

# GOLDEN STAR RESOURCES LTD.

## FORM 6-K (Report of Foreign Issuer)

Filed 09/15/14 for the Period Ending 09/15/14

Telephone	416 583 3800
CIK	0000903571
Symbol	GSS
SIC Code	1040 - Gold And Silver Ores
Industry	Gold & Silver
Sector	Basic Materials
Fiscal Year	12/31

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**UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION**  
Washington, D.C. 20549

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**FORM 6-K**

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**REPORT OF FOREIGN PRIVATE ISSUER  
PURSUANT TO RULE 13a-16 OR 15d-16  
UNDER THE SECURITIES EXCHANGE ACT OF 1934**

For the month of September 2014

Commission File Number 001-12284

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**GOLDEN STAR RESOURCES LTD.**

(Translation of registrant's name into English)

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**150 King Street West  
Suite 1200  
Toronto, Ontario  
M5H 1J9, Canada**  
(Address of principal executive office)

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Indicate by check mark whether the registrant files or will file annual reports under cover of Form 20-F or Form 40-F.

Form 20-F  Form 40-F

Indicate by check mark if the registrant is submitting the Form 6-K in paper as permitted by Regulation S-T Rule 101(b)(1):

Indicate by check mark if the registrant is submitting the Form 6-K in paper as permitted by Regulation S-T Rule 101(b)(7):

Indicate by check mark whether the registrant by furnishing the information contained in this Form is also thereby furnishing the information to the Commission pursuant to Rule 12g3-2(b) under the Securities Exchange Act of 1934.

Yes  No

If "Yes" is marked, indicate below the file number assigned to the registrant in connection with Rule 12g3-2(b):

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## SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

Date: September 15, 2014

**GOLDEN STAR RESOURCES LTD.**

By: /s/ André van Niekerk  
André van Niekerk  
Executive Vice President and Chief Financial Officer

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**EXHIBIT INDEX**

<u>Exhibit No.</u>	<u>Description of Exhibit</u>
99.1	Press Release of Golden Star Resources Ltd. dated September 15, 2014



**News Release**

TSX:GSC NYSE MKT:GSS GSE:GSR www.gsr.com

**PEA of Wassa Mine indicates NPV of \$350 M  
Cash flows and Ecobank facilities fund this project**

TORONTO—September 15, 2014—Golden Star is pleased to announce the results of its Preliminary Economic Assessment (“PEA”) on the development of an underground mining operation at its Wassa mine in Ghana.

It is the Company’s objective to develop an underground mine at Wassa that will operate in conjunction with the existing open pit mine. A Mineral Resource estimate for Wassa, on which this PEA was based, was recently updated and results are detailed below. Mineral Resource estimates are reported inclusive of Mineral Reserves.

Additional debt funding to develop the Wassa Underground mine, as announced last week, supplements cash and an existing facility to fund this project.

All references to “\$” in this news release are to United States dollars.

**HIGHLIGHTS**

- Assuming an open pit and underground mining scenario, total Measured and Indicated Mineral Resources at Wassa are now 35.7 million tonnes at 2.22 g/t Au for 2.5 million ounces
- Substantial increase in Inferred Mineral Resources at Wassa Main to 9 million tonnes at an average grade of 3.88 g/t for 1.1 million ounces
- IRR of 129% estimated for Wassa mine, at \$1,300/oz. gold price
- NPV <sub>5%</sub> of \$350 million estimated for Wassa mine, at \$1,300/oz. gold price
- Pre-production incremental capital expenditure for Wassa underground estimated at \$41 million
- First production from Wassa underground expected early 2016, estimated mine life of ten years thereafter for combined operation
- Cash operating cost of \$684 per oz. for combined Wassa operations estimated
- All-in sustaining costs of \$778 per oz. for combined Wassa operations estimated
- Project funded with \$25 million Ecobank Ghana financing facility recently arranged
- Board decision taken to progress to Feasibility Study and commence construction of exploration decline early 2015

Golden Star will be giving a presentation at the Denver Gold Show on Wednesday 17, September 2014, to discuss these results. Details of the presentation and webcast thereof are provided at the end of this release.

150 King Street West | Sun Life Financial Tower | Suite 1200 | Toronto ON M5H 1J9

**Sam Coetzer, President and CEO of Golden Star commented:**

*“The exceptionally strong results of this PEA on the Wassa mine demonstrate that we have made good progress in the execution of our strategy to transform Golden Star into a lower cost producer. Furthermore, our confidence in these results is evident in our decision to commence the construction of a decline at Wassa in early 2015. I am convinced that we are now well on our way to deliver significantly enhanced value to our shareholders.”*

**INTRODUCTION**

The Wassa gold mine is in the Western Region of Ghana. It has a carbon-in-leach processing plant with a rated capacity of 2.7 million tonnes per annum (“mtpa”). Golden Star has been mining the Wassa open pits since commissioning the plant in 2005. Mining is currently at the Wassa Main pit, which is within 500 meters of the plant.

Drilling below the Wassa Main pit has been ongoing since late 2011. This drilling has been successful in increasing the Wassa Mineral Reserves by 148%.

In early 2014, SRK Consulting (UK) Ltd (“SRK”) was awarded the contract to prepare a preliminary economic assessment (“PEA”) to determine the economic viability of an underground mine beneath the Wassa Main pit. An underground mine is envisioned in the PEA that will operate in conjunction with the existing open pit mine for five years. Thereafter mining from the open pit will cease and mining will be solely from the underground mine for the remaining six years of operation.

The PEA assumes the use of mining contractors in the underground mine and owner operated mining in the open pit. A gold price of \$1,300/oz. was used in the economic modeling as well as the base case for the pit and underground optimizations.

The PEA is preliminary in nature and it includes Inferred Mineral Resources that are considered too speculative to have the economic considerations applied to them that would enable them to be categorized as Mineral Reserves. There is no certainty that the conclusions reached in the PEA will be realized. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.

**MINERAL RESOURCE ESTIMATE**

The PEA is based on an updated mineral resource model which has incorporated all of the recent drilling including infill at depth as well as step out to the south of the Wassa Main Pit. The updated resource statement for the open pit has been constrained by a \$1,400/ oz. optimized Whittle pit shell that was limited to the 820 meter elevation and is approximately 150 meters below the current mining benches. The underground mineral resources include material below this pit at an economic cutoff grade of 2.27 g/t Au.

The updated Measured and Indicated Mineral Resources are slightly less than those reported at 2013 year end due to seven months of mining depletion and a change of approach from an open pit method to combined open pit and underground mining. However the Inferred Mineral Resources have added approximately 1 million ounces of material below the open pit.

The updated PEA Mineral Resource has been estimated by SRK Consulting (Canada) Ltd and reviewed by the Company's technical personnel in accordance with guidelines set out in the Definition Standards for Mineral Resources and Mineral Reserves published by the Canadian Institute of Mining, Metallurgy, and Petroleum and as required by Canada's National Instrument 43-101.

Class	Wassa Main Mineral Resource as of September 15, 2014			Wassa Main Mineral Resource as of December 31, 2013		
	Tonnes (000)	Grade g/t Au	Open pit			
			Ounces (000)	Grade g/t Au	Ounces (000)	
Measured	—	—	—	270	1.44	13
Indicated	25,582	1.41	1,160	44,812	1.78	2,568
<b>M &amp; I</b>	<b>25,582</b>	<b>1.41</b>	<b>1,160</b>	<b>45,082</b>	<b>1.78</b>	<b>2,580</b>
<b>Inferred</b>	<b>237</b>	<b>1.56</b>	<b>12</b>	<b>313</b>	<b>1.28</b>	<b>13</b>
<b>Underground</b>						
Measured	—	—	—	—	—	—
Indicated	10,116	4.27	1,389	2,446	3.67	289
<b>M &amp; I</b>	<b>10,116</b>	<b>4.27</b>	<b>1,389</b>	<b>2,446</b>	<b>3.67</b>	<b>289</b>
<b>Inferred</b>	<b>8,841</b>	<b>3.95</b>	<b>1,122</b>	<b>646</b>	<b>3.10</b>	<b>64</b>
<b>Combined</b>						
<b>M &amp; I</b>	<b>35,699</b>	<b>2.22</b>	<b>2,550</b>	<b>47,529</b>	<b>1.88</b>	<b>2,869</b>
<b>Inferred</b>	<b>9,077</b>	<b>3.88</b>	<b>1,134</b>	<b>959</b>	<b>2.51</b>	<b>77</b>

Notes to the Measured, Indicated and Inferred Mineral Resources:

1. The above Mineral Resources are inclusive of Mineral Reserves
2. The Mineral Resources were estimated in accordance with the definitions and requirements of Canada's National Instrument 43-101.
3. The 2013 year end open pit Mineral Resources were estimated using optimized pit shells at a gold price of \$1,400 per ounce inclusive of the Mineral Reserves as at December 31, 2013.
4. The 2013 Year end open pit Mineral Resources are reported above an economic cutoff grade of 0.63 and 0.68 g/t Au for oxide and fresh material respectively and 2.63 g/t Au for underground material below the pit shell.

5. *The PEA open pit Mineral Resources are reported between the July 2014 month end surveyed mining surface and an optimized pit shell using a gold price of \$1,400/ oz. and limited to a lower elevation of 820 meters.*
6. *The PEA open pit Mineral Resources are reported above an economic cutoff grade of 0.58 and 0.61 g/t Au for oxide and fresh material respectively and 2.27 g/t Au for underground material below the pit shell.*
7. *The Qualified Person reviewing and validating the estimation of the mineral resources is S. Mitchel Wasel, Golden Star Resources Vice President of Exploration.*
8. *Numbers may not add due to rounding.*

The success of the step out drilling has demonstrated the high grade shoots are structurally controlled and related to earlier folding. The results of the two step out drill hole fences, which were included in the PEA resource model update, have resulted in the approximate million ounce increase in the Inferred Mineral Resource. The last fence drilling on section 19100 north intersected significant wide zones of high grade gold mineralization which confirms the mineralization is open to the south of the current model limits. The addition of a million ounces of Inferred Mineral Resource from two drill fences testing the down plunge extensions of the gold 400 meters to the south justifies the need for further step out drilling. The company has planned another 200 meter step out drill fence to the south of the last deep drilling on 19100 north and will commence drilling in the later part of 2014.



## WASSA PEA FINDINGS

### Capital Expenditure

A summary of the capital costs and timing thereof from the PEA are summarized below:

Capital Costs	2015-2016 Underground Pre-production (\$ Million)	2017- 2021 (\$ million)	2022- 2026 (\$ million)	LOM (\$ million)
Underground Mine	\$ 41	\$ 84	\$ 19	\$ 144
Infrastructure	\$ 25	\$ 11	\$ 0	\$ 36
Environmental	\$ 4	\$ 6	\$ 3	\$ 13
<b>Total</b>	<b>\$ 70</b>	<b>\$ 101</b>	<b>\$ 22</b>	<b>\$ 193</b>

Pre-production incremental capital costs for the underground mine are estimated to total \$41 million including \$8 million in contingency capital. The bulk of this expenditure is the \$24 million in underground development which includes the development of an underground decline to about 300 meters vertical depth and four levels of lateral development designed to open up multiple working faces and allow flexibility within the mine plan.

Minor modifications to the Wassa processing plant are estimated to cost \$2 million. A substantial portion of the budgeted infrastructure capital will be spent on a new tailings storage facility, which was already planned for the open pit mine.

### Economic Summary and Sensitivity to Gold Price and Discount Rate

Post - Tax		NPV		IRR
		5%	10%	
	\$1,000	\$111	\$ 67	25%
	\$1,100	\$191	\$136	47%
	\$1,200	\$271	\$203	78%
<b>Gold Price</b>	<b>\$1,300</b>	<b>\$350</b>	<b>\$269</b>	<b>129%</b>
	\$1,400	\$433	\$338	234%
	\$1,500	\$515	\$407	615%
	\$1,600	\$597	\$476	n/a

## Operating Metrics

A summary of the production and operating metrics for the combined open pit and underground mines and resulting operating costs from the PEA are summarized below:

PEA baseline metrics	2017-2021	2022-2026
Average pit Run of Mine ("ROM") (tpd)	6,000	—
Average underground ROM (tpd)	1,700	2,700
Daily tonnes processed (tonnes)	7,600	3,000
Average mill feed grade (g/t Au)	2.20	3.97
Average gold recoveries	93%	93%
Average annual gold production (k oz.)	174	120

Cost Summary	2017-2021 (\$/oz.)	2017-2021 (\$/t)	2022-2026 (\$/oz.)	2022-2026 (\$/t)	LOM (\$/oz.)	LOM (\$/t)
Cash operating cost	\$ 798	\$ 51	\$586	\$ 69	\$684	\$ 56
All in sustaining cost	\$ 891	\$ 57	\$684	\$ 80	\$778	\$ 64
Total cost	\$1,022	\$ 64	\$736	\$ 86	\$863	\$ 71

(1) Sustaining Costs include royalties and sustaining capital but do not include corporate G&A

## Mining

Golden Star has been mining the Wassa open pits since 2005. Prior to 2013, mining was in a number of smaller satellite pits which were combined into a single large Wassa Main pit in late 2013. This allowed for operational efficiencies and cost savings.

A decision has been taken by the Board to commence a Feasibility Study ("FS") and the construction of a development decline from the bottom of the Wassa Main pit in early 2015. A production decision will be based on obtaining the necessary permits and environmental approvals.

The decline will be positioned to follow the plunge of the underground target about 60 meters in the footwall. Close to the start of the decline a ventilation raisebore will be driven to provide an exhaust airway for the first phase of underground mining. As the decline is driven down, sublevels will be developed at a vertical spacing of 25 meters. These sublevels will allow access to the mineralized target for longhole open stoping. The mineable resource varies in width from 15 to 70 meters. Wider areas will be mined using transverse methods; while narrower will be mined longitudinally. The mining sequence will be bottom-up primary-secondary stoping and stopes will be filled with cemented waste backfill. The mine will be operated by a contractor using a full suite of mechanized equipment.

First production is expected from the underground mine in early 2016.

Assuming that development and ultimately mining of the Wassa underground proceeds, the underground material will receive priority in the processing plant due to the higher grade compared to the open pit material. As the underground ramps up in production over the first three years, the pit mining will slow down to maintain a steady feed to the processing plant.

The cutoff grades used for the open pit mineable resource estimate are 0.70 g/t and 0.73 g/t for oxide and fresh respectively. The underground mineable resource cutoff is 3.0 g/t.

The underground mine design assumes a total internal and external dilution of 28% and a mining recovery of 95%.

### **Mineral Processing**

The Wassa processing plant was constructed in 2005 and is currently operating at its rated capacity of 2.7 mtpa. The plant is 500 meters from the current open pit mining operations. Processing currently includes a three stage crushing, grinding, gravity recovery, carbon in leach circuits and a thickener. A final recovery circuit using electrowinning is also in place along with associated secure gold room facilities. Average recoveries since mining has been in fresh rock have been 93% and future recoveries from combined open pit and underground operations are estimated to be at this level.

### **NEAR TERM DEVELOPMENT PLANS AND ONGOING EXPLORATION**

Although no development decision has been reached for the Wassa Underground Mine, Golden Star's Board believes that the economic case presented in the PEA coupled with the straightforward brownfield nature of the project merit the advancement of the project to a FS.

Golden Star will shortly commence this FS which has been awarded to SRK and will build on and optimize the results from the PEA. The study is expected to be completed in early 2015. Future work will include further infill drilling, detailed geotechnical drilling, further metallurgical test work and hydrology studies as well as tendering of operating and capital costs. A decision has been taken to commence the construction of an exploration decline from the bottom of the Wassa Main pit in early 2015.

Management believes that with additional drilling from underground there is an opportunity to firstly optimize the mine plan and secondly to potentially add more ounces to the resource base. However there is no certainty that additional drilling would result in all or any such ounces being included in a mine plan.

Golden Star has not yet completed a FS to demonstrate the economic viability of Wassa Underground. Furthermore, no Mineral Reserves have been established on Wassa Underground. Any statements regarding planned production rates, projected cash flows, payback period, IRR, NPV assume that Golden Star is or will be able to complete all of the required steps to bring Wassa Underground into commercial production including the completion of a FS to demonstrate the economic viability of the Wassa Underground, the completion of the environmental assessment process and the successful granting of relevant permits. There is no certainty that Golden Star will be able to complete any or all of these steps.

## **NI 43-101 TECHNICAL REPORT**

The complete updated NI 43-101 Technical Report which will include the PEA will be filed on SEDAR ([www.sedar.com](http://www.sedar.com)) within 45 days and will also be available on the Company's website ([www.gsr.com](http://www.gsr.com)).

The technical contents of this press release have been reviewed and approved by Dr. Martin Raffield, P. Eng., a Qualified Person pursuant to National Instrument 43-101. Dr. Raffield is Senior Vice President Technical Services for Golden Star.

## **WEBCAST**

Golden Star will be presenting at the Denver Gold Show on Wednesday September 17, 2014 at 8.45 am MOUNTAIN TIME (which is 10.45 am EST). This presentation will be webcast on the Company's website [www.gsr.com](http://www.gsr.com). A replay of this webcast will be available until December 15, 2014.

## **TECHNICAL INFORMATION AND QUALITY CONTROL:**

The technical contents of this press release have been reviewed and approved by S. Mitchel Wasel, BSc Geology, a Qualified Person pursuant to National Instrument 43-101. Mr. Wasel is Vice President Exploration for Golden Star and an active member of the Australasian Institute of Mining and Metallurgy.

## **COMPANY PROFILE**

Golden Star Resources (NYSE MKT: GSS; TSX: GSC; GSE: GSR) ("Golden Star" or the "Company") is an established gold mining company that holds a 90% interest in both the Bogoso and Wassa gold mines in Ghana. The Company also has a 90% interest in the Prestea Underground mine in Ghana. Golden Star has Mineral Reserves of 3.9 million ounces and 6.0 million ounces in Measured and Indicated Mineral Resources. In 2013, Golden Star sold 331,000 ounces of gold and in 2014 the Company expects to produce 260,000 – 280,000 ounces. The Company offers investors leveraged exposure to the gold price in a stable African mining jurisdiction with exploration and development upside potential.

For further information regarding Golden Star's Mineral Reserves and Mineral Resources, see Golden Star's Annual Information Form for the year ended December 31, 2013, available on SEDAR at [www.sedar.com](http://www.sedar.com). For further information on the Company, please visit [www.gsr.com](http://www.gsr.com) or contact:

Angela Parr, Vice President Investor Relations  
+1 416-583-3800  
[investor@gsr.com](mailto:investor@gsr.com)

#### **STATEMENTS REGARDING FORWARD-LOOKING INFORMATION**

Some statements contained in this news release are 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: PEA operating metrics, including estimated gold production, tonnes processed, grade and gold recoveries; estimated pre-tax and post-tax internal rate of return and net present value of Wassa Underground (including assumed discount rates); the timing for first production from Wassa Underground; the life of mine at Wassa and Wassa Underground; cash operating costs per ounce; all-in sustaining costs per ounce; the sufficiency of funding to advance the development of Wassa Underground; the use of mining contractors and mechanized equipment at Wassa Underground; mining methods and estimated recovery at Wassa Underground; capital costs, including pre-production capital costs, for Wassa Underground; potential modifications to the Wassa processing plant; required investments in mine infrastructure; production and operating metrics; the mining sequence and backfilling at Wassa Underground; the priority of materials to be processed at the Wassa processing plant; the timing for ramping up production at Wassa Underground and slowing down production at Wassa Main; estimates and expectations for ore types and indicated and inferred mineral resources; the timing for commencing and completing a feasibility study at Wassa Underground and additional matters to be considered in the feasibility study; and future work to be completed at Wassa Underground. 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; 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; 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 2013. The forecasts contained in this press release constitute management's current estimates, as of the date of this press release, 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 press release represent management's estimate as of any date other than the date of this press release.

#### **Cautionary Note to US Investors Concerning Estimates of Measured and Indicated Mineral Resources**

This press release uses the terms "Measured Mineral Resources" and "Indicated Mineral Resources". The Company advises US investors that while these terms are recognized and required by National Instrument 43-101, the US Securities and Exchange Commission ("SEC") does not recognize them. Also, disclosure of contained ounces is permitted under Canadian regulations; however the SEC generally requires Mineral Resource information to be reported as in-place tonnage and grade. US Investors are cautioned not to assume that any part or all of the mineral deposits in these categories will ever be converted into Mineral Reserves.

#### **Cautionary Note to US Investors concerning estimates of Inferred Mineral Resources**

This press release uses the term "Inferred Mineral Resources". The Company advises US investors that while this term is recognized and required by National Instrument 43-101, the SEC does not recognize it. "Inferred Mineral Resources" have a great amount of uncertainty as to their existence, and great uncertainty as to their economic and legal feasibility. It cannot be assumed that all or any part of Inferred Mineral Resources will ever be upgraded to a higher category. In accordance with Canadian rules, estimates of Inferred Mineral Resources cannot form the basis of feasibility or other economic studies. US investors are cautioned not to assume that any part or all of the Inferred Mineral Resource exists, or is economically or legally mineable.

#### **Non-GAAP Financial Measures**

In this press release, we use the terms "cash operating cost per ounce" and "all-in sustaining costs per ounce". 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 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. 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.

Source: Golden Star Resources Ltd.