



Expanding Production and Reducing Costs



**Q3 2016
RESULTS**
NOVEMBER 2, 2016

Disclaimer

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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 for the three and nine months ended September 30, 2016" and our "Management's Discussion and Analysis of Financial Condition and Results of Operations for the year ended December 31, 2015" for a reconciliation of these Non-GAAP measures to the nearest IFRS measure.

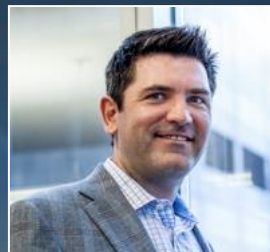
INFORMATION: The information contained in this presentation has been obtained by Golden Star from its own records and from other sources deemed reliable, however no representation or warranty is made as to its accuracy or completeness. The technical information relating to Golden Star's material properties 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.

Management Participants



Sam Coetzer
President and
Chief Executive Officer



André van Niekerk
Executive Vice President and
Chief Financial Officer



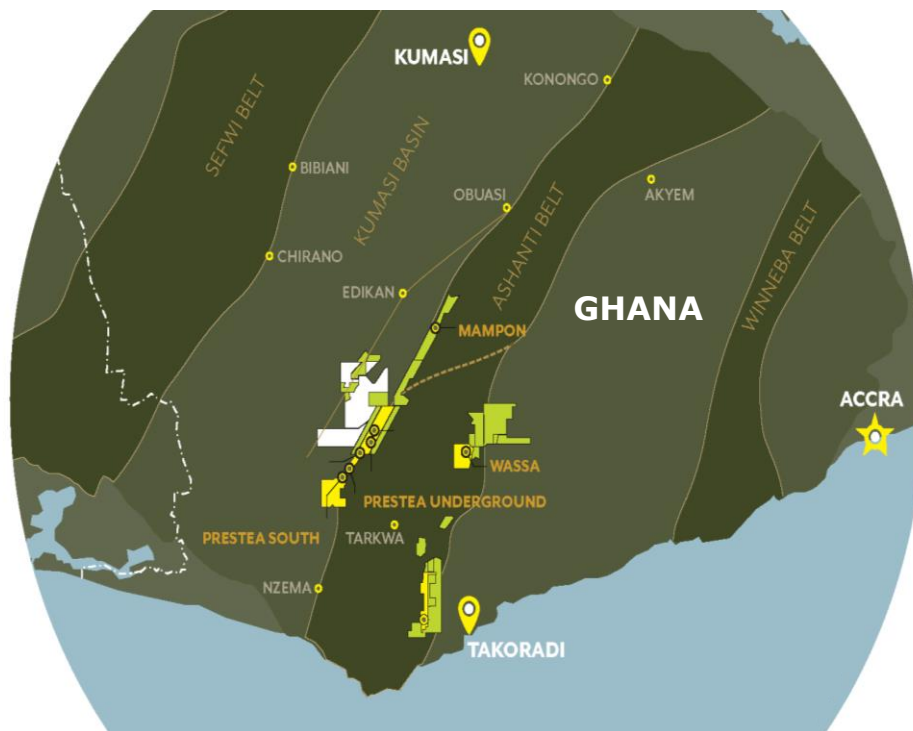
Daniel Owiredù
Executive Vice President and
Chief Operating Officer



Katharine Sutton
Director, Investor Relations &
Corporate Affairs

Why Invest In Golden Star?

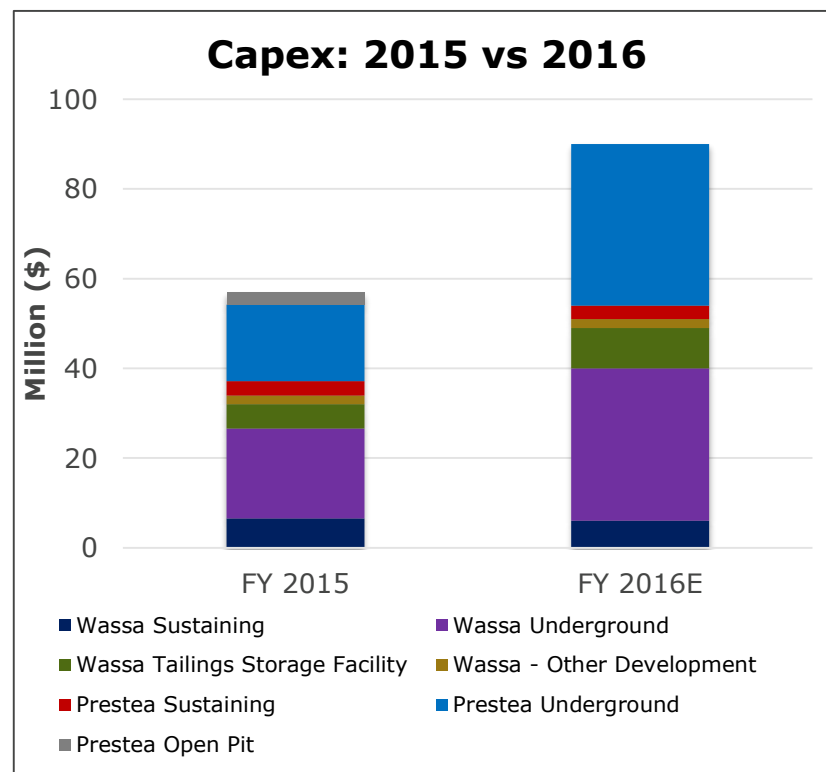
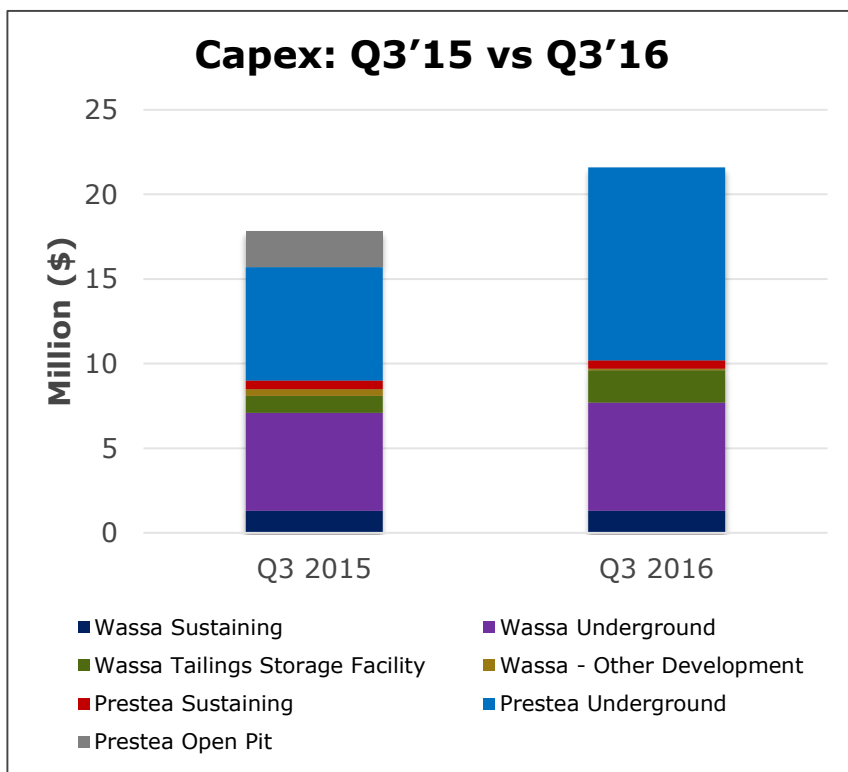
- West African-focused, mid-tier gold producer with two producing mines in Ghana
- Two high grade development assets, including 14.02g/t Prestea Underground - production is expected to expand and costs to continue to reduce
- Strong exploration upside potential - focused on increasing the mine lives 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

Investing In Our Future

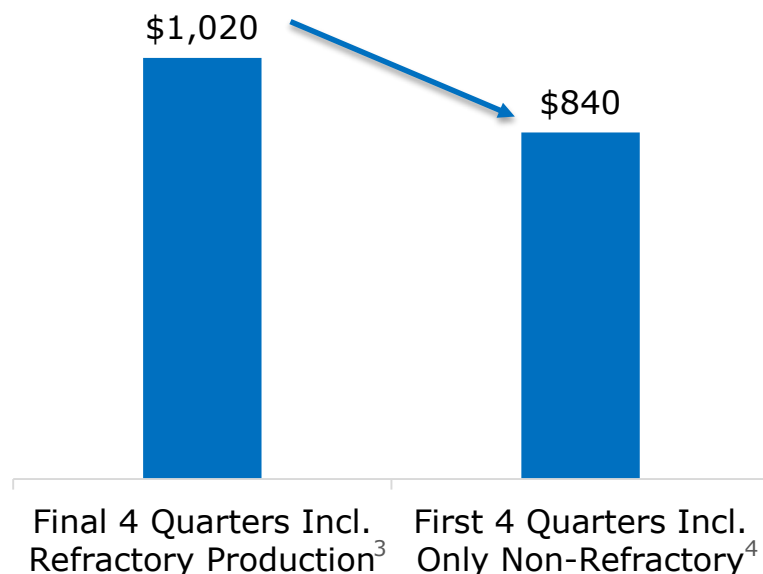
- Capital expenditures of \$21.7m during Q3 2016 reflecting continued work at development projects – two underground mines will transform GSR's production and cost profiles
- Total spent year-to-date of \$60.6m
- First stope blasted at Wassa Underground during Q3 2016, as expected



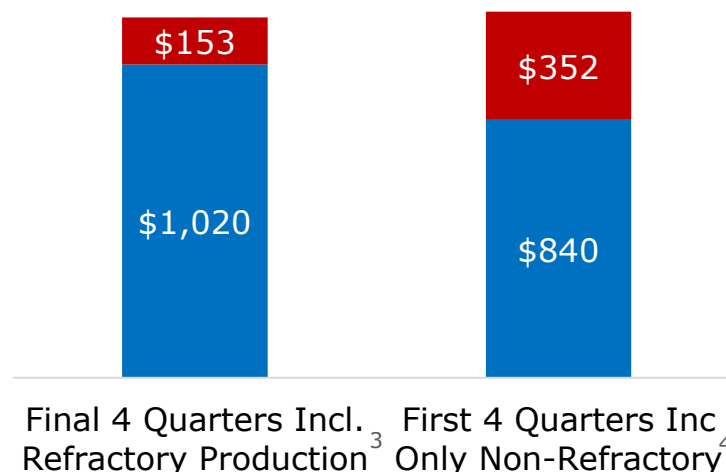
Lower Costs and Stronger Cash Margin

Ceasing refractory production has yielded lower cash operating costs¹ and a stronger cash operating margin per ounce¹

Cash Operating Cost Per Ounce¹

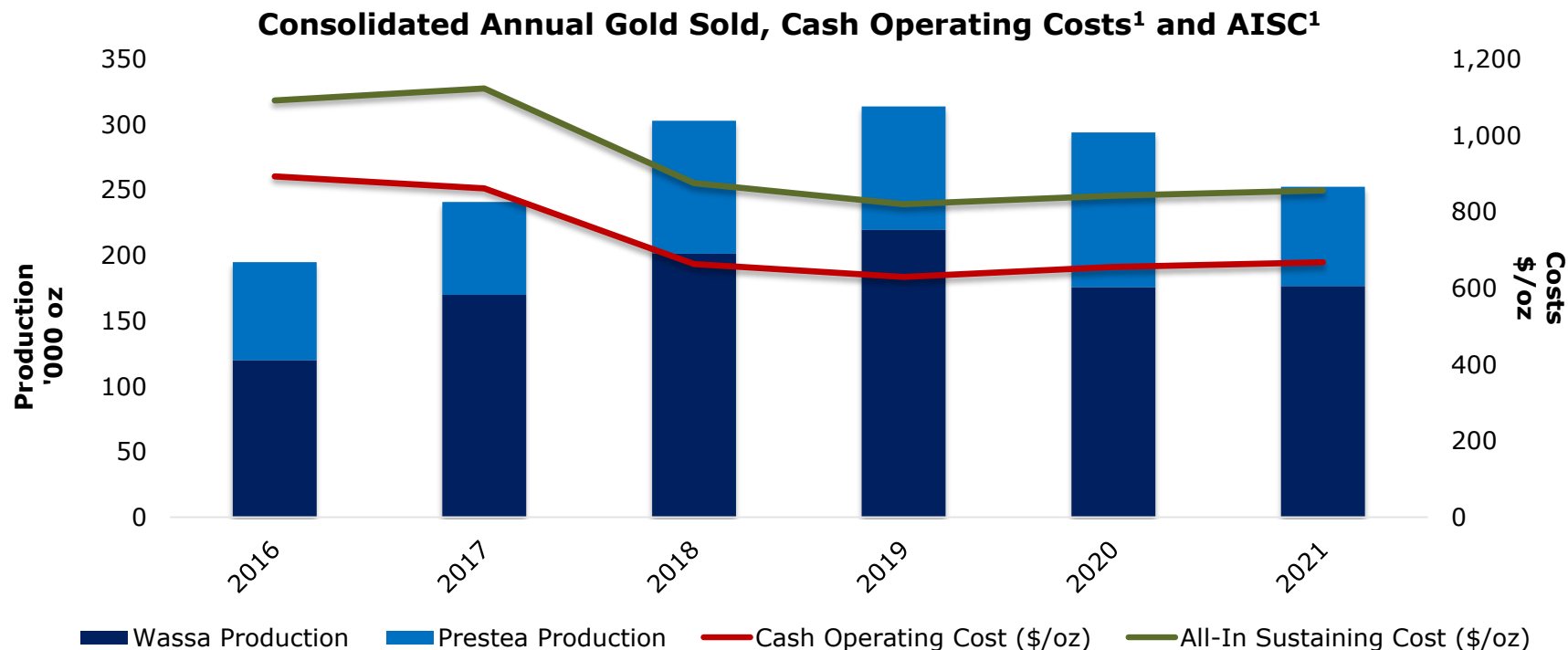


Cash Operating Margin Per Ounce^{1,2}



- Cash operating cost per ounce¹ has decreased by 21% since GSR ceased refractory production
- Average cash operating margin per ounce¹ has increased by 130%

Expanding Production and Reducing Costs



- 2016 guidance: 180,000-205,000oz at a cash operating cost¹ of \$815-925/oz

- Average for the next 5 years from 2017 onwards:

- Production: 281,000oz/annum
- Cash operating costs¹: \$695/oz
- AISC¹: \$903/oz

**60% increase in production
forecast between 2016 and
2019**

**Q3 2016
OPERATIONAL
REVIEW**

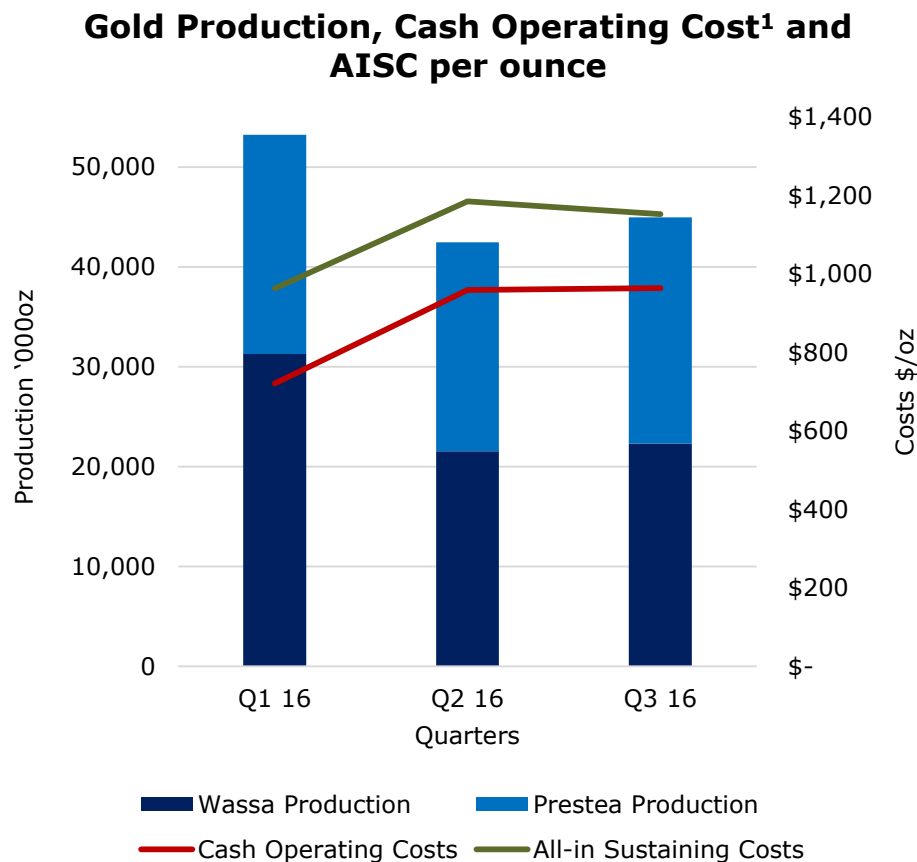
Wassa Gold Mine

Prestea Gold Mine



Q3 2016 Operational Highlights

On track to achieve 2016 full year guidance in terms of production, cash operating cost per ounce¹ and capital expenditures



- Q3 2016 gold production in line with expectations
- Production profile impacted by seasonality and horizon being mined in Wassa Main Pit
- This impact will be reduced when both underground mines are in production
- Cash operating cost¹ and AISC¹ per ounce at both projects also expected to decline further as high grade underground projects come on-stream

Q3 2016: Wassa Operational Results

Wassa		Q3 2016	Q3 2015
Ore Mined	kt	608	728
Waste Mined	kt	2,742	2,658
Ore Processed	kt	699	635
Grade Processed	g/t	1.09	1.51
Recovery	%	93.4	92.9
Gold Production	oz	22,290	28,848
Gold Sales	oz	22,431	28,848
Cash Operating Costs ¹	\$/oz	1,110	770

- Q3 2016 production was in line with expectations but Q2 production was weaker due to higher than expected dilution during mining
- GSR expected to offset weaker Q2 2016 production during Q3 2016 due to expanded processing capacity
- Measures put in place to reduce dilution – higher grade ore processed reported for September 2016
- Production in Q4 2016 is anticipated to be in line with expectations

Wassa 2016 Production Guidance:

89,000-97,000oz from Wassa Main Pit at cash operating costs¹ of \$900-990/oz

Plus 11,000-15,000oz from Wassa Underground

Wassa Underground: Project Update

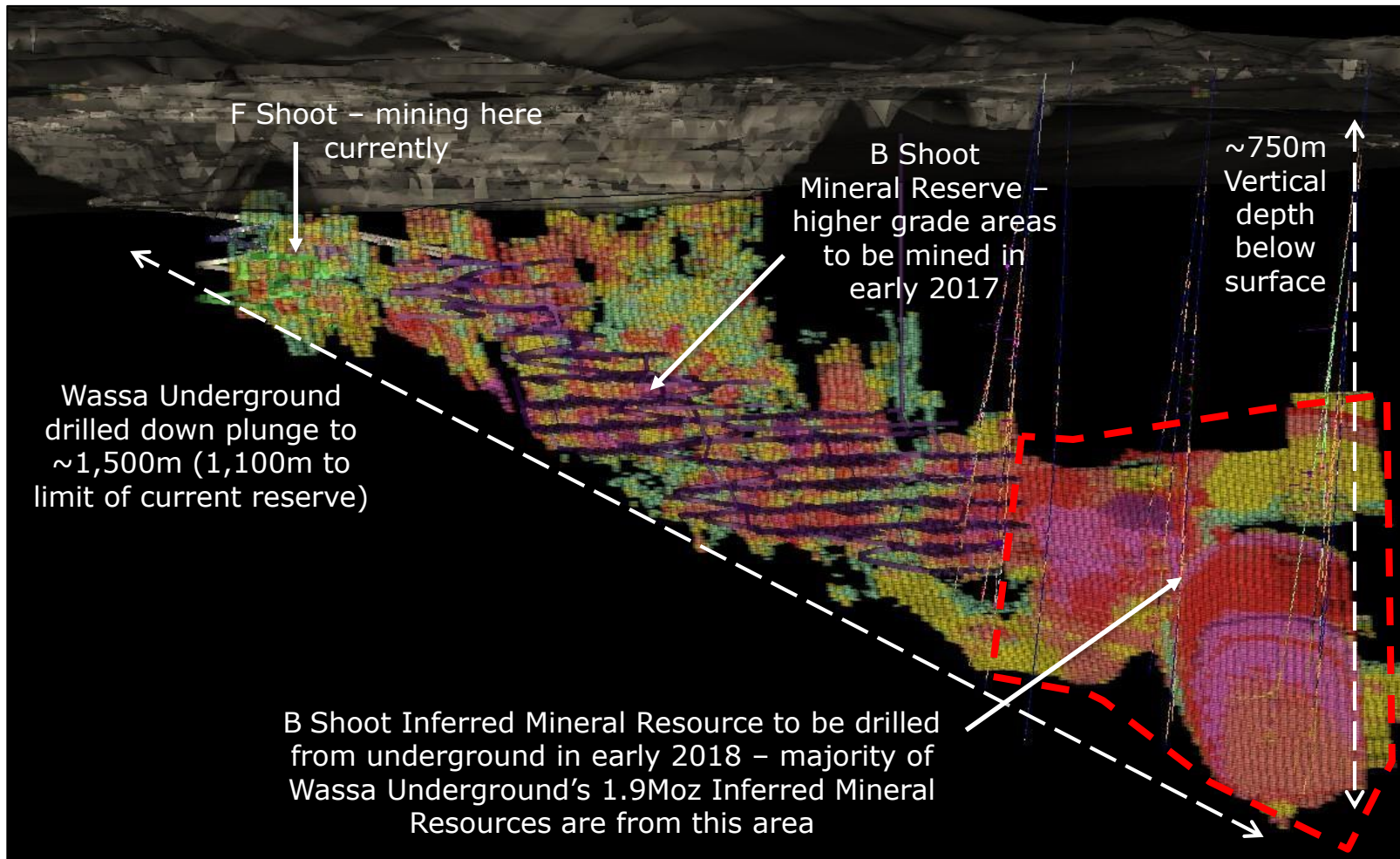
- First stope blasted on July 10, 2016 in F Shoot – area of deposit being used for test stoping
- B Shoot is higher grade area – underground mine built in order to effectively mine at depth
- Infrastructure development well advanced – all surface infrastructure and plant modifications complete, plus twin decline and ventilation systems in place
- Higher than expected internal dilution encountered within stopes in F Shoot, as such 10,300m drilled during Q3 2016 to delineate stopes more effectively
- Minimal dilution now expected when F Shoot stopes are mined during Q4 2016
- First stopes of B Shoot expected to be mined during Q1 2017



The exhaust fan installation at Wassa Underground

Short term change to Wassa Underground mine plan has created long term upside from F Shoot

Wassa Underground Development



Strong potential to increase Mineral Resources & Reserves through exploration

Q3 2016: Prestea Operational Results

Prestea		Q3 2016	Q3 2015
Ore Mined	kt	490	240
Waste Mined	kt	1,212	606
Ore Processed	kt	387	725
Grade Processed	g/t	2.20	1.66 ¹ 1.35 ²
Recovery	%	82.7	60.4 ¹ 68.0 ²
Gold Production	oz	22,684	23,050
Gold Sales	oz	22,930	23,050
Cash Operating Cost ³	\$/oz	835	1,261

- Record quarterly production achieved since non-refractory production from Prestea Open Pits began in Q3 2015
- Year to date production of 65,546oz – 2016 FY guidance increased as a result of strong performance
- Accordingly, FY2016 cash operating cost³ per ounce guidance decreased
- 34% decrease in cash operating cost per ounce³ compared to Q3 2015 as a result of transition to lower cost, non-refractory ounces

Upgraded Prestea 2016 Production Guidance:

80,000-93,000oz from Prestea Open Pits at cash operating cost³ of \$800-890/oz

Mampon Mining Lease Received

- Post-period end, mining lease received for high grade Mampon gold deposit
- Mampon is an oxide deposit 65km to the north of the CIL processing plant at the Bogoso site
- Mineral Reserves of 45,000oz of gold (304Kt at 4.60g/t)
- High grade ore from Mampon will be blended with ore from Prestea Open Pits to enhance GSR's cash flow in 2017
- Mining expected to commence in H1 2017 – represents upside on GSR's current production profile
- Limited capital expenditures required to bring Mampon into production due to existing good quality road between deposit and processing plant



Opportunity to enhance 2017 cash flow strongly

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 – expected in Q4 2016

Pre-development of the Mineral Resource – expected to begin Q4 2016

First stope blasted - expected in Q2 2017

Achieving commercial production – expected in mid-2017

March 2016 Update to Feasibility Study

Gold production
per annum

90,000oz

Cash operating
cost per ounce¹

\$468

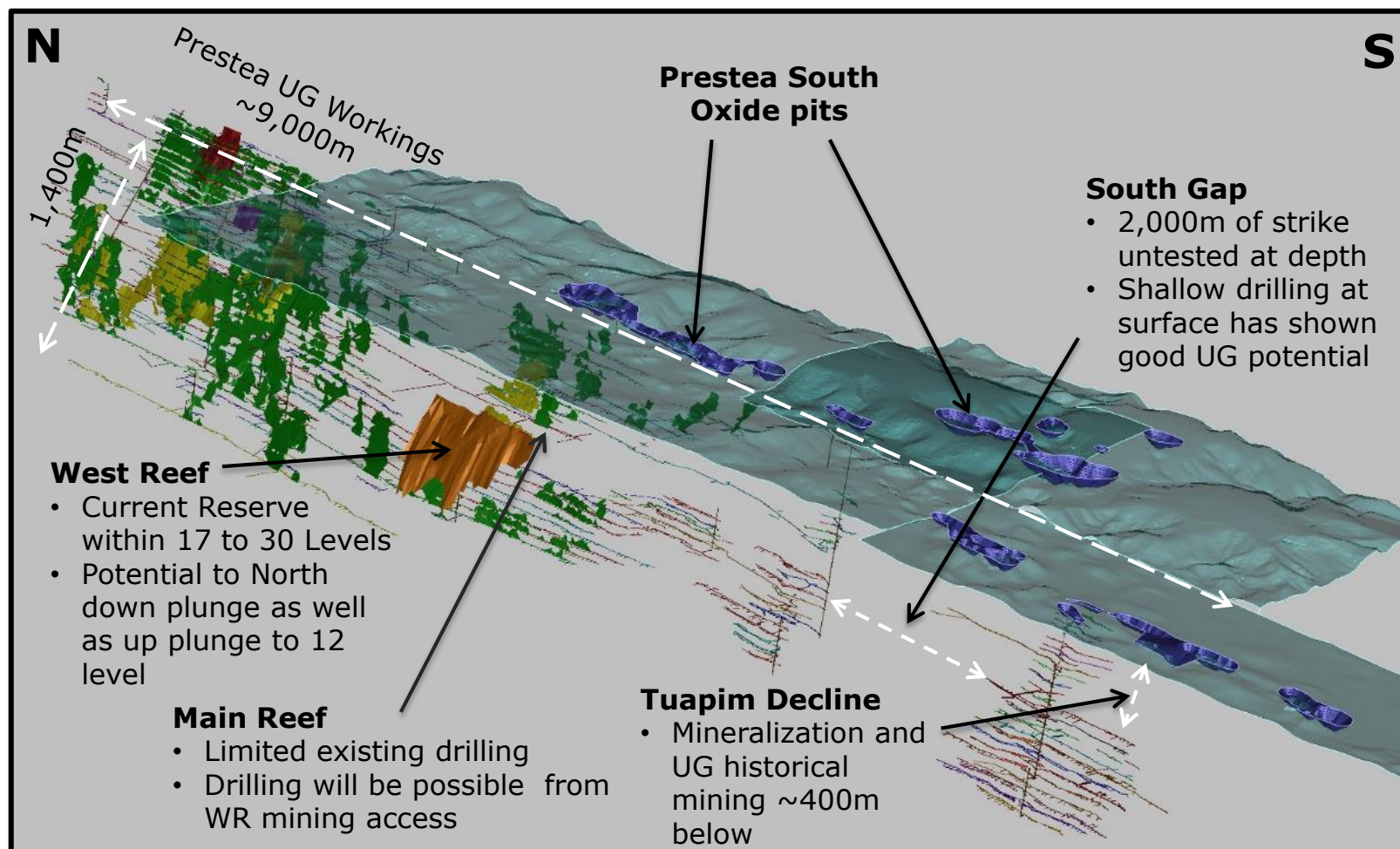
AISC per ounce¹

\$615

Mineral Reserve
head grade

14.0g/t

Prestea Underground Exploration Upside Potential



Large proportion of formerly mined areas along strike untested

Opportunity to Substantially Increase Mineral Reserves

Potential to expand Mineral Reserves and extend lives of both operations significantly through further drilling

- Objective is to convert further Measured and Indicated (M&I) Mineral Resources to Mineral Reserves
 - At Wassa, 42% of M&I Resources are Mineral Reserves
 - At Prestea, 57% of M&I Resources are Mineral Reserves
- Strong, low risk, low cost opportunity to expand Mineral Reserve base materially
- Significant additional potential outside of existing Mineral Resource area – Golden Star has concession areas totaling 1,156km²
- Update on exploration strategy will be released in Q1 2017



Q3 2016 FINANCIAL REVIEW



Q3 2016 Financial Highlights

As at 30 September 2016		Q3 2016	Q3 2015
Revenue	\$'000	55,511	56,452
Gold Sales	oz	45,361	51,898
Average Realized Gold Price	\$/oz	1,286	1,088
Net Loss	\$'000	23,110	6,832
Net Loss per share	\$/share	0.07	0.03
Adjusted Net Earnings/(Loss) ¹	\$'000	1,148	(11,205)
Adjusted Net Earnings/(Loss) ¹	\$/share	0.01	(0.04)
Cash Flow from Operations	\$'000	21,500	43,223
Cash Flow from Operations	\$/share	0.06	0.17
Capital Expenditures	\$'000	21,656	17,789
Cash & Cash Equivs.	\$'000	17,494	27,673

- Revenue in Q3 2016 largely in line with Q3 2015 due to higher average realized gold price despite weaker Wassa production
- Mine operating margin of \$5.8m, compared to a mine operating loss of \$4.3m in Q3 2015
- Adjusted net earnings of \$1.1m in Q3 2016 compared to an adjusted net loss of \$11.2m in Q3 2015
- \$17.5M cash at the end of Q3 2016, exclusive of \$20m received from RGLD on October 3, 2016
- Focused on generating meaningful cash flow

A Transformative Transaction

- **\$65m private offering of 7.0% convertible senior notes due 2021**
- Entered into exchange and purchase agreements with two holders of 5.0% convertible senior unsecured debentures due June 1, 2017
 - Exchanged \$42m principal amount of outstanding convertible debentures for \$42m principal amount of newly issued notes
- **\$30m underwritten public offering** – plus full exercise of 30-day over-allotment option to purchase up to 15% of additional common shares to cover over-allotment – total gross proceeds raised: \$34.5m
- Balance sheet strengthened through restructure and repayment of debt facilities – remaining cash used for other corporate purposes

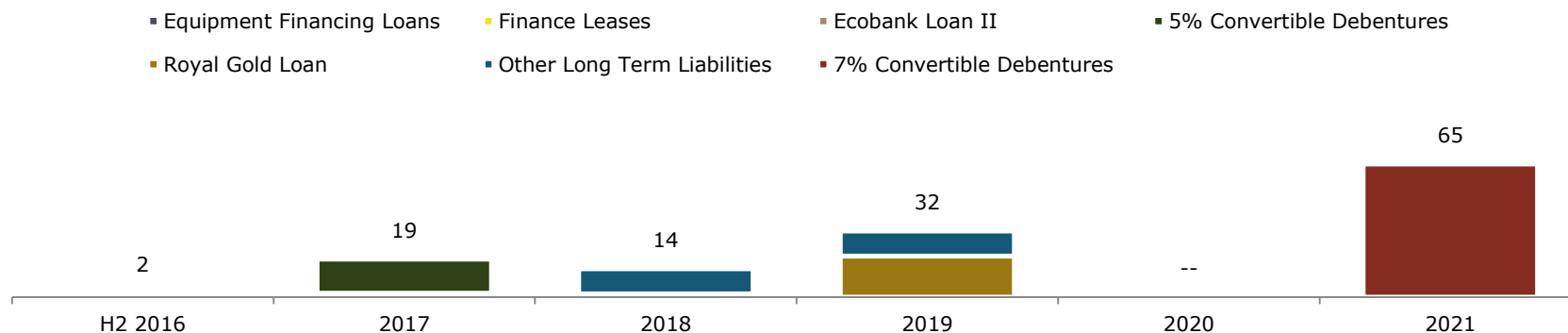
DEBT POSITION (US\$M)

	Post-Transaction	Pre-Transaction
Ecobank Loan	--	22
Royal Gold Term Loan	18	18
5.0% Convertible Debentures	14	59
New Convertible Debt ¹	63	--
Other Debt ²	27	27
Total Debt	122	127

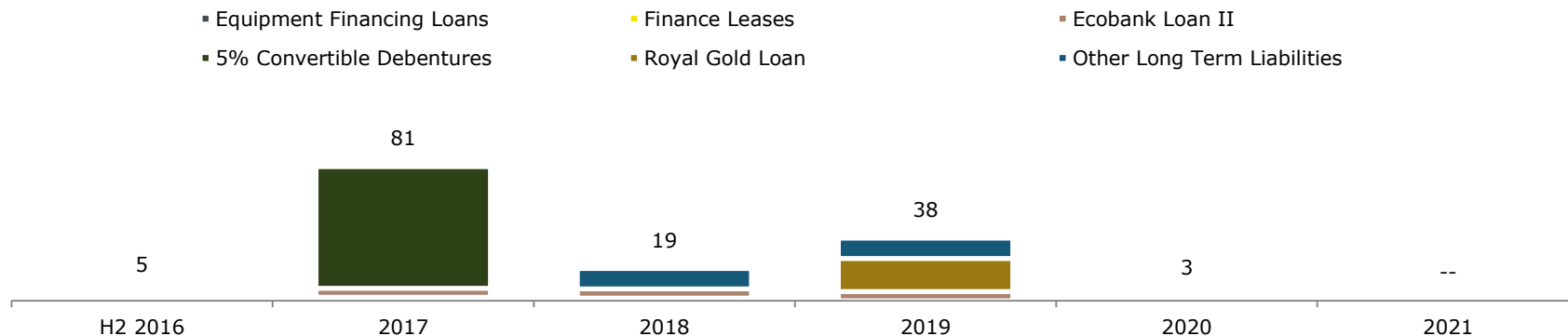
Balance Sheet Strengthened

Debt repayments are now more closely aligned to forecast cash flow

Post-Transaction Debt Maturity Schedule (\$m)¹



Pre-Transaction Debt Maturity Schedule (\$m)



LOOKING AHEAD



UPCOMING MILESTONES IN H2 2016

- ✓ Commence production at Wassa Underground – mid-2016
- ✓ Strengthen balance sheet through refinancing of debt – Q3 2016
- ✓ Receive mining lease for Mampon deposit near Prestea Open Pits – Q4 2016

Mobilize contractor to Prestea Underground – Q4 2016

Commence orebody development of Prestea Underground - Q4 2016

Investment Summary

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

- On track to achieve 2016 full year guidance in terms of production, cash operating cost per ounce¹ and capital expenditures
- Two high grade underground development projects – production expected to expand and costs expected to continue to reduce
- Significant exploration upside potential – increase Mineral Reserves and extend mine lives
- Experienced management team with a track record of discovery and project delivery
- Undervalued compared to peer group on a number of metrics





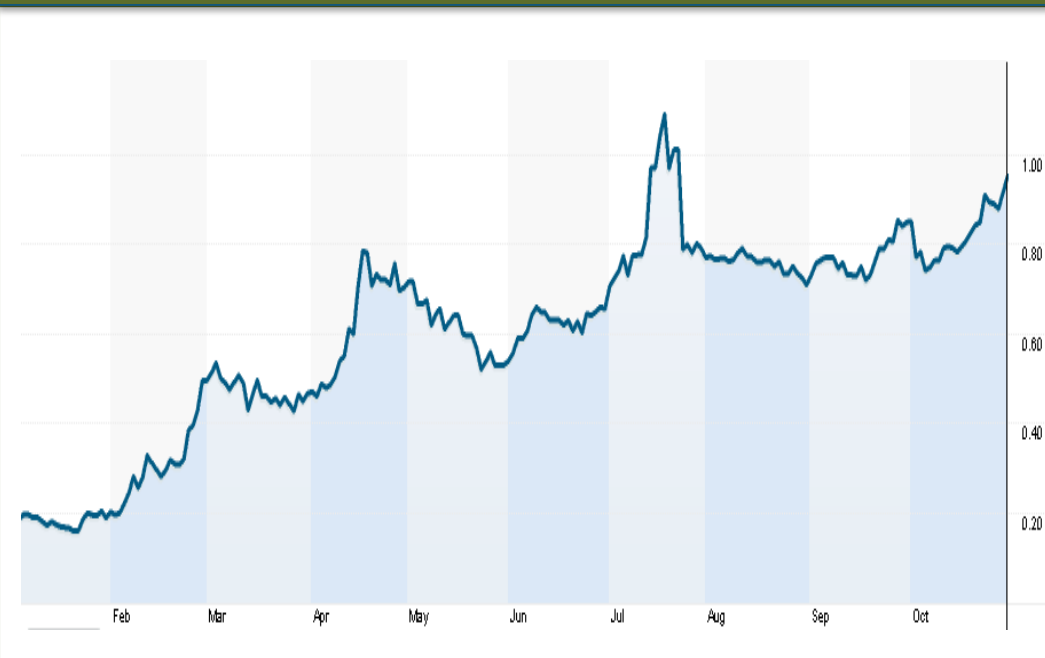
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NYSE MKT: GSS
TSX: GSC

Appendices: Market Information

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



Analyst Coverage

- BMO Capital Markets
- CIBC
- National Bank Financial
- Scotia Bank

Key Shareholders

- Sentry Investments
- Franklin Templeton
- Oppenheimer Funds
- Earth Resources
- Gold 2000
- AGF Management
- RBC Investment Mgmt

Market Information¹

Markets	NYSE MKT / TSX / GSE
Tickers	NYSE: GSS TSX: GSC GSE: GSR
Shares in Issue	328,745,758
Options	16,440,582 ³
Fully Diluted	350,820,571
Share Price ²	\$0.94
Market Cap ²	\$308.2m
Cash (at Sep 30 2016)	\$17.5m ⁴
Debt (at Sep 30 2016)	\$122.0m
Daily Volumes Traded (3 Month Average) ²	2.3m shares
Year to Date Return ²	406%

A Responsible Corporate Citizen

CONTRIBUTING TO SOCIETY

\$1.4 M

in royalties paid in 2015
and over \$11 million in royalties
over the last 5 years¹

\$5.3 M

in sustainable
agribusiness to date

\$3.2 M

in development fund
projects to date

\$46 M

in total salaries paid



GSR supports a range of community projects focused on the key areas of healthcare, education and sustainable agribusiness.

For more information on our commitment to corporate social responsibility, please visit www.gsr.com/responsibility

99% of our workforce and contractors are Ghanaian
59% of our workforce and contractors are from local communities

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
 - \$135m payments received to date, with the remaining \$10m expected in January 2017
 - A total of 26,020 ounces have been delivered as at September 30, 2016
- **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	1,046	1.09	37
Prestea	25	2.69	2
Total	1,071	1.12	39
Probable Reserves			
Wassa	19,319	2.33	1,450
Prestea	3,237	6.29	654
Total	22,556	2.90	2,104
Total Proven & Probable	23,626	2.82	2,143

Mineral Resources ^{1,2,3}	Tonnes ('000)	Grade (Au g/t)	Content (Koz)
Measured & Indicated Mineral Resources			
Wassa	54,647	2.02	3,556
Prestea	6,712	5.30	1,144
Total	61,360	2.38	4,700
Inferred Mineral Resources			
Wassa	16,462	4.15	2,200
Prestea	3,813	7.70	944
Total	20,305	4.82	3,144

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 03, 2015, which is filed on SEDAR and at www.gsr.com
3. All numbers exclude refractory ore.