



Expanding Production and Reducing Costs

INVESTOR PRESENTATION

JUNE 2017

Disclaimer

SAFE HARBOUR: Some statements contained in this presentation are forward-looking statements or forward-looking information (collectively, "forward-looking statements") within the meaning of the United States Private Securities Litigation Reform Act of 1995 and applicable Canadian securities laws. Investors are cautioned that forward-looking statements are inherently uncertain and involve risks and uncertainties that could cause actual results to differ materially. Such statements include comments regarding: the expansion of production and reduction of costs at Golden Star's projects; the exploration upside of the Company's projects and ability of the Company to increase mine lives and Mineral Resources and Mineral Reserves; the ability of the Company to transform into a high grade, low cost gold producer; the impact of Wassa Underground and Prestea Underground on the Company's production profile, cost profile, cash operating cost per ounce and AISC per ounce; the timing for commercial production at Prestea Underground; the timing for mining first transverse stopes at B Shoot of Wassa Underground; the achievement of full production rate at Wassa Underground and life of mine average production; the achievement of 2017 production; production, cash operating cost and capital expenditure guidance for 2017; ore grade, production and capital expenditures at Mampon; the ability to expand Mineral Reserves and extend the life of mine at Prestea Underground and Wassa Underground through exploration; the ability to convert Mineral Resources into Mineral Reserves; the timing for incurring 2017 capital expenditures; and the potential for growth of Golden Star's share price. Factors that could cause actual results to differ materially include timing of and unexpected events at the Bogoso/Prestea and/or the Wassa processing plants; variations in ore grade, tonnes mined, crushed or milled; delay or failure to receive board or government approvals and permits; construction delays; the availability and cost of electrical power; timing and availability of external financing on acceptable terms or at all; technical, permitting, mining or processing issues, including difficulties in establishing the infrastructure for Wassa Underground or Prestea Underground, inconsistent power supplies, plant and/or equipment failures and an inability to obtain supplies and materials on reasonable terms (including pricing) or at all; changes in U.S. and Canadian securities markets; heavy rainfall and flooding of underground mines; and fluctuations in gold price and input costs and general economic conditions. There can be no assurance that future developments affecting the Company will be those anticipated by management. Please refer to the discussion of these and other factors in our Annual Information Form for the year ended December 31, 2016 filed on SEDAR at www.sedar.com. The forecasts contained in this presentation constitute management's current estimates, as of the date of this presentation, with respect to the matters covered thereby. We expect that these estimates will change as new information is received and that actual results will vary from these estimates, possibly by material amounts. While we may elect to update these estimates at any time, we do not undertake to update any estimate at any particular time or in response to any particular event. Investors and others should not assume that any forecasts in this presentation represent management's estimate as of any date other than the date of this presentation.

NON-GAAP FINANCIAL MEASURES: In this presentation, we use the terms "cash operating cost per ounce", "all-in sustaining cost per ounce", "AISC per ounce", "Adjusted Net Loss", "Adjusted Net Loss/Share", "Cash operating margin per ounce" and "Cash Flow from/(used in) operations". These terms should be considered as Non-GAAP Financial Measures as defined in applicable Canadian and United States securities laws and should not be considered in isolation or as a substitute for measures of performance prepared in accordance with International Financial Reporting Standards ("IFRS"). "Cash operating cost per ounce" for a period is equal to the cost of sales excluding depreciation and amortization for the period less royalties, the cash component of metals inventory net realizable value adjustments and severance charges divided by the number of ounces of gold sold during the period. "All-in sustaining costs per ounce" commences with cash operating costs and then adds sustaining capital expenditures, corporate general and administrative costs, mine site exploratory drilling and greenfield evaluation costs and environmental rehabilitation costs, divided by the number of ounces of gold sold during the period. This measure seeks to represent the total costs of producing gold from operations. These measures are not representative of all cash expenditures as they do not include income tax payments or interest costs. In order to indicate to stakeholders the Company's earnings excluding the non-cash (gain)/loss on the fair value of debentures, non-cash impairment charges and severance charges, the Company calculates "Adjusted Net Earnings/(Loss)" and "Adjusted Net Earnings/(Loss) per share" to supplement the condensed interim consolidated financial statements. "Cash operating margin per ounce" is calculated as gold price minus cash operating cost per ounce. "Cash flow from/(used in) operations" is calculated by subtracting the "Changes in working capital" from "Net cash provided by operating activities" as found in the statements of cash flows. These measures are not necessarily indicative of operating profit or cash flow from operations as would be determined under IFRS. Changes in numerous factors including, but not limited to, mining rates, milling rates, gold grade, gold recovery, and the costs of labor, consumables and mine site general and administrative activities can cause these measures to increase or decrease. We believe that these measures are the same or similar to the measures of other gold mining companies, but may not be comparable to similarly titled measures in every instance. Please see our "Management's Discussion and Analysis of Financial Condition and Results of Operations for the year ended December 31, 2016" for a reconciliation of these Non-GAAP measures to the nearest IFRS measure.

INFORMATION: The information contained in this presentation has been obtained by Golden Star from its own records and from other sources deemed reliable, however no representation or warranty is made as to its accuracy or completeness. The technical information relating to Golden Star's material properties disclosed herein is based upon technical reports prepared and filed pursuant to National Instrument 43-101 - Standards of Disclosure for Mineral Projects ("NI 43-101") and other publicly available information regarding the Company, including the following: (i) "NI 43-101 Technical Report on a Feasibility Study of the Wassa Open Pit Mine and Underground Project in Ghana" effective December 31, 2014; (ii) "NI 43-101 Technical Report on Resources and Reserves, Golden Star Resources Ltd., Bogoso Prestea Gold Mine, Ghana" effective December 31, 2013, and (iii) "NI 43-101 Technical Report on a Feasibility Study of the Prestea Underground gold project in Ghana" effective November 5, 2015. Additional information is included in Golden Star's Annual Information Form for the year ended December 31, 2015 which is filed on SEDAR. Mineral Reserves were prepared under the supervision of Dr. Martin Raffield, Senior Vice President Technical Services for the Company. Dr. Raffield is a "Qualified Person" as defined by NI 43-101. The Qualified Person reviewing and validating the estimation of the Mineral Resources is S. Mitchel Wasel, Golden Star Resources Vice President of Exploration.

CURRENCY: All monetary amounts refer to United States dollars unless otherwise indicated.

Why Invest In Golden Star?



West African-focused, mid-tier gold producer with two producing mines in Ghana



High grade development asset, Prestea Underground (13.93g/t Mineral Reserves)



Strong exploration upside potential - focused on increasing the mine lives of current operations



Experienced management team with a track record of discovery and project delivery



Undervalued compared to peer group and with robust liquidity through NYSE MKT listing

Transforming into a high grade, non-refractory, low cost gold producer

Experienced Management and Technical Leadership



Sam Coetzer, President & CEO

- Mining engineer with over 26 years' experience with Kinross, Xstrata Nickel, Xstrata Coal and Placer Dome
- Previously SVP South American Operations for Kinross



André van Niekerk, EVP & Chief Financial Officer

- Joined GSR in 2006 - 5 years in Ghana as GSR's Head of Finance and Business Operations
- Previously VP, Financial Controller
- Trained at KPMG



Daniel Owiredun, EVP & Chief Operating Officer

- 20 years' experience in West African mining, based in Ghana
- Previously Deputy COO for AngloGold - managed construction and operation of the Bibiani, Siguiri and Obuasi mines



Martin Raffield, SVP, Project Development & Technical Services

- Ph.D. geotechnical engineering & P. Engineering
- Previously worked for SRK, Placer Dome and Breakwater Resources
- Based at Prestea mine in Ghana

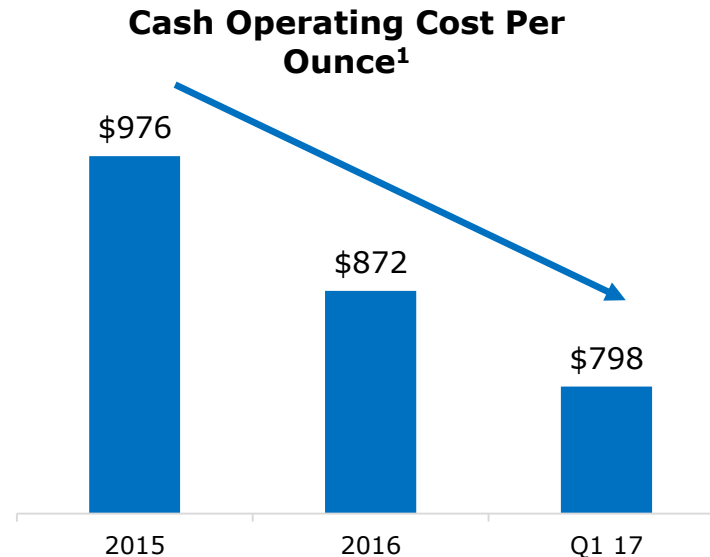
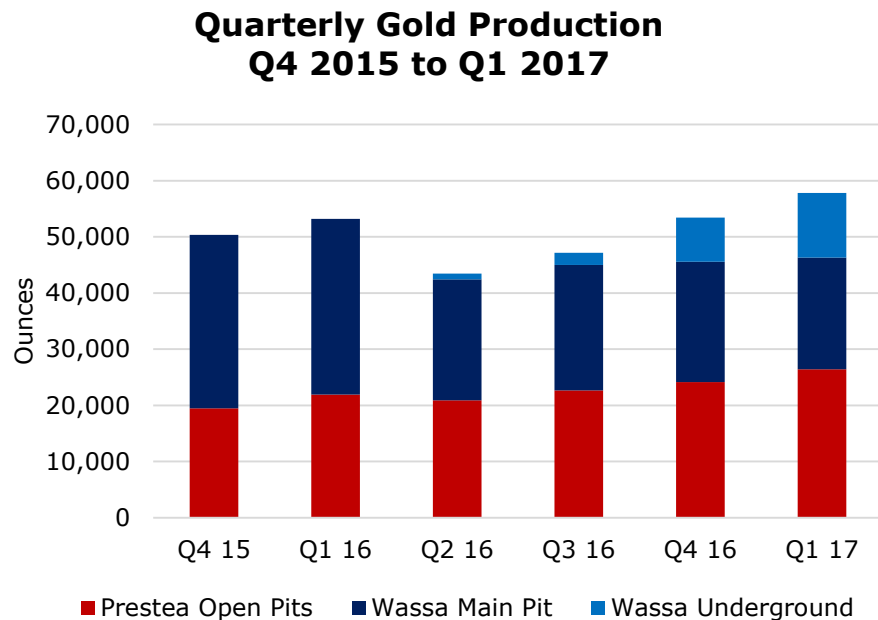


Mitch Wasel, VP Exploration

- Joined GSR in 1993
- Based in Ghana for GSR for past 17 years
- Previously spent 10 years in gold & base metal exploration in north western Canada

Record Quarterly Production in Q1 2017

Strongest quarterly production since cessation of refractory operation

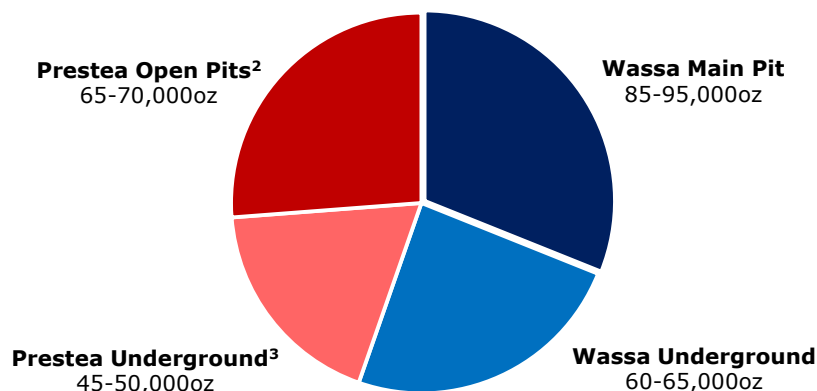


- Gold production of 57,795oz in Q1 2017 – third consecutive quarter of record production from Prestea Open Pits
- Ore from three production sources – significant reduction in risk profile
- Cash operating cost¹ and AISC¹ are anticipated to reduce in H2 2017

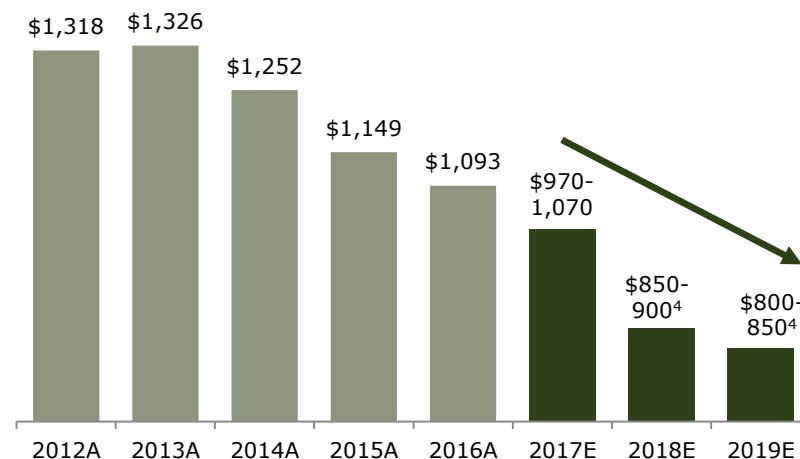
2017 Guidance

2017 production guidance 31-44% higher than 2016 production results

2017 Production Guidance By Asset

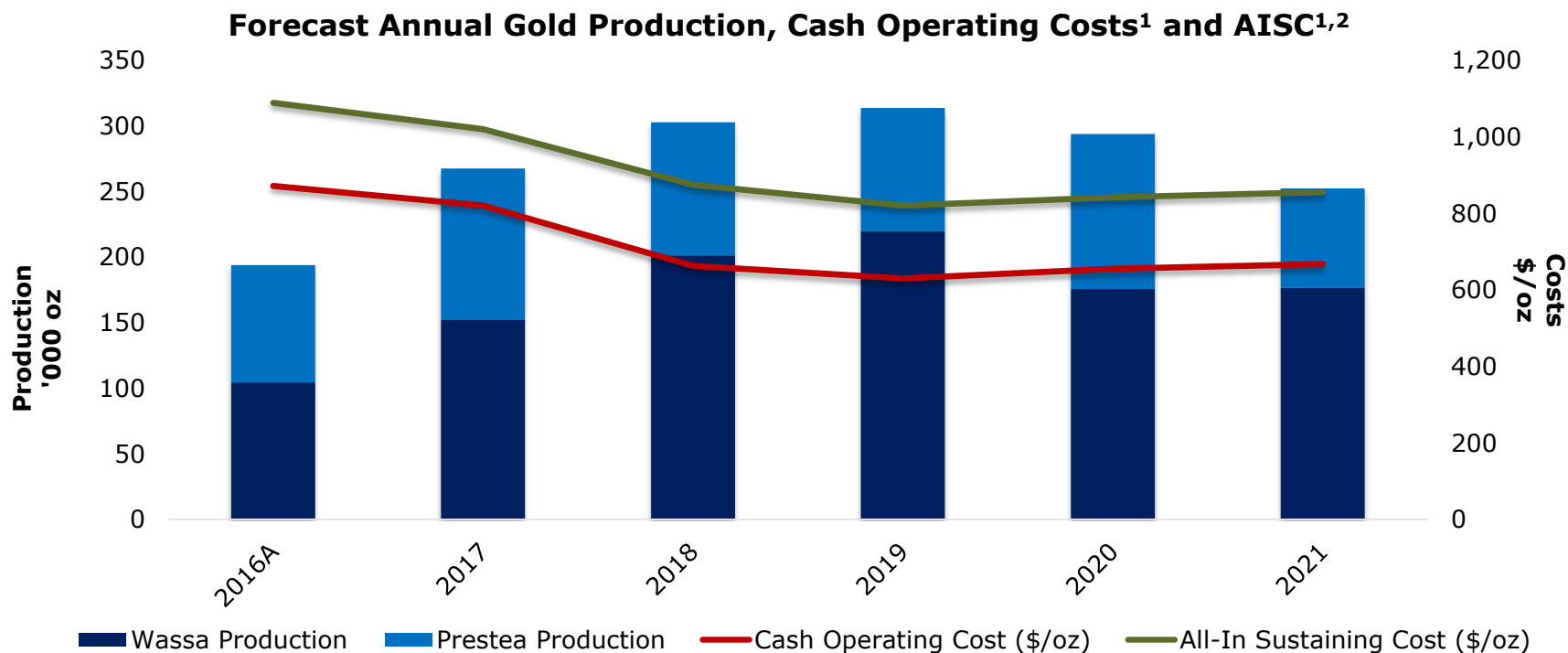


All-In Sustaining Cost Per Ounce¹



- 2017 gold production guidance of 255,000-280,000oz
- 2017 cash operating cost¹ per ounce guidance of \$780-860/oz
- 2017 AISC per ounce¹ guidance of \$970-1,070/oz – expected to decrease further as high grade, underground mines continue to ramp up
- 2017 capital expenditures guidance of \$63m

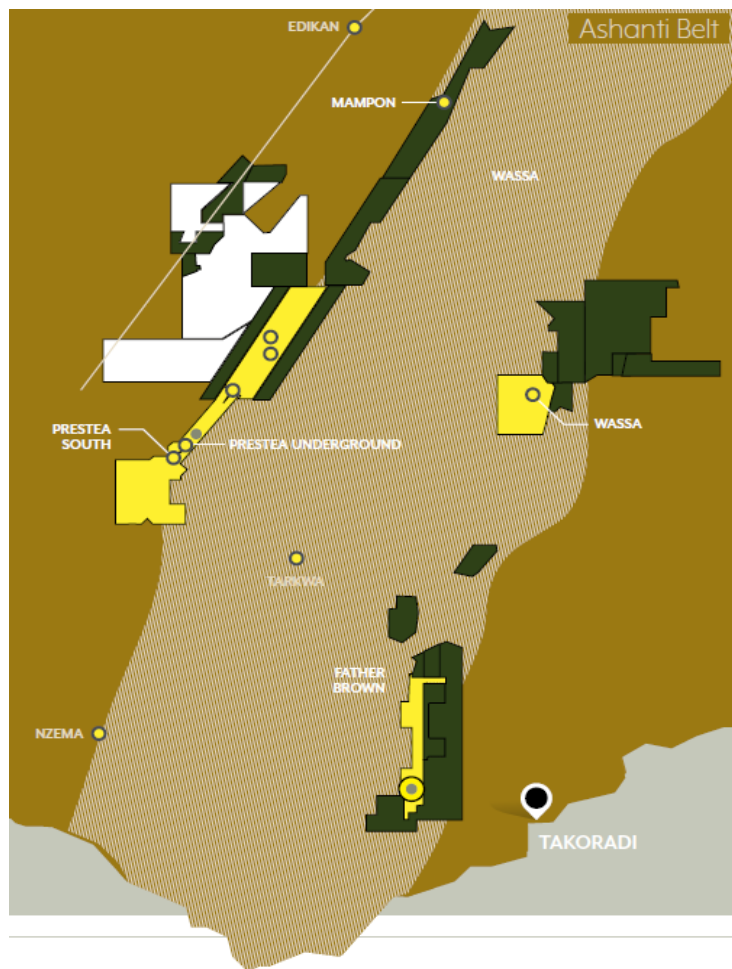
Expanding Production and Reducing Costs



- Average annual production from 2017 onwards of 281,000oz²
- Significant exploration upside on current production profile

60% increase in production forecast between 2016 and 2019

2017 Exploration Strategy



Legend

- Mining license area
- Exploration license area
- Care and maintenance – no longer mined

- Three key objectives of the 2017 exploration strategy:
 - To increase supply of high grade, underground ore to the processing plants in the near term
 - To increase the lives of both operations in the medium term
 - To identify the potential of Golden Star's 1,156km² concession area
- First phase of program is expected to comprise 48,000m
- Further drilling may be conducted subject to the results received
- 171% increase to 2017 exploration budget to \$6.5 million for the first phase of drilling
- Drilling is underway on targets at both Wassa and Prestea deposits

**OPERATIONS &
EXPLORATION
OVERVIEW**

Wassa Gold Mine

Prestea Gold Mine



Wassa Gold Mine

- Open pit and underground gold mine in Ghana, commenced production in 2005
- Mineral Reserves of 1.3Moz (17.4Mt at 2.37g/t)
- 7 years of mine life remaining based on current Mineral Reserves
- 2.7Mtpa processing plant within 500m of pit
- Ore from Wassa Underground is being blended with open pit ore
- Tonnes processed (7,000tpd) will be constant but grade will increase as underground continues to ramp up
- Life of Mine average annual production expected to be ~175,000 ounces¹



Wassa ²	Unit	Rate
2016 Production	Koz	104
2016 Cash Operating Cost ³	\$/oz	941
2017 Forecast Production	Koz	145-160
2017 Forecast Cash Operating Cost ³	\$/oz	830-915

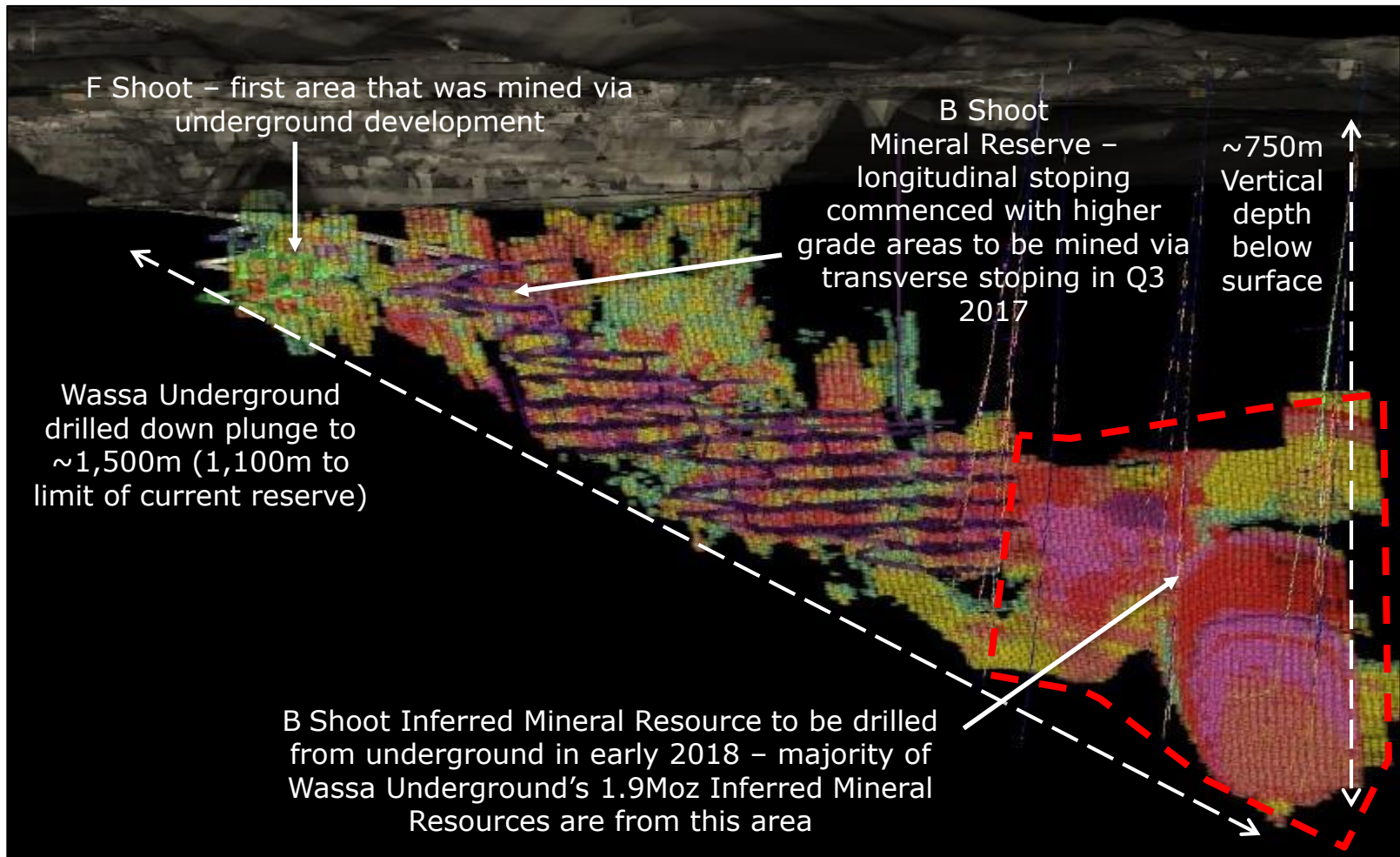
Wassa Underground: Mining of B Shoot Commenced



- Commercial production achieved on January 1, 2017
- First longitudinal stopes of B Shoot mined in late Q1 2017
- First larger, higher grade, transverse B Shoot stopes expected to be mined in Q3 2017
- Targeting mining rate of 1,400 tpd in 2017 – nameplate rate of 2,200 tpd expected to be achieved in 2018

Production expected to increase in Q3 2017 when transverse stoping of B Shoot begins

Wassa Underground Development



Strong potential to increase Mineral Resources & Reserves through exploration

Wassa Underground: 2017 Exploration

Three key focuses at Wassa Underground:

B Shoot North extension drilling

- Expected to comprise 3,000m
- Objective: To test the potential to increase near-term production

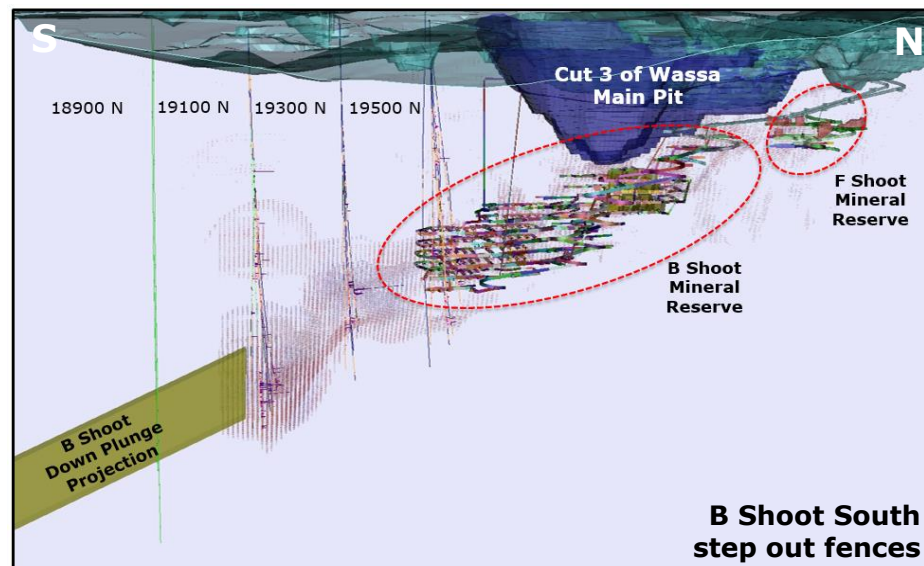
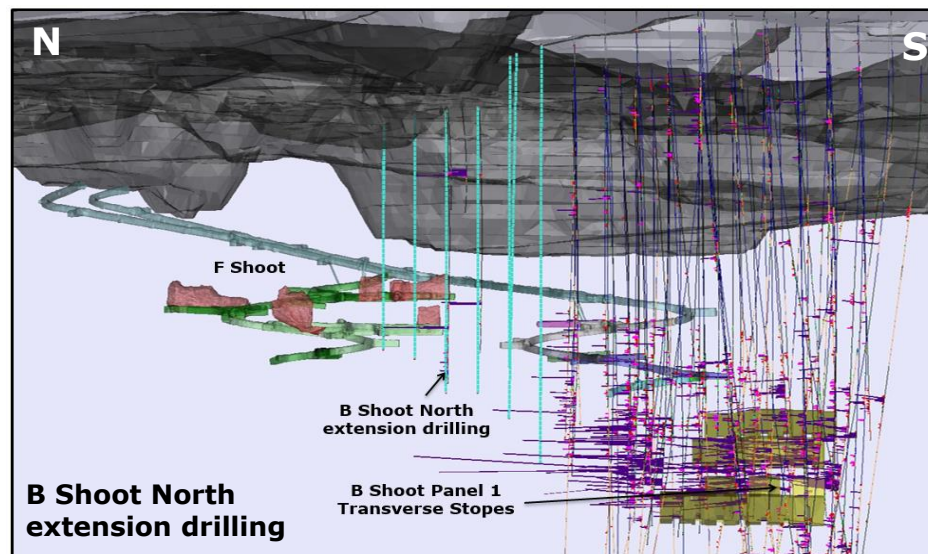
B Shoot South Step Out Fences

- Expected to comprise 10,000m
- Objective: To ascertain if the B Shoot is continuous to the South

242 Trend Step Out Drilling

- Expected to comprise 4,000m
- Objective: To increase Wassa's Inferred resources

Drilling has commenced on all targets at Wassa – results expected in H2 2017



Prestea Gold Mine

- +100 year history of mining at Prestea in Ghana – acquired by GSR in 1999
- Prestea Open Pits commenced production in Q3 2015
- Currently mining non-refractory, oxide ore
- Refractory reserves replaced through drilling
- Open pits are bridging the production gap until underground production established
- Prestea Underground has very high grade Mineral Reserves of 1.1Mt at 13.93g/t for 490Koz
- 2017 exploration drilling has commenced at Prestea Underground, Prestea Open Pits and Mampon



Prestea ¹	Unit	Rate
2016 Production	Koz	90
2016 Cash Operating Cost ¹	\$/oz	800
2017 Forecast Production ²	Koz	110-120
2017 Forecast Cash Operating Cost ¹	\$/oz	715-780

Mampon: Strong Near-Term Cash Flow

Mining commenced in late Q1 2017

- Mampon is an oxide deposit 65km to the north of the CIL processing plant
- Mineral Reserves of 45,000oz of gold (301Kt at 4.64g/t)
- All permits received by end of 2016 including mining lease, environmental permit and forestry permit
- High grade ore from Mampon is being blended with ore from Prestea Open Pits to enhance GSR's cash flow in Q2 and Q3 2017



Prestea Underground: Project Update

- ✓ Rehabilitation works commenced
 - ✓ Long lead time equipment ordered
 - ✓ Underground mining contractor appointed (Manroc Developments, Inc.)
 - ✓ Installation of new electrical and water supply services completed
 - ✓ Track improved on 24 Level for high-speed haulage
 - ✓ Mobilization of underground mining contractor to site and first Alimaks arrived
 - ✓ Rock winder upgrade completed and commissioned
 - ✓ Pre-development of the Mineral Resource and West Reef intersected by mining team
- First stope blasted - expected in Q2 2017
- Achieving commercial production – expected in Q3 2017

March 2016 Update to Feasibility Study

Gold production
per annum

90,000oz

Cash operating
cost per ounce¹

\$468

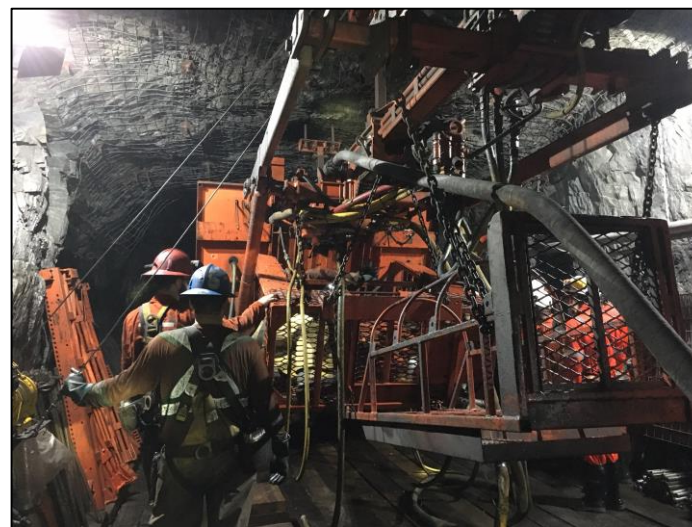
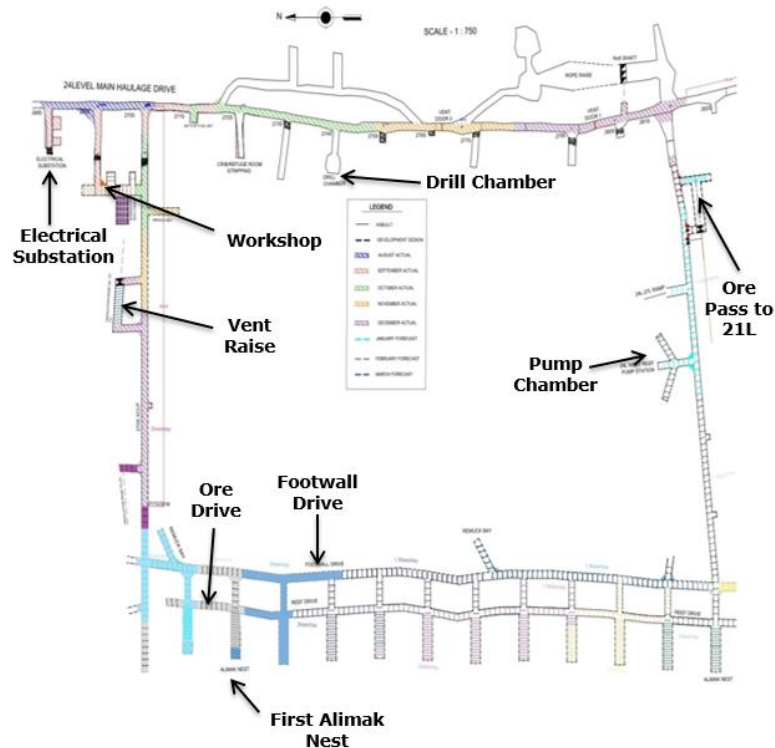
AISC per ounce¹

\$615

Mineral Reserve
head grade

13.9g/t

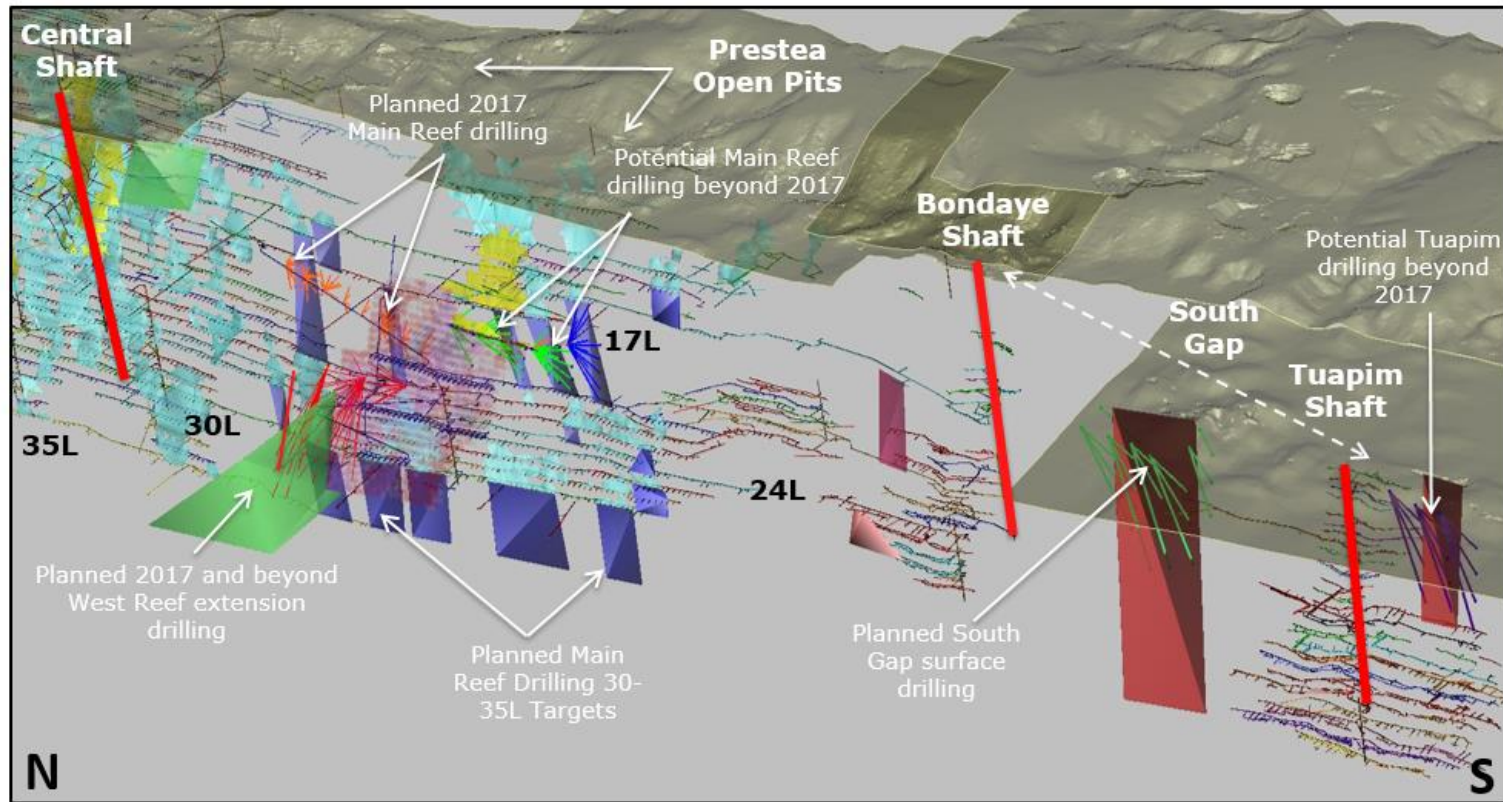
Prestea Underground: Development of First Stope



First Alimak in its nest at Prestea Underground

- Development of first stope at Prestea Underground commenced in March 2017, as planned, with first raise now completed
- Second Alimak nest completed and blasting of second raise underway
- However total development advance behind schedule due to issues relating to short term infrastructure bottlenecks and relatively inexperienced workforce – measures being put in place to rectify these issues

Prestea Underground: 2017 Exploration



- Three key focuses for 2017 exploration program at Prestea Underground
- Primarily focused on the extension and definition of the West Reef – objective is to increase high grade ore to processing plant in near term
- Other focuses include initial testing of the Main Reef and the South Gap area to add ore into the mine plan in the medium to long term

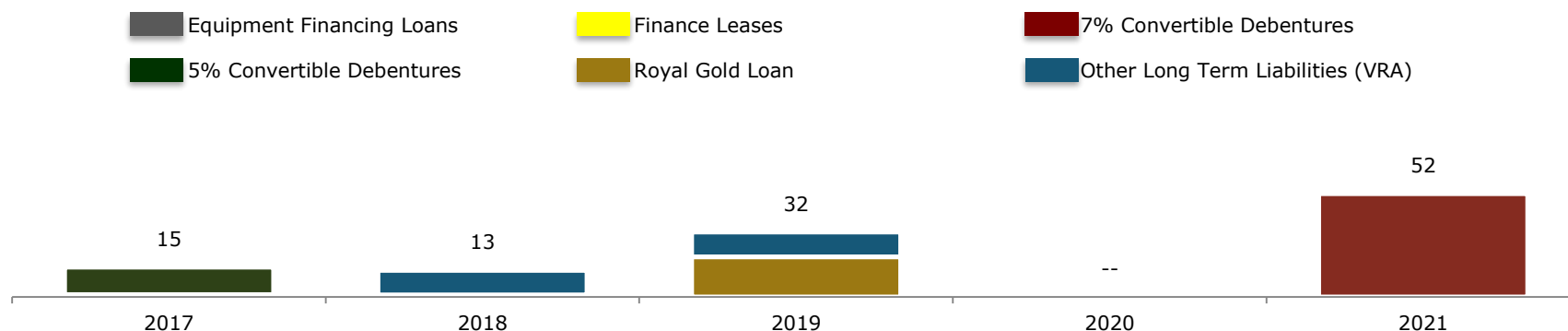
BALANCE SHEET AND KEY MILESTONES



Balance Sheet Transformed

- \$15m bought deal in April 2016
 - Reduced Accounts Payable
- \$65m private placement in August 2016 of 7.0% convertible senior notes, due 2021
 - Significantly reduced 2017 debt repayments and aligned future debt repayments more closely to forecast cash flow
- \$34.5m underwritten public offering in August 2016
 - Repaid high interest Ecobank II loan and brought new institutional investors onto register
- C\$34.5m (US\$26.2m) bought deal in February 2017
 - Ensures that GSR is fully funded and maintains a strong financial position
- \$25m financing facility with Ecobank in March 2017
 - Prudent measure as GSR continues to grow
- Remaining 5% convertible debentures (\$13.6m) repaid on June 1, 2017

Debt Maturity Schedule (\$m)¹



UPCOMING MILESTONES IN 2017

- ✓ Achieve commercial production at Wassa Underground – January 1, 2017
- ✓ Commence longitudinal stoping of higher grade B Shoot zone of Wassa Underground – Q1 2017
- ✓ Commence mining of Mampon deposit – Q1 2017

Blasting of first stope at Prestea Underground – expected Q2 2017

Commence transverse stoping of B Shoot at Wassa Underground – expected Q3 2017

Achieve commercial production at Prestea Underground – expected Q3 2017

GOLDEN STAR



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NYSE MKT: GSS
TSX: GSC

Appendices: Market Information

One Year Share Price Graph (GSS)^{1,2}



Analyst Coverage

- BMO Capital Markets
- CIBC Capital Markets
- Clarus Securities
- Credit Suisse
- National Bank Financial
- Scotia Bank

Key Institutional Shareholders

- Van Eck
- Franklin Templeton
- Oppenheimer Funds
- Sentry Investments
- Earth Resources
- Gold 2000
- AGF Management
- USAA Asset Management

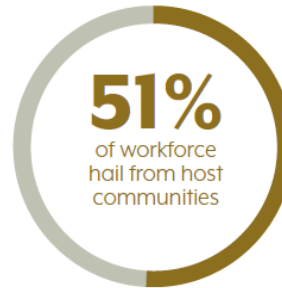
Market Information¹

Markets	NYSE MKT / TSX / GSE
Tickers	NYSE: GSS TSX: GSC GSE: GSR
Shares in Issue	376,165,952
Options	16,769,212
Share Price ²	\$0.66
Market Capitalization	\$243m
Cash ³	\$36.5m
Debt	\$112m
Daily Volumes Traded (3 Month Average) ²	2.0m shares

A Responsible Corporate Citizen

SUSTAINABLE
DEVELOPMENT
GOALS

#gsr17



SUSTAINABLE
DEVELOPMENT
GOALS

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\$47m in salaries paid in
2016



\$5.7m in sustainable
agribusiness to date



\$3.4m in development
fund projects to date

\$36.7m paid in Government payments in 2016

Q1 2017: Financial Highlights

		Q1 2017	Q1 2016
Revenue	\$'000	68,545	61,067
Gold Sales	oz	58,144	52,669
Average Realized Gold Price	\$/oz	1,179	1,159
Net Income	\$'000	170	2,051
Net Income per share	\$/share	0.00	0.01
Adjusted Net Income ¹	\$'000	3,411	8,538
Adjusted Net Income ¹	\$/share	0.01	0.03
Cash Flow from Operations before working cap. changes ¹	\$'000	17,725	10,767
Cash Flow from Operations before working cap. changes ¹	\$/share	0.05	0.04
Capital Expenditures	\$'000	16,703	15,914
Cash & Cash Equivs.	\$'000	36,455	14,561

- 12% increase in revenue compared to Q1 2016 due to higher production at Prestea, 2% higher realized gold price and commencement of commercial production at Wassa Underground
- Mine operating margin¹ of \$8.7m – 39% decrease compared to Q1 2016 due to higher cost of sales and higher depreciation & amortization expenses
- \$0.2m net income due to a mine operating loss at Wassa, partially offset by higher mine operating margin at Prestea Open Pits & a fair value gain on financial instruments
- Capex of \$16.7m with \$10.3m attributable to development of Prestea Underground
- \$36.5m of cash at end of Q1 2016 – remain fully funded for capital program and 2017 debt repayments

Royal Gold Financing Agreement

- **GSR has a financing arrangement with Royal Gold for total aggregate proceeds of \$145m.** Use of funds:
 - Facilitate development of Wassa and Prestea underground mines
 - Retire outstanding Ecobank I loan debt
- **Gold stream of \$145m over Bogoso, Prestea and Wassa:**
 - From January 1, 2016, to deliver 9.25% of all production at a cash purchase price of 20% of spot gold
 - From January 1, 2018 or commercial production of the underground mines, whichever is sooner, to deliver 10.50% of production at a cash purchase price of 20% of spot gold until 240,000 ounces have been delivered
 - Thereafter, 5.50% of production at a cash purchase price of 30% of spot gold will be delivered ('tail stream')
 - Option to repurchase 50% of the tail stream
 - In the event that Golden Star expands its operations to outside its current mine license areas in the future, it will have the option to deliver ounces from these operations to satisfy the first and second delivery thresholds
 - GSR would retain the upside to these new operations as the tail stream would not be applied
 - All payments received for a total of \$145m
 - A total of 36,036 ounces have been delivered as at March 31, 2017
- **Four year \$20m secured term loan:**
 - Interest rate linked to gold price¹
 - At a gold price of \$1,200/oz the interest rate would be 7.5% and at \$1,300/oz, it would be 8.13%
 - Rate is not to exceed 11.5%
 - No early prepayment penalty
 - Subject to an agreed quarterly 25-50% excess cash flow sweep from the third quarter of 2017 onwards
 - Matures in July 2019
 - Royal Gold has security against mining assets

Mineral Reserves and Resources

Mineral Reserves ^{1,2,3}	Tonnes ('000)	Grade (Au g/t)	Content (Koz)
Proven Reserves			
Wassa	695	0.96	21
Prestea	115	2.55	9
Total	810	1.18	31
Probable Reserves			
Wassa	16,741	2.43	1,307
Prestea	1,905	9.35	573
Total	18,646	3.13	1,879
Total Proven & Probable	19,456	3.05	1,910

Mineral Resources ^{1,2,3}	Tonnes ('000)	Grade (Au g/t)	Content (Koz)
Measured & Indicated Mineral Resources			
Wassa	44,347	2.33	3,328
Prestea	5,394	6.08	1,055
Total	49,741	2.74	4,382
Inferred Mineral Resources			
Wassa	15,581	4.20	2,102
Prestea	3,723	7.79	933
Total	19,305	4.88	3,034

1. For Wassa's Mineral Reserves and Resources please refer to 'NI 43-101 Technical Report on a Feasibility Study of the Wassa Open Pit and Underground Project in Ghana', dated December 31, 2014, which is filed on SEDAR and at www.gsr.com
2. For Prestea's Mineral Reserves and Resources please refer to 'NI 43-101 Technical Report on a Feasibility Study of the Prestea Underground Gold Project in Ghana', dated November 3, 2015, which is filed on SEDAR and at www.gsr.com
3. All numbers exclude refractory ore.