ("SARs") Plan. The plan allows SARs to be issued to executives, employees and directors that vest after a period of three years. These awards are settled in cash on the exercise date equal to the Company's stock price less the strike price. Since these awards are settled in cash, the Company marks-to-market the associated expense for each award at the end of each reporting period using a Black-Scholes model. The Company accounts for these as liability awards and marks-to-market the fair value of the award until final settlement.

As of December 31, 2017, there was approximately $0.4 million of total unrecognized compensation cost related to unvested SARs (December 31, 2016 - $0.3 million). For the year ended December 31, 2017, the Company recognized an expense of $0.5 million related to these cash settled awards (year ended December 31, 2016 - $0.6 million).

A summary of the SARs activity during the year ended December 31, 2017 and 2016:

| | For the Years Ended December 31, | |
|---|---|---|
| | 2017 | 2016 |
| Number of SARs, beginning of period ('000) | 2,687 | 2,934 |
| Granted | 1,460 | 1,850 |
| Exercised | (792) | (10) |
| Forfeited | (690) | (678) |
| Expired | — | (1,409) |
| Number of SARs, end of period ('000) | 2,665 | 2,687 |

**Performance share units ("PSUs")**

On January 1, 2014, the Company adopted a Performance Share Unit ("PSU") Plan. Each PSU represents one notional common share that is redeemed for cash based on the value of a common share at the end of the three year performance period, to the extent performance and vesting criteria have been met. The PSUs vest at the end of a three year performance period. The cash award is determined by multiplying the number of units by the performance adjustment factor, which ranges from 0% to 200%. The performance adjustment factor is determined by comparing the Company's share price performance to the share price performance of a peer group of companies as listed in the PSU Plan. As the Company is required to settle these awards in cash, they are accounted for as liability awards with corresponding compensation expense recognized.

For the year ended December 31, 2017, the Company recognized an expense of $10.1 million related to PSU's (year ended December 31, 2016 - $12.0 million). As at December 31, 2017, the long term PSU liability is $6.8 million, recognized on the Balance Sheet as Long Term Other Liability and the current portion of $13.5 million is recognized on the Balance Sheet as Other Liability.

A summary of the PSU activity during the year ended December 31, 2017 and 2016:

| | For the Years Ended December 31, | |
|---|---|---|
| | 2017 | 2016 |
| Number of PSUs, beginning of period ('000) | 15,480 | 9,618 |
| Granted | — | 6,058 |
| Settled | (1,876) | — |
| Forfeited | — | (196) |
| Number of PSUs, end of period ('000) | 13,604 | 15,480 |

**2017 Performance and restricted share units ("PRSUs")**

On May 4, 2017, the Company adopted a 2017 performance and restricted share unit plan (the "2017 PRSU Plan"). Pursuant to the 2017 PRSU Plan, performance share units ("2017 PSUs") and restricted share units ("2017 RSUs" and, together with the 2017 PSUs, the "Share Units") may be issued to any employee or officer of the Company or its designated affiliates. Share Units may be redeemed for: (i) common shares issued from treasury; (ii) common shares purchased in the secondary market; (iii) a cash payment; or (iv) a combination of (i), (ii) and (iii). On March 21, 2017, the Company issued 1,694,491 Share Units.

Each PRSU represents one notional common share that is redeemed for common shares or common shares plus cash subject to the consent of the Company based on the value of a common share at the end of the three year performance period, to the extent performance and vesting criteria have been met. The PRSUs vest at the end of a three year performance period. The award is determined by multiplying the number of Share Units by the performance adjustment factor, which ranges from 0% to 200%. The performance adjustment factor is determined by comparing the Company's share price performance to the share price performance of a peer group of companies as listed in the 2017 PRSU Plan. As the Company is required to settle these awards in common shares or common shares plus cash subject to the consent of the Company, they are accounted for as equity awards with corresponding compensation expense recognized. For the year ended December 31, 2017, the Company recognized an expense of $0.3 million.

## 16. INCOME/(LOSS) PER COMMON SHARE

The following table provides reconciliation between basic and diluted income/(loss) per common share:

| | For the Years Ended December 31, | |
|---|---|---|
| | 2017 | 2016 |
| Net income/(loss) attributable to Golden Star shareholders | $ 38,771 | $ (39,647) |
| Adjustments: | | |
| Interest expense on 7% Convertible Debentures | 3,657 | — |
| Amortization of 7% Convertible Debentures discount | 1,845 | — |
| Gain on fair value of 7% Convertible Debentures embedded derivative | (2,095) | — |
| Diluted income/(loss) | $ 42,178 | $ (39,647) |
| | | |
| Weighted average number of basic shares (millions) | 373.5 | 294.1 |
| Dilutive securities: | | |
| Options | 2.5 | — |
| Deferred stock units | 5.5 | — |
| Performance and restricted share units | 1.3 | — |
| Convertible Debentures | 58.2 | — |
| Weighted average number of diluted shares (millions) | 441.0 | 294.1 |
| | | |
| Income/(loss) per share attributable to Golden Star shareholders: | | |
| Basic | $ 0.10 | $ (0.13) |
| Diluted | $ 0.10 | $ (0.13) |

## 17. REVENUE

Revenue includes the following components:

| | For the Years Ended December 31, | |
|---|---|---|
| | 2017 | 2016 |
| Revenue - Streaming Agreement | | |
| Cash payment proceeds | $ 6,138 | $ 4,385 |
| Deferred revenue recognized | 14,156 | 11,267 |
| | 20,294 | 15,652 |
| Revenue - Spot sales | 295,203 | 205,638 |
| Total revenue | $ 315,497 | $ 221,290 |

During the year ended December 31, 2017, the Company capitalized $10.9 million of pre-commercial production revenue to construction in progress. These proceeds were capitalized as they relate to ounces sold from Prestea Underground which was in the development phase at December 31, 2017.

During the year ended December 31, 2016, the Company capitalized $13.6 million of pre-commercial production revenue to construction in progress. These proceeds were capitalized as they relate to ounces sold from Wassa Underground which was in the development phase at December 31, 2016.

## 18. COST OF SALES EXCLUDING DEPRECIATION AND AMORTIZATION

Cost of sales excluding depreciation and amortization include the following components:

| | For the Years Ended December 31, | |
|---|---|---|
| | 2017 | 2016 |
| Contractors | $ 41,297 | $ 32,869 |
| Electricity | 20,558 | 18,378 |
| Fuel | 11,137 | 12,647 |
| Raw materials and consumables | 51,996 | 44,016 |
| Salaries and benefits | 53,582 | 43,404 |
| Transportation costs | 2,116 | 1,949 |
| General and administrative | 7,695 | 6,216 |
| Other | 8,997 | 6,505 |
| Mine operating expenses | $ 197,378 | $ 165,984 |
| Severance charges | 9,232 | (71) |
| Operating costs to metal inventory | 167 | (6,569) |
| Inventory net realizable value adjustment | 2,410 | 1,190 |
| Royalties | 17,295 | 12,082 |
| | $ 226,482 | $ 172,616 |

## 19. FINANCE EXPENSE, NET

Finance income and expense includes the following components:

| | For the Years Ended December 31, | |
|---|---|---|
| | 2017 | 2016 |
| Interest income | $ (72) | $ (26) |
| Interest expense, net of capitalized interest (see Note 7) | 6,039 | 6,167 |
| Net foreign exchange gain | (172) | (749) |
| Accretion of rehabilitation provision | 1,245 | 1,368 |
| Conversion make-whole payment | 1,445 | 1,072 |
| | $ 8,485 | $ 7,832 |

## 20. OTHER INCOME

Other income includes the following components:

| | For the Years Ended December 31, | |
|---|---|---|
| | 2017 | 2016 |
| Loss/(gain) on disposal of assets | 672 | (180) |
| Gain on reduction of asset retirement obligations | (4,945) | (198) |
| Gain on deferral of payables (see Note 12) | — | (2,682) |
| Other income | (73) | (289) |
| | $ (4,346) | $ (3,349) |

## 21. RELATED PARTY TRANSACTIONS

There were no material related party transactions for the year ended December 31, 2017 and 2016 other than the items disclosed below.

**Key management personnel**

Key management personnel is defined as members of the Board of Directors and certain senior officers. Compensation of key management personnel are as follows, with such compensation made on terms equivalent to those prevailing in an arm's length transaction:

| | For the Years Ended December 31, | |
|---|---|---|
| | 2017 | 2016 |
| Salaries, wages, and other benefits | $ 2,800 | $ 2,337 |
| Bonuses | 787 | 1,311 |
| Share-based compensation | 7,487 | 9,736 |
| | $ 11,074 | $ 13,384 |

## 22. PRINCIPAL SUBSIDIARIES

The consolidated financial statements include the accounts of the Company and all of its subsidiaries at December 31, 2017. The principal operating subsidiaries are Wassa and Bogoso/Prestea, in which the Company has a 90% ownership interest in each.

Set out below is summarized financial information for each subsidiary that has non-controlling interests that are material to the group. The amounts are disclosed on a 100% basis and disclosure for each subsidiary are based on those included in the consolidated financial statements before inter-company eliminations.

**Summarized statement of financial position**

| | Wassa | | Bogoso/Prestea | |
|---|---|---|---|---|
| | As of December 31, | | As of December 31, | |
| | 2017 | 2016 | 2017 | 2016 |
| **Non-controlling interest percentage** | 10% | 10% | 10% | 10% |
| | | | | |
| Current assets | $ 94,760 | $ 90,627 | $ 25,023 | $ 13,957 |
| Current liabilities | 160,725 | 166,230 | 1,058,732 | 1,011,786 |
| | (65,965) | (75,603) | (1,033,709) | (997,829) |
| Non-current assets | 138,416 | 125,628 | 131,245 | 95,527 |
| Non-current liabilities | 25,016 | 19,513 | 76,373 | 81,155 |
| | 113,400 | 106,115 | 54,872 | 14,372 |
| Net assets/(liabilities) | 47,435 | 30,512 | (978,837) | (983,457) |
| | | | | |
| **Non-controlling interest** | $ (12,562) | $ (10,870) | $ 78,587 | $ 79,083 |

**Summarized income statement**

| | Wassa | | Bogoso/Prestea | |
|---|---|---|---|---|
| | For the years ended December 31, | | For the years ended December 31, | |
| | 2017 | 2016 | 2017 | 2016 |
| Revenue | $ 156,908 | $ 103,991 | $ 138,295 | $ 101,648 |
| Net income/(loss) and comprehensive income/(loss) | 16,924 | (5,870) | 4,619 | (15,289) |

**Summarized cash flows**

| | Wassa | | Bogoso/Prestea | |
|---|---|---|---|---|
| | For the years ended December 31, | | For the years ended December 31, | |
| | 2017 | 2016 | 2017 | 2016 |
| Cash flows provided by/(used in) operating activities | 27,486 | 16,757 | 3,505 | (43,190) |
| Cash flows used in investing activities | (21,744) | (42,189) | (43,616) | (43,244) |
| Cash flows provided by financing activities | 7,468 | 18,376 | 42,078 | 88,330 |

## 23. SEGMENTED INFORMATION

**Segmented revenue and results**

The Company has reportable segments as identified by the individual mining operations. Segments are operations reviewed by the executive management. Each segment is identified based on quantitative and qualitative factors.

| For the Years Ended December 31, | Wassa | Prestea | Other | Corporate | Total |
|---|---|---|---|---|---|
| **2017** | | | | | |
| Revenue | $ 167,376 | $ 148,121 | $ — | $ — | $ 315,497 |
| Mine operating expenses | 115,625 | 81,753 | — | — | 197,378 |
| Severance charges | 6,316 | 2,916 | — | — | 9,232 |
| Operating costs from/(to) metal inventory | 5,080 | (4,913) | — | — | 167 |
| Inventory net realizable value adjustment | 2,410 | — | — | — | 2,410 |
| Royalties | 8,652 | 8,643 | — | — | 17,295 |
| Cost of sales excluding depreciation and amortization | 138,083 | 88,399 | — | — | 226,482 |
| Depreciation and amortization | 20,052 | 11,740 | — | — | 31,792 |
| Mine operating margin | 9,241 | 47,982 | — | — | 57,223 |
| Income tax recovery | (12,944) | — | — | — | (12,944) |
| Net income attributable to non-controlling interest | 1,693 | 495 | — | — | 2,188 |
| Net income/(loss) attributable to Golden Star | $ 17,644 | $ 50,050 | $ (3,701) | $ (25,222) | $ 38,771 |
| | | | | | |
| Capital expenditures | $ 21,583 | $ 48,055 | $ — | $ — | $ 69,638 |
| | | | | | |
| **2016** | | | | | |
| Revenue | $ 112,341 | $ 108,949 | $ — | $ — | $ 221,290 |
| Mine operating expenses | 92,938 | 73,046 | — | — | 165,984 |
| Severance charges | 113 | (184) | — | — | (71) |
| Operating costs to metal inventory | (5,149) | (1,420) | — | — | (6,569) |
| Inventory net realizable value adjustment | 1,190 | — | — | — | 1,190 |
| Royalties | 6,483 | 5,599 | — | — | 12,082 |
| Cost of sales excluding depreciation and amortization | 95,575 | 77,041 | — | — | 172,616 |
| Depreciation and amortization | 15,094 | 6,066 | — | — | 21,160 |
| Mine operating margin | 1,672 | 25,842 | — | — | 27,514 |
| Net loss attributable to non-controlling interest | (587) | (1,529) | — | — | (2,116) |
| Net income/(loss) attributable to Golden Star | $ 603 | $ 28,687 | $ (6,096) | $ (62,841) | $ (39,647) |
| | | | | | |
| Capital expenditures | $ 41,805 | $ 42,413 | $ 88 | $ 50 | $ 84,356 |

**Segmented Assets**

The following table presents the segmented assets:

| | Wassa | Prestea | Other | Corporate | Total |
|---|---|---|---|---|---|
| **December 31, 2017** | | | | | |
| Total assets | $ 195,180 | $ 158,715 | $ 4,257 | $ 2,237 | $ 360,389 |
| | | | | | |
| **December 31, 2016** | | | | | |
| Total assets | $ 175,738 | $ 109,691 | $ 8,786 | $ 4,635 | $ 298,850 |

**Information about major customers**

Currently, approximately 90% of our gold production is sold through a South African gold refinery. Except for the sales to RGLD as part of the Streaming Agreement, the refinery arranges for the sale of gold on the day it is shipped from the mine sites and we receive payment for gold sold two working days after the gold leaves the mine site. The global gold market is competitive with numerous banks and refineries willing to buy gold on short notice. Therefore, we believe that the loss of our current customer would not materially delay or disrupt revenue. Refer to Note 25 for further discussion on the Company's exposure to credit risk.

## 24. SUPPLEMENTAL CASH FLOW INFORMATION

During the year ended December 31, 2017 and 2016, there was no payment of income taxes. The Company paid $7.7 million of interest during the year ended December 31, 2017 (year ended December 31, 2016 - $7.2 million).

Changes in working capital for the year ended December 31, 2017 and 2016 are as follows:

| | For the Years Ended December 31, | |
|---|---|---|
| | 2017 | 2016 |
| Decrease/(increase) in accounts receivable | $ 3,871 | $ (2,185) |
| Increase in inventories | (7,684) | (9,369) |
| (Increase)/decrease in prepaids and other | (2,132) | 1,059 |
| (Decrease)/increase in accounts payable and accrued liabilities | (1,503) | 1,656 |
| Decrease in current portion of vendor agreement | — | (13,369) |
| **Total changes in working capital** | $ (7,448) | $ (22,208) |

Other includes the following components:

| | For the Years Ended December 31, | |
|---|---|---|
| | 2017 | 2016 |
| Loss/(gain) on disposal of assets | $ 672 | $ (180) |
| Net realizable value adjustment on inventory | 2,410 | 1,190 |
| (Gain)/loss on fair value of warrants (see Note 5) | (86) | 2,322 |
| Gain on fair value of marketable securities | (64) | (69) |
| Gain on deferral of payables | — | (2,682) |
| Accretion of vendor agreement | 731 | 2,008 |
| Accretion of rehabilitation provisions (see Note 10) | 1,245 | 1,368 |
| Amortization of financing fees | 378 | 884 |
| Accretion of 7% Convertible Debentures discount | 1,845 | 870 |
| Gain on reduction of rehabilitation provisions | (4,945) | (198) |
| Conversion make-whole payment in common shares (see Note 13) | — | 885 |
| Loss/(gain) on conversion of 7% Convertible Debentures, net | 165 | (48) |
| Gain on warrant exercise | (193) | — |
| | $ 2,158 | $ 6,350 |

*Non-cash changes of liabilities arising from financing activities*

During the year ended December 31, 2017, the non-cash changes relating to the changes in liabilities arising from financing activities were $6.9 million relating to the conversion of the 7% Convertible Debentures, $2.2 million accretion of debt and $0.3 million fair value loss on the 5% Convertible Debentures.

## 25. FINANCIAL RISK MANAGEMENT

Our exposure to market risk includes, but is not limited to, the following risks: changes in interest rates on our debt, changes in foreign currency exchange rates and commodity price fluctuations.

**Liquidity risk**

Liquidity risk is the risk that we will encounter difficulty in meeting obligations associated with financial liabilities that are settled by delivering cash or another financial asset. We manage the liquidity risk inherent in these financial obligations by preparing monthly financial summaries, quarterly forecasts and annual long-term budgets which forecast cash needs and expected cash availability to meet future obligations. Typically these obligations are met by cash flows from operations and from cash on hand. Scheduling of capital spending and acquisitions of financial resources may also be employed, as needed and as available, to meet the cash demands of our obligations.

Our ability to repay or refinance our future obligations depends on a number of factors, some of which may be beyond our control. Factors that influence our ability to meet these obligations include general global economic conditions, credit and capital market conditions, results of operations, mineral reserves and resources and the price of gold.

The following table shows our contractual obligations as at December 31, 2017:

| | Payment due (in thousands) by period | | | | |
|---|---|---|---|---|---|
| (Stated in thousands of U.S dollars) | Less than 1 Year | 1 to 3 years | 3 to 5 years | More than 5 Years | Total |
| Accounts payable and accrued liabilities [1] | $ 108,121 | $ — | $ — | $ — | $ 108,121 |
| Debt [2] | 15,864 | 90,977 | 834 | — | 107,675 |
| Interest on long term debt | 7,546 | 13,572 | 56 | — | 21,174 |
| Purchase obligations | 12,731 | — | — | — | 12,731 |
| Rehabilitation provisions [3] | 6,566 | 30,133 | 25,844 | 15,386 | 77,929 |
| **Total** | $ 150,828 | $ 134,682 | $ 26,734 | $ 15,386 | $ 327,630 |

[1] Includes the current portion of the PSU liabilities of $13.5 million. The long term portion of the PSU liability is not included in this table as those PSU's have not yet vested. The long term PSU liability is recognized on the balance at $6.8 million.

[2] Includes the 7% Convertible Debentures maturing in August 2021, the loan from RGI, the finance leases and the vendor agreement. Golden Star may not redeem the 7% Convertible Debentures prior to August 15, 2019, except in the event of certain changes in applicable tax law. On or after August 15, 2019, the Company may redeem all or part of the outstanding 7% Convertible Debentures at the redemption price, only if the last reported sales price of the Company's common shares for 20 or more trading days in a period of 30 consecutive trading days ending on the trading day prior to the date the Company provides the notice of redemption to holders exceeds 130% of the conversion price in effect on each such trading day. The presentation shown above assumes payment is made in cash and also assumes no conversions of the 7% Convertible Debentures into common shares by the holders prior to the maturity date.

[3] Rehabilitation provisions indicates the expected undiscounted cash flows for each period.

As at December 31, 2017, the Company has current assets of $86.9 million compared to current liabilities of $148.4 million. As at December 31, 2017, the Company had a cash balance of $27.8 million and in late January 2018, the Company drew down the remaining $15.0 million of Ecobank Loan III.

The Company expects to meet its short-term financial needs through its cash on hand, cash flow from operations, and further long term financing as required. These alternatives should provide the Company with the flexibility to fund any potential cash flow shortfall. There can be no assurance however that if additional financing is required it will be available at all or on terms acceptable to the Company.

**Interest rate risk**

Interest rate risk is the risk that the future cash flows of a financial instrument will fluctuate because of changes in market interest rates. Our 7% Convertible Debentures, vendor agreement and the outstanding loans under our equipment financing facility bear interest at a fixed rate and are not subject to changes in interest payments. The Royal Gold loan has interest calculated based on the average daily London Bullion Market Association ("LBMA") gold price multiplied by 62.5% divided by 10,000 to a maximum interest rate of 11.5% per annum. Based on our current $20.0 million outstanding balance on the Royal Gold loan, a $100 increase in the LBMA gold price would increase interest charges by $0.1 million on an annual basis. The Ecobank Loan III interest rate is three month LIBOR plus 8%, per annum. Based on our current $10.0 million outstanding balance on Ecobank Loan III, a 100 basis points change in the three month LIBOR rate would result in a nominal change in interest expense. We have not entered into any agreements to hedge against unfavorable changes in interest rates, but may in the future actively manage our exposure to interest rate risk.

**Foreign currency exchange rate risk**

Currency risk is risk that the fair value of future cash flows will fluctuate because of changes in foreign currency exchange rates. In addition, the value of cash and cash equivalents and other financial assets and liabilities denominated in foreign currencies can fluctuate with changes in currency exchange rates.

Since our revenues are denominated in U.S. dollars and our operating units transact much of their business in U.S. dollars, we are typically not subject to significant impacts from currency fluctuations. However, certain purchases of labor, operating supplies and capital assets are denominated in Ghana cedis, euros, British pounds, Australian dollars, South African rand and Canadian dollars. To accommodate these purchases, we maintain operating cash accounts in non-US dollar currencies and appreciation of these non-US dollar currencies against the U.S. dollar results in a foreign currency gain and a decrease in non-U.S. dollar currencies results in a loss. In the past, we have entered into forward purchase contracts for South African rand, euros and other currencies to hedge expected purchase costs of capital assets. During 2017 and 2016, we had no currency related derivatives. At December 31, 2017 and December 31, 2016, we held $3.8 million and $1.8 million, respectively, of foreign currency.

**Commodity price risk**

Gold is our primary product and, as a result, changes in the price of gold can significantly affect our results of operations and cash flows. Based on our gold production in the year, a $100 per ounce change in gold price would result in approximately a $24.7 million and $23.5 million change in our sales revenues and operating cash flows, respectively. To reduce gold price volatility, we have at various times entered into gold price hedges. As at December 31, 2017, the Company did not have any outstanding gold price derivative contracts.

**Credit risk**

Credit risk is the risk that one party to a financial instrument will cause a financial loss for the other party by failing to discharge an obligation. Our credit risk is primarily associated with liquid financial assets and derivatives. We limit exposure to credit risk on liquid financial assets by holding our cash, cash equivalents, restricted cash and deposits at highly-rated financial institutions. Risks associated with gold trade receivables is considered minimal as we sell gold to a credit-worthy buyer who settles promptly within two days of receipt of gold bullion.

## 26. CAPITAL RISK MANAGEMENT

The Company manages its capital in a manner that will allow it to continue as a going concern while maximizing the return to shareholders through the optimization of the debt and equity balance.

In the management of capital, the Company includes the components of equity, long-term debt, net of cash and cash equivalents, and investments.

| | As of December 31, 2017 | As of December 31, 2016 |
|---|---|---|
| Equity | $ (41,754) | $ (120,761) |
| Long-term debt | 79,741 | 89,445 |
| | $ 37,987 | $ (31,316) |
| Cash and cash equivalents | 27,787 | 21,764 |
| | $ 65,774 | $ (9,552) |

The Company manages its capital structure and makes adjustments to it in light of changes in economic conditions and the risk characteristics of the underlying assets. In doing so, the Company may issue new shares, restructure or issue new debt and acquire or dispose of assets.

In order to facilitate the management of its capital requirements, the Company prepares annual budgets that are updated as necessary depending on various factors, including successful capital deployment and general industry conditions. The Company's treasury policy specifies that cash is to be held in banks with a rating of A or higher by Moody's or Standard & Poor's. In addition, the Company's investment policy allows investment of surplus funds in permitted investments consisting of US treasury bills, notes and bonds, government sponsored agency debt obligations, corporate debt or municipal securities with credit rating of at least AA. All investments must have a maximum term to maturity of one year.