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Progress on the Leonora Province Plan

Highlights

- **An additional circa 1.4 million ounces added to Mineral Resources in the Leonora Province, an uplift of around 30%**
- **Resource Development and Extensional drilling commenced**
- **Additional Resource inventory supports a Mill Expansion Study**
- **Gwalia Intermediates incorporated in the Life of Mine plan**
- **Third party ore sources secured to fill the mill for FY22**

	Previously Reported Mineral Resources[1,2]		**Updated LPP Mineral Resources**	
Resource Area	Tonnes (Mt)	Ounces (Moz)	**Tonnes (Mt)**	**Ounces (Moz)**
Gwalia Deeps	22.6	4.4	**22.6**	**4.4**
Gwalia Open Pit	-	-	**8.4**	**0.8**
Tower Hill	5.1	0.6	**5.1**	**0.6**
Harbour Lights	-	-	**12.9**	**0.6**
Totals	27.7	5.0	**49.0**	**6.4**
Increase with updated Mineral Resources			**44%**	**28%**

1 Refer to ASX release 24 August '*30 June 2020 Ore Reserves and Mineral Resource Statements*'
2 Current Mineral Resources are stated as at 30 June 2020 and not adjusted for FY21 year to date depletion

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Leonora Province Plan Progress

In the December 2020 Investor briefing, St Barbara Limited (**St Barbara**) outlined its strategy to grow production sustainably, lower the Company's cost profile, and deliver superior returns to shareholders through three stages of uplift for the business. For the Leonora Province, Uplift 1 and 2 were outlined as per Figure 1.

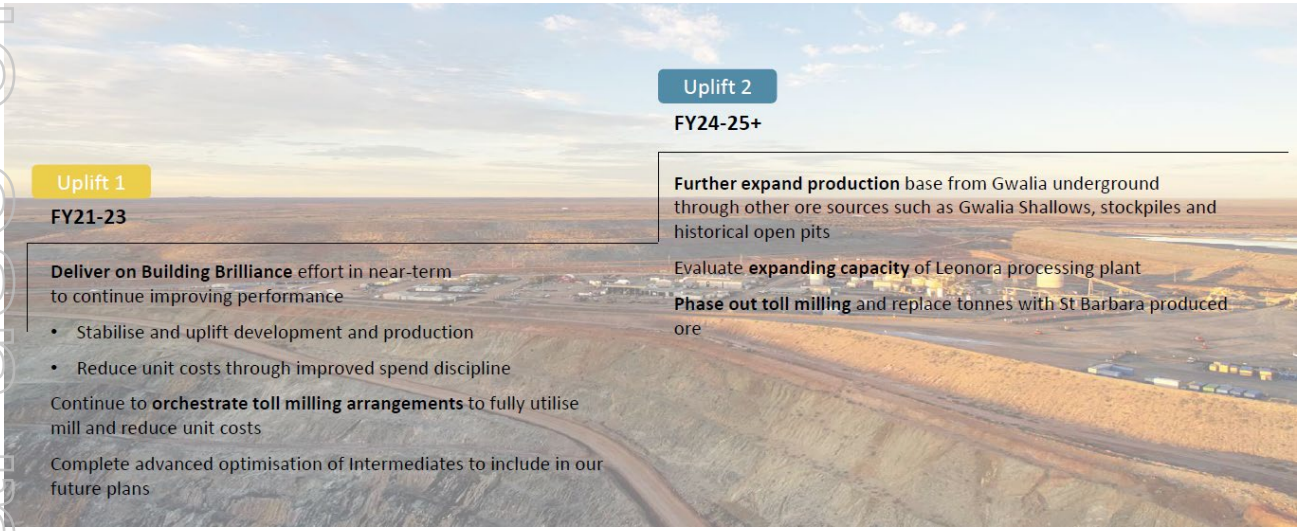

Figure 1: Leonora Strategy over two uplift horizons

Uplift 1 Progress

In early FY21 toll milling was established with the treatment of third-party ore. In March FY21 an ore purchase arrangement with Linden Gold Alliance (**LGA**) was established delivering on the strategy to fully utilise mill capacity and reduce unit costs.

The current agreement with LGA is for the delivery of a minimum of 180 kt of ore in FY22 and 90 kt of ore in FY23, with potential for higher amounts and a longer period. In addition, suitable toll milling arrangements with third parties are also being considered.

The Gwalia Intermediates have been incorporated into the current Life of Mine plan and will be included in the end of year reserves update. Development to access these areas will commence in FY22.

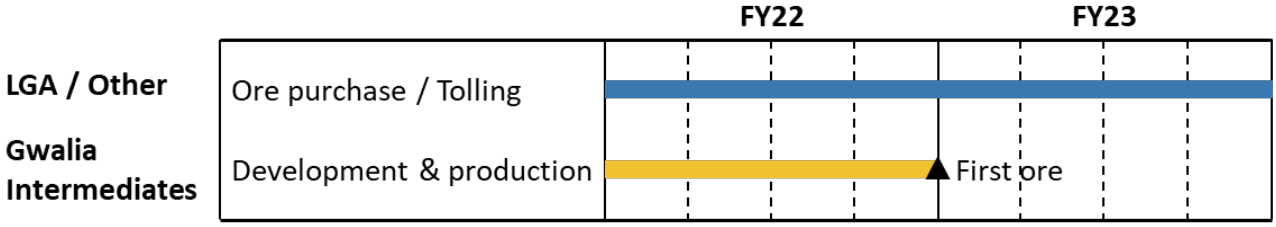

Figure 2: Indicative timeline for Uplift 1

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Uplift 2 Progress

Additional production areas from Gwalia underground have been incorporated into the mine plan. Mineral Resources have been identified in an additional cutback on the Gwalia open pit. The area (described below and shown in Figure 4) between ~400 and ~1,100 metres below surface (mbs) continues to be evaluated for further Mineral Resource growth.

Regional stockpiles continue to be evaluated as potential mill feed for the Leonora Processing Facility. Recovery and processing of two stockpiles from the Jasper region has been completed.

The historic mineral resources on Harbour Lights and Tower Hill have been reviewed. The Harbour Lights geology model has been updated and a new Mineral Resource declared underpinning the commencement of a combined Pre-Feasibility Study (PFS) for the two deposits. The PFS is supported by a recently completed mill scoping study.

A FY22 drilling program is focussed on extensional resource and reserve targets. Initial drilling has commenced at the Jasper region.

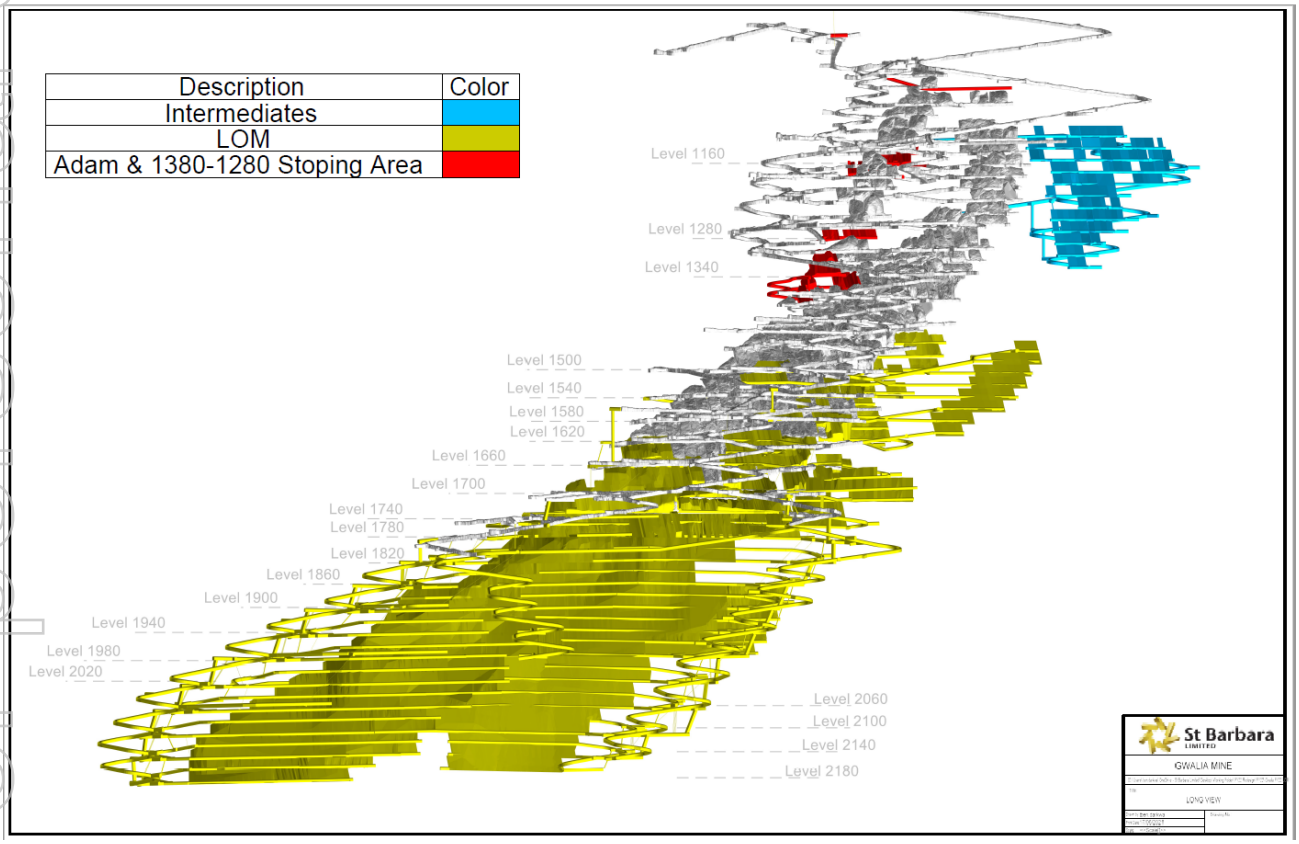

Figure 3: Current Life of mine design showing the Intermediates and Adam Decline stoping areas

Progress on the Leonora Province Plan is presented in more detail below.

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Gwalia mine

St Barbara's flagship Gwalia mine is located 3 kilometres south of the Leonora Township. Gold has been extracted from the deposit over time by both open pit and underground methods.

Currently reported Mineral Resources start at approximately 1,100 mbs and extend to depth and are referred to as Gwalia Deeps. The extent of past production within the mine itself was determined by the prevailing gold price at the time and was also a function of the distance from the original shaft access. In particular as the Gwalia Mineral Resource contains four main lode systems (Main Lode, South West Branch, South Gwalia Series and West Lode) there are areas within the mine where only some lodes have been developed and others have been left untouched. To investigate this, St Barbara commenced a review of the Gwalia Mine from top to bottom in December 2020 as part of the Leonora Province Plan.

As part of this review, remnant mineralisation at the Gwalia Mine between 280 and 500 mbs was identified as a potential source of open pit mill feed upon completion of underground mining. Accordingly, a 2002 resource model originally compiled by the previous owner, has been reviewed and updated in accordance with JORC 2012. This work has resulted in the addition of an open pit Mineral Resource of 8.4 million tonnes at 2.8 grams per tonne for 764,000 ounces of gold. The pit shell constraining this Mineral Resource is shown in orange in Figure 4.

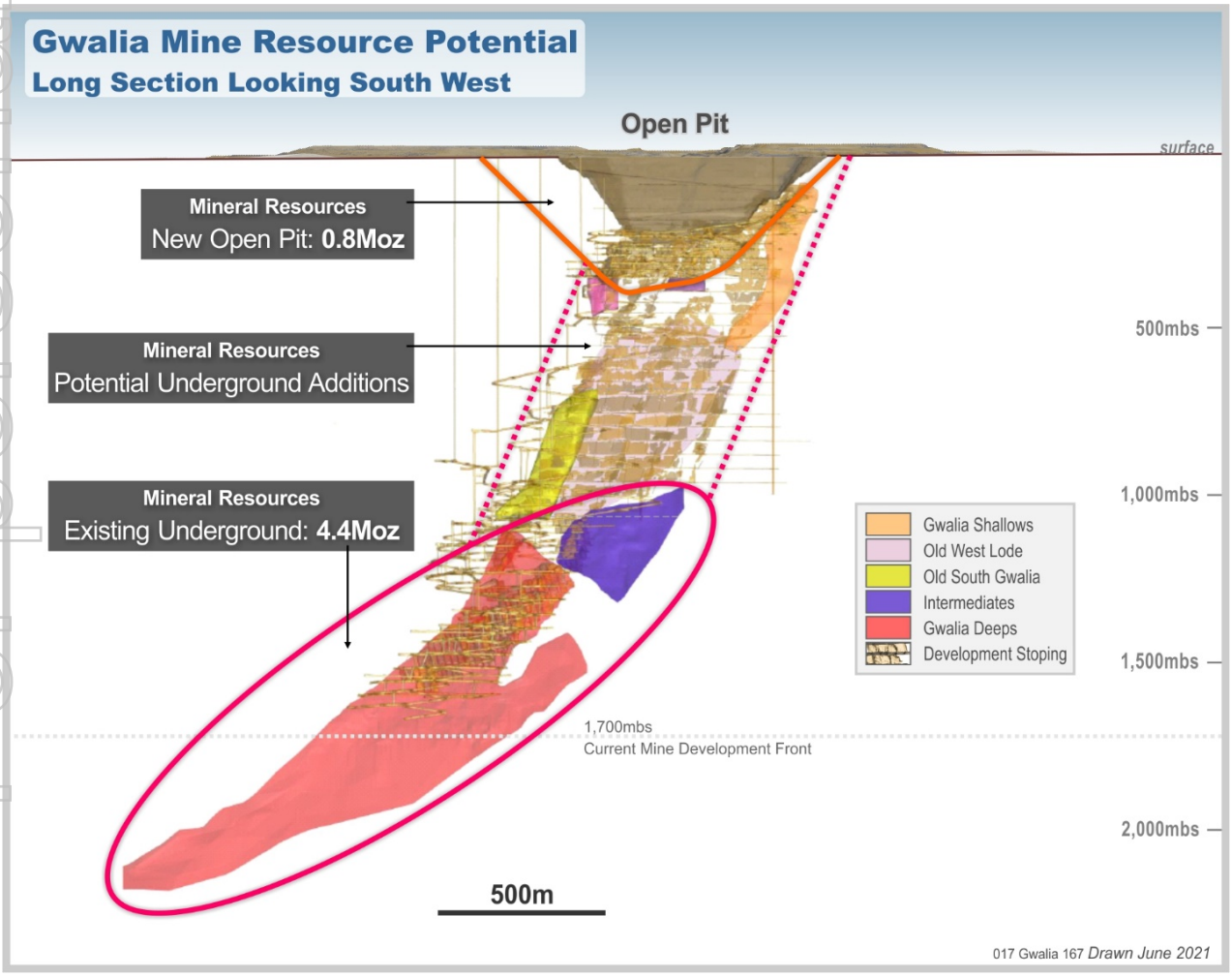

Figure 4: Gwalia Mine – internal mineralised areas within the mine

The area outside the new open pit Mineral Resource shell (approximately 400 mbs) down to the currently reported Gwalia Deeps at approximately 1,100 mbs remains unreported and available for additional Mineral Resources to be defined.

Part of the Intermediates has already been incorporated into the mine plan and will be included in the end of year FY21 Ore Reserves, while work continues on drilling and evaluation of the Gwalia Shallows. The Gwalia Mine review has also identified upper portions of West Lode (Old West Lode) and South Gwalia Series (Old South Gwalia Series) as having potential for recoverable mineralisation in this depth range. Work is ongoing to assess the potential of all four locations, with updated Mineral Resources to follow.

Gwalia Open Pit Mineral Resource

Category	Tonnes ('000)	Gold (g/t Au)	Ounces ('000)
Measured	2,221	2.3	164
Indicated	6,218	2.9	600
Total	**8,439**	**2.8**	**764**

Harbour Lights

The Harbour Lights Deposit is located 1.5 kilometres north-west of Leonora, situated between the Goldfields Highway and Leonora Airport. It is approximately 5 kilometres from the Leonora Processing Facility.

Mineralisation at Harbour Lights was discovered around the same time as Gwalia and Tower Hill (circa 1896 – 1904). The deposit was initially mined by underground methods between 1904 and 1935 via a series of shafts to around 40 mbs. More recently, ore was extracted from an open pit by Harbour Lights Mining between 1985 and 1992. Initially, the oxide ore was treated successfully through a conventional carbon-in-pulp processing plant. However, the sulphide ore was determined to be refractory and so the plant was modified in 1987 to treat the sulphide material.

The sulphide processing circuit comprised a flotation concentrator to effectively separate arsenopyrite from pyrite. The pyrite fraction was re-ground and leached onsite, whilst the arsenopyrite was concentrated, and the concentrate sold to third parties. In late 1991 a biological oxidation (BIOX) plant was commissioned and successfully ran until 1994 when the (then) economic pit was exhausted. Sons of Gwalia Ltd purchased the mine in 1995, with no further mining undertaken since that time. It is estimated that production at Harbour Lights from open pit mining operations produced approximately 420,000 ounces of gold.

The geological model has now been reviewed and refreshed with a view to consideration of open pit mining. The table below shows a summary of the new Mineral Resource for Harbour Lights.

Harbour Lights Mineral Resource

Category	Tonnes ('000)	Gold (g/t Au)	Ounces ('000)
Indicated	12,268	1.4	569
Inferred	616	1.7	33
Total	**12,884**	**1.5**	**602**

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Tower Hill

Tower Hill is located approximately 2 km north of the Leonora Processing Facility. Intermittent mining has occurred in the vicinity of Tower Hill since 1898. Early mining was from a small open cut and underground mine to 66 metres depth.

Larger scale open pit mining began in 1984 by Forrest Gold Pty Ltd, a subsidiary of CRA Limited. The mine was subsequently taken over by Austwhim Resources NL, then Dominion Mining Ltd and finally Plutonic Resources Ltd. Mining operations ceased in 2003 with total historical production of around 220,000 ounces. Sons of Gwalia Ltd acquired the mine from Plutonic in 1996.

Tower Hill has an existing Mineral Resource[3,4] of 5.1 million tonnes at 3.8 grams per tonne for 625,000 ounces of gold and an existing Ore Reserve[3,4] of 2.6 million tonnes at 3.7 grams per tonne for 310,000 ounces of gold, based on an underground mine design. Tower Hill ore is known to be free milling with excellent metallurgical recoveries. The current reserve case considers processing this ore concurrently with Gwalia Deeps material, using the existing 1.4 million tonne per annum Leonora Processing Facility.

Recent pit optimisation work indicates that a larger resource may be possible if treatment is undertaken through a higher throughput capacity processing facility. The existing Mineral Resources and Ore Reserves for Tower Hill will remain in place while work continues on the best extraction and processing options for this mineralisation.

Pre-Feasibility Studies to commence

The new Mineral Resource additions of approximately 1.4 million ounces of gold complement the existing Leonora Operations resource base of 5.0 million ounces of gold, taking the **total Mineral Resources to around 6.4 million ounces of gold, an overall increase of approximately 28%.**

	Previously Reported Mineral Resources[3,4]		**Updated LPP Mineral Resources**	
Resource Area	Tonnes (Mt)	Ounces (Moz)	**Tonnes (Mt)**	**Ounces (Moz)**
Gwalia Deeps	22.6	4.4	**22.6**	**4.4**
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Totals	27.7	5.0	**49.0**	**6.4**
Increase with updated Mineral Resources			**44%**	**28%**

A Mineral Resource aspirational target of another 1.1 million ounces of gold has been set and is expected to come from further additions from within the Gwalia Mine (described above) and also from the Jasper Region (see below). This could see a potential expansion of St Barbara's Mineral Resource base to around 7.5 million ounces of gold contained within around 60 million tonnes of material.

A combined Pre-Feasibility Study (PFS) for Tower Hill and Harbour Lights is scheduled to commence at the start of Q1 September FY22. Given the expanded size of Mineral Resources that have already been defined in the Province, the PFS will include mill expansion options.

[3] Refer to ASX release 24 August '*30 June 2020 Ore Reserves and Mineral Resource Statements*'

[4] Current Mineral Resources and Ore Reserves are stated as at 30 June 2020 and not adjusted for FY21 year to date depletion

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Stage 1 of the PFS will assess the best value combination of open pit and underground mining options for each of the two deposits. It will assess the ability to commence mining early versus requirements to address physical constraints such as a railway line located along the eastern margin of both deposits. Recently completed preliminary pit optimisations show the unconstrained resource pit shells extend through the railway reserve such that large open pit operations would require the line to be relocated at some point during mine development.

Once the preferred mining approach has been selected, Stage 2 of the study will focus on drilling activities at both deposits to collect data for geotechnical, hydrogeological and metallurgical studies and test work. Additional resource definition and extensional drilling are also planned to convert and extend the current resources as the extents of mineralisation are not yet closed off at either deposit.

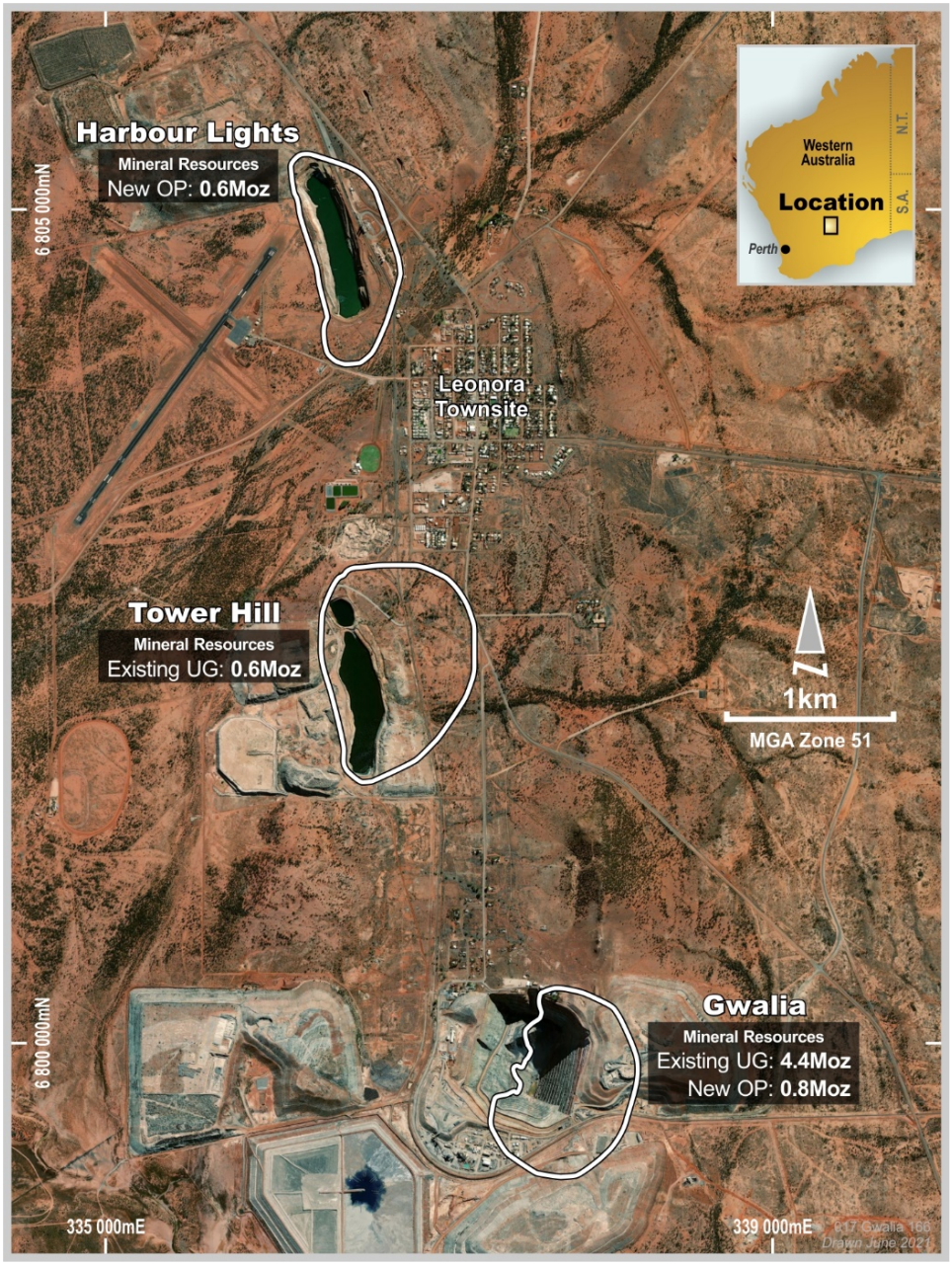

Figure 5: Location plan for Gwalia mine, Harbour Lights and Tower Hill deposits

St Barbara has recently completed a Mill Scoping Study at its Leonora Operations to consider expanding the existing Leonora Processing Facility and / or new processing facilities to support increased production from the broader Leonora Province. The study indicates that the existing Leonora Processing Facility could be upgraded to around 1.7 million tonnes per annum, beyond which construction of a new plant is the preferred option.

The scoping study considered construction of a new plant ranging in size from 2 to 4 million tonnes per annum, with the ultimate size being dependent on optimising ore volume and mine life.

As part of the study, refractory treatment options for Harbour Lights focused on two options for the treatment of the ore, being either the production and sale of a float concentrate or alternatively, use of Glencore's Albion Technology (Albion). The Albion Process™ consists of a combination of ultrafine grinding and oxidative leach at atmospheric pressure to produce gold doré onsite. This treatment option could be retro fitted to the existing Leonora Processing Facility or a new process plant.

The PFS and the Milling Expansion Study are both scheduled for completion in Q4 June FY22.

Jasper Region

The Jasper Region comprises a series of historic open pits and prospects approximately 25 km north of Gwalia. These include the Jasper Flat, Jasper Hill, Falklands Trend, Hawaii, Greenland and Trevor Bore deposits.

The area was extensively explored from 1982 to 1987 by Esso Exploration. City Resources Limited controlled the projects from 1987 to 1991. Sons of Gwalia Ltd acquired the leases in 1991 and mined Jasper Flat by open pit methods between November 1997 and October 1999, ultimately producing 1.8 million tonnes at 2.1 grams per tonne for 121,500 ounces of gold. Jasper Hill was mined as an open pit by Dominion Mining Limited in 1991 and 1992, where an estimated 25,000 ounces of gold at 2.5 grams per tonne were recovered.

During FY21, the geological models for Jasper Flat, Jasper Hill, Trevor Bore, Hawaii and Falklands were reviewed and updated. At the same time, high level resource estimates were completed on Jasper Hill and Trevor Bore ahead of pit optimisations. Results from this work were used to assess the potential of open pit resources and the requirement for follow up drilling.

Drilling commences in June 2021 and has been designed to further test these deposits for continuity of mineralisation. A new resource model for Jasper Flat is warranted and will be undertaken ahead of drilling. Results from this initial round of drilling will be used to inform further phases of drilling later in the year.

The overarching objective of the work program in the Jasper Region is to define sufficient ore reserves to support a satellite mining operation with ore delivered to the Leonora Processing Facility.

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Organic opportunities in the Leonora Province

St Barbara's Leonora Operations comprise almost 300 square kilometres of mineral tenure, acquired when it purchased the assets from the receivers of Sons of Gwalia Ltd in 2005. Almost 85% of the holding is under granted Mining Leases. The tenure covers around 60 strike kilometres of the Keith-Kilkenny shear zone, in one of the most prolific gold producing regions in the Goldfields of Western Australia.

St Barbara has completed its annual evaluation of organic opportunities within its existing exploration portfolio. In the Leonora Province, 39 targets have been included. These range from early stage through to more advanced prospects. Each will be progressed during FY22 in support of St Barbara's Leonora Province Plan.

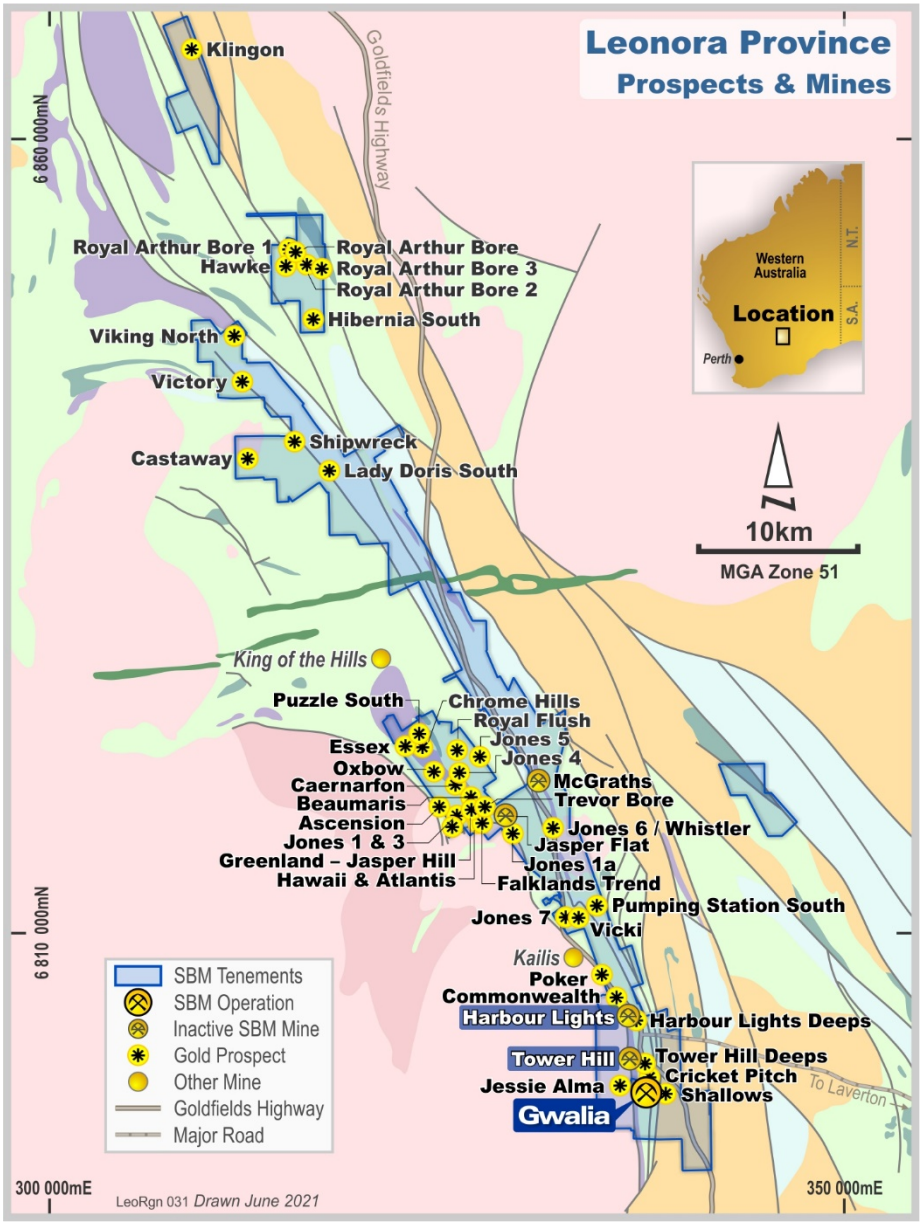

Figure 6: Leonora organic exploration projects for FY2022

Next Steps

Having added 1.4 Moz of gold to the Mineral Resource base through Gwalia Open Pit and Harbour Lights and with aspirations to add a further 1.1 Moz of gold from Gwalia and the Jasper Region the next step is to progress studies to convert this material into Ore Reserves and bring it into the life of mine plan.

To realise this goal, the combined Tower Hill and Harbour Lights PFS will be commencing shortly. In parallel, ongoing drilling campaigns at Jasper Region and within the Gwalia mine will aim to identify mineral resources and convert to ore reserves to fill the pipeline for the Leonora Processing Facility.

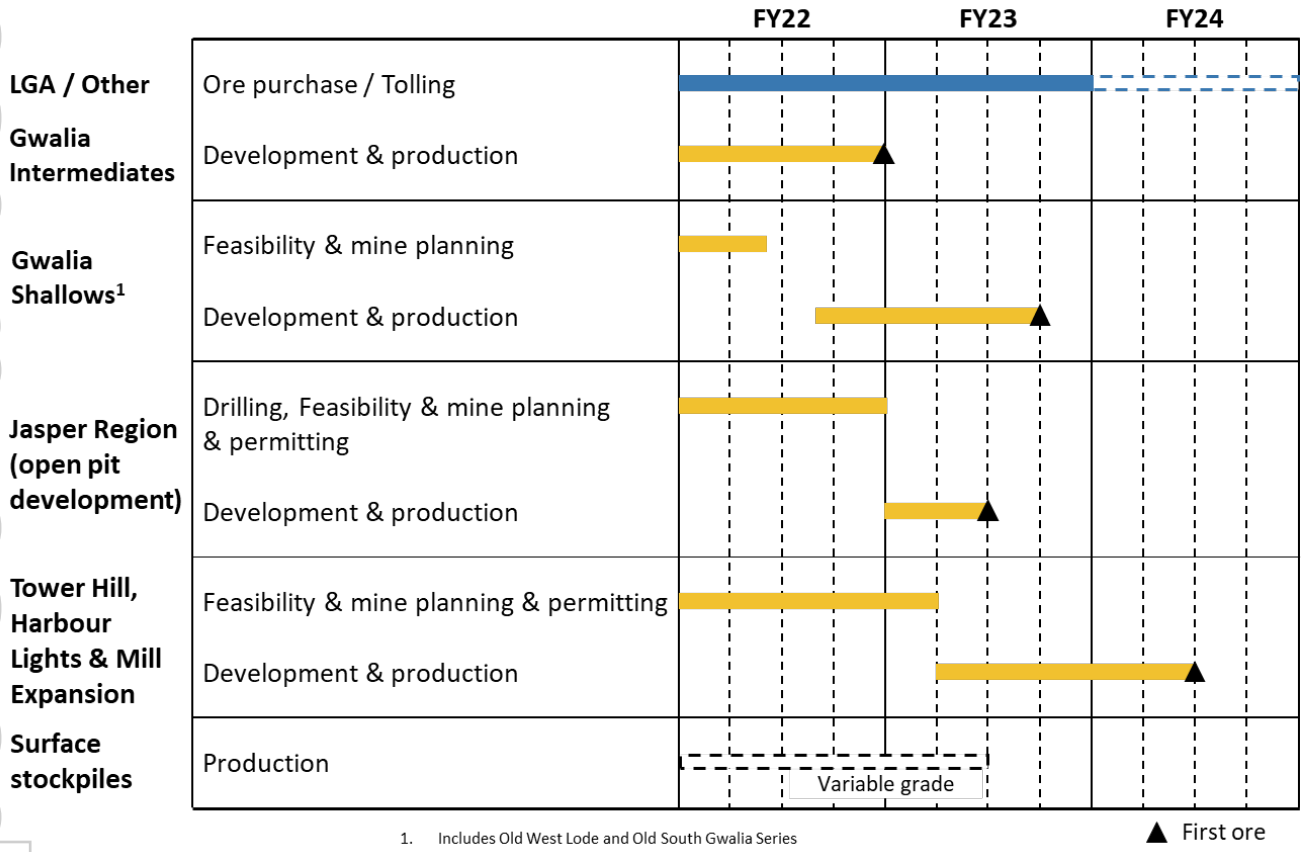

Figure 7: Leonora Province – indicative timeline

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JORC Code Compliance Statements

The information in this report that relates to Mineral Resources at Gwalia Open Pit and Harbour Lights is based on information compiled by Ms. Jane Bateman who is a Fellow of the Australasian Institute of Mining and Metallurgy. Jane Bateman is a full-time employee of St Barbara Ltd and has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which she is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Jane Bateman consents to the inclusion in the statement of the matters based on her information in the form and context in which it appears.

The information in this report that relates to Mineral Resources and Ore Reserves at Tower Hill is extracted from the report entitled '30 June 2020 Ore Reserves and Mineral Resources Statements' created on 24 August 2020 and is available to view on https://stbarbara.com.au. The company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement and, in the case of estimates of Mineral Resources and Ore Reserves, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. The company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement

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JORC Table 1 Checklist of Assessment and Reporting Criteria

Section 1 Sampling Techniques and Data – Gwalia Open Pit

Criteria	Comments
Sampling Techniques	Reverse circulation (RC) drilling for pit grade control holes was used to obtain 1m samples from which 3-4kg was split and assayed. Diamond drilling from surface and underground was used to obtain core samples which were sampled mostly at 1m intervals within lithological boundaries from the distinct hangingwall (Basalt) boundary to 2-3m beyond the footwall.
Drilling Techniques	Pit RC holes used a 4.5 or 5.5 inch downhole hammer in mostly vertical holes with a few angled holes to the west. Surface and underground diamond drill holes used NQ2 (50.6mm) sized core (standard tubes). These holes were surveyed by single shot electronic camera where possible. When drilling into underground voids holes were not cased.
Drill Sample Recovery	Core was metre marked and orientated and checked against drillers blocks to ensure that any core loss was accounted for. Sample recovery outside of historic voids was rarely less than 100%. Minor occurrences of core loss in most instances was attributed to drilling conditions and not ground conditions.
Logging	All holes were logged in their entirety primarily for lithology, alteration and vein type/intensity. Validation of geological data is controlled via the use of library codes and reliability and consistency of data is monitored through regular peer review. All core was oriented and photographed before geotechnical logging and sampling
Sub-Sampling Techniques And Sample Preparation	RC samples were collected at 1m intervals and riffle split on-site to produce a subsample less than 5kg, field duplicates were also taken. Half core and whole core was cut using a core saw into 1m samples, where possible. RC and core samples were sent to an accredited lab (Analabs or Leonora Laverton Assay Labs or Amdel) where the entire sample was crushed to achieve particle size <4mm followed by complete pulverisation (90% passing 75 µm)
Quality Of Assay Data And Laboratory Tests	Drilling samples were analysed for gold using fire assay with a 50g charge and analysis by flame Atomic Absorption Spectrometry (AAS). QAQC for the RC drilling was approximately 3 replicates, 3 duplicates, 2 standards and 1 blank per 50 samples. Surface and underground diamond drilling was one replicate, duplicate, standard and blank every 20 samples. Sample pulp residues were submitted for assay to an accredited umpire laboratory. Results from commercial standards were entered into site spreadsheets and plotted to check if they were within tolerance. It is assumed that the assay laboratories used were accepted as having no significant bias.
Verification Of Sampling And Assay	Sampling data was recorded as a hardcopy or electronically in spreadsheets which ensured only valid non-overlapping data could be recorded. Assay and down hole survey data are subsequently merged electronically. All drill data is stored in a SQL relational database on a secure company server and validated prior to use.
Location Of Data Points	Collars for surface holes were recorded by theodolite survey. Upon completion of underground drill holes an authorised surveyor picked up the collar by placing a survey rod into the hole to measure azimuth and dip.
Data Spacing And Distribution	Data spacing for pit grade control drilling is nominally 10m x 10m from 5m benches from 125 metres below surface (mbs) to 250mbs. Surface resource diamond hole spacing is nominally 60m x 60m from surface to 830mbs. Underground grade control diamond hole spacing is on 20mN section intervals in fans drilling to the west from nominal 25m levels with end of holes between 120mbs and 505mbs. Drilling data is sufficient to establish down plunge continuity for all lodes. No sample compositing has been recorded.
Orientation Of Data In Relation To Geological Structure	Sampling was across the lode orientation for most of the pit and underground grade control drilling but perpendicular to lode orientation for the surface resource drilling, some underground grade control drill holes in the drill fans and a few pit holes.
Sample Security	The procedures applied were aligned to the industry practices prevailing at the time of sample collection, despatch, sample preparation and analysis at accredited laboratories.
Audits Or Reviews	Reviews of sample logging and sampling were regularly completed through site mentoring, auditing and investigations. Laboratory inspections were conducted. No significant issues were identified or reported.

Section 2 Reporting of Exploration Results – Gwalia Open Pit

Criteria	Comments
Mineral Tenement And Land Tenure Status	The reported resource is completely located within M37/25, M37/333, M37/849 which are 100% owned by St Barbara Limited. The tenements were in good standing at the time of reporting.

Exploration Done By Other Parties	No drilling of this portion of the Gwalia Resource was completed by SBM. All drilling of the resource was completed by Sons of Gwalia Ltd and is discussed in the previous section.
Geology	Gold mineralisation occurs as a number of en echelon, moderately east dipping foliation parallel lodes within strongly potassic altered mafic rocks and extends over a strike length of approximately 500 m and to a vertical depth of at least 2,300 m.
Drill Hole Information	No exploration results are presented.
Data Aggregation Methods	No exploration results are presented.
Relationship Between Mineralisation Widths And Intercept Lengths	No exploration results are presented.
Diagrams	No exploration results are presented.
Balanced Reporting	No exploration results are presented.
Other Substantive Exploration Data	No exploration results are presented.
Further Work	Future work will focus on testing for the presence of remnant South Gwalia Series to the south

Section 3 Estimation and Reporting of Mineral Resources –Gwalia Open Pit

Criteria	Comments
Database Integrity	All information was captured by spreadsheets or entered directly in an SQL relational database on a secure company server and was rigorously validated using validation routines within the database software for both location and downhole survey, geology, sample intervals and assays prior to use. Visual graphical inspections of hole traces and locations were also made.
Site Visits	The Competent Person is an employee of St Barbara and was an employee of Sons of Gwalia and has visited site for the purposes of reviewing work contributing to resource estimates
Geological Interpretation	Mineralisation domains were defined by abundance of quartz and quartz/carbonate veining, the presence of distinctive laminated veining (quartz/sericite/sulphides +/- au), strong potassic alteration, abundance of sulphides (commonly >3% pyrite) and elevated gold grade (>0.5g/t). The orientation and continuity of the lodes is well known and documented from previous the activity of surface and underground mining and particularly by underground geological exposures.
Dimensions	The mineralised zone strikes 15 degrees east of true north over a distance of 500m and plunges 45 degrees to the southeast. The mineralised zone consists of several stepped or en echelon style foliation parallel lodes disposed in plan in a “horse-shoe” shape with the limbs converging at the southern end. The mineralised zone and individual lodes dip east at 35 to 45 degrees and are conformable with the foliation of the Mine Sequence mafic schists. Individual lode widths vary from 2m to 30m true width. Mineralisation has been tested to approximately 2,300m below surface and remains open.
Estimation And Modelling Techniques	Closed wireframes of the lodes were constructed using a nominal 0.5g/t Au envelope and geology, reflecting the geological understanding of the deposit. 1m sample composites from within the lode wireframes were used to estimate gold grades into a block model of 10mY by 3mX by 2.5mZ reflecting the geometry of the lodes. Wireframe percentages were calculated for each block. Block grade estimates were made (using Gemcom software) via Multiple Indicator Kriging (MIK) to a single model (e-type estimate) controlled by anisotropic variogram models (using Visor software) which reflected the overall geology. Estimates used ellipsoid sample searches orientated to the variogram directions of maximum grade continuity. Minimum and maximum samples used within the searches were set. MIK does not require the use of grade top-cuts as outlier high grades are controlled by the estimation process. The model was validated by plotting sample composite and block model average grades against Easting, Northing and RL
Moisture	Not applicable. Tonnages are estimated on a dry basis.
Cut-Off Parameters	The model is reported at a 0.4/t Au cut-off. The cut-off grade includes the following considerations: Gold Price $A2500/oz; Processing Recovery 94%; Pit slope 35 degrees overall west wall, 45 degrees overall other walls Mining cost $4.48/t; G&A $9.80/t; Processing Cost $20.0/t

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Criteria	Comments
Mining Factors Or Assumptions	The mining method is assumed to be open pit post the completion of underground mining
Metallurgical Factors Or Assumptions	Metallurgical recovery is assumed to be 94%.
Environmental Factors Or Assumptions	The project covers an area that has been previously impacted by mining. The tenement area includes existing ethnographic heritage sites. SBM have undertaken extensive Aboriginal Heritage Surveys within the tenements and management measures are in place.
Bulk Density	Bulk density of 2.8 g/cm3 has been determined for the lodes from core samples using the weight in air/weight in water method. Where blocks are impacted by historic voids bulk density has been factored to account for the openings.
Classification	The resource is classified as a function of drill spacing Areas where grade control drilling has been completed to a nominal 10mN x 10mE pattern are classified as Measured. Areas where drill density is on a 20mN x 30mE, pattern are classified as Indicated and elsewhere where drill density is sparse classified as Inferred.
Audits Or Reviews	The Mineral Resource Estimate has been reviewed internally. The review covered all aspects of the estimate including source data, geological model, resource estimate and classification. No material issues were identified.
Discussion Of Relative Accuracy/Confidence	The resource estimate is a global estimate.

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JORC Table 1 Checklist of Assessment and Reporting Criteria

Section 1 Sampling Techniques and Data – Harbour Lights

Criteria	Comments
Sampling Techniques	No drilling has been completed by St Barbara at Harbour Lights. The bulk of the drilling was completed by Esso Exploration and Production Australia Inc. (Esso) between 1981 and 1985. Diamond and RC holes have generally been sampled on 1m intervals but no details on sampling protocols have been found.
Drilling Techniques	Details on RC and DDH drilling techniques have not been located. Diamond holes were surveyed by single shot camera.
Drill Sample Recovery	Details on core recovery are unknown
Logging	Holes were logged in fresh rock for lithology, alteration quartz-carbonate veining and sulphides.
Sub-Sampling Techniques and Sample Preparation	Sub-sampling techniques and sample preparation are unknown but are assumed to conform to standard Eastern Goldfields practices of the time.
Quality of Assay Data and Laboratory Tests	The analytical method is unknown. Quality control was limited to analysis of pulp duplicates and the drilling of twin holes. This data shows no bias.
Verification of Sampling and Assay	All drill data is stored in a SQL relational database on a secure company server and validated prior to use. This data has been cross-checked against historic hard copy plots and reports.
Location of Data Points	Collar survey methods are unknown but are assumed to conform to standard Eastern Goldfields practices of the time.
Data Spacing and Distribution	Surface drilling has been completed on an approximate 25mN x 30mRL pattern decreasing to ~50mN x 100mRL below 170mbs. Mineralised areas have generally been sampled on 1 metre intervals.
Orientation of Data in Relation to Geological Structure	Sampling was perpendicular to lode orientation.
Sample Security	It is assumed that the procedures applied were aligned to the industry practices prevailing at the time of sample collection, dispatch, sample preparation and analysis at accredited laboratories.
Audits or Reviews	The logging and analytical data has been cross-checked against hard copy reports.

Section 2 Reporting of Exploration Results – Harbour Lights

Criteria	Comments
Mineral Tenement and Land Tenure Status	The reported resource is completely located within M37/0251 and M37/1150 which are 100% owned by St Barbara Limited. The tenements were in good standing at the time of reporting.

Exploration Done by Other Parties	No drilling of this portion of the Harbour Lights resource was completed by St Barbara. All drilling of the resource was completed by Esso and is discussed in the previous section.
Geology	Gold mineralisation at Harbour Lights extends over 1km and is hosted within a sequence of sheared ultramafics and overlying high-Mg tholeiitic basalt units which strike north-northwest and dip 45° to the east. Gold mineralisation is associated with pyrite and arsenopyrite in isoclinally folded laminated quartz veins and potassic alteration halos. Gold, which is partly refractory in fresh rock, is closely associated with arsenopyrite and estimated recoveries for the refractory ore are in the order of 40%.
Drill Hole Information	No exploration results are presented.
Data Aggregation Methods	No exploration results are presented.
Relationship Between Mineralisation Widths and Intercept Lengths	No exploration results are presented.
Diagrams	No exploration results are presented.
Balanced Reporting	No exploration results are presented.
Other Substantive Exploration Data	No exploration results are presented.
Further Work	Future work will focus on testing for down plunge extensions to mineralisation

Section 3 Estimation and Reporting of Mineral Resources – Harbour Lights

Criteria	Comments
Database Integrity	The data files used in the estimation were automatically created as an extract from the St Barbara corporate Datashed database. The validation of the database has included: • Cross-check of electronic data with hard copy WAMEX mineral exploration reports, • Cross-check of assay and drill-hole location with historical geological reports, and • Incorporation of original logging of lithology, alteration, quartz-carbonate veining and sulphides to improve geological and mineralisation models.
Site Visits	The Competent Person is an employee of St Barbara and has visited the site
Geological Interpretation	Mineralisation domains were defined based on a 0.1g/t Au cut-off, strong potassic alteration, and proximity to a mafic/ultramafic contact.
Dimensions	The mineralised zones strike 20 degrees east of true north over a distance of 1000m and dip moderately to the east and plunge shallowly to the south. The mineralised zones are between 30m and 60m in width. Mining in the Harbour Lights open pit was centred around one or more large (20 – 35m wide) fold structures with elevated gold grades (+6 g/t) in the core of the fold hinges. Mineralisation has been tested to approximately 320m below surface and remains open.
Estimation and Modelling Techniques	Closed wireframes of the lodes were constructed using a nominal 0.1g/t Au envelope and potassic alteration. 2m sample composites from within the lode wireframes were used to estimate gold grades into a block model of 10mY by 10mX by 5mZ. Block grade estimates were made via ordinary kriging with ellipsoid octant searches orientated to the variogram directions of maximum grade continuity. Minimum and maximum samples used within the searches were set. Data was not top cut as outlier high grades (>50g/t Au) were located in the mined-out pit and did not impact estimation of remnant resources. The model was validated by plotting sample composite and block model average grades against Easting, Northing and RL
Moisture	Not applicable. Tonnages are estimated on a dry basis.
Cut-Off Parameters	The model is reported at a 0.4/t Au cut-off for oxides and 0.8 g/t Au for sulphides. The cut-off grades include the following considerations: • Gold price AU$2,500/oz • Mining cost - $3.70/t • Process Recovery – oxide 90% and sulphide 85.5% • Processing cost – oxide $19.30/t and sulphide $46.00/t • General & Admin cost - $9.80/t • Pit slope angles – oxide = 35° and sulphide = 47°
Mining Factors or Assumptions	The mining method is assumed to be open pit.

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Criteria	Comments
Metallurgical Factors or Assumptions	Metallurgical recovery is assumed to be 90% for oxides and 85.5% using the Albion Process for treatment of sulphides.
Environmental Factors or Assumptions	The project covers an area that has been previously impacted by mining. An agreement with the Aboriginal Land Trust will be required to gain access to an Aboriginal Reserve toward the southern of the deposit for drilling and mining. Agreements will be required to relocate infrastructure related to the handling and transportation of nickel concentrate on the eastern wall of the pit
Bulk Density	Bulk density has been assigned based on historical values; 2.4g/cm3 for oxide and 2.8g/cm3 for sulphides.
Classification	The resource is classified as a function of drill spacing and geological continuity. Areas where drilling has been completed on a nominal 25mN x 30mRL pattern are classified as Indicated. Elsewhere where drill density is sparser, or drill holes are inadequately sampled the resource is classified as Inferred.
Audits or Reviews	No audits or reviews have been completed
Discussion of Relative Accuracy/Confidence	The resource estimate is a global estimate.

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