



**GOLDEN STAR**

PRECIOUS METALS SUMMIT  
09.15

**WASSA MINE  
DEVELOPMENT**

# DISCLAIMER AND OTHER MATTERS

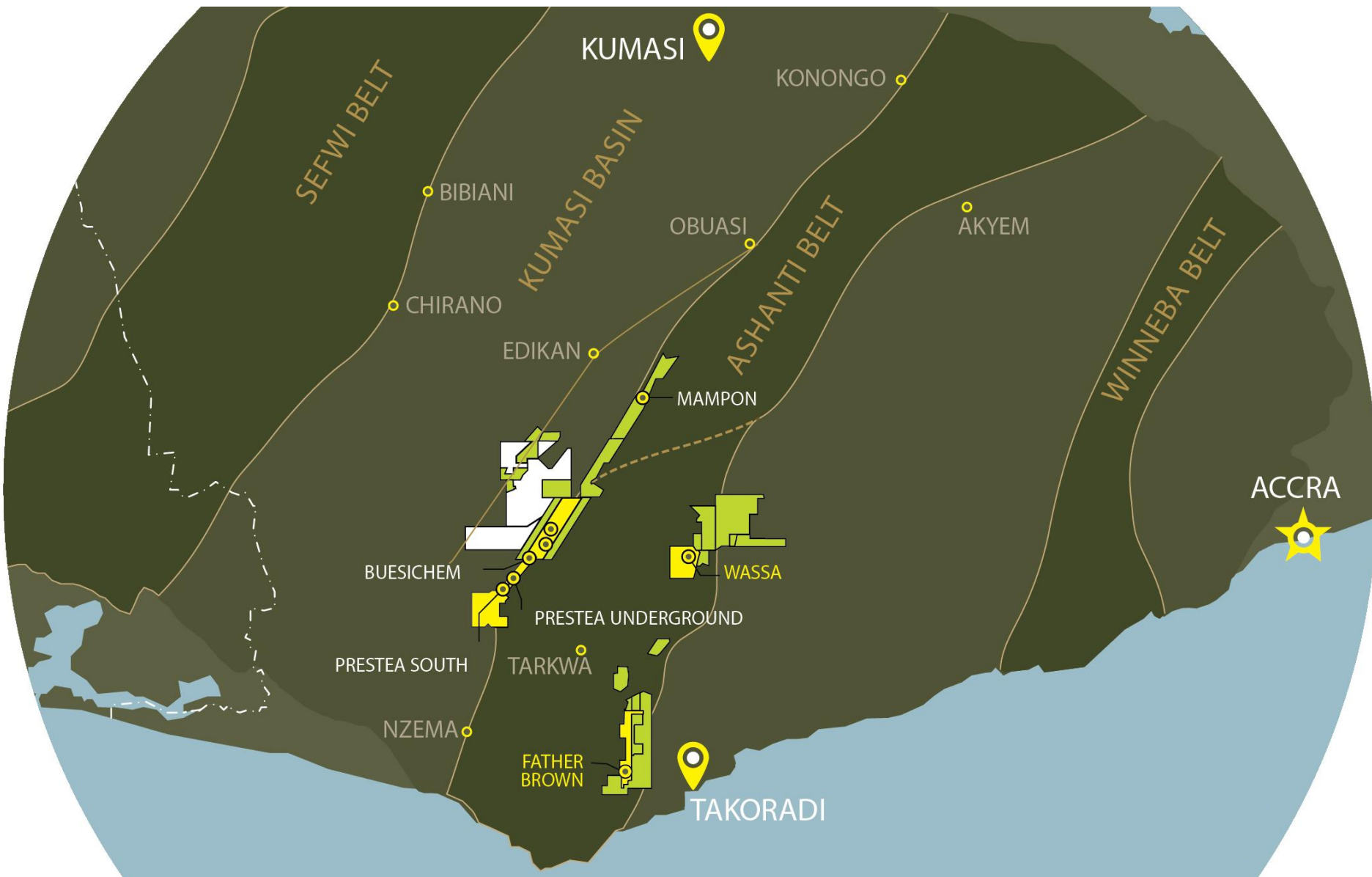
**SAFE HARBOR:** Some statements contained in this presentation are forward-looking statements or forward-looking information (collectively, "forward-looking statements") within the meaning of the Private Securities Litigation Reform Act of 1995 and applicable Canadian securities laws. Investors are 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: cash operating costs per ounce; all-in sustaining costs per ounce; internal rate of return; net present value; pay back period; capital expenditures; timing for first production; average grade forecasts; total production over life of mine; metallurgical recoveries; life of mine; average annual production; timing for completing construction at Wassa underground mine; potential to deliver early production at Wassa underground mine; timing for reaching commercial production and maximum production at Wassa underground mine; exploration drilling outside of known mineralization; potential for and quantity of additional Inferred Mineral Resources resulting from step-out drilling and exploration drilling; production guidelines for 2015; monthly running costs in 2015 and 2016; timing for commencing construction of exploration decline; timing for completion of first stopes; and timing for mineral resource and mineral reserve updates. Factors that could cause actual results to differ materially include timing of and unexpected events at the Wassa processing plant; variations in ore grade, tonnes mined, crushed or milled; variations in relative amounts of refractory, non-refractory and transition ores; 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; technical, permitting, mining or processing issues, including difficulties in establishing the infrastructure for Wassa 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; 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, 2014 filed on SEDAR at [www.sedar.com](http://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" or "CoC per oz" and "all-in sustaining cost per ounce" or "AISC per oz". 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 GAAP. "Cash operating cost per ounce" for a period is equal to the cost of sales excluding depreciation and amortization for the period less royalties and production taxes, minus 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. These measures are not necessarily indicative of operating profit or cash flow from operations as would be determined under International Financial Reporting Standards. 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. 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 loss attributable to Golden Star shareholders" and "adjusted net loss per share attributable to Golden Star shareholders" to supplement the condensed interim consolidated financial statements.

**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 "NI 43-101 Technical Report on a Feasibility Study of the Wassa Open Pit Mine and Underground Project in Ghana" effective December 31, 2014. Additional information is included in Golden Star's Annual Information Form for the year ended December 31, 2014 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.

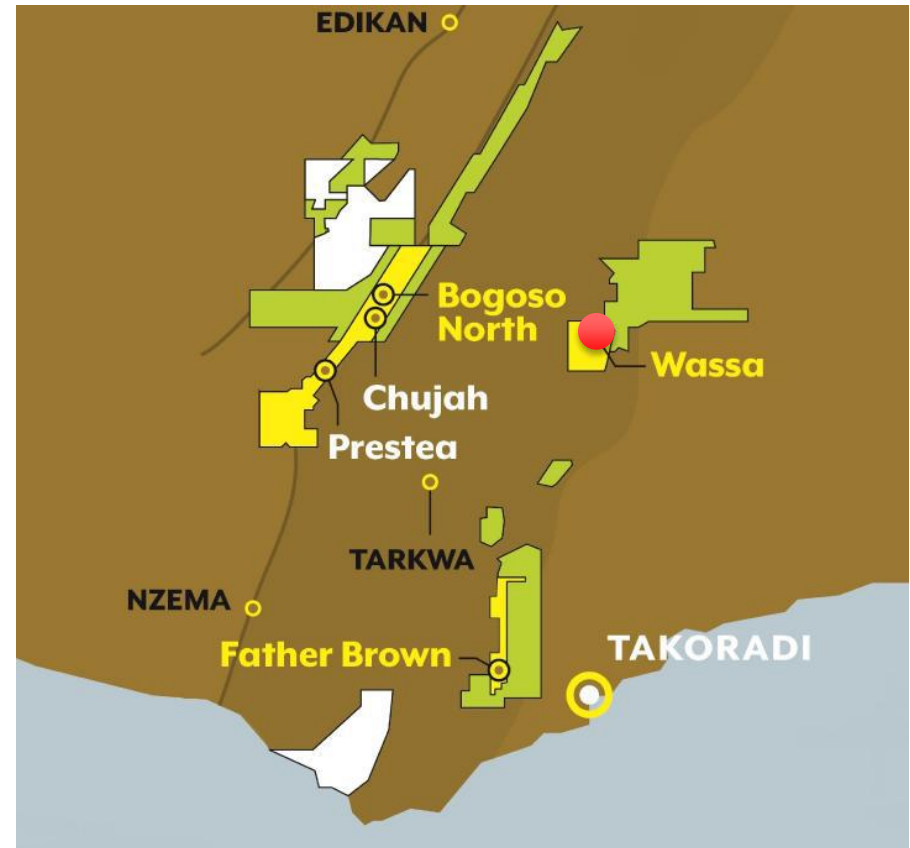
## GOLDEN STAR OPERATING IN GHANA





## WASSA MINE WELL ESTABLISHED

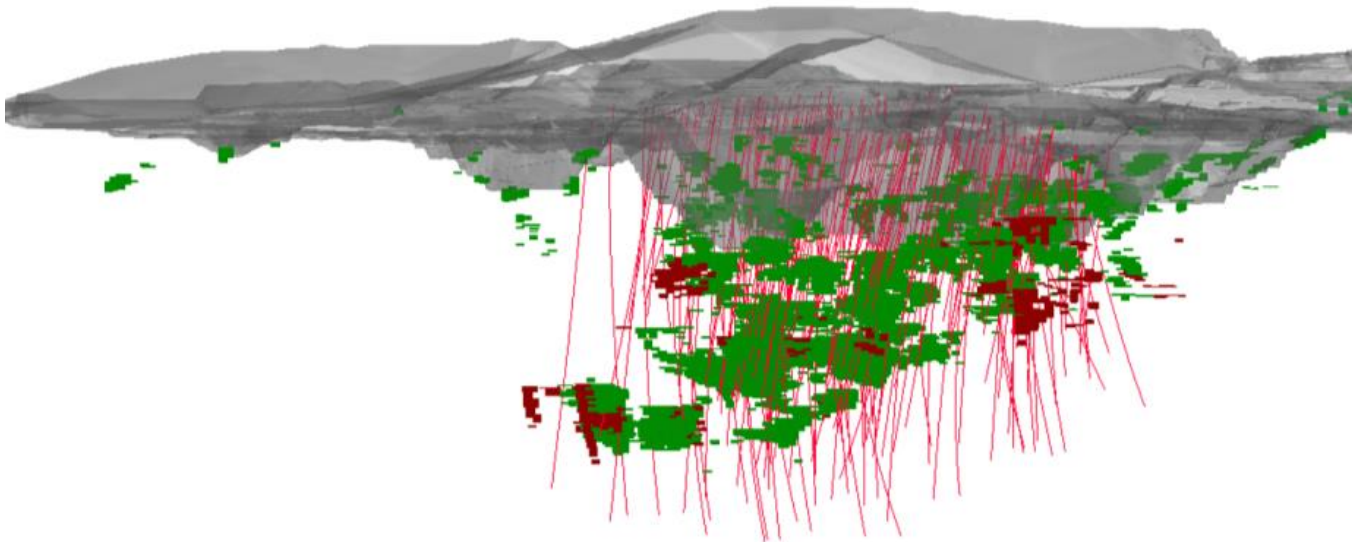
- Acquired in 2002, in operation as open pit mine since 2005
- One of the oldest gold deposits in West Africa
- Free milling ore from a folded quartz vein system
- Large mine license area with 6 km of lease along strike
- 2.7mtpa CIL processing plant 500m from Wassa Main pit
- 2014 production of 113,000 oz at cash operating cost of \$971 per oz



## WASSA OPEN PIT MINING

- Historically mined shallow oxide ore in numerous small pits
- Lower mining and processing costs, but higher overheads with permitting, community relocations and rehabilitation
- Lower grade Wassa pits supplemented by higher grade ore from Father Brown until 2014
- Limited Mineral Resource development or drilling at depth resulted in diminished mine life
  - End of 2011 only two years of production left
- BSDD90 drilled, intersected high grade zone of 15.8 g/t Au over 21.2 metres motivated more drilling at depth

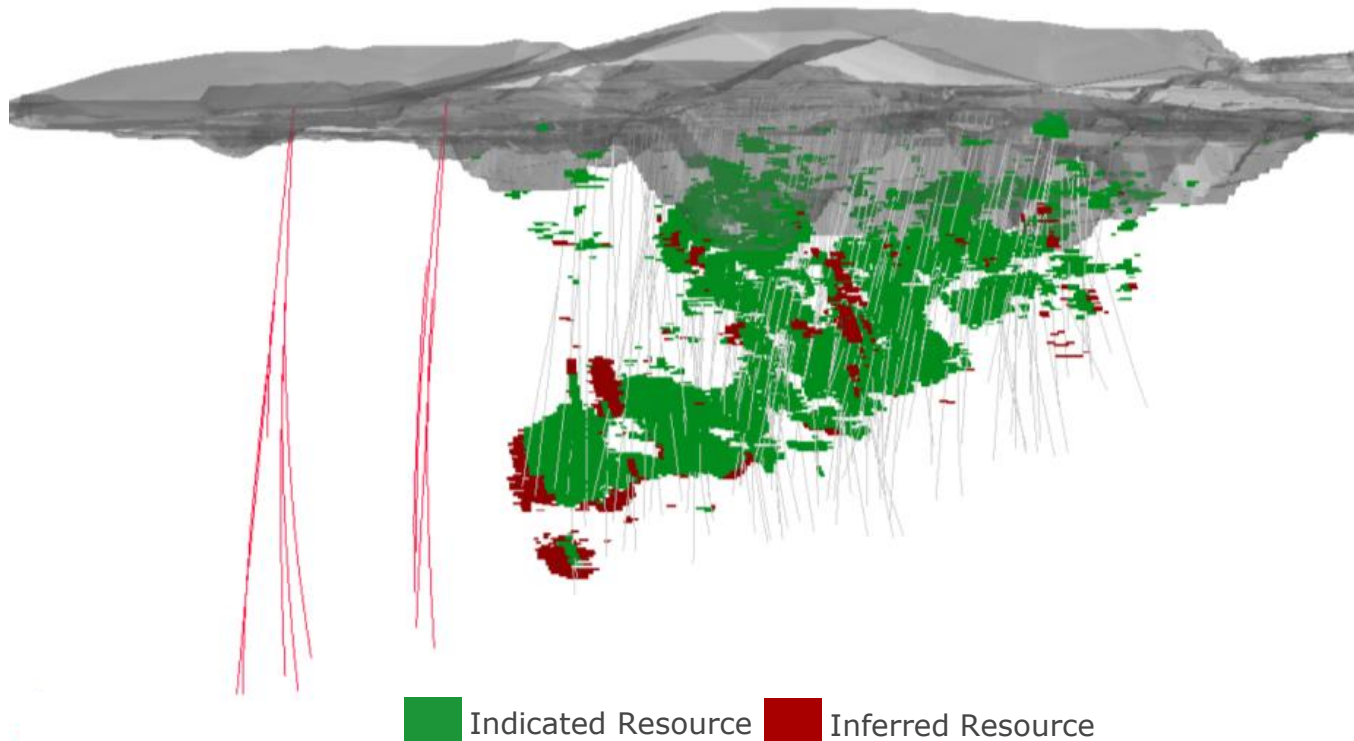
## WASSA RESOURCE DEVELOPMENT 2013



 Indicated Resource  Inferred Resource

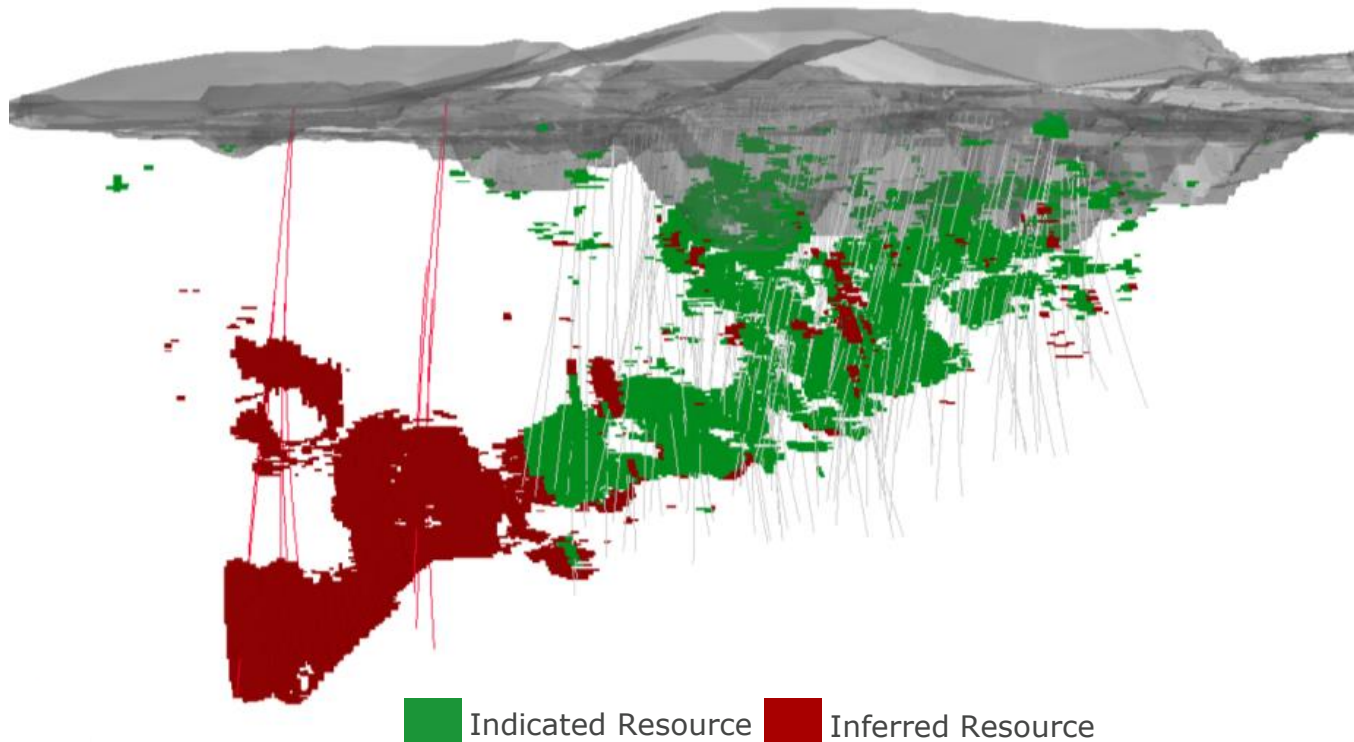
- Subsequent two year drilling campaign increased Mineral Reserves from 560k oz in 2011 to 1.9M oz in 2013
- Subsequent drilling demonstrated high grade orebody plunging southeast and open at depth
- 2013 mine plan was for a super pit with a 12 year LOM
  - Free cash flows weighted to later years due to increasing grade at depth

## WASSA RESOURCE DEVELOPMENT H1 2014



- Opportunity identified to accelerate cash flows with underground mining
- Decision taken to do step out drilling to determine strike length
  - Longer strike length would allow for higher underground tonnage

## WASSA RESOURCE DEVELOPMENT H2 2014



- Step out drilling indicated deposit remains open along strike and concession extends for over 6 km to the south in the direction of strike
- PEA undertaken on development of underground mine run in conjunction with open pit mine



## STUDIES CONSISTENTLY INDICATE STRONG RETURNS

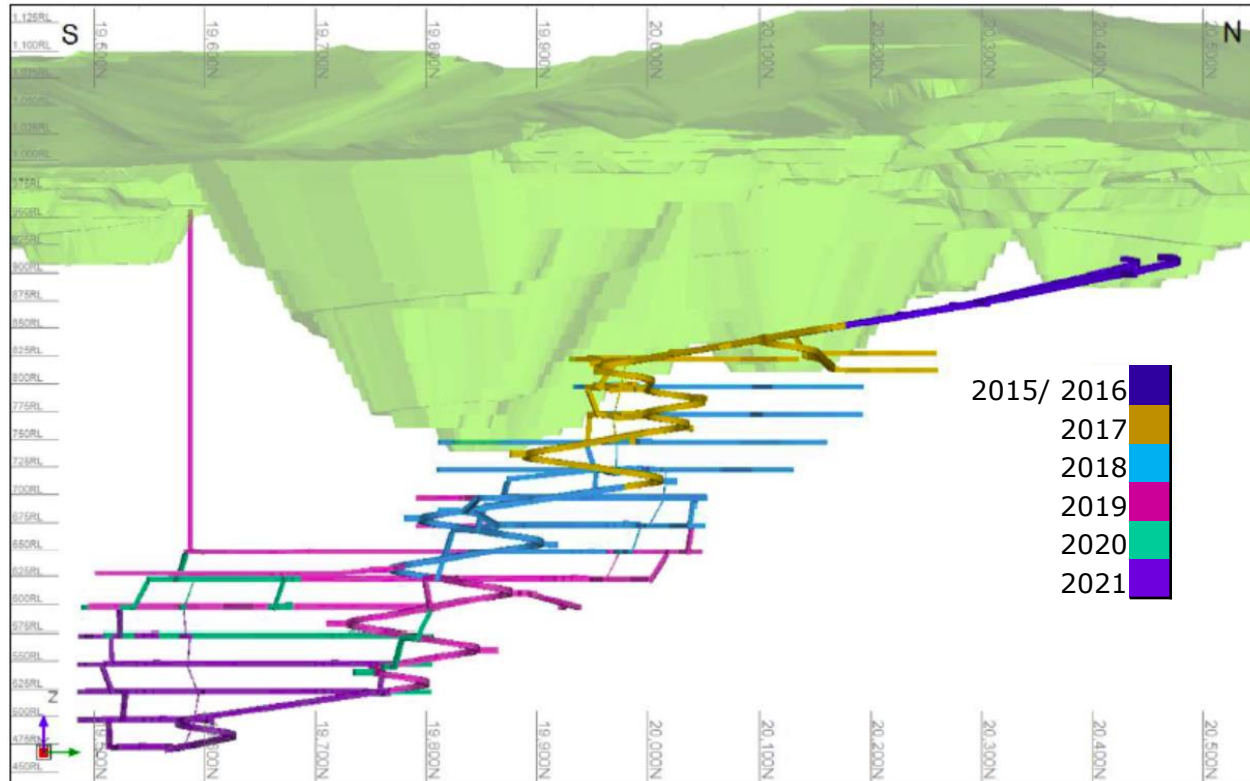
PEA RESULTS – SEPTEMBER 2014	
<b>COC PER OZ</b>	\$684
<b>AISC PER OZ</b>	\$778
<b>IRR</b>	90%
<b>NPV5%</b>	\$271M
<b>PAY BACK PERIOD</b>	N/A
<b>CAPEX</b>	\$41M
<b>FIRST GOLD</b>	Early 2016

FS RESULTS – MARCH 2015	
<b>COC PER OZ</b>	\$780
<b>AISC PER OZ</b>	\$938
<b>IRR</b>	83%
<b>NPV5%</b>	\$176M
<b>PAY BACK PERIOD</b>	3.25 years
<b>CAPEX</b>	\$39M
<b>FIRST GOLD</b>	Q1 2016

— Key differential in NPV is attributable to exclusion of Inferred Resources from Feasibility Study

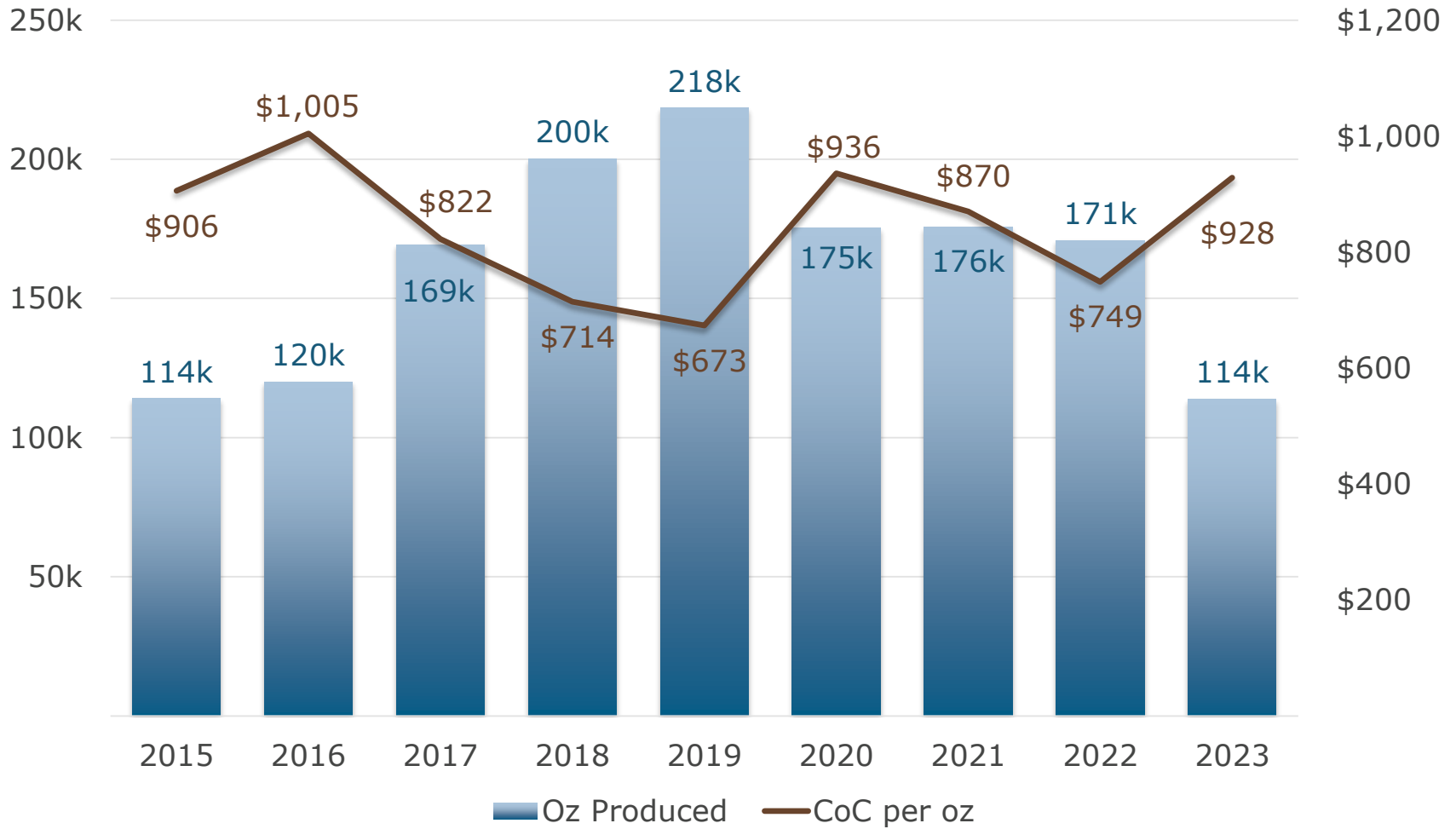
\*Assumption of a gold price of \$1,200 per ounce used in these calculations.

# WASSA UNDERGROUND MINE DESIGN



- 2015 exploration decline constructed
- 2016 'half-way pod' reached, potential to deliver 5.6k oz of early production from Q1 2016
- Commercial production reached late 2016, max production reached 2019
- Open pit mining expected to complete in 2023 and underground in 2024 with 1.47M oz of gold produced

## WASSA MINE PRODUCTION





## WASSA UNDERGROUND PROGRESSING TO SCHEDULE

- Mining permits and finance secured Q2 2015
- Senior management team located on site
- Mining equipment arrived on site
- First blast of decline in July 2015, 106m of decline development to date
- Electrical infrastructure, including 4MVA generator capacity, installed
- Construction of support infrastructure on target
- \$3.4M spent in Q2, further \$10.8M forecast for H2 2015
- First production expected early 2016

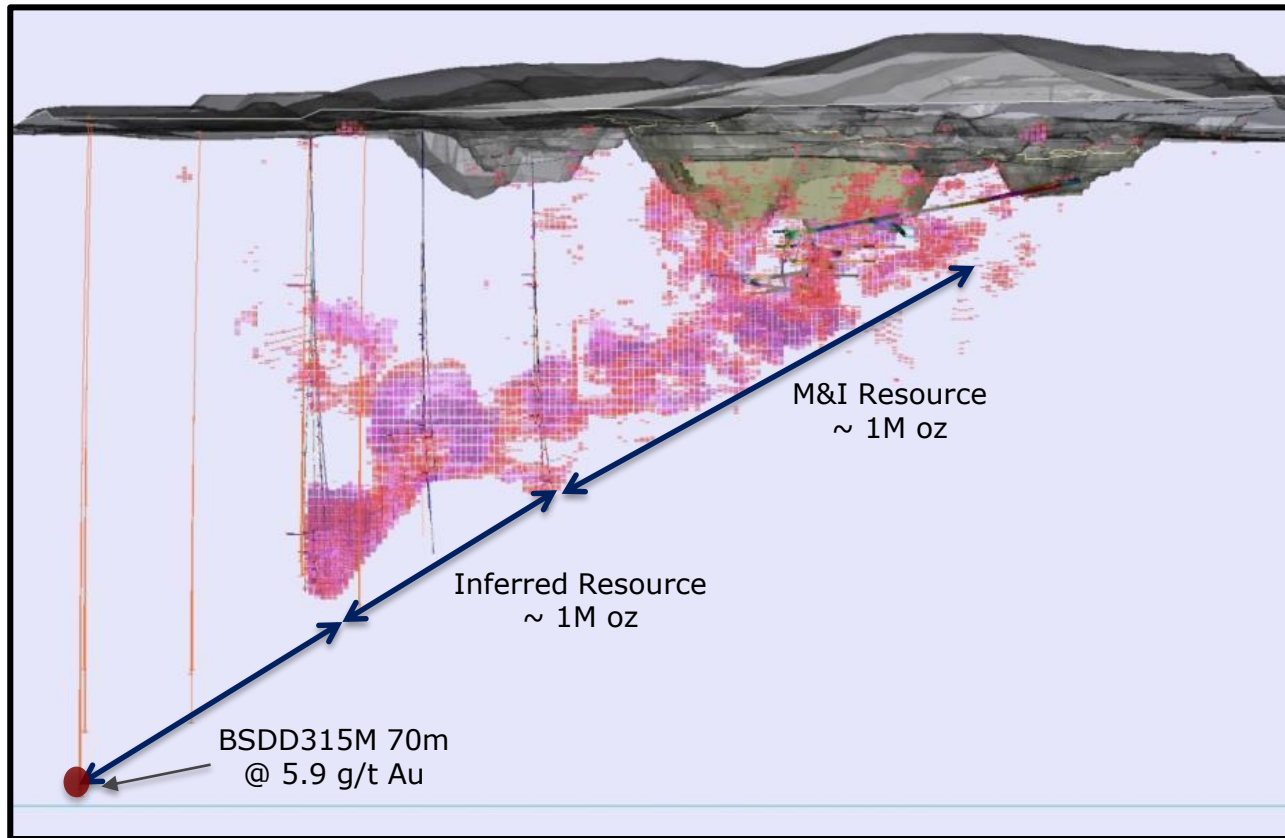




## WASSA OPEN PIT PERFORMING WELL

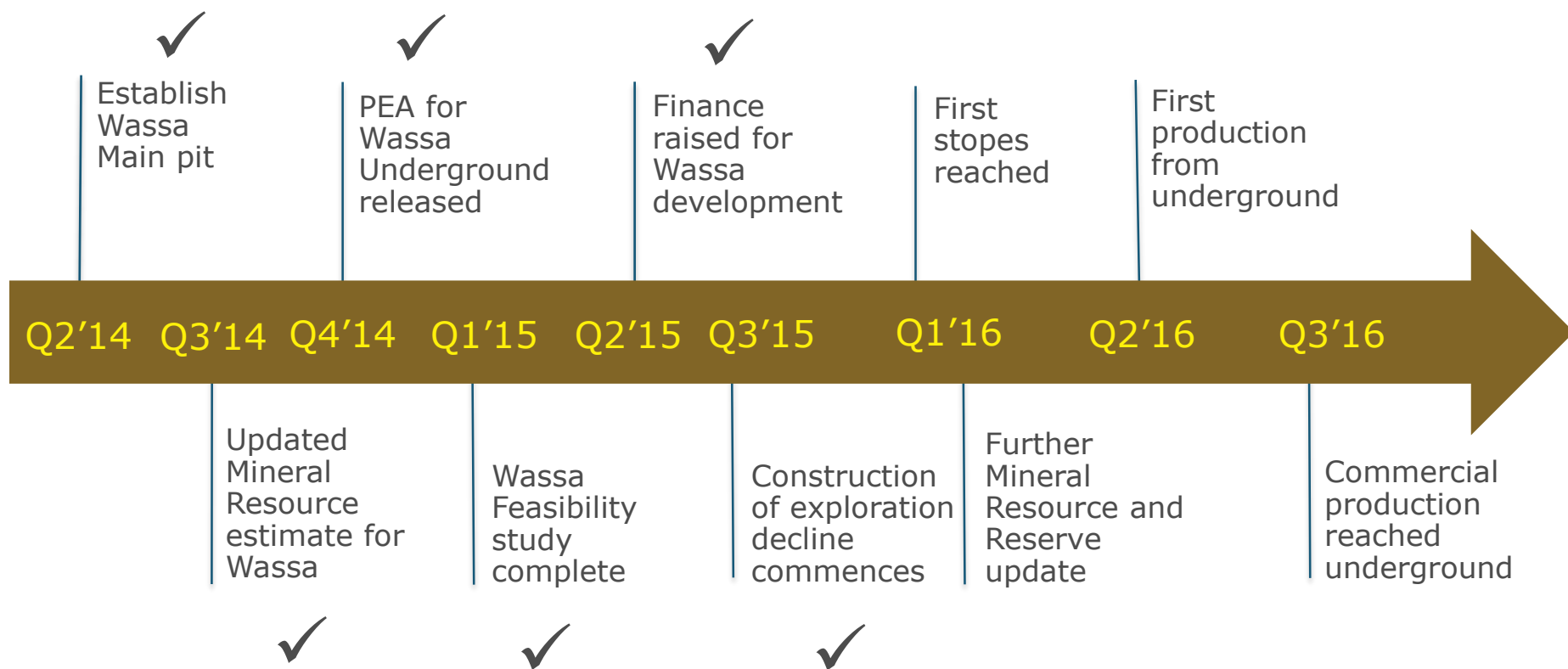
- On track to meet guidance of 110-115,000 oz at cash operating costs of \$860-990 per oz for 2015
- Open pit mine plan not impacted by ongoing construction
- Material from open pit currently being processed has close correlation on hardness and metallurgy with the deeper ore
- Monthly mine operating costs reduced 15% since start of 2015 and further 15% sought by end 2016
- Open pit mine life extends to 2023

## WASSA RESOURCE DEVELOPMENT



- Last step out drilling on 19100N intersected the projected zone which remains open down plunge
- Every 200m step out drill fence has potential to add 500k oz of Inferred Mineral Resource; geophysical and geochemical anomalies indicate trend continues 6 km south of the last step out fence
- Targeting zones close to existing infrastructure - deeper drilling will be conducted south of the known high grade mineralization
- F shoot identified that is expected to develop parallel to B shoot

# WASSA TIMELINE TO DELIVERY



\* Development of projects dependent on positive study results



A large-scale photograph of a rock face, likely a quarry or mine. The rock surface is covered with a grid of small, white, diamond-shaped markers. A tunnel entrance is visible at the bottom right, with several workers in hard hats and safety vests standing near the entrance. The overall scene is industrial and rugged.

**GOLDEN STAR**

THANK YOU



## STUDIES CONSISTENTLY INDICATE STRONG RESULTS

METRIC	PEA VS. FS RESULTS
<b>Total tonnes</b>	Total tonnes increased as open pit expanded and mine life lengthened
<b>Average grade</b>	High grade Inferred Resources excluded from FS, reducing average grade to 2.04 g/t Au
<b>Total ounces</b>	Inferred Resources excluded from FS, reducing total ounces produced by 7% to 1.47M oz
<b>Recoveries</b>	Metallurgical recoveries consistent at 93%
<b>Mine life - years</b>	Longer open pit mine life but shorter underground mine life reduces LOM to 10 years
<b>Average annual production</b>	Average annual production increases 12%
<b>Cash operating cost/oz</b>	Higher portion of expenditure allocated to costs rather than capex increasing cash operating costs to \$780/oz

