KCGM

18 August 2020

Joint ASX Announcement

NORTHERN STAR RESOURCES LIMITED

Northern Star Resources Limited

ASX: NST
ABN: 43 092 832 892

Saracen

Saracen Minerals Holdings Limited

ASX: SAR
ABN: 52 009 215 347

Kalgoorlie Consolidated Gold Mines Pty Ltd

(ABN: 97 009 377 619) is the Manager of the KCGM Operations for the 50:50 Joint Venture partners.

KCGM Strategic Review and Outlook Statement

Production expected to rise to +675,000ozpa; 15-year mine life visibility underpinned by 9.7Moz JORC compliant Reserves

JORC compliant Reserves of 9.7Moz and JORC compliant Resources of 19.0Moz (compared to previous non-JORC compliant estimates of 6.3Moz and 12Moz); Operation being de-risked and productivities are increasing with multiple production sources

HIGHLIGHTS

JORC Compliant Reserves and Resources[1]

JORC compliant Reserves of 9.7Moz at 30 June 2020, (compared to non-JORC compliant estimate of 6.3Moz at 31 December 2019)[2] (after depletion of 293koz)

- Fimiston open pit JORC compliant Reserve of 6.1Moz (compared to non-JORC compliant estimate of 3.0Moz at 31 December 2019)
  - **Maiden Fimiston South Open Pit JORC compliant Reserve of 3.9Moz**
  - Brownhill Open Pit JORC compliant Reserve of 710,000oz (compared to non-JORC compliant estimate of 0.3Moz at 31 December 2019)
- Mt Charlotte Underground JORC compliant Reserve of 510,000oz (compared to non-JORC compliant estimate of 0.2Moz at 31 December 2019)
- Surface Stockpile JORC compliant Reserves of 3.0Moz (compared to non-JORC compliant estimate of 3.2Moz at 31 December 2019)

- **JORC compliant Resources of 19.0Moz at 30 June 2020** (compared to non-JORC compliant estimate of 12Moz at 31 December 2019

Current Reserves support a 15-year life of mine visibility

Guidance (100%)

- **FY21 guidance 440,000 - 480,000oz** at **AISC of A$1,470 - 1,570/oz**[3]
- **FY21 growth capital budget** is A$198m; **FY21 exploration budget** is **A$12m**
- **FY22 growth and de-risking capital expenditure forecasted at A$240m - A$270m**
- **De-risking strategy being implemented**, mining underway at Oroya Brownhill (OBH), bringing Brownhill production forward and integrating it with the East wall remediation; remediation timeframe maintained at ~3.5 years with the additional ounces offsetting the cost
- **OBH increases mining areas** from two to three, **immediate productivity and costs benefits**; fourth area Fimiston South to commence in the June half FY21
- **Production rises to +500,000ozpa by FY24** (post-remediation and as Fimiston South becomes dominant ore source and access to high grade Golden Pike North is restored), **before climbing to +675,000ozpa by FY28**

[1] This announcement contains JORC compliant Ore Reserves and Mineral Resources estimates for each of Saracen and Northern Star (previous estimates as at 31 December 2019 having been prepared under NI 43-101 standards by Barrick Gold Corporation and Newmont Goldcorp Corporation).

[2] KCGM reporting has changed from calendar year ended 31 December to financial year ended 30 June for alignment with the reporting periods of the JV partners Northern Star Resources Ltd and Saracen Mineral Holdings Ltd.

[3] The production targets in this announcement are based on JORC compliant Reserves.

Pipeline of further organic growth opportunities

- **Maiden Underground JORC compliant Resource at Fimiston of 2.2Moz @ 2.8g/t**
- **Mt Charlotte Underground JORC compliant Resources of 1.9Moz**
- **Significant exploration upside** also supported by a **large quantity of drill results outside of current JORC compliant Reserves**, examples include:
  - Fimiston South (open pit): 23.8m @ 66.1g/t, 11.0m @ 208.0g/t, 24.8m @ 29.3g/t, and 23.7m @ 12.3g/t
  - OBH (open pit): 25.0m @ 5.9g/t, 1.4m @ 253g/t and 7.6m @ 12.1g/t
  - Mt Charlotte (underground): 0.5m @ 1,171g/t, 2.0m @ 51.9g/t, 6.7m @ 19.6g/t, 16.8m @ 7.8g/t and 28.9 m@ 3.1g/t
  - Fimiston (underground): 8.2m @ 43.6g/t, 3.4m @ 296.4g/t, 11.2m @ 35.7g/t, 5.6m @ 26.7g/t, 10.2m @ 35.4g/t and 0.9m @ 275.0g/t

The KCGM JV is pleased to announce the results of the strategic review undertaken in conjunction with owners Northern Star Resources Ltd (ASX: NST) and Saracen Mineral Holdings Ltd (ASX: SAR).

The in-depth review has established KCGM as a long-life asset with a growing production profile and significant exploration upside, all in a Tier-1 location.

KCGM's outstanding future is underpinned by JORC compliant Reserves of 9.7Moz (after depletion of 293koz) and JORC compliant Resources of 19.0Moz.

This landmark JORC compliant Reserve provides mine life visibility of 15 years, with significant exploration upside which points to further growth.

The review also outlines the future production profile. FY21 production guidance is 440,000 - 480,000oz at an all-in sustaining cost of A$1,470 - 1,570/oz.

Production is expected to rise to +500,000ozpa from FY24 (post-remediation, as Fimiston South becomes an increasingly dominant ore source and access to high grade Golden Pike North is restored), and is then expected to climb steadily to +675,000ozpa from FY28.

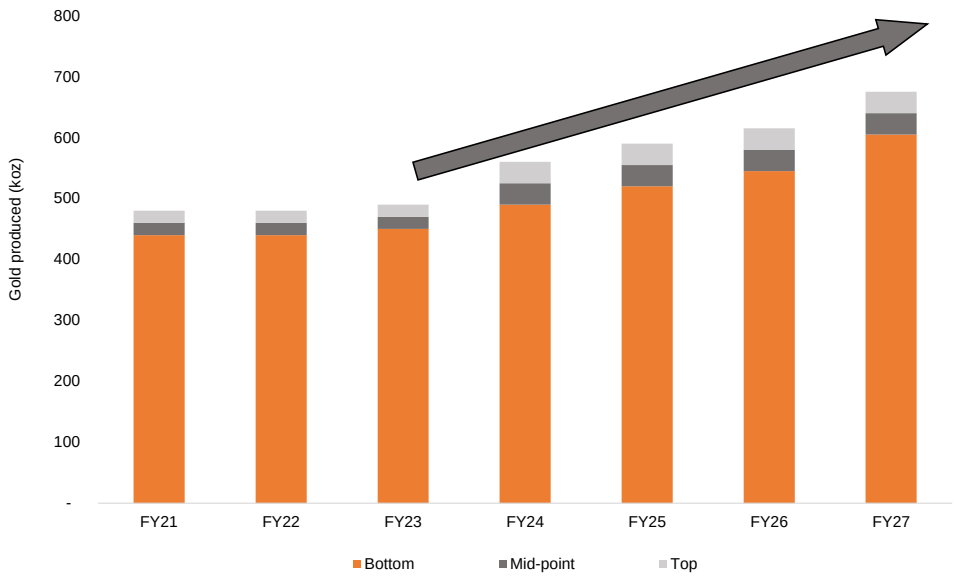


Figure1- KCGM expected growth to +675kozpa

Further growth is supported by a large quantity of significant drill results across the KCGM portfolio that sit outside of current Reserves, including at Fimiston South open pit, OBH open pit, Fimiston South underground and Mt Charlotte underground.

Ore Reserves

Table 1 - KCGM Ore Reserves (Open Pit, Underground and Surface Stockpiles)

KCGM ORE RESERVES as at 30 June 2020	PROVED			PROBABLE			TOTAL RESERVES		
100% KCGM	Tonnes (000's)	Grade (gpt)	Ounces (000's)	Tonnes (000's)	Grade (gpt)	Ounces (000's)	Tonnes (000's)	Grade (gpt)	Ounces (000's)
FIMISTON	130,000	0.7	3,100	100,000	1.8	6,100	230,000	1.2	9,200
MT CHARLOTTE	290	2.4	23	7,200	2.1	490	7,500	2.1	510
KCGM TOTAL	130,000	0.7	3,100	110,000	1.8	6,600	240,000	1.3	9,700

Note:
1. Ore Reserves are reported at A$1,750/oz Au
2. Rounding may result in apparent summation differences between tonnes, grade and contained metal content.

Competent Persons:
1. Fimiston; Ibrahim Omari
2. Mt Charlotte; Jeff Brown

The table above is a summary only of the KCGM Ore Reserves estimates, as reported according to the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the 'JORC Code') 2012 edition. Full detail in relation to these estimates is provided in the Appendix to this announcement titled "KCGM JORC (2012) Table 1".

The Competent Persons Statements are provided at the end of this announcement.

Total JORC compliant Ore Reserves are **9.7Moz after depletion of 293koz** (compared to non-JORC compliant estimate of 6.3Moz at 31 December 2019). The JORC compliant Ore Reserves are based on a conservative gold price of A$1,750/oz.

Key changes to the non-JORC compliant estimates from 31 December 2019 are:

FIMISTON

- The overall Fimiston open Pit Reserve is 6.1Moz (compared to non-JORC compliant estimate of 3.0Moz at 31 December 2019)
- Maiden Open Pit Ore Reserve at Fimiston South of 3.9Moz, following successful drilling
- The Brownhill JORC compliant Ore Reserve is 710koz (compared to non-JORC compliant estimate of 0.3Moz at 31 December 2019), following successful drilling
- The Golden Pike JORC Compliant Ore Reserve is 1.5Moz (compared to non-JORC compliant estimate of 1.5Moz at 31 December 2019).

MT CHARLOTTE

- The Mt Charlotte Underground JORC compliant Ore Reserve is 510koz (compared to non-JORC compliant estimate of 0.2Moz at 31 December 2019).

STOCKPILES

- The marginal grade stockpile JORC compliant Ore Reserve is 820koz, (compared to non-JORC compliant estimate of 0.9Moz at 31 December 2019), due to depletion as mill feed
- The sub-grade stockpile JORC compliant Ore Reserve is 2.2Moz, (compared to non-JORC compliant estimate of 2.25Moz at 31 December 2019), due to depletion as mill feed

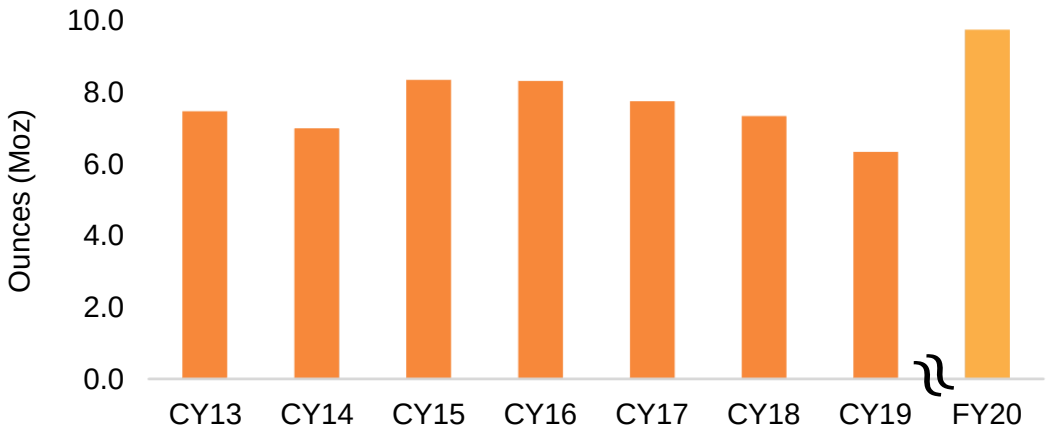


Figure 2 - KCGM annual ore reserves since 2013;
CY13-CY19 are non-JORC compliant estimates; FY20 are JORC compliant Ore Reserves

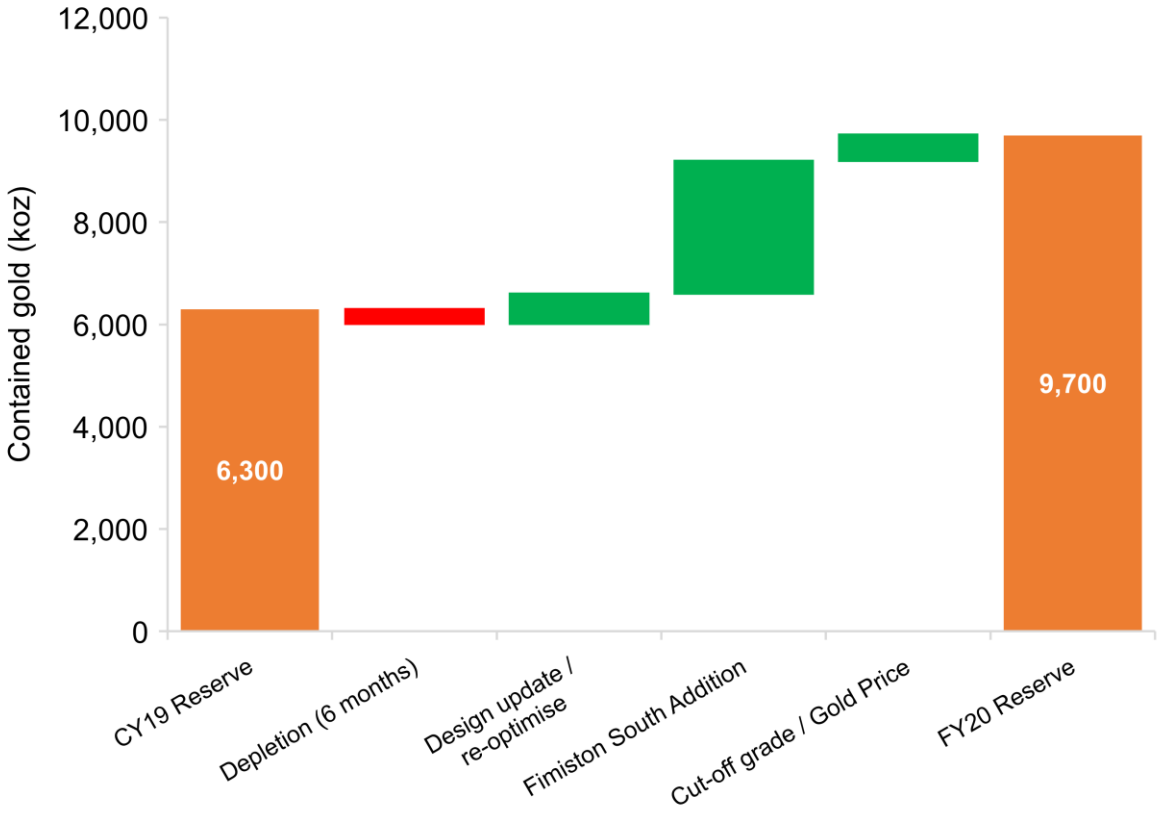


Figure 3 - KCGM ore reserve reconciliation FY20 v FY19^ (Open Pit, Underground and Surface Stockpiles);
CY19 are non-JORC compliant estimates; FY20 are JORC compliant Ore Reserves

Table 2 - KCGM JORC compliant Ore Reserves by deposit at 30 June 2020

KCGM ORE RESERVES as at 30 June 2020	PROVED			PROBABLE			TOTAL RESERVES		
100% KCGM	Tonnes (000's)	Grade (gpt)	Ounces (000's)	Tonnes (000's)	Grade (gpt)	Ounces (000's)	Tonnes (000's)	Grade (gpt)	Ounces (000's)
FIMISTON									
Open Pit									
Oroya Brownhill	-	-	-	15,000	1.5	710	15,000	1.5	710
Golden Pike	-	-	-	24,000	2.0	1,500	24,000	2.0	1,500
Fimiston South	-	-	-	66,000	1.9	3,900	66,000	1.9	3,900
Sub-Total Surface	-	-	-	100,000	1.8	6,100	100,000	1.8	6,100
Underground	-	-	-	-	-	-	-	-	-
Stockpiles - Marginal	25,000	1.0	820	-	-	-	25,000	1.0	820
Stockpiles - Sub-Grade	100,000	0.7	2,200	-	-	-	100,000	0.7	2,200
Sub-Total Fimiston	130,000	0.7	3,100	100,000	1.8	6,100	230,000	1.2	9,200
MT CHARLOTTE									
Underground	290	2.4	23	7,200	2.1	490	7,500	2.1	510
Stockpiles	-	-	-	-	-	-	-	-	-
Sub-Total Mt Charlotte	290	2.4	23	7,200	2.1	490	7,500	2.1	510
KCGM TOTAL	**130,000**	**0.7**	**3,100**	**110,000**	**1.8**	**6,600**	**240,000**	**1.3**	**9,700**

Note:
1. Ore Reserves are reported at A$1,750/oz Au
2. Rounding may result in apparent summation differences between tonnes, grade and contained metal content.

Competent Persons:
1. Fimiston; Ibrahim Omari
2. Mt Charlotte; Jeff Brown

Mineral Resources

Table 3 - KCGM JORC compliant Mineral Resources (Open Pit and Underground, includes stockpiles)

KCGM MINERAL RESOURCES as at 30 June 2020	MEASURED			INDICATED			INFERRED			TOTAL RESOURCES		
100% INCLUSIVE OF RESERVE	Tonnes (000's)	Grade (gpt)	Ounces (000's)	Tonnes (000's)	Grade (gpt)	Ounces (000's)	Tonnes (000's)	Grade (gpt)	Ounces (000's)	Tonnes (000's)	Grade (gpt)	Ounces (000's)
FIMISTON	130,000	0.7	3,100	160,000	1.9	9,700	67,000	2.1	4,500	350,000	1.5	17,000
MT CHARLOTTE	-	-	-	21,000	2.0	1,300	7,200	2.4	550	28,000	2.1	1,900
KCGM TOTAL	**130,000**	**0.7**	**3,100**	**180,000**	**1.9**	**11,000**	**74,000**	**2.1**	**5,000**	**380,000**	**1.6**	**19,000**

Note:
1. Mineral Resources are inclusive of Ore Reserves.
2. Mineral Resources are reported at A$2,250/oz Au
3. Rounding may result in apparent summation differences between tonnes, grade and contained metal content.

Competent Persons:
1. Emma Murray-Hayden

The below is a summary only of the KCGM Mineral Resources estimates, as reported according to the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the 'JORC Code') 2012 edition. Full detail in relation to these estimates is provided in the Appendix to this announcement titled "KCGM JORC (2012) Table 1".

The Competent Persons Statements are provided at the end of this announcement.

The key changes to the mineral resources statement from 31 December 2019 are:

- Total JORC compliant Mineral Resources are 19.0Moz (compared to non-JORC compliant estimate of 12Moz at 31 December 2019)
  - Fimiston
    - Open Pit JORC compliant Mineral Resources are 12.0Moz
    - Maiden Underground JORC compliant Mineral Resource at Fimiston of 2.2Moz @ 2.8g/t
  - Mt Charlotte
    - Underground JORC compliant Resource of 1.9Moz

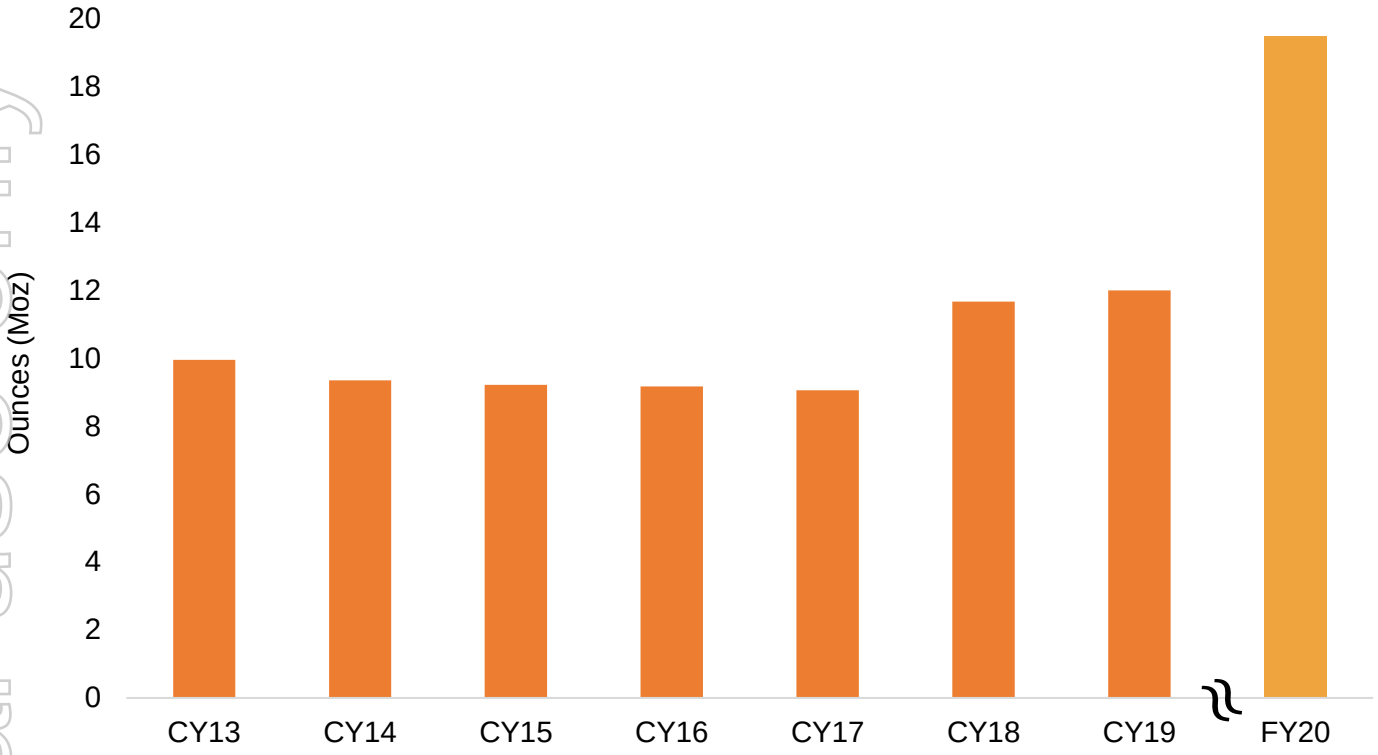


Figure 4 - KCGM annual mineral resources since 2013;
CY13-CY19 are non-JORC compliant estimates; FY20 are JORC compliant Mineral Resources

Table 4 - KCGM JORC compliant Mineral Resources at 30 June 2020

KCGM MINERAL RESOURCES as at 30 June 2020	MEASURED			INDICATED			INFERRED			TOTAL RESOURCES		
100% INCLUSIVE OF RESERVE	Tonnes (000's)	Grade (gpt)	Ounces (000's)	Tonnes (000's)	Grade (gpt)	Ounces (000's)	Tonnes (000's)	Grade (gpt)	Ounces (000's)	Tonnes (000's)	Grade (gpt)	Ounces (000's)
FIMISTON												
Open Pit												
Croesus	-	-	-	5,400	2.1	370	18	1.3	1	5,400	2.1	370
Oroya Brownhill	-	-	-	16,000	1.6	830	1,800	1.5	89	18,000	1.6	920
Golden Pike	-	-	-	62,000	1.9	3,800	13,000	1.9	800	75,000	1.9	4,600
Fimiston South	-	-	-	74,000	2.0	4,700	28,000	1.6	1,400	100,000	1.9	6,100
Sub-Total Surface	-	-	-	160,000	1.9	9,700	42,000	1.6	2,200	200,000	1.9	12,000
Underground	-	-	-	-	-	-	25,000	2.8	2,200	25,000	2.8	2,200
Stockpiles - Marginal	25,000	1.0	820	-	-	-	-	-	-	25,000	1.0	820
Stockpiles - Sub-Grade	100,000	0.7	2,200	-	-	-	-	-	-	100,000	0.7	2,200
Sub-Total Fimiston	130,000	0.7	3,100	160,000	1.9	9,700	67,000	2.1	4,500	350,000	1.5	17,000
MT CHARLOTTE												
Underground	-	-	-	21,000	2.0	1,300	7,200	2.4	550	28,000	2.1	1,900
Stockpiles	-	-	-	-	-	-	-	-	-	-	-	-
Sub-Total Mt Charlotte	-	-	-	21,000	2.0	1,300	7,200	2.4	550	28,000	2.1	1,900
KCGM TOTAL	**130,000**	**0.7**	**3,100**	**180,000**	**1.9**	**11,000**	**74,000**	**2.1**	**5,000**	**380,000**	**1.6**	**19,000**

Note:
1. Mineral Resources are inclusive of Ore Reserves.
2. Mineral Resources are reported at A$2,250/oz Au
3. Rounding may result in apparent summation differences between tonnes, grade and contained metal content.

Competent Persons:
1. Emma Murray-Hayden

Overview

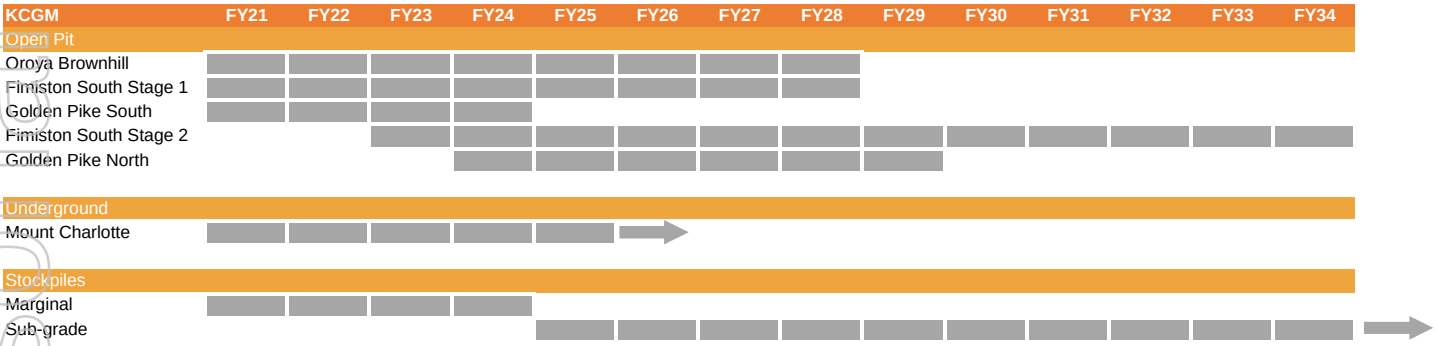
KCGM is a large, high quality, long-life open-pit and underground gold mine located in the globally renowned Golden Mile Region of Kalgoorlie-Boulder, Western Australia. 465koz of gold was produced in FY20 (100% basis), making it one of the largest gold mines in Australia. The Golden Mile has produced in excess of 65Moz of gold.

Despite just over 6 months of new ownership, KCGM is already benefiting from the increased focus:

- Landmark Reserves of 9.7Moz
- Maiden Underground JORC compliant Inferred Mineral Resource at Fimiston of 2.2Moz @ 2.8g/t
- Mt Charlotte Underground JORC Compliant Resources of 1.9Moz
- Improved open pit productivities (49% improvement in total material movement in the recent June quarter 2020)
- Improved underground mining productivities (25% improvement in mined ore tonnes in the recent June quarter 2020)
- A lower risk and lower cost East Wall remediation strategy
- Improved processing productivities and lower unit costs (6% and 16% respectively in the recent June quarter 2020)

A 15-year life of mine profile is supported by current JORC compliant Reserves.

Table 5 - KCGM production profile



**Production profile based on current JORC compliant Ore Reserves. The material assumptions underpinning the production target are provided in the Ore Reserve summaries in this report and in the JORC Table 1 Sections 1-4. The production profile estimates have been prepared by a competent person in accordance with Appendix 5A (JORC Code 2012).*

Fimiston - Open Pit

The Fimiston open pit JORC compliant Reserve is **6.1Moz, compared to 3.0Moz non-JORC compliant estimate at 31 December 2019** (despite depletion of 134koz). **Upgrades were delivered across all three major mining cutbacks**, dominated by Fimiston South and Oroya Brownhill:

- Fimiston South – JORC compliant Reserves of 3.9Moz (compared to non-JORC compliant estimate of 1.2Moz at 31 December 2019)
- Oroya Brownhill - JORC compliant Reserves of 0.7Moz, (compared to non-JORC compliant estimate of 0.3Moz at 31 December 2019)
- Golden Pike - Reserves of 1.5Moz

HIGHER PRODUCTIVITY / LOWER COSTS

A transformation of the open pit operations is underway. Six months ago, only two small and inefficient cutbacks were available to mine (Golden Pike South and Morrison). Today, there are three mining areas available to the shovel and truck fleets (Golden Pike South, Morrison and Oroya Brownhill), with a fourth (Fimiston South Stage 1) scheduled to come on line in the June half 2021.

These new cutbacks will boost mining productivities, improve costs, and ensure that higher grades are delivered to the mill by displacing lower grade stockpile feed.

New ownership is targeting mining material movements of 70-80Mt per annum, a significant improvement over recent years.

Figure 5 - Fimiston Pit, Total material movement

This target is in line with historical volumes achieved at the Super Pit using the same large face shovels and trucks, when between three and four cutbacks were available for the mining fleets at any given time.

Significant gains in productivities and utilisation are already being achieved, as evidenced by the 49% improvement in total material movement in the recent June quarter 2020.

A mining fleet renewal program will further enhance operational efficiencies by ensuring the timely replacement of some of the current mining fleet that is coming towards the end of its productive life. A new equipment tender is currently underway to source new equipment from reputable manufacturers. It is the JV owners' intentions to lease finance the equipment over the useable life of the fleet.

Major new mining equipment slated for delivery during FY21 includes:

- 1x Komatsu PC-8000 shovel
- 4x 240t trucks

Figure 6 - Fimiston Pit, PC8000 face shovel loading a CAT793 truck

A recruitment campaign has recently been launched to attract open pit operators to Kalgoorlie to enable the expansion of material movement to 70-80Mt per annum to take place.

A 300t excavator has been mobilised to site and has been commissioned in the OBH mining front. The excavator has the capability of mining narrower cutback areas in OBH more productively and being more selective during ore mining, minimising dilution and ore loss. This focus is particularly relevant while the operation is currently mill constrained.

OPEN PIT PRODUCTION PROFILE

The new Fimiston open pit production profile (100% in JORC compliant Reserves) consists of several large mining areas, aiming to consistently maximise fleet productivity.

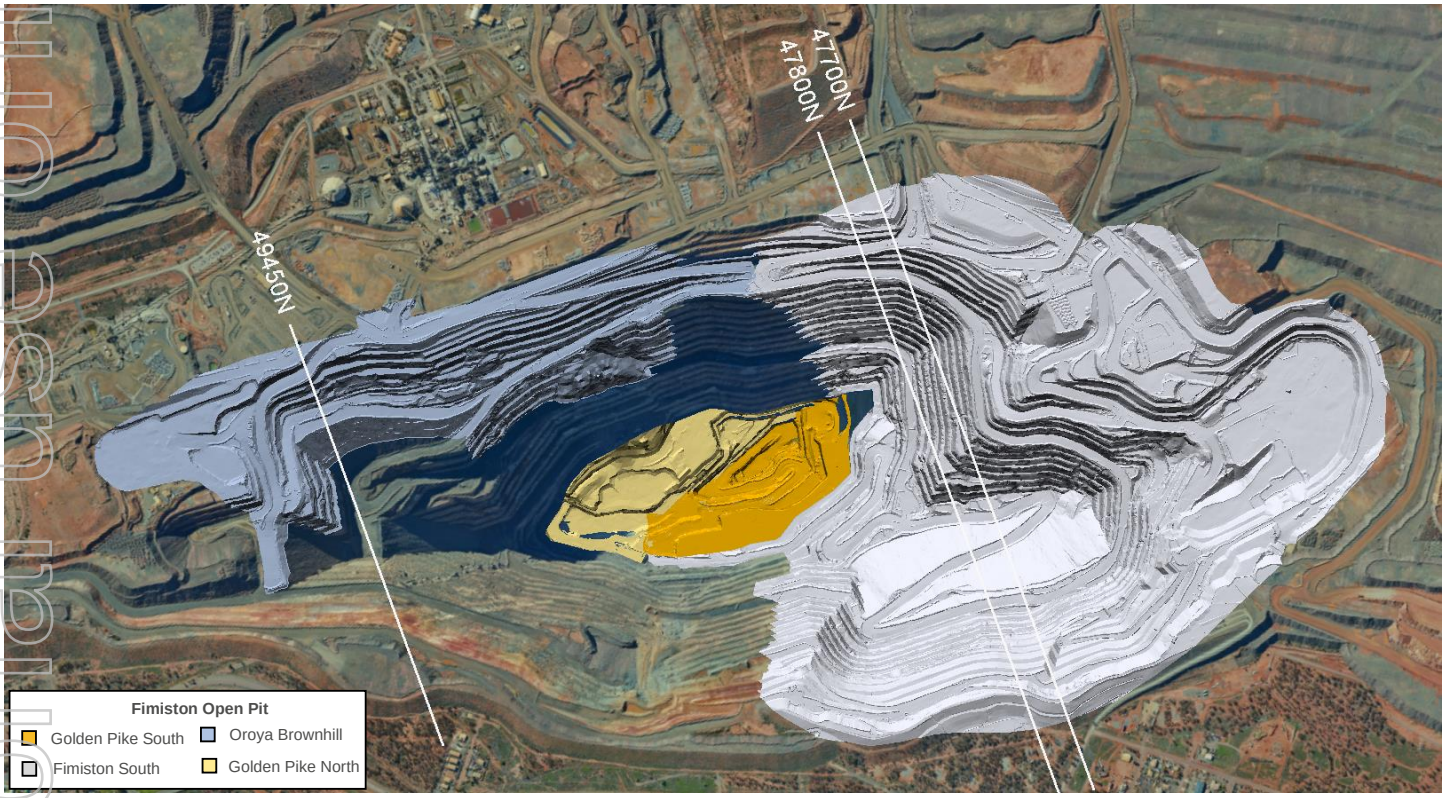


Figure 7 – Fimiston Pit production profile ore sources

Table 6 - Fimiston Pit production profile

KCGM	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34
Open Pit														
Oroya Brownhill														
Fimiston South Stage 1														
Golden Pike South														
Fimiston South Stage 2														
Golden Pike North														

FIMISTON SOUTH

Fimiston South, located at the southern end of the Super Pit, will be KCGM's single largest cutback in a decade, with a ~10:1 strip ratio (including Inferred Resource^ material) and ~850Mt total material movement.

Figure 8 below shows the strip ratio declining from 58:1 in FY21 (pre-strip on Fimiston South Stage 1) to 2.9:1 in FY34 (base of Fimiston South Stage 2), with the grade increasing over the same period from 1.5g/t in FY21 to 2.2g/t in FY34. **This combination improves the economics of the project every day over the next decade.**

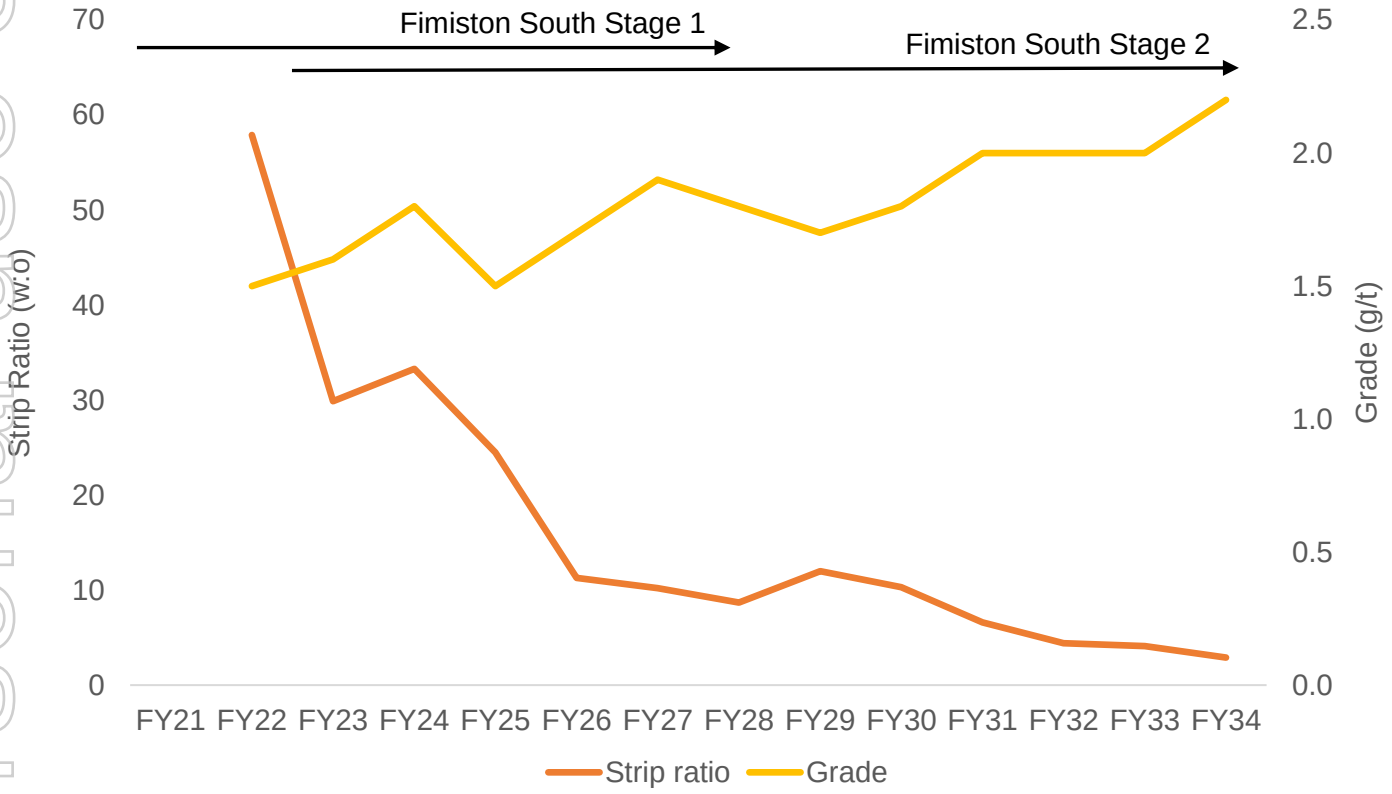


Figure 8 - Fimiston South Strip ratio and grade

A two stage, 12 year mine life is planned. Stage 1 will commence in the second half of FY21, and Stage 2 will commence in FY23. Stage 1 has received full regulatory approval from the relevant government authorities, whilst the application for Stage 2 has been submitted for approval.

The staged approach will accelerate access to an earlier ore stream for the Fimiston mill, and appropriately smooth the capital cost of the waste pre-strip across several years. On current plans, FY22 and FY23 will be the largest years of waste pre-stripping.

Key learnings from over three decades of open pit geotechnical performance and a program of geotechnical holes drilled in Fimiston South have de-risked the pit design by defining a stable wall geometry over the significant life of the cutback.

Mining is underway in the new Morrison cutback. This is effectively the Fimiston South starter pit and will ultimately be encompassed by the much larger Fimiston South cutback.

^ *There is a low level of confidence associated with Inferred Mineral Resources and there is no certainty that further exploration work will result in the determination of Indicated Mineral Resources or that the Fimiston South production target itself will be realised.*

Figure 9 - Morrison (Fimiston South starter pit), Looking north

The 12 year mine plan at Fimiston South is the reward from a substantial investment in exploration over the last three years. Deep directional diamond drilling coupled with in-pit RC drilling has **significantly grown the system to the south and at depth**.

Drilling has targeted the highly continuous mineralised shear zones hosted in the Golden Mile Dolerite and the Paringa Basalt, which remain open in all directions.

Infill drilling completed in recent months has provided the confidence to report the JORC compliant Reserves.

This drilling has returned a significant number of outstanding drill results that complement the enormous drilling dataset already collected over the previous decades of underground and open pit mining.

Significant results include **23.8m @ 66.1g/t, 11.0m @ 208.0g/t, 24.8m @ 29.3g/t** and **17.8m @ 3.7g/t.**

Of particular interest, are the very strong results from the “saddle” drilling that were returned post completion of the JORC compliant Resource estimation, including 23.8m @ 66.1g/t, 11.0m @ 208.0g/t and 4.2m @ 16.8g/t. These results have the potential to reduce and / or remove the “saddle” as shown below in Figure 10, pointing to further ounce and mine life upside in Fimiston South.

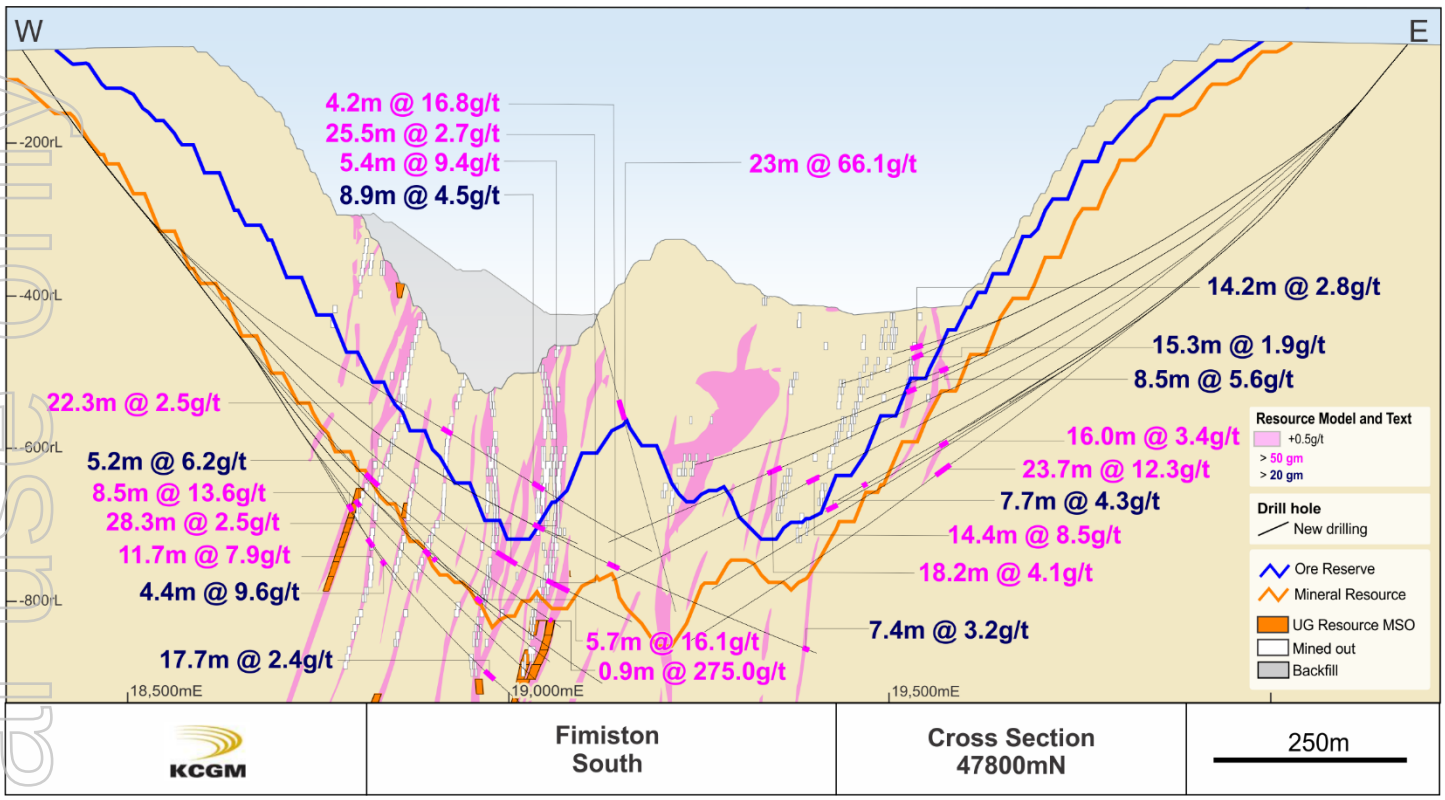


Figure 10 - Fimiston South, Cross Section 47800mN

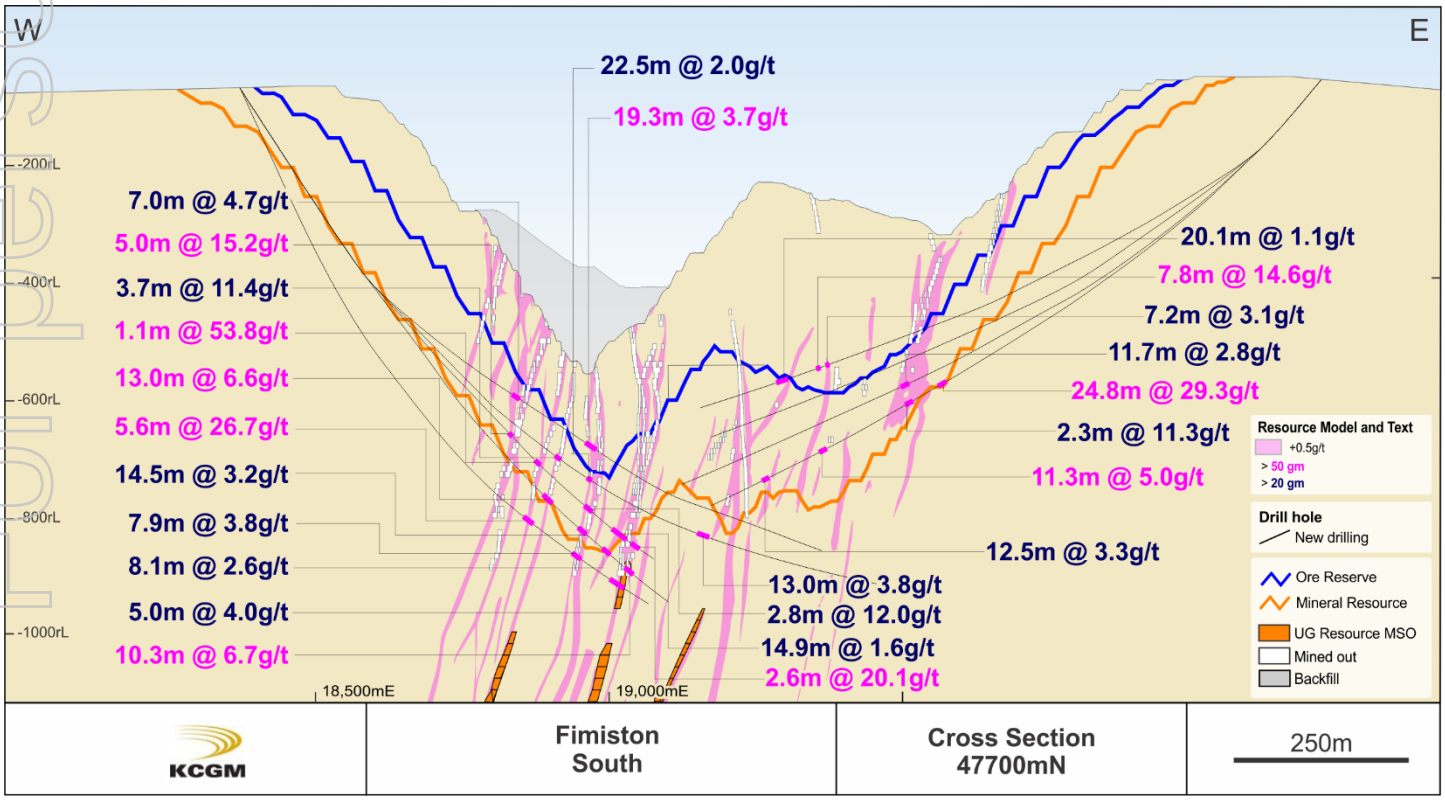


Figure 11 - Fimiston South, Cross Section 47700mN

GOLDEN PIKE

Golden Pike is a priority mining front, due to **high grades** (Reserves 25Mt @ 2.0g/t) and **low strip ratio** (average 2.9:1).

Although this is the deepest open pit working area at ~600m below surface, it benefits from the investment made by previous owners. The waste pre-stripping at Golden Pike has been completed in the preceding ~10 years.

Figure 12- Fimiston Pit, Golden Pike cutback

Mining continues at the Golden Pike South cutback, whilst the Golden Pike North cutback will commence in FY24, once the East Wall remediation work is completed under the new Oroya Brownhill plan (refer Oroya Brownhill section).

The open pit mining schedule from Golden Pike has been slowed down, compared to previous owners, for the following reasons:

- Reduce the risk of being overly reliant on any one ore source
- Focus on quality over quantity with regards to ore mining by reducing dilution and ore loss
- Extend the contribution of higher grade, lower strip ratio ore from Golden Pike
- Enable the existing fleet to be re-deployed to fast-track pre-stripping in new mining areas like OBH & Fimiston South
- Focus on the medium to long term LOMP

The new plan has Golden Pike South finishing in FY24 (previously FY21) and Golden Pike North being mined from FY24 to FY29 (previously FY24 to FY26). Opportunities to fast track mining in these areas will be assessed, but not at the detriment of quality ore mining.

The wall slip has impacted operations from May 2018, as can be seen in Figure 13, showing the decline in total open pit mining due to the loss of access to Y-ramp, and a safety exclusion zone preventing access to high grade material in Golden Pike North (GPN).

Figure 13 - Fimiston Pit, East wall failure zone and Golden Pike North safety exclusion zone

OROYA BROWNHILL

Oroya Brownhill (OBH) has an open pit JORC compliant Reserve of 15Mt @ 1.5g/t for 710koz.

Mining of the OBH cutback commenced in March 2020, following a comprehensive review of various east wall remediation strategies for the May 2018 slip. Eight years of mining is currently planned in two stages, with an average strip ratio of 9.0:1 (including pre-strip) at an average grade of 1.5g/t.

Under new ownership, KCGM has devised a new wall remediation plan (OBH) that involves:

- Bringing the Brownhill cutback forward in the schedule (mining already underway)
- Pushing the north-east wall back by ~80 - 100m
- Integrating the east wall remediation zone with the Brownhill cutback

Previously the Brownhill cutback was a smaller, standalone cutback not scheduled until 2022.

Figure 14 - Fimiston Pit, OBH cutback looking south

Advantages of the new OBH plan include:

- A larger, more productive and lower unit cost mining area
- Inclusion of an additional ~184koz that offsets the remediation cost
- Expedites the mining of ~71koz in Brownhill Stage 1 by ~two years
- Reduces operational risk due to larger work areas and the flexibility to reallocate the mining fleet to alternate work areas
- No additional approvals required
- No increase to the previous remediation timeframe of ~3.5 years[4]

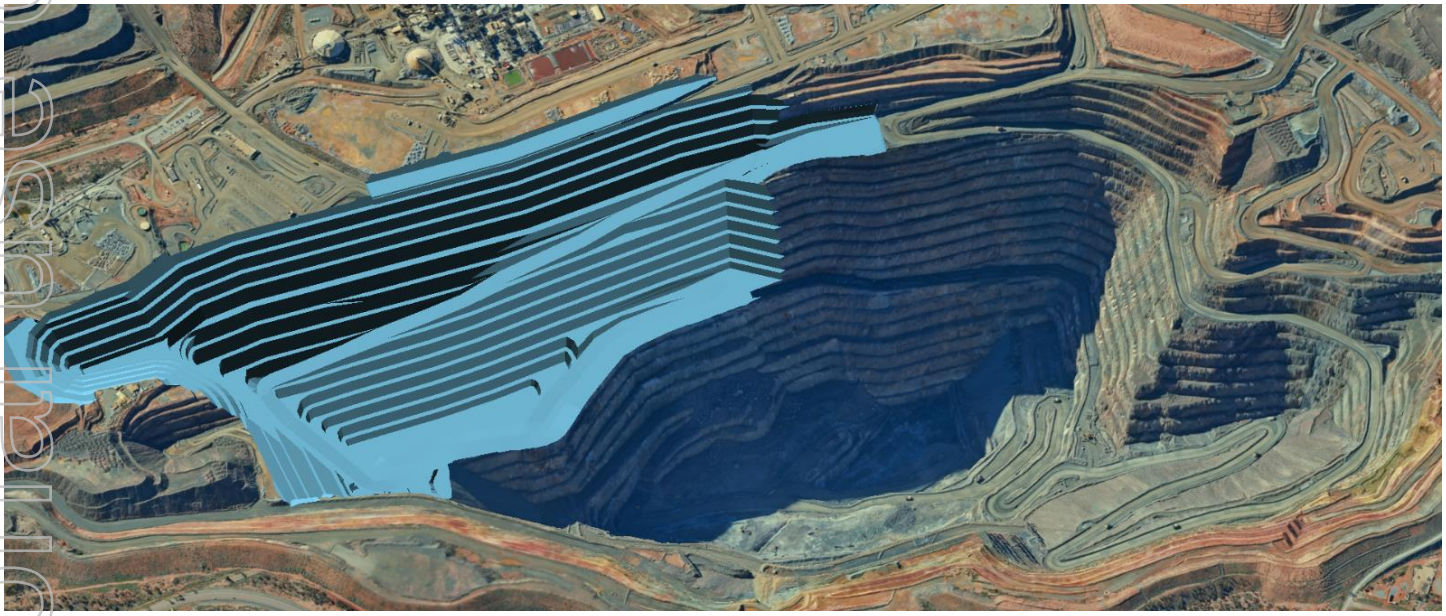


Figure 15- Fimiston Pit, OBH cutback

Rigorous geotechnical investigation has been applied to the OBH plan to reduce the probability of a similar wall failure occurring in the future.

Over the last six months as the Fimiston South drilling was nearing completion some of the drilling capacity was directed towards the highly prospective northern extensions.

This drilling has targeted the depth and strike extensions of the known lodes below the current JORC compliant Reserve and Resource. The drilling has confirmed the continuity of these lodes and has discovered a number of potential new high-grade lodes which have not currently been modelled or previously mined. This highlights further growth potential for this well-endowed system.

A pipeline of further organic open pit and underground growth opportunities is evident following significant results received from this drilling outside of the current JORC compliant Reserve, including:

- **10.2m @ 35.4g/t**
- **25.5m @ 3.2g/t^**
- **2.9m @ 42.6g/t^**
- **2.5m @ 31.7g/t^**
- **2.3m @ 24.2g/t^**

^Also outside current JORC compliant Resource

[4] Refer to the ASX: SAR announcement 18th November 2019 “Super Pit Acquisition Investor Presentation” available at www.asx.com.au

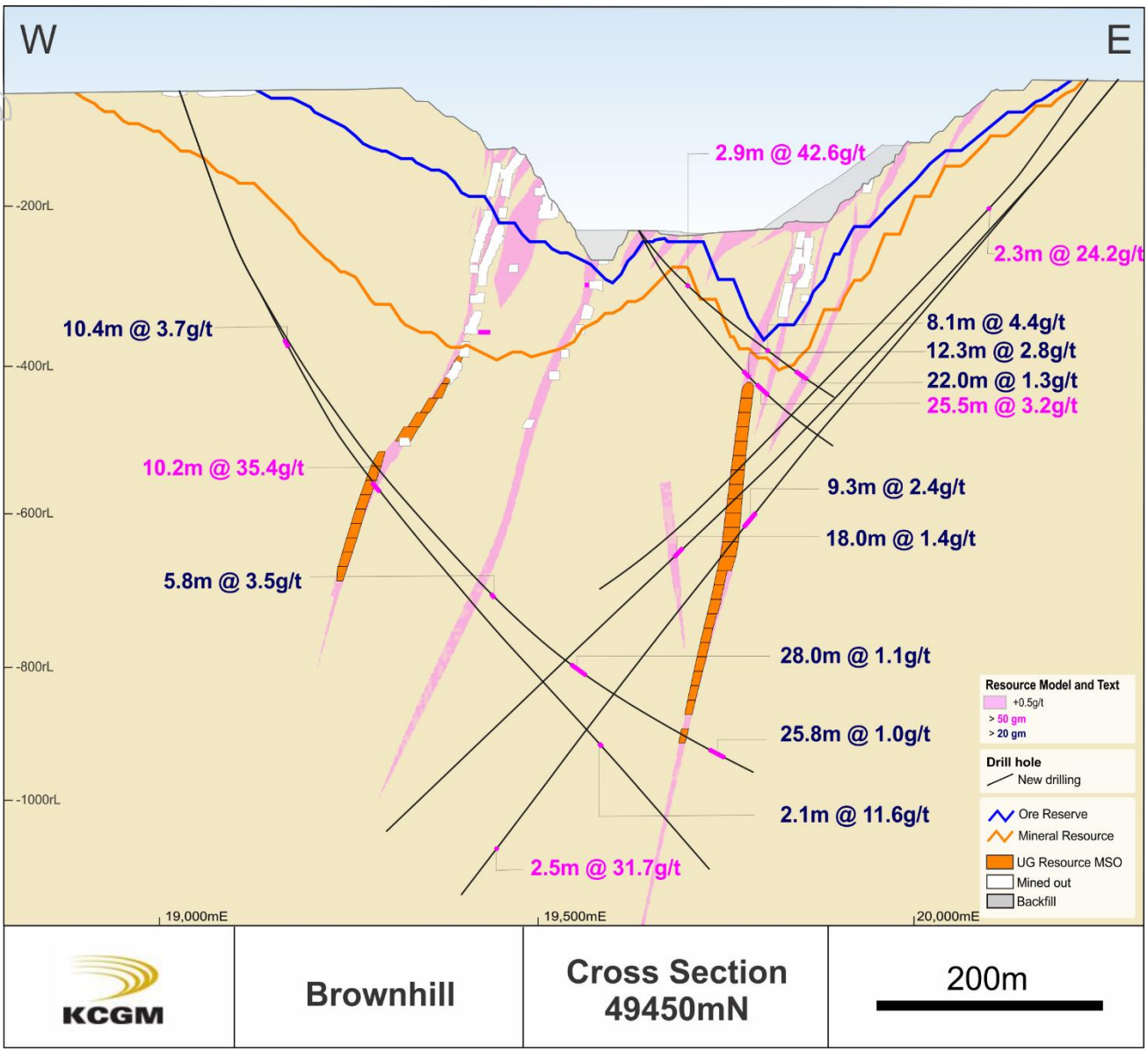


Figure 16 - Brownhill Cross Section, new results

Mt Charlotte - Underground

The Mt Charlotte underground operation has produced over **5.5Moz** at an average grade of 3.6g/t.

During the last 6 months, a strategic review of Mt Charlotte underground has resulted in a significant increase in inventory:

- JORC compliant Reserves of 510koz (compared to 0.2Moz non-JORC compliant estimates at 31 December 2019)
- JORC compliant Resources of 1.9Moz

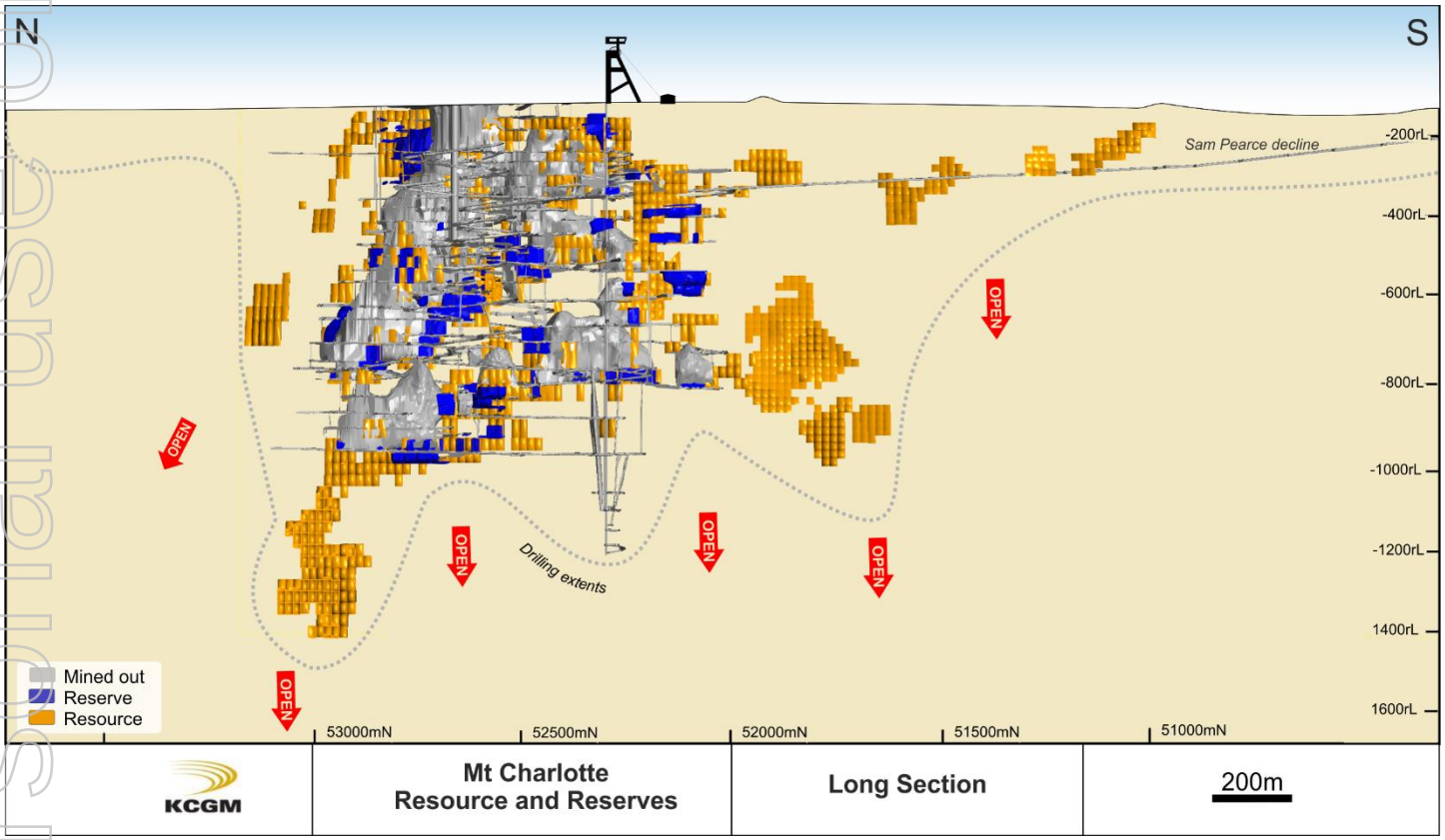


Figure 17 - Mt Charlotte Long Section, 2020 JORC compliant Ore Reserves & Mineral Resource

Since January 2020, over 23,000m of diamond drilling has been completed across the Mt Charlotte mine area. This new data coupled with the existing historic data has delineated **a number of exciting opportunities** including Mt Ferrum, Kal East and Little Wonder.

These opportunities are **all accessible from existing Mt Charlotte infrastructure** i.e. via the Sam Pearce decline and / or the Cassidy shaft, and will be the focus of ongoing exploration and growth.

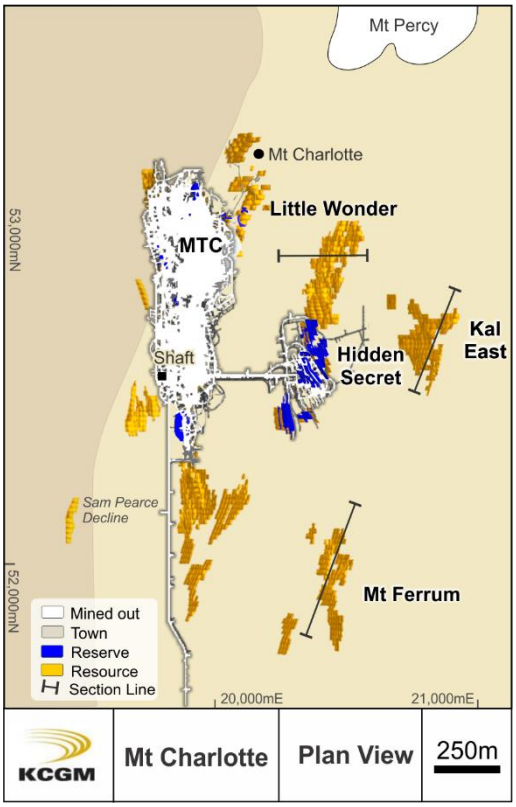


Figure 18 - Mt Charlotte Plan, New targets accessible from existing infrastructure

MT FERRUM

Across the greater Mt Charlotte area the mineralisation can be associated with both classic Mt Charlotte stockwork-style veining and shear hosted Fimiston-style mineralisation.

Recent exploration drilling completed south east from the Mt Charlotte mine has discovered significant extensions to the Mt Ferrum lode (Fimiston-style). The discovery hole returned an impressive **127.0m** @ **6.0g/t** (drilled down the lode). Followed up drilling returning further encouraging results including **6.7m** @ **19.6g/t** and **3.4m** @ **30.3g/t**.

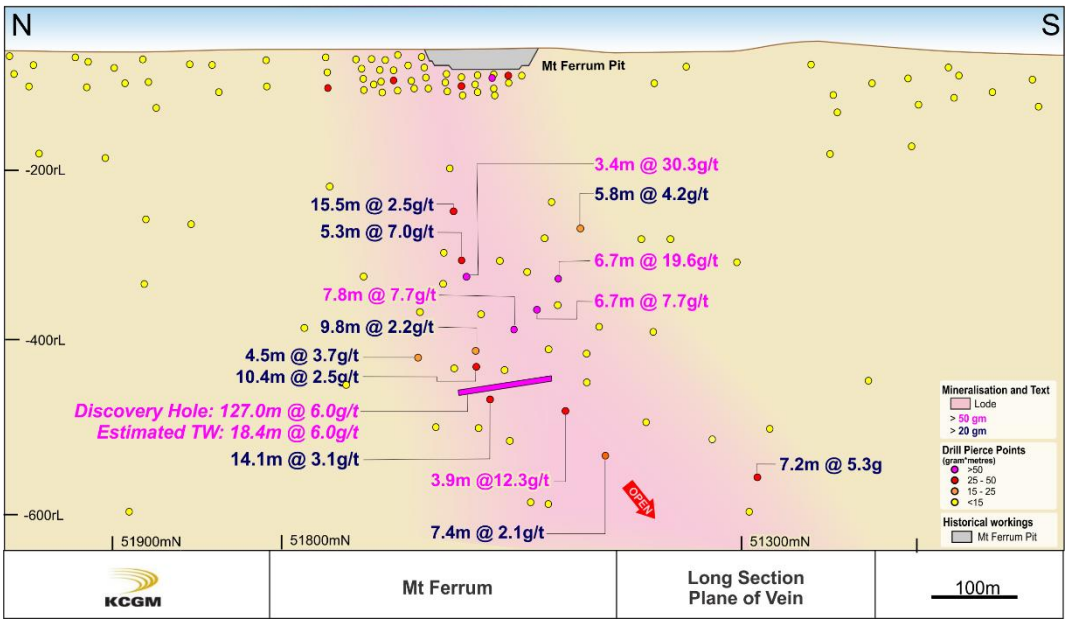


Figure 19 – Mt Ferrum Long Section, recent drill results

KAL EAST

The Kal East lode sits ~1km to the east of the Mt Charlotte mine. The mineralisation is Fimiston-style and sits higher in the stratigraphic sequence, hosted in the Williamstown Dolerite. The lode is a very high-grade discreet shear zone which remains open in all directions.

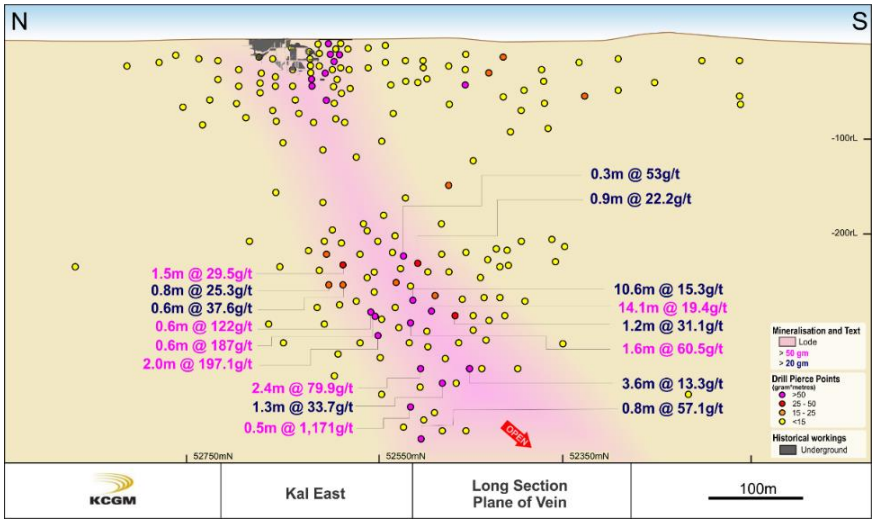


Figure 20 – Kal East Long Section, recent drill results

LITTLE WONDER

Little Wonder sits only 500m in the footwall of the Mt Charlotte mine. The mineralisation is a large stockwork similar to Mt Charlotte. The stockwork veins are strongly developed in the Devons Consols Basalt and have similar characteristics to those observed at Mt Charlotte.

The mineralisation has been sub optimally tested and further work is required to fully delineate the large bulk mining opportunity, which is in close proximity to the Mt Charlotte infrastructure.

Existing drilling into the Little Wonder stockwork has provided significant encouragement for future growth, with intersections including; **65.0m @ 2.3g/t, 22.0m @ 4.0g/t and 76.8m @ 2.0g/t**.

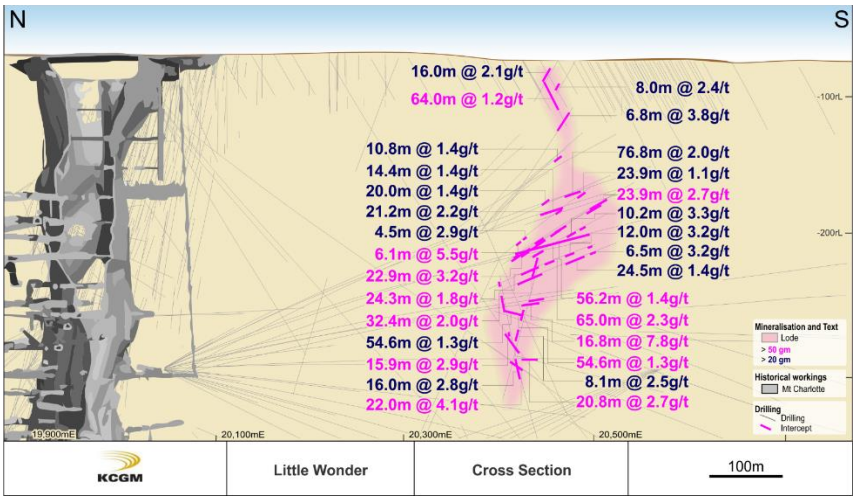


Figure 21 – Little Wonder Cross Section, existing drill results

The strong JORC compliant Resource and Reserve reported combined with the near mine opportunities highlight the long-term growth potential of the Mt Charlotte underground operation.

Significant progress has been made in upgrading critical infrastructure to support long term growth and sustained production activities at the Mt Charlotte operations. These include power, ventilation, pumping and upgrading ground support in the Sam Pearce decline.

Initiatives including moving to a 24 hours per day, seven days per week operation and opening new mining fronts have resulted in strong increases in underground productivities. For example, in the June quarter 2020 mined ore tonnes increased by 25% from the March quarter 2020.

Ore mined from Mt Charlotte is planned to hit 1.5Mt in FY21, substantially higher than prior years.

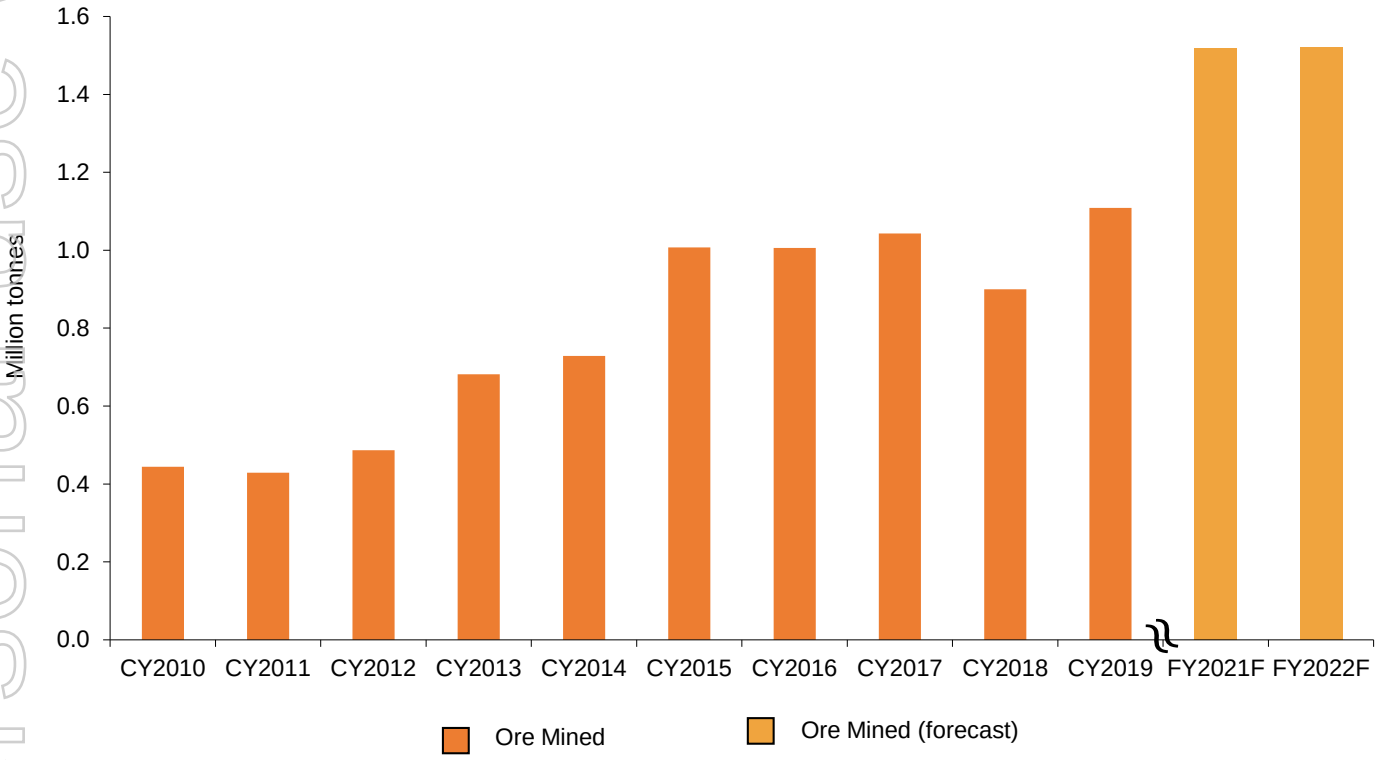


Figure 22 - Mt Charlotte, Ore mined

Fimiston – Underground

The world-class Fimiston deposit has produced in excess of 65Moz at a mined grade of 5.0g/t since 1893.

The present-day Fimiston 'Super Pit' extracts remnant ore and unmined gold lodes in proximity to historic underground workings that extend to a maximum depth of ~1,400 metres below surface. **Historic drilling intersects mineralisation at depths in excess of 2km.**

Drilling completed between 2017 and 2020 demonstrates the continuity of mineralisation beneath the current Fimiston open pit Resource. Significant intersections from this drilling includes:

- **8.2m @ 43.6g/t**
- **3.4m @ 296.4g/t**
- **11.2m @ 35.7g/t**
- **11.7m @ 13.6g/t**

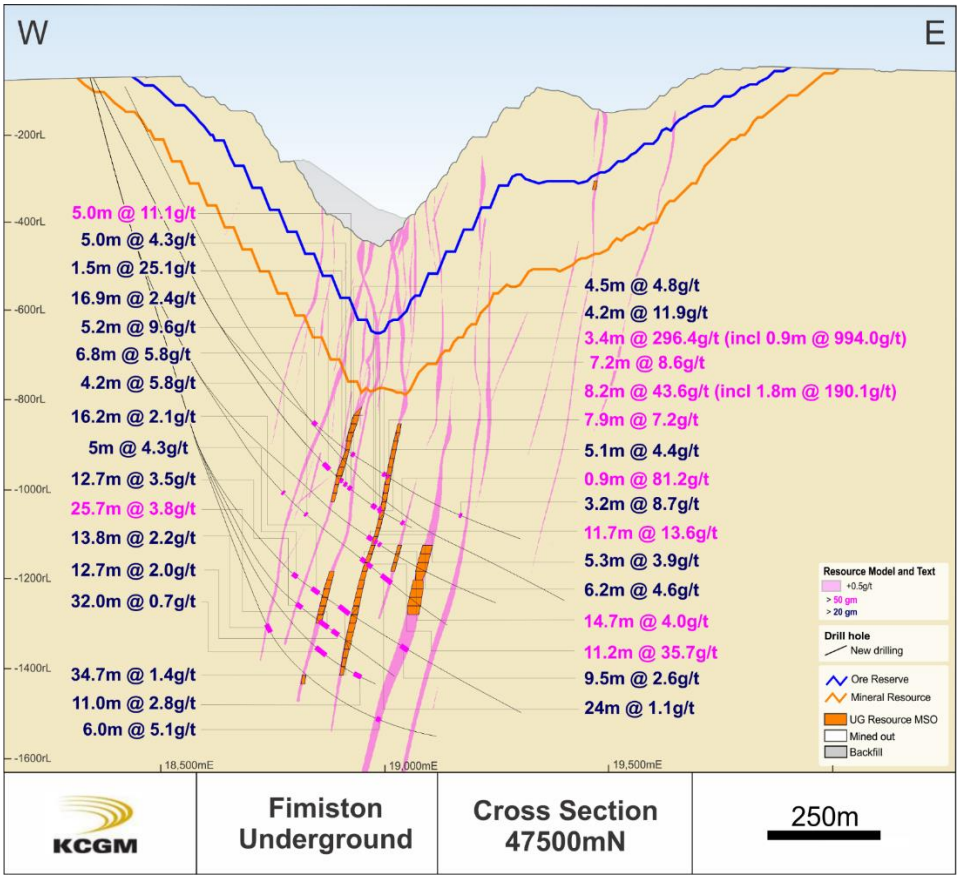


Figure 23 - Fimiston Underground Cross Section, existing drill results

This recent drilling program has been added to the extensive high quality historical dataset across the Fimiston system culminating in a **maiden underground JORC compliant Mineral Resource of 25.0Mt @ 2.8 g/t for 2.2 Moz**.

To accelerate further growth and definition of the underground JORC compliant Resource, a total of **A$10M** will be allocated in FY21 to establish **multiple in-pit portals** and **initial underground development** to re-establish underground access beneath the open pit.

The primary purpose of the development will be to **provide drill platforms to test depth extensions of the Fimiston lodes**, in addition to completing resource definition of the current pit JORC compliant Resource where pit shadows and surface infrastructure inhibit surface drilling. Work is currently in progress to finalise portal positions that will not inhibit in-pit production activities.

Production from the Fimiston Underground is slated to commence in FY26, providing ample time for infill and extensional drilling from the underground platforms to grow and improve the confidence of the maiden underground JORC compliant Inferred Mineral Resource of 2.2Moz @ 2.8g/t.

The results of the drilling over the coming years will help inform the optimum mining method(s) for the deposit as well as deliver a maiden JORC compliant Reserve that will further extend the mine life of the project. Development of Fimiston Underground is expected FY26.

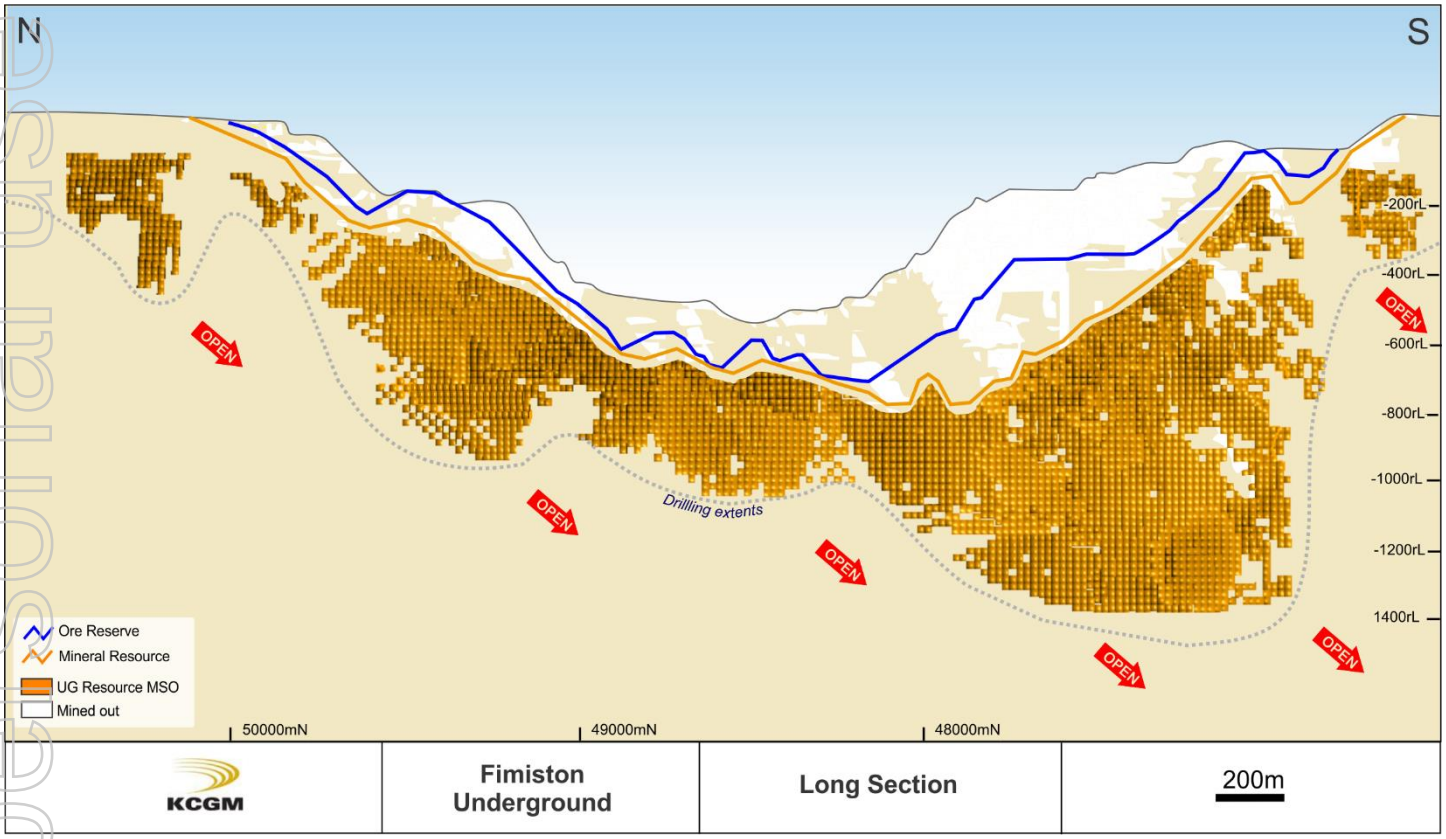


Figure 24 - Fimiston Underground Long Section, new JORC compliant Mineral Resource

Project updates

TAILINGS STORAGE FACILITIES

KCGM will construct a new tailings storage facility (TSF) with a capacity of 144Mt to support the expanded life of mine requirements.

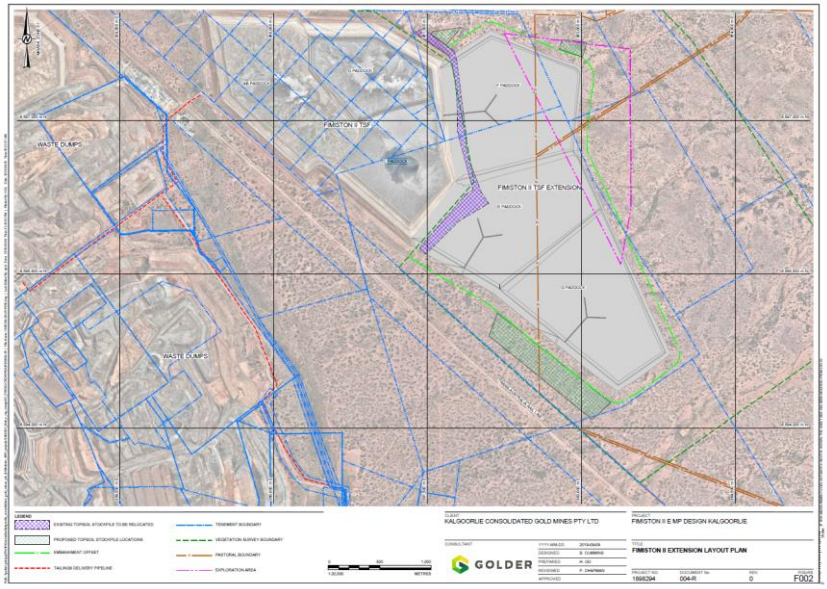


Figure 25 - Fimiston tailing storage facility extension

Development will occur in two stages with construction of the first two of three cells to commence in the June half 2021, with A$18m of FY21 growth capital allocated.

FY21 growth capital and exploration guidance

GROWTH CAPITAL

FY21 growth capital guidance is A$210m (100% basis).

Table 6 - FY21 growth capital guidance

Item	A$m
KCGM	
Open pit development - Oroya Brownhill	96
Open pit development - Fimiston South	68
Underground portal	10
Capital works	24
Resource evaluation	12
Total	**210**

FY22 growth capital guidance is A$240-270m (100% basis).

EXPLORATION

The reported JORC compliant Ore Reserves in just 6 months, and the broader exploration upside has motivated **FY21 regional exploration guidance of A$12m** (100% basis). Including JORC compliant Resource evaluation (growth capital in Table 6), the total FY21 exploration guidance is A$24m.

The KCGM Super Pit has a globally leading endowment of ~45,000oz per vertical metre. Historical underground mining extends up to 1400m below the surface and the deepest drilling in the system confirms the mineralisation is open at depth.

FY22 regional exploration guidance is A$12m (100% basis).

Authorised for release to ASX by Bill Beament, Executive Chair (NST) and Raleigh Finlayson, Managing Director (SAR).

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Competent Person Statements

The information in the report to which this statement is attached that relates to Exploration Results and Mineral Resources is based upon information compiled by Ms Emma Murray-Hayden, a Competent Person who is a member of The Australasian Institute of Mining and Metallurgy and the Australian Institute of Geoscientists. Emma Murray-Hayden is a full-time employee of Kalgoorlie Consolidated Gold Mines Pty Ltd . Emma Murray-Hayden has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken 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'. Emma Murray-Hayden consents to the inclusion in this announcement of statements based on this information in the form and context in which it appears.

The information in the report to which this statement is attached that relates to all underground Ore Reserves is based upon information compiled by Mr Jeffrey Brown, a Competent Person who is a member of The Australasian Institute of Mining and Metallurgy. Jeffrey Brown is a full-time employee of Northern Star Resources. Jeffrey Brown has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken 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'. Jeffrey Brown consents to the inclusion in this announcement of matters based on this information in the form and context in which it appears.

The information in the report to which this statement is attached that relates to all open pit Ore Reserves is based upon information compiled by Mr Ibrahim Omari, a Competent Person who is a member of The Australasian Institute of Mining and Metallurgy. Ibrahim Omari is a full-time employee of Kalgoorlie Consolidated Gold Mines Pty Ltd. Ibrahim Omari has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken 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'. Ibrahim Omari consents to the inclusion in this announcement of matters based on this information in the form and context in which it appears.

Forward looking statements

Northern Star Resources and Saracen Mineral Holdings have jointly prepared this announcement based on information available to them and it contains forward looking statements. Often, but not always, forward looking statements can be identified by the use of forward looking words such as "may", "will", "expect", "intend", "plan", "estimate", "anticipate", "continue", and "guidance", or other similar words and may include, without limitation, statements regarding parties' intent, belief or expectations, plans, strategies and objectives of management, expected costs or production parameters. Forward looking statements are not a guarantee of future performance or outcomes and should not be relied on as such. Mining operations bring with them inherent uncertainty as to the ability to realise life of mine or production profiles, particular cost outcomes or pricing expectations; those being matters beyond the control of the operator.

Mineral Resources and Ore Reserves – Other Material Information Summary

The assessment and reporting criteria in accordance with JORC Code 2012 for each of the KCGM projects is presented as an appendix to this announcement.

A summary of all other material information pursuant to ASX Listing Rules 5.8 and 5.9 and JORC Code 2012 is provided below for each material KCGM mining projects. Material mining projects (significant projects) are, or likely to be, material in the context of the overall business operations or financial results of the Joint Venture between Northern Star Resources Limited and Saracen Mineral Holdings Pty Ltd.

APPENDIX A: MATERIAL INFORMATION SUMMARY

FIMISTON MINERAL RESOURCE

Material Assumptions for Mineral Resources

The Fimiston Open Pit Mineral Resource estimate is constrained by an optimised mining shape using an A$2,250/oz gold price assumption and 0.5g/t cut-off grade. The Fimiston Underground Mineral Resource estimate is defined by an underground mining shape optimiser (MSO) using an A$2,250/oz gold price assumption, a 1.5g/t cut-off grade and 2.5m minimum mining width.

Estimation Methodology

Mineralisation is domained based on geological continuity. All domain wireframes are created using Leapfrog software and all subsequent geostatistical evaluation and resource estimation is completed using Supervisor and Datamine software respectively.

Lode wireframes are intersected with a validated drill database from which lower confidence drill holes have been removed. All remaining diamond and RC samples are flagged with a domain identifier and composited to 2m with 0.2m minimum sample. Residual samples are distributed across adjacent component intervals.

Due to the complexity of Fimiston mineralisation, many of the lodes exhibit mixed grade populations internal to the domain which are difficult to manually partition. Where this is the case and sufficient samples are available categorical indicator kriging (CIK) is used to sub- domain the lode into low and high grade envelopes. This is achieved through review of log probability plots by domain from which grade cut-offs and subsequent indicator variograms are derived. Prior to indicator estimation, simulated drill holes are created on a 10m x10m YZ grid through the stope asbuilts which are then restricted by the lode interpretations.

These data points are appended to the composite file as samples above cut-off and used to supplement the indicator estimate. The rationale for the process is that stoped material was high grade prior to extraction and as such should be used to inform sub-domain continuity. Grade cut-offs are applied to the combined composite file and an indicator assigned by domain and estimated using ordinary kriging weighted by the relevant indicator variogram. Dynamic anisotropy is used to control both search ellipse and variogram orientation to account for local variation in lode geometry. Domains are subsequently reviewed for a probability threshold above which high grade sub-domains are assigned. The simulated drill holes are then removed from the composite file and sub-domains back flagged from the block model.

For gold, sub-domains are evaluated for grade variograms and kriging neighbourhood analysis (KNA) conducted to derive appropriate sample counts, search strategy, discretisation and parent block size. For sulphur, variograms on the full domains are created due to less internal grade variation evident in the lode. KNA is again completed to select appropriate estimation parameters.

Gold and sulphur are estimated using ordinary kriging into sub-domains and domain parent blocks respectively using the requisite variogram model. Hard boundaries are maintained between domains and sub-domains as confirmed by contact analysis. A nested search strategy is employed with the first pass aligned to the full range of the variogram followed by 2 subsequent passes of increasing volume.

Resource Classification

The Fimiston resource is classified as Indicated or Inferred assigned via boundary string by domain based on a combination of physical and estimation quality metrics including mining exposure, drill spacing, variogram range, kriging efficiency / slope / variance, grade, geological continuity and historical reconciliation.

Indicated is assigned to mineralisation above the $2,250 pit shell where drill spacing <=50x50m defined by average full range of grade variograms, established grade continuity above 0.3g/t gold, geological continuity defined by consistent ore zone alteration and/or exposure by historical underground mining, positive kriging efficiency and >25% slope.

Inferred material is assigned where drill spacing is >50x50m and <=90x90m's with established geological continuity as defined by consistent vein selvage alteration and/or exposure by historical underground mining.

All other mineralisation is assigned a Potential resource category. The Mineral Resource estimate appropriately reflects the view of the Competent Person and is assigned in accordance with the JORC 2012 Code.

Open pit Mineral Resources use a 0.5g/t cut-off grade. Underground Mineral Resources use a 1.5g/t Au cut-off grade.

Audits or reviews

The Mineral Resource Estimate has been both internally and externally reviewed.

FIMISTON ORE RESERVE

Material Assumptions for Ore Reserves

The Ore Reserve is based on the Mineral Resource and a Pre-Feasibility Study (PFS) level study.

Cut-off parameters

The Ore Reserve Estimation is based on a cut-off of 0.50g/t and accounts for mining dilution. The open pit cut-off grade has been calculated based on the key input components (gold price, processing costs, administration costs and recovery).

Mining factors or assumptions

Mineral Resource is converted to Ore Reserve after completing a detailed mine design complete with a detailed financial assessment.

The Mineral Resource block model is the basis for design and evaluation.

Open Pit Ore Reserves have been calculated by generating detailed pit designs for the proposed cutbacks. A series of nested optimised pit shells were generated using Whittle software, an analysis of the shells was completed to identify the preferred shell. The detailed pit design follows the preferred pit shell as closely as practicable.

The Whittle optimisation input parameters are validated by KCGM technical personnel and technical consultants and are supported by an abundance of historic data.

Metallurgical factors or assumptions

The Fimiston plant is made up of crushing, grinding, gravity gold recovery, flotation, UFG, CIL, elution and gold recovery circuits.

The milling facilities are designed to process approximately 12 million tonnes per annum. The plant has the capability to treat both refractory and free milling ores through a flotation circuit and associated concentrate ultra-fine grinding circuit. Ore Reserves are calculated using processing plant recovery factors that are based on test work and historical performance.

Costs

The detailed mine designs are incorporated into the life of mine plan and scheduled through to completion. The schedule is costed in detail from first principals. Cost assumptions are supported by an abundance of historic data and have been validated by an independent third party.

Revenue factors

The Ore Reserve was generated using an A$1,750/oz gold price.

Economic

NPV is used during Pre-Feasibility and Feasibility studies as required. Economic assumptions such as discount rate and estimated inflation are finalised at the time of the study.

The Ore Reserve is based on detailed life of mine designs. All relevant capital and operating costs as well as revenue and selling costs have been accounted for.

Classification

The classification of the Ore Reserve reflects the view of the Competent Person and is in accordance with the JORC 2012 Code.

Ore Reserves classifications are derived from the underlying Resource model classifications – i.e. Measured Resource material is able to be converted to either Proved or Probable Reserves, with Indicated Resource material able to be converted to Probable Reserves.

Audits or reviews

The Ore Reserves reporting processes has been subjected to an internal review by KCGM and the JV owner's Senior Technical personnel in July 2020.

MT CHARLOTTE MINERAL RESOURCE

Material Assumptions for Mineral Resources

The Mt Charlotte Underground Mineral Resource estimate is defined by an underground mining shape optimiser (MSO) using an A$2,250/oz gold price assumption and 2.5m minimum mining width and 1.4g/t cut off grade.

Estimation Methodology

Mineralisation is domained based on geological continuity and style. All domain wireframes are created using Leapfrog software and all subsequent estimation is completed using Datamine software. Lode wireframes are intersected with a validated drill database from which all RAB, air core, and erroneous drill holes have been removed. All remaining diamond, RC and face samples are flagged with a domain identifier and composited to 1m with 0.3m minimum sample. Residual samples are distributed across adjacent component intervals. Composites are analysed for population outliers by domain and topcut proximal to population disintegration. Many of the lodes exhibit bi/multi-model grade populations. These internal populations are controlled by grade indicators based on inflexion points in domain log probability plots from which indicator variograms are created. Categorical indicator kriging (CIK) is then used to sub-domain lodes with mixed populations. The block model used in the CIK estimation has blocks set at 1x5x2m to ensure sub-domain complexity is maintained then optimised and re-blocked to the parent block size of 5x10x5m. This model is then used to back flag the composite file with the defined sub-domain identifiers. Multiple Indicator Kriging (MIK) on a 5mx10mx5m block size was used to estimate the Mt Charlotte Mine ore bodies due to factors of drilling density, mineralisation style and multi mixed data populations.

Variography is created for all domains and sub-domains with sufficient sample data. Output variograms are utilised in kriging neighbourhood analysis (KNA) to generate optimum parent block sizes and estimation parameters. Domains and sub-domains are estimated using ordinary kriging utilising the estimation parameters defined in the KNA as inputs. Grade is estimated into parent blocks only and all kriging quality metrics and search pass values are output.

Resource Classification

The Mt Charlotte Mineral Resource estimate is classified as Measured, Indicated, Inferred by boundary string based on a combination of physical and estimation quality metrics including mining exposure, drill spacing, search pass, kriging efficiency /slope of regression, grade and geological continuity. Mineralisation has been categorised as Measured if it has been exposed by mining (open pit or development), have drill spacing at <=20x20m's, estimated in the first search pass, have established grade and geological continuity, and >50% kriging efficiency and >80% slope. Indicated material is assigned if drill spacing is between 20x20m and 35x35m, search pass either 1 or 2, established grade and geological continuity, positive kriging efficiency and >50% slope of regression. Inferred material is drill spacing between 35x35m and 80x80m's with established geological and grade continuity. All other mineralisation is assigned a Potential resource category.

The Mineral Resource estimate appropriately reflects the view of the Competent Person and is assigned in accordance with the JORC 2012 Code.

Cut-off Grade

Underground Mineral Resources use a 1.4g/t Au cut-off grade.

Audits or reviews

The Mineral Resource Estimate has been internally reviewed.

MT CHARLOTTE ORE RESERVE

Material Assumptions for Ore Reserves

The Ore Reserve is based on the Mineral Resource and a Pre-Feasibility Study (PFS) level study.

Cut-off parameters

Forward looking forecast costs and physicals form the basis of the cut-off grade calculations.

- The assumed AUD gold price is at a conservative assumption of $1,750/oz
- Mill recovery factors are based on test work and historical averages from the mine.

Mining factors or assumptions

Mineral Resource is converted to Ore Reserve after completing a detailed mine design complete with a detailed financial assessment.

The Mineral Resource block model is the basis for design and evaluation.

The Mount Charlotte underground mine is accessed via a portal within the Fimiston Open Pit and the Cassidy Shaft. Production in Mount Charlotte is carried out utilising a combination of remnant Sublevel caving, modified Avoca and conventional longhole open stoping. Where possible, stopes are backfilled with development waste to save haulage costs.

Metallurgical factors or assumptions

The Fimiston plant is made up of crushing, grinding, gravity gold recovery, flotation, UFG, CIL, elution and gold recovery circuits.

The milling facilities are designed to process approximately 12 million tonnes per annum. The plant has the capability to treat both refractory and free milling ores through a flotation circuit and associated concentrate ultra-fine grinding circuit. Ore Reserves are calculated using processing plant recovery factors that are based on test work and historical performance.

Costs

Mine development capital cost based on historical performance on site and life-of-mine forward planning. Plant and equipment capital are based on site experience and the LOM plan.

Revenue factors

All revenue based on a gold price of AUD $1,750/oz.

Economic

All costs assumptions are made based on historical performance from the mine and current economic forecast seen as representative of current market conditions.

Classification

The classification of the Ore Reserve reflects the view of the Competent Person and is in accordance with the JORC 2012 Code.

Ore Reserves classifications are derived from the underlying Resource model classifications – i.e. Measured Resource material is able to be converted to either Proved or Probable Reserves, with Indicated Resource material able to be converted to Probable Reserves.

Audits or reviews

This ore reserve has been prepared and peer reviewed internally within KCGM, NST and SAR. There have been no external reviews of this Ore Reserve estimate.

KCGM JORC (2012) TABLE 1

JORC Code, 2012 Edition – Table 1

Fimiston: Resources and Reserves – July 2020

Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

<table>
<tr><th>Criteria</th><th>JORC Code explanation</th><th>Commentary</th></tr>
<tr><td rowspan="3">Sampling techniques</td><td>Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.</td><td>The sampling database for the KCGM Mineral Resource estimation has been collected over the last 115 years.

The data has been collected by many different operations, using varying techniques. Assay information quality also varies with detection limit and quality: generally, the quality appears to be inversely proportional to the age of the samples. For this reason, assay information collected prior to 1984 is not used in the interpolation of element grades.

All information collected prior to involvement by Northern Star Resources and Saracen Minerals in 2019 is hereafter referred to as historical data. Only historical data that is deemed as having acceptable and traceable location and assay information has been included in the Mineral Resource estimation dataset for Fimiston.

For Mineral Resource estimation the Fimiston deposits are sampled in majority by diamond drilling (DD) and reverse circulation (RC) drilling.

<table>
<tr><th>Hole Type</th><th>No. of Collars</th><th>Total Metres</th><th>No. of Samples</th></tr>
<tr><td>Surface Diamond</td><td>57</td><td>48,651</td><td>28,801</td></tr>
<tr><td>RC Resource Definition</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>RC Open Pit Grade Control</td><td>1,808</td><td>81,008</td><td>39,447</td></tr>
<tr><td>Underground Diamond</td><td>64</td><td>22,495</td><td>23,973</td></tr>
<tr><td>Total Number of Drill holes</td><td>1,932</td><td>152,238</td><td>92,263</td></tr>
</table>
</td></tr>
<tr><td>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</td><td>The DD drilling down hole depth is recorded by the drillers on core blocks after every run. This is checked and compared to the measurements of the core by the geologist during core mark-up prior to logging, to prevent incorrect logging and sampling errors. Sample intervals are then marked on the core by a geologist, to honour geological boundaries. Sample interval lengths vary from 0.3m and 1.3m. DD core is orientated, measured and then sampled by cutting the core in half longitudinally using an “Almonte” diamond saw. Cutting is along orientation and cut lines. The same half of the core is always selected for each sample interval, placed in numbered calico bags that contain a bar code, scanned into the database and submitted to the laboratory for analysis. The other half of the core is left in the core tray, which was stamped for identification, stored and catalogued. Routine ‘field duplicates' to assess sample representivity are not performed on diamond core as these are not considered to be true field duplicates.

RC samples are homogenised by riffle or cone splitting prior to sampling and then submitted for assay as either 1m or 2m intervals for exploration and resource definition samples and 2m composites for grade control in pit drilling. Certified standard samples, ranging in grades from 0.63 gpt Au to 12.74 gpt Au, purchased from Gannet Holdings, are inserted at the rate of one in 40 samples. The results are reviewed on a per batch basis and the entire batch of samples is reanalysed if the result is greater than three standard deviations (SD) from the expected result.

All drill collars are surveyed by using a total station theodolite or total GPS.</td></tr>
<tr><td>Aspects of the determination of mineralisation that are Material to the Public Report. In cases where ‘industry standard’ work has been done this would be relatively simple (e.g. ‘reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30g charge for fire assay’). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling</td><td>Historical sample preparation and assay procedures are variable due to the duration of historical work and the numerous companies involved. All historical sampling accepted for use in the Mineral Resource estimates are considered to have been collected by acceptable practices.</td></tr>
</table>

Criteria	JORC Code explanation	Commentary
	problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.	Current sample preparation and assay procedures employed by KCGM are considered as following industry standard practice. All assay determinations are conducted by internationally recognised laboratories. The primary laboratory, Bureau Veritas, meets ISO 9001:2000. Samples are oven dried until a constant mass is achieved. All samples are then processed through an Essa Jaw Crusher or a Boyd Crusher to 90% < 3 mm. The crushed sample is then pulverised for 4 minutes in an LM5 pulveriser for a product of 90% passing < 75 µm. Approximately 250 - 300g of the pulp is retained and a 40g charge weight for fire assay is extracted from the pulp packet. Samples are tested for sulphides and flux adjusted, flux is added at a ratio of 1:4. Samples are fired, hammered and cupelled. Prills placed in tubes, dissolved on hotplates and analysed using AA finish with over range dilutions. Sample preparation for Sulphur determination follows the same process as for Gold, with assaying taking place using the LECO method.
Drilling techniques	Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc.).	The Fimiston drilling database is composed of surface and in-pit reverse circulation (RC) drill holes and PQ, HQ, NQ, and BQ diamond drill holes from surface and underground. Where possible diamond core was orientated using a spear, Ballmark™, Ezimark™, or ACE multi electronic tool. For RC holes either 5.5inch or 5.25inch diameter face sampling hammer was used.
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed.	For DD, all recovery is recorded by the drillers on core blocks. This is checked and compared to the measurements of the core by the geologist. Recovery is generally very high, in excess of 95%, and there have been no significant sample recovery problems. Historic DD core stored on site shows excellent recovery. For DD drilling, any core loss is recorded on the core block by the driller. This is then captured by the logging geologist and entered as interval into the hole log. Drilling within Fimiston regularly intersects historic underground workings (voids), this is recorded on the core block as well as on driller's plods and is recorded in the database. Where possible drilling continues beyond the void. RC drilling sample weights were recorded for selected sample intervals and monitored for fluctuations against the expected sample weight. If samples were below the expected weight, feedback was given promptly to the RC driller to modify drilling practices to achieve the expected weights
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	For DD, drilling contractors adjust the rate of drilling and method if recovery issues arise. Minor loss occurs when drilling through fault zones such as the Golden Pike Fault. Areas of potential lower recovery are generally known before hand and controlled drilling techniques employed to maximise recovery.
	Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	No specific study has been carried out on recovery and grade. As recoveries are generally very high (95%+) it is assumed that the potential for bias due to variable sample recovery is low.
Logging	Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.	Core is logged using either digital logging into a laptop computer or onto paper logs and then transcribed into the database. Logging records lithology, stratigraphy, oxidation state, structure, vein form, mineralisation, and alteration. All drill core is photographed using a digital camera and stored on the site server. RC samples are first split at the rig using a cone splitter, with the sample stream being placed into numbered calico bags and the reject stream stored in chip trays for logging. Resource definition RC drill chips are sieved and a small representative sample is collected in chip trays, one sample for each two metre interval. These samples are logged using the same parameters as for diamond core above. Geological boundaries are defined to the nearest two metres. The data are manually entered directly into the database. Logging is entered in Acquire using a series of drop-down menus which contain the appropriate codes for description of the rock. Chips from all exploration RC holes are stored in chip trays for future reference while remaining core is stored in core trays and archived on site. RC chips from grade control are retained until assays have been returned and validated, after which the chips are disposed of. Qualitative and quantitative logging of historic data varies in its completeness.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	Geology logging is qualitative in nature with visual estimates made of mineralisation percentages for core. Structural and geotechnical logging is quantitative in nature. All core is photographed wet as standard practice. Historically some core may have also been photographed dry.
	The total length and percentage of the relevant intersections logged.	100% of the drill core is logged.

Criteria	JORC Code explanation	Commentary
Sub-sampling techniques and sample preparation	If core, whether cut or sawn and whether quarter, half or all core taken.	DD core is sampled by sawn half-core on intervals controlled by geological domaining represented by mineralisation, alteration and lithology. A selected number of grade control holes were full cored. Mineralised intersections are sampled with a maximum and minimum length of 1.3m and 0.3m, respecting lithological or alteration contacts. The down hole depth of all sample interval extents are recorded.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	All RC samples are split using a rig-mounted cone splitter to collect a sample 3 - 4 kg in size from each 2 m interval. Wet samples are rarely encountered in Fimiston, however any samples that fail KCGMQA/QC protocols are removed from the estimate.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	Sample preparation follows industry standard practice. Samples are oven dried until a constant mass is achieved. All samples are then processed through an Essa Jaw Crusher or a Boyd Crusher to 90% < 3 mm. The crushed sample is then pulverised for 4 minutes in an LM5 pulveriser for a product of 90% passing < 75 µm. Approximately 250 - 300 g of the pulp is retained and a 40g charge prepared.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	Coarse grind checks at the crushing stage (3mm) are carried out at a ratio of 1:25 samples with 90% passing required. Pulp grind checks at the pulverising stage (75 µm) are carried out at a ratio of 1:25 samples with 90% passing required. Laboratory duplicate samples are taken for coarse crush (3mm) and pulverising (75 µm) stages at a ratio of 1:25 samples. Repeat assays are carried out at a ratio of 1:10 on prepared pulp samples.
	Measures taken to ensure that the sampling is representative of the in-situ material collected, including for instance results for field duplicate / second-half sampling.	Quarter core sampling of diamond core is occasionally undertaken for check assays, however routine field duplicates are not performed on diamond core as these are not considered to be true field duplicates. Umpire sampling is performed fortnightly, where 10% of the samples are sent to the umpire lab for processing.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	The sample and size (3kg to 4kg) relative to the particle size (>90% passing 75um) of the material sampled is a commonly utilised practice for effective sample representation for gold deposits within the Eastern Goldfields of Western Australia
Quality of assay data and laboratory tests	The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.	Fire assay analysis is undertaken and this is considered to be a total assay method. Monthly QAQC reports are prepared to check for any bias or trends with conclusions discussed with the laboratory management. Holes that do not pass QAQC are not used for Mineral Resource estimation.
	For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.	No geophysical tools were used to determine any element concentrations.
	Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.	Sampling and assaying QAQC procedures include: - Periodical resubmission of samples to primary and secondary laboratories - Submittal of independent certified reference material - Sieve testing to check grind size - Sample recovery checks. - Unannounced laboratory inspections Standard control samples and blanks purchased from certified commercial suppliers are inserted at a ratio of 1:40. The standard control samples are changed on a 3-month rotation. The results are reviewed on a per batch basis and batches of samples are re-analysed if the result is greater than three standard deviations from the expected result. Any result outside of two standard deviations is flagged for investigation by a geologist and may also be re-assayed. Blanks are inserted into the sample sequence at a nominal ratio of 1:40. The insertion points are selected at random, except where high grade mineralisation is expected. In these cases, a Blank is inserted after the high-grade sample to test for contamination. Results greater than 0.2 gpt are investigated, and re-assayed if appropriate. New pulps are prepared if anomalous results cannot be resolved. When visible gold is observed in core, a barren flush is required. Laboratory performance was monitored using the results from the QA samples mentioned above. This was supplemented by the internal QA samples used by the laboratories, which included pulp duplicates and CRMs

Criteria	JORC Code explanation	Commentary
		The QA studies indicate that accuracy and precision are within industry accepted limits.
Verification of sampling and assaying	The verification of significant intersections by either independent or alternative company personnel.	All significant and anomalous intersections are verified by a Senior Geologist during the drill hole validation process.
	The use of twinned holes.	No twinned holes were drilled for this data set. Re-drilling of some drill holes has occurred due to issues downhole (e.g. bogged rods). These have been captured in the database as an 'A'. Re-drilled holes are sampled whilst the original drill hole is logged but not sampled.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	All data are stored and validated within the site AcQuire database. Data imported into the database is controlled by documented standard operating procedures, and by a set of validation tools included in Acquire import routines. Hard copies and electronic copies of all primary location, logging and sample results data are filed for each hole. Assay results are received in a comma-separated values (.csv) file format and loaded directly into the database by the supervising geologist who then checks that the results have inserted correctly. Holes that cannot be accurately validated or do not meet the requirements of Fimiston Quality assurance and Quality Control (QAQC) are excluded prior to Mineral Resource estimation.
	Discuss any adjustment to assay data.	No adjustments are made to this assay data.
Location of data points	Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.	Planned holes are marked up by the KCGM surveyors using RTK-GPS in the mine grid. All historical drill hole collar positions were assumed to be surveyed. All recent drill hole collar positions were surveyed. All recent DD holes were surveyed down hole by various methods including single shot down hole camera, EMS (Electronic Multi Shot) method or in-rod gyroscopic survey tools. Holes are typically surveyed at 15m and 30m intervals down hole thereafter. QAQC is performed on the speed of running and on the misclose rate for each gyroscopic survey. Where issues are identified, a single survey run can be chosen as preferred with the remaining data ignored. This data is converted to CSV format and imported into the AcQuire database where it is validated by the project geologist. Any poor surveys are re-surveyed. If survey data is missing or quality was suspect and not replaced by more recent drilling, affected data was not used in estimation.
	Specification of the grid system used.	The Fimiston data is exported and modelled on the mine Oroya East Grid. This is a rotated grid 38.3° from MGA 94.
	Quality and adequacy of topographic control.	The topography surface wireframe is generated from an annual flyover survey completed by Fugro Australia Land Pty Ltd with +/- 15cm resolution.
Data spacing and distribution	Data spacing for reporting of Exploration Results.	Drill hole spacing varies through the deposit. Exploration drill spacing targets areas of gaps within the current dataset. These vary from 100m to 25m infill spacing. Fimiston is nominally 50mE x 60mN down to 20mE x 25mN in the Eastern zones of mineralisation, 50mE x 60mN down to 15mE x 20mN in the Western Zones of mineralisation and 40mE x 50mN down to 12mE x 20m in the Northern zones of mineralisation. While open pit drill hole spacing is 8mE x 10mN. Cross mineralised structures in the hanging wall and footwall of Fimiston are typically narrower and less consistent so have a nominal drill spacing of 10m x 10m.
	Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.	The data spacing in the ore lodes at Fimiston is considered sufficient to support the estimation of Mineral Resources and Reserves as applied under the 2012 JORC Code. Appropriate geological and grade continuity have been demonstrated during the 20+ years of mining at the Fimiston operations.
	Whether sample compositing has been applied.	No sample compositing has been applied to the database. For grade estimation, the datasets are composited to 2 m intervals prior to grade estimation. This aligns with the most common sample length taken.
Orientation of data in relation to geological structure	Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.	The majority of data is drilled perpendicular to the interpreted strike of the Fimiston ore lodes. Due to the complex overlapping nature of the mineralised zones, actual intersections may be slightly oblique to the intended right-angle intersections. Recent drill intercepts from 2020 are recorded in true width where known. Historical drill intercepts are recorded as downhole width, unless otherwise stated. The majority of drill holes are positioned to achieve optimum intersection angles to the ore zone as are practicable.
	If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.	Holes with orientations that are considered likely to introduce sampling bias are flagged during drill hole validation and are excluded from the Mineral Resource estimation datasets.

Criteria	JORC Code explanation	Commentary
Sample security	The measures taken to ensure sample security.	All core is kept within the site perimeter fence on the Mining Lease M 26/131, M 26/353, M 26/78 and M 26/86. Samples are dispatched and/or collected by an offsite delivery service on a regular basis. Each sample batch is accompanied with a: - Job number - Number of Samples - Sample Numbers (including standards and duplicates) - Required analytical methods - A job priority rating A Chain of Custody is demonstrated by both KCGM and Bureau Veritas in the delivery and receipt of sample materials. Any damage to or loss of samples within each batch (e.g. total loss, spillage or obvious contamination), is reported to the KCGM in the form of a list of samples affected and detailing the nature of the problem(s).
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	Sampling performed by KCGM staff and contractors is reviewed weekly by senior KCGM geology personnel including task observations and inspections. Data is reviewed regularly by senior KCGM geology personnel and low confidence data is excluded from the estimate.

Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	The tenement portfolio is located on land owned by the State of Western Australia on Crown reserves or vacant Crown land. KCGM manages the tenement portfolio for the KCGM operations on behalf of the Joint Venture Owners, Saracen Kalgoorlie Pty Limited (Saracen) and Northern Star (KLV) Pty Ltd (Northern Star). The portfolio comprises of 322 granted tenements which is a combination of Miscellaneous (73) and Prospecting Licenses (25), and General Purpose (107) and Mining Leases (117). The tenements cover a total area of approximately 34,000 hectares extending in a north-south direction over a distance of approximately 45km, centred on the Super Pit. There are two registered Native Title Claims that incorporate the KCGM leases. Claimant groups include the Maduwongga people (WC2017/001) and Marlinyu Ghoorlie (WC2017/007). These claims are currently before the tribunal for the Determination.
	The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.	No known impediments exist and the tenements are in good standing.
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	In the 1970s, the Golden Mile was controlled by three companies: Kalgoorlie Mining Associates (KMA), Kalgoorlie Lake View (the majority owner of KMA) and North Kalgurli Mines. In 1974, all operations on the Golden Mile had ceased, apart from the highly mechanized Mt Charlotte Underground Mine. Modern day surface mining commenced in 1983 in the Kemlo Pit followed by the Croesus and Eclipse pits and the Central and Paringa pits in 1985. KCGM was formed in 1989 to run the operation on behalf of its owners Homestake Gold of Australia Ltd (Homestake) and GMK, a subsidiary of Normandy Mining Limited. By 1992, all labour intensive, high cost underground mining of narrow zones stopped in the Main, Croesus, Chaffers, Lake View, and Perseverance shafts. Fimiston underground production ceased in 1994. In 2001, Homestake merged with Barrick to form Barrick Gold Australia, thereby becoming a 50% owner of KCGM. In 2002, Newmont acquired Normandy Mines Limited, thereby becoming a 50% owner of KCGM. In 2019, Saracen and Northern Star acquired the operation from Barrick and Newmont respectively.
Geology	Deposit type, geological setting and style of mineralisation.	The Golden Mile deposit occurs in the Kalgoorlie Terrane within the southern portion of the NNW trending Archaean Norseman-Wiluna Greenstone Belt. The greenstone belt has been multiply deformed and regionally metamorphosed to grades varying from lower greenschist to amphibolite grade. The stratigraphy covered by the Fimiston Project tenements consists of a basal ultramafic unit called the Hannan Lake Serpentinite. This ultramafic unit is overlain successively by the high magnesian Devon Consols Basalt, Kapai Slate, tholeiitic Paringa Basalt and the Black Flag sediments. Differentiated zones of dolerite and gabbro texture occur within the mafic sequence. The Golden Mile Dolerite, hosting the bulk of the Golden Mile and Mount Charlotte gold mineralisation, is a strongly differentiated layered gabbro, approximately 700m in thickness. The Golden Mile Dolerite is situated conformably between the Paringa Basalt and the Black Flag sediments. This entire stratigraphic sequence is intruded by numerous porphyry dykes of intermediate to felsic composition. The Fimiston style gold mineralisation, which accounts for the bulk of the economic gold ore of the Golden Mile deposit, is hosted dominantly in the Golden Mile Dolerite with lesser mineralisation hosted in the Paringa Basalt. The Golden Mile deposit is an intensely mineralised Archaean shear zone system developed between the Adelaide and Golden Pike faults (Clout et al., 1990). Gold mineralisation occurs over a north-south strike length of 4,250m, a width of 1,850m and has been historically mined to a depth of about 1,200m underground. The mineralisation consists of numerous narrow, generally 1-2m wide, but locally up to 20m wide, vertically and laterally extensive lodes, up to 1,200m vertical and over 1,000m along strike length. The Fimiston lodes occur in three principle orientations: Main 140°/80°W, Caunter 115°/55°W to 80°W and Cross Lodes 050°/90° to 80°N-S (Finucane, 1948). The deposit lies within a regional syncline and is divided into the Eastern Lode System and the Western Lode System, divided by the steeply dipping reverse Golden Mile Fault. The Main and Caunter lodes are the dominant sets in both the Western and Eastern Lode Systems. The lodes in the Western Lode System display good lateral and vertical continuity whereas lodes in the Eastern Lode System are segmented by numerous steep reverse faults. The lodes in the Western and Eastern Lode System form a funnel shaped array which is sub-vertical in the Western Lode System and steeply west dipping in the Eastern Lode System (Gauthier, 2005).

Criteria	JORC Code explanation	Commentary
		The Mt Charlotte style gold mineralisation accounts for the bulk of the economic gold ore of the Mt Charlotte deposit, but may be seen in some areas of Fimiston Pit. It is predominantly associated with pyrite in carbonate alteration haloes around quartz veins with a minor proportion as relatively coarse free gold within the veins, commonly close to their margins. The veins vary in width from a few millimetres to a maximum of about 2 metres but are commonly between 2 cm and 50 cm wide. The vein spacing varies from 20 cm to tens of metres but is typically from 50 cm to 2 metres in areas mined as ore. Quartz is the dominant vein-fill mineral; accessory vein minerals include calcite, ankerite, scheelite, pyrite, pyrrhotite, and gold.
Drill hole Information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: o easting and northing of the drill hole collar o elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar o dip and azimuth of the hole o down hole length and interception depth o hole length.	Refer to the drill hole information table in the Appendix of this report for significant assay results from KCGMs SCGD series of drilling as well as other relevant drill programs. The SCGD program commenced in 2018 and generally targeted the area below the Fimiston Open Pit design. All mineralised intercepts are shown in the table.
	If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	Exclusion of the drill information will not detract from the understanding of the report.
Data aggregation methods	In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.	All reported assay results have been length weighted to provide a true intersection width where possible.
	Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.	Intercepts are aggregated based on underground and open pit reporting criteria. Cut off grades are based on assumed mining grades. Open pit lode mineralised zones were interpreted using a nominal cut-off grade (COG) of 0.5gpt with a maximum internal dilution of 5 metres. Open pit stockwork mineralised zones were interpreted using a nominal cut-off grade (COG) of 0.5gpt with a maximum internal dilution of 5 metres. Underground lode mineralised zones were interpreted using a nominal cut-off grade (COG) of 3.0gpt with a maximum internal dilution of 2 metres. Underground Stockwork mineralised zones were interpreted using a nominal cut-off grade (COG) of 1.7gpt with a maximum internal dilution of 2 meters. Where a stand out higher grade zone exists within the broader mineralised zone, the higher grade interval is reported also.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	No metal equivalent values have been used for the reporting of these exploration results.
Relationship between mineralisation widths and intercept lengths	These relationships are particularly important in the reporting of Exploration Results:	Estimated true widths have been calculated for intersections of the known ore zones, based on existing knowledge of the nature of these structures.
	If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.	Both the downhole width and estimated true width have been clearly specified when used.
	If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').	Where mineralisation orientations are not known, downhole lengths are reported.
Diagrams	Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	Appropriate plans and section have been included in this report.
Balanced reporting	Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	Both high and low grades have been reported accurately, clearly identified with the drill hole attributes and 'From' and 'To' depths.

Criteria	JORC Code explanation	Commentary
Other substantive exploration data	Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	No other material exploration data has been reported for this area.
Further work	The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).	KCGM is targeting the extension down dip and along strike of the current interpretation.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Appropriate diagrams accompany this release.

Section 3 Estimation and Reporting of Mineral Resources

(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Database integrity	Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.	Data used for generating the mineral resource estimates is stored in an AcQuire database. The Company employs a database administrator to manage the database. Where possible raw data is loaded directly into the database with adjustments such as survey transformations occurring within the database so that they are fully traceable. Extensive validation is built into the AcQuire database to ensure data integrity and user access logs are maintained for all fields in the dataset. Data validation tools and sign off facilities to record data cross-checking are used.
	Data validation procedures used.	Data that is captured in the field is entered into Excel templates which are checked on import into the AcQuire database for errors. Assay jobs are dispatched electronically to the lab to minimise the chance of data entry errors. Assay results from the lab are received in .csv format and are checked for errors on import into the database. Data is regularly validated using the mining software. The data validation process is overseen by the Database Administrator. Errors are corrected where possible. When not possible the data is flagged as confidence "0" or "1" in the database and the database is re-exported. This data will not be used in the estimation process. Only fully sampled drill holes with a confidence level of 2 or 3 were used for grade estimation.
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	The Competent Person is a fulltime employee of KCGM and is based in Kalgoorlie and has full access to ensure integrity across all geological disciplines.
	If no site visits have been undertaken indicate why this is the case.	Not applicable.
Geological interpretation	Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.	Geological and structural controls of the Fimiston mineralisation are well understood following extensive academic study and ongoing review. The interpretation has been built on this cumulative knowledge and thoroughly tested with significant resource definition and grade control drilling, historical underground exposure, and open pit mining resulting in a high confidence in the position of and controls to mineralisation. The interpretation has been generated from geologically logged high confidence diamond and reverse circulation drilling resulting in the creation of a series of mineralised horizons categorised as Main, Caunter, Cross, and Oblique lodes effectively representing a Riedel shear array. Each lode is further refined by underground level mapping, historical stope as-builts, and geological features mapped in open pit exposures. The final geological interpretation utilised in the resource estimation is comprised of 197 Main lodes, 108 Caunter Lodes, 25 oblique lodes and 19 Cross lodes for a total of 349 individual domains
	Nature of the data used and of any assumptions made.	All available geological data was used in the interpretation including open pit mapping, drill holes, scanned level map sheets, structural measurements, and underground void wireframes. Historical underground as built wireframes have been assumed to be spatially accurate.
	The effect, if any, of alternative interpretations on Mineral Resource estimation.	The geological domains defining the mineralised zones are considered robust. Alternative interpretations have historically been trialed where braided lode systems were combined into bulk domains however this resulted in moderately inflated ore tonnes following estimation particularly in poorly supported areas.
	The use of geology in guiding and controlling Mineral Resource estimation.	The underlying geological and structural framework controls gold endowment at the Fimiston deposit. Ore lode interpretations were developed using all available geological data to honour the geological and structural framework and constrain the Mineral Resource estimations.
	The factors affecting continuity both of grade and geology.	Continuity of mineralisation is controlled by host lithology, structural architecture and alteration assemblage. Highest grade lodes occur predominantly within the more fertile geochemical areas of the Golden Mile Dolerite and to a lesser degree the Paringa Basalt. Major shear structures provided fluid pathways, dilatational positions and lode offset. Broadly, mineralisation is constrained to the north by the Golden Pike Fault, the Adelaide Fault in the south, and is effectively partitioned into East and West lodes by the Golden Mile Fault. Numerous other smaller scale fault and shear structures disrupt and offset the resource.

Criteria	JORC Code explanation	Commentary
		Four main zones of hydrothermal alteration are recognised. The outermost zone is pervasive chlorite-carbonate alteration followed by progression to ankerite-siderite with increased proximity to the lode. Lode selvage is effectively defined by ankerite-siderite-pyrite-quartz-albite-telluride with occasional haematite-anhydrite. The most intensely altered lodes are locally termed "green leaders" and are comprised of siderite and vanadium rich sericite. Quartz veining is always part of the lode position occurring as either sheeted veins or less common stockwork. Fresh ore at Fimiston, comprising most of the resource, is refractory with gold typically associated with pyrite, chalcopyrite, other minor sulphides, tellurides, silver, mercury, and lead. Completed deportment studies indicate that approximately 30% of gold occurs as free milling, 25% as gold tellurides, and 45% as gold inclusions in pyrite.
Dimensions	The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.	The Fimiston resource extends 4.3km's north-south, 1.5km's east-west, and 1.8km's vertical. Mineralised domains are categorised by overall geometry and divided into Main, Caunter, Oblique, and Cross lodes. Main lodes are predominantly sub-vertical with a north-south strike, Caunter lodes strike north-north-west dipping approximately 65° west, and Cross lodes strike east-west with a sub-vertical dip. Oblique lodes are less common but are effectively conjugate to the Caunter lodes.
Estimation and modelling techniques	The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.	Mineralisation is domained based on geological continuity. All domain wireframes are created using Leapfrog software and all subsequent geostatistical evaluation and resource estimation is completed using Supervisor and Datamine software respectively. Lode wireframes are intersected with a validated drill database from which lower confidence drill holes have been removed. All remaining diamond and RC samples are flagged with a domain identifier and composited to 2m with 0.2m minimum sample. Residual samples are distributed across adjacent component intervals. Due to the complexity of Fimiston mineralisation, many of the lodes exhibit mixed grade populations internal to the domain which are difficult to manually partition. Where this is the case and sufficient samples are available categorical indicator kriging (CIK) is used to sub-domain the lode into low and high grade envelopes. This is achieved through review of log probability plots by domain from which grade cut-offs and subsequent indicator variograms are derived. Prior to indicator estimation, simulated drill holes are created on a 10m x10m YZ grid through the stope as-builts which are then restricted by the lode interpretations. These data points are appended to the composite file as samples above cut-off and used to supplement the indicator estimate. The rationale for the process is that stoped material was high grade prior to extraction and as such should be used to inform sub-domain continuity. Grade cut-offs are applied to the combined composite file and an indicator assigned by domain and estimated using ordinary kriging weighted by the relevant indicator variogram. Dynamic anisotropy is used to control both search ellipse and variogram orientation to account for local variation in lode geometry. Domains are subsequently reviewed for a probability threshold above which high grade sub-domains are assigned. The simulated drill holes are then removed from the composite file and sub-domains back flagged from the block model. For gold, sub-domains are evaluated for grade variograms and kriging neighbourhood analysis (KNA) conducted to derive appropriate sample counts, search strategy, discretisation and parent block size. For sulphur, variograms on the full domains are created due to less internal grade variation evident in the lode. KNA is again completed to select appropriate estimation parameters. Gold and sulphur are estimated using ordinary kriging into sub-domains and domain parent blocks respectively using the requisite variogram model. Hard boundaries are maintained between domains and sub-domains as confirmed by contact analysis. A nested search strategy is employed with the first pass aligned to the full range of the variogram followed by 2 subsequent passes of increasing volume.
	The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.	The final resource estimates are compared to the previous model estimates and reconciled to historic production.
	The assumptions made regarding recovery of by-products.	No assumptions are made on recovery of by-products.
	Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).	Sulphur is estimated within every ore lode domain. In exploration and resource definition drill holes, sulphur is assayed for every metre while in grade control drill holes its sampled 1:4 holes.
	In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.	Drill spacing ranges at Fimiston from 10mx10m for grade control (GC) drilling out to >160mx160m's in the potential areas of the resource. Downhole sampling for reverse circulation drilling is taken on 2m intervals and dictated by geology for diamond holes. To capture the variable grade resolution of the GC drilling, the parent block size has been influenced

Criteria	JORC Code explanation	Commentary
		by close spaced holes and set at 5mx10mx5m's with sub-blocking down to 1mx1mx1m's in order to appropriately define domain boundaries. The indicator model used to sub-domain well supported lodes has a block size set at 2mx5mx2m's to honour the complexity of the mixed grade populations. Following sub-domaining, the indicator model is optimised to the parent block size (5mx10mx5m) in preparation for grade estimation.
	Any assumptions behind modelling of selective mining units.	Selective mining units were not used during the estimation process.
	Any assumptions about correlation between variables.	No assumptions have been made regarding the correlation between variables for this Mineral Resource Estimation.
	Description of how the geological interpretation was used to control the resource estimates.	Mineralisation is partitioned into estimation domains relative to stratigraphic position, structural orientation, recorded lithology, and specific alteration assemblage. The geological interpretation is initially created from drill data and later calibrated with mapping of open pit and underground exposures. Domains are estimated individually with search geometry and variography controlled by lode orientation and grade continuity respectively. Variogram major search directions are aligned with geologically interpreted high grade shoot trends. Categorical indicator kriging has been utilised to define sub-domains in lodes with mixed grade populations to limit the spread of high grade mineralisation. Dynamic anisotropy has been employed on lodes exhibiting excessive undulation. Boundary analysis has been conducted on key lodes indicating hard boundaries should be maintained across domain and sub-domain contacts.
	Discussion of basis for using or not using grade cutting or capping.	Composites are analysed for grade outliers by domain for both gold and sulphur and top cut proximal to population disintegration. Attempts are made to ensure no more than 10% of metal is lost and the co-efficient of variation (CV) is less than 1.8. Where sufficient samples are available and the CV remains elevated following top cutting, basic statistics are re-reviewed following sub-domaining of the lode to ensure metrics are appropriate.
	The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.	Several statistical and visual measures are used to validate the accuracy of the estimation. Volume variance between the wireframe domains and block model domains are assessed. A visual inspection of input composites is compared to the estimated block model in section for each domain. The mean grade of the block model is compared to the naïve and declustered mean grades of the composites by domain with any variance greater than +/-10% investigated. Swath plots are created by domain and sub-domain in the X, Y, Z, strike and cross strike directions and viewed holistically to vector into any problematic areas. Estimation quality metrics (kriging efficiency, slope) are reviewed by domain/sub-domain to give an indication of the quality of the estimate. Global change of support plots are created and reviewed for principal domains. End of month production and individual stope reconciliations in addition to ongoing field observations are used as a feedback loop to continuously calibrate and improve the interpretation and estimation.
Moisture	Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.	Tonnages are estimated on a dry basis
Cut-off parameters	The basis of the adopted cut-off grade(s) or quality parameters applied.	The open pit cut-off grade of 0.5gpt and the Fimiston underground cut-off grade is 1.5gpt these have been derived from current mining costs and parameters at AUD$2,250/oz.
Mining factors or assumptions	Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the	The open pit mineral resource inventory assumes open pit extraction and is reported within an AUD$2,250/oz pit optimisation shell generated using current mining parameters and constraints. The Fimiston Underground Mineral Resource estimate is defined by an underground mining shape optimiser (MSO) using an AUD$2,250/oz gold price assumption, and 2.5m minimum mining width.

Criteria	JORC Code explanation	Commentary
	case, this should be reported with an explanation of the basis of the mining assumptions made.	
Metallurgical factors or assumptions	The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	Gold recovery is based on a recovery formula which is reconciled annually against historic performance. The average recovery based on this equation is 83%.
Environmental factors or assumptions	Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a green fields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	It has been assumed that current or similar operational approaches, protocols and facilities applied to environmental factors at Fimiston continue for the duration of the project life.
Bulk density	Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.	Density measurements are collected using the industry standard submersion method for determining the density of competent diamond core. The density is assigned based upon the stratigraphy and weathering state. Basic statistics are collected by stratigraphy and the mean assigned to all blocks coded with that stratigraphy and oxidation state. The sample size is generally between 0.5 and 1.5kg and the method of calculation is the water displacement technique. Measurements have been recorded in the acquire database and extraction schemes pair this data with the major lithology code for statistical analysis.
	The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc.), moisture and differences between rock and alteration zones within the deposit.	Ore zones predominantly exist in transitional to fresh nonporous material, so additional measures to reduce moisture intake during the water displacement method is unnecessary at this stage. Density samples are collected from homogenous lithological units and weathering states.
	Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	Density determinations are made on diamond drill core. The density data is analysed for each resource estimate and assigned to the block model based on the modelled stratigraphy unit. Fresh rock densities range from 2.74t/m^3 in basalt units to 2.96t/m^3 in the more mafic sills of the Golden Mile Dolerite.
Classification	The basis for the classification of the Mineral Resources into varying confidence categories.	The Fimiston resource is classified as Indicated or Inferred assigned via boundary string by domain based on a combination of physical and estimation quality metrics including mining exposure, drill spacing, variogram range, kriging efficiency / slope / variance, grade, geological continuity and historical reconciliation. Indicated is assigned to mineralisation above the AUD$2,250 pit shell where drill spacing <=50mx50m defined by average full range of grade variograms, established grade continuity above 0.3gpt gold, geological continuity defined by consistent ore zone alteration and/or exposure by historical underground mining, positive kriging efficiency and >25% slope. Inferred material is assigned where drill spacing is >50mx50m and <=90mx90m's with established geological continuity as defined by consistent vein selvage alteration and/or exposure by historical underground mining. All other mineralisation is assigned a Potential resource category.
	Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).	All relevant factors have been given due weighting during the classification process. Thorough model validations and internal/external reviews ensure the integrity of the final estimation and reported inventory.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The resource model methodology is appropriate, and the estimated grades reflect the Competent Persons' view of the deposit.
Audits or reviews	The results of any audits or reviews of Mineral Resource estimates.	The Mineral Resource Estimate has been both internally and externally reviewed. Estimation methodology has been assessed as robust and appropriate however the geological interpretation requires greater infill drilling and incremental refinement to ensure areas of risk are mitigated. Continued reconciliation of the resource model to current production has been flagged as critical to ensure the validity of the estimate.

Criteria	JORC Code explanation	Commentary
Discussion of relative accuracy/ confidence	Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.	The Mineral Resource has been reported in accordance with the guidelines of the 2012 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. The relative accuracy and confidence of the mineral resource model estimate is reflected in the assigned Mineral Resource classifications. An area of operational risk to the resource relates to the historical underground workings in two respects. The first is the spatial accuracy of known stopes and development used to deplete the mineral resource. These voids have not been surveyed using modern techniques and are largely defined by historical plans and current drilling. Subsequently a degree of variation in the exact position and extents of the voids can be expected resulting in a potential impact to resource inventory. The second risk is the impact of any unknown voids not captured in historical plans and not yet intersected with infill drilling.
	The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.	The statement relates to global estimates.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	Mineral reserves and resources are reconciled and reported monthly. Reconciliation is conducted by spatially comparing the resource and reserve models with grade control models and the monthly Declared Ore Mined (DOM). Reconciliations show reasonable correlation between the models and production with the process being treated as a feedback loop to ensure continuous improvement of the geological interpretation and estimation workflows.

Section 4 Estimation and Reporting of Ore Reserves

(Criteria listed in section 1, and where relevant in sections 2 and 3, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.	The Mineral Resource model used for the conversion of the Ore Reserve is a robust global estimate of the Fimiston gold deposit. Exploration, resource definition, grade control, geological mapping and historical mining records where used to inform and validate the model. The Resource model estimated utilises the Categorical Indicator Kriging (CIK) method. The Resource model was depleted to the end of June 2020 for the Reserve Estimation.
	Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.	The Mineral Resources are reported inclusive of the Ore Reserve.
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	Numerous site visits have been undertaken by the competent person to validate and review input parameters, the life of mine plan, current mining performance, wall conditions and stability, groundwater condition.
	If no site visits have been undertaken indicate why this is the case.	Site visits undertaken.
Study status	The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.	A minimum Pre-Feasibility level study is completed prior to converting a Mineral Resource to an Ore Reserve.
	The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.	A minimum Pre-Feasibility level study is completed prior to converting to a Mineral Resource to an Ore Reserve. Ore Reserves have been calculated within detailed pit designs. A series of nested optimised pit shells were generated using Whittle software, an analysis of the shells was completed to identify the preferred shell. The detailed pit design follows the preferred pit shell as closely as practicable. The Whittle optimisation input parameters are validated by KCGM technical personnel and technical consultants and are supported by an abundance of historic data. A detailed mine schedule and cost model has been generated and appropriate ore dilution and recoveries have been applied to the Mineral Resource model.
Cut-off parameters	The basis of the cut-off grade(s) or quality parameters applied.	The open pit cut-off grade has been calculated based on the key input components (gold price, processing costs, administration costs and recovery). Forward looking forecast costs and physicals form the basis of the cut-off grade calculations. • The AUD gold price as per corporate guidance. • Mill recovery is based on historical data and metallurgical test work. • Variable treatment costs to open pit mining for processing is a fundamental premise in the evaluation of open pit projects. The Ore Reserve Estimation is based on a cut-off of 0.50gpt and accounts for mining dilution.
Mining factors or assumptions	The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design).	Mineral Resource is converted to Ore Reserve after completing a detailed mine design complete with a detailed financial assessment. The Mineral Resource block model is the basis for design and evaluation. Open Pit - Ore Reserves have been calculated by generating detailed pit designs for the proposed cutbacks. A series of nested optimised pit shells were generated using Whittle software, an analysis of the shells was completed to identify the preferred shell. The detailed pit design follows the preferred pit shell as closely as practicable. The Whittle optimisation input parameters are validated by KCGM technical personnel and technical consultants and are supported by an abundance of historic data.
	The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc.	The selected mining method for the Fimiston Open Pit is a bench mining open pit method. The proposed open pit cutbacks will be mined using conventional open pit mining methods (drill, blast, load and haul) under an owner operator model, utilising 800t class excavators and 240t class trucks. This method is consistent with the current and historic mining method of the Fimiston Open Pit and is deemed appropriate given the proposed cutbacks are an extension of the current Fimiston Open Pit.

Criteria	JORC Code explanation	Commentary
	The assumptions made regarding geotechnical parameters (e.g. pit slopes, stope sizes, etc.), grade control and pre-production drilling.	Geotechnical slope parameters for the Fimiston Open Pit have been developed and modified throughout the mine's history. A combination of experience, geotechnical design and trial mining has been used to arrive at the parameters currently used. In general, the selection of slope design parameters is controlled by weathering state (oxide/non-oxide), structural fabric and major structures present within the pit. The design process to arrive at slope parameters for new cutbacks includes geotechnical drilling and testing, mapping of current pit faces, geotechnical model and domain creation, and 3-D numerical modelling to assess factors of safety. Independent review of the data collection and geotechnical model development processes is carried out by independent consultants before each cutback is modelled. Further modifications are made as required during mining in response to slope performance and updates to the geotechnical model as the new faces become exposed.
	The major assumptions made, and Mineral Resource model used for pit and stope optimisation (if appropriate).	This Table 1 applies to both underground and open pit mining. And detailed interface review was conducted to ensure separation between underground and open pit Reserve material. The Ore Reserve Estimate is based on detailed mine design work based on the approved resource model and is supported by an abundance of historic data.
	The mining dilution factors used.	Dilution is built into the block model and is based on a minimum mining width calibrated to proposed mining fleet and reconciled against historical performance.
	The mining recovery factors used.	Mining recovery is built into the Ore Reserve estimated and is based on current mining performance.
	Any minimum mining widths used.	Minimum mining width of 40m is applied to both the Whittle optimisation and final mine design as is appropriate for the primary mining fleet.
	The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.	Inferred material is excluded from the Ore Reserves and treated as waste material. Which incurs a mining cost but is not processed and do not generate any revenue. Therefore, final pit reserve inventory has excluded any inferred Mineral Resources.
	The infrastructure requirements of the selected mining methods.	The Ore Reserve estimate is an extension of the existing Fimiston operation. The existing operation has adequate infrastructure to support the Ore Reserve and future mine plan.
Metallurgical factors or assumptions	The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.	The Fimiston plant is made up of crushing, grinding, gravity gold recovery, flotation, UFG, CIL, elution and gold recovery circuits. The milling facilities are designed to process approximately 12 million tonnes per annum. The plant has the capability to treat both refractory and free milling ores through a flotation circuit and associated concentrate ultra-fine grinding circuit. Ore Reserves are calculated using processing plant recovery factors that are based on test work and historical performance.
	Whether the metallurgical process is well-tested technology or novel in nature.	Milling experience gained since 2005, 15 years' continuous operation.
	The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.	Milling experience gained since 2005, 15 years' continuous operation.
	Any assumptions or allowances made for deleterious elements.	No allowances made.
	The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.	Milling experience gained since 2005, 15 years' continuous operation.
	For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?	Not applicable.
Environmental	The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.	The Fimiston Operation includes mining of the Fimiston Open Pit and the Mt Charlotte underground mine, and mineral processing at the Fimiston Processing Plant. Tailings generated from the Fimiston Processing Plant are deposited to the Fimiston I, II and Kaltails Tailings Storage Facilities (TSFs). KCGM also operates the Gidji Gold Processing Plant, located approximately 17 km north of Kalgoorlie-Boulder, where sulphide concentrate produced at the Fimiston Processing

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		Plant undergoes further processing. Tailings generated from the Gidji Gold Processing Plant are deposited to the Gidji II TSF. Final gold recovery (elution of the loaded carbon) is conducted at the Fimiston Processing Plant. Mining operations in Western Australia are regulated under the Mining Act 1978 and the Mines Safety and Inspection Act 1994, which are administered by the Department of Mines, Industry Regulation and Safety (DMIRS). KCGM manages over 300 Mining Leases (tenements) granted in accordance with the Mining Act 1978, which stipulate environmental conditions for operation, rehabilitation and reporting. The tenements extend in a general north-south direction centred on the Fimiston Open Pit and cover a surface area of approximately 34,000 ha. Mineral processing and tailings disposal are regulated by the Department of Water and Environmental Regulation (DWER) under the Environmental Protection Act 1986 (EP Act). Accordingly, the Fimiston Processing Plant operates in accordance with Prescribed Premises Licence L6420/1988/14 with an approved production capacity of 14,500,000 tonnes per year, whilst the Gidji Gold Processing Plant operates in accordance with Prescribed Premises Licence L5946/1988/13 with an approved production capacity of 438,000 tonnes per year. KCGM was granted environmental approval for the Fimiston Mine and Waste Dumps under Part IV of the EP Act on 24 October 1991 for the Consultative Environmental Review (CER) Mine and Waste Dumps - Fimiston. Conditions for approval were outlined in Ministerial Statement 188. In September 2006, KCGM released a Public Environmental Review for the Fimiston Gold Mine Operations Extension (Stage 3) Project which was granted Ministerial Approval in January 2009 under Ministerial Statement 782. The Gidji Gold Processing Plant was granted environmental approval under Part IV of the EP in May 1988 under Ministerial Statement 28, and subsequently in September 1989 under Ministerial Statement 77. Following decommissioning of the roasters in 2015, which effectively removed sulphur dioxide point source emissions from the site, KCGM were granted Ministerial Statement 1032 in May 2016. KCGM currently manages potential environment impacts associated with the Fimiston Operation in accordance with the following Environmental Management Plans: • Fimiston Air Quality Management Plan approved by DWER June 2016. • Noise and Vibration Monitoring and Management Plan approved by DWER September 2016. Waste rock characterisation studies have determined that approximately 80% of the waste rock sourced from the Fimiston Open Pit is Golden Mile Dolerite. The remaining waste rock is composed primarily of Paringa Basalt (14%) and the Black Flag Shale (BFS) (4.5%). The studies have concluded that the Golden Mile Dolerite and Paringa Basalt units are classified as non-acid forming (NAF). The ore zone of the BFS is potentially long lag PAF, with the risk diminishing towards the mine waste zones as the sulphur content decreases. The risk of acid rock drainage formation in the Fimiston WRDs is very low to low, due to the large amount of Golden Mile Dolerite containing neutralisation potential in the dumps, and the relatively low sulphur content of waste rock. Further, net acid generation and associated metals leaching would only be possible after very prolonged exposure, and such exposure is unlikely given current waste management practices of blending and encapsulation of BFS material within the WRDs.
Infrastructure	The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided or accessed.	KCGM Fimiston operations, including Mt Charlotte and the open pit are located adjacent to the City of Kalgoorlie-Boulder, while Gidji processing plant is located 17km north of Kalgoorlie-Boulder. Access to the operations are provided by well-maintained sealed public and private roads. Majority of employees reside in Kalgoorlie-Boulder and commute to site daily. Normal communication channels, satellite and land-based facilities are available. Potable water for the KCGM operations is supplied from the Water Corporation Kalgoorlie water supply system. Non-potable water requirements are sourced from bores fields up to 28km away from the mine site. Makeup water for the Fimiston and Gidji processing plants is supplied from bore fields, water recovered and recycled from the operations, pit dewatering as well as some water sourced from recycled or treated effluent. Electricity is provided by the state electricity grid and Parkeston Power Station. A combination of KCGM owned and Newmont Power owned lines feed all KCGM operations from Parkeston Power Station or direct from the grid. Sources of fuel, such as diesel, gasoline etc. are readily available at competitive pricing from local suppliers, as there are multiple operating plants in the Kalgoorlie area.
Costs	The derivation of, or assumptions made, regarding projected capital costs in the study.	Capital costs are projected through an annual budget process.

Criteria	JORC Code explanation	Commentary
	The methodology used to estimate operating costs.	The detailed mine designs are incorporated into the life of mine plan and scheduled through to completion. The schedule is costed in detail from first principals. Cost assumptions are supported by an abundance of historic data and have been validated by an independent third party.
	Allowances made for the content of deleterious elements.	No allowances made.
	The derivation of assumptions made of metal or commodity price(s), for the principal minerals and co- products.	The gold price is based on internal forecasts.
	The source of exchange rates used in the study.	Internal forecasts.
	Derivation of transportation charges.	Historic performance and existing contractual agreements.
	The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.	Historic performance and existing contractual agreements.
	The allowances made for royalties payable, both Government and private.	State Govt. 2.5% royalty is built into the cost model.
Revenue factors	The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc.	AUD$1,750/oz gold price.
	The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.	Corporate guidance.
Market assessment	The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.	There is a transparent quoted market for the sale of gold.
	A customer and competitor analysis along with the identification of likely market windows for the product.	There is a transparent quoted market for the sale of gold.
	Price and volume forecasts and the basis for these forecasts.	Corporate guidance.
	For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.	Not applicable.
Economic	The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.	NPV is used during Pre-Feasibility and Feasibility studies as required. Economic assumptions such as discount rate and estimated inflation are finalised at the time of the study. The Ore Reserve Estimation is based on detailed life of mine designs. All relevant capital and operating costs as well as revenue and selling costs have been accounted for.
	NPV ranges and sensitivity to variations in the significant assumptions and inputs.	A full financial model was developed with sensitivities applied to all key inputs and assumptions.
Social	The status of agreements with key stakeholders and matters leading to social licence to operate.	Agreements are in place and are current with all key stakeholders. The Ore Reserve is an extension of the existing Fimiston Operations which has a proven track record of good standing in regard to social licence to operate.
Other	To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:	
	Any identified material naturally occurring risks.	Mercury occurs naturally in the gold bearing ore that is mined from the Fimiston Open Pit. The mercury is present primarily as tellurides, which are minerals composed of several metals in association with the element tellurium (Te). The telluride minerals containing mercury that are present in the Fimiston Open Pit include Coloradoite, also known as Mercury telluride (HgTe) and cuprian coloradoite ((Hg, Cu)Te). Telluride minerals are rare but widely distributed through the Golden Mile lodes and generally represent less than 0.00014% of the ore mined from the Fimiston Open Pit and the

Criteria	JORC Code explanation	Commentary
		Mt Charlotte Underground Mine. Mercury is also present in the waste rock material mined from the Fimiston Open Pit (typically 0.00001%). An investigation by KCGM in 2006 showed that the distribution of tellurides (including coloradoite) within the Golden Mile lodes is consistent and there is no evidence to suggest that the concentration of mercury in the materials mined from the Fimiston Open Pit will increase or decrease over time.
	The status of material legal agreements and marketing arrangements.	No issues.
	The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.	No issues.
Classification	The basis for the classification of the Ore Reserves into varying confidence categories.	The classification of the Ore Reserve estimate is in accordance with the JORC code 2012. Ore Reserves classifications are derived from the underlying Resource model classifications – i.e. Measured Resource material is converted to either Proved or Probable Reserves, Indicated Resource material is converted to Probable Reserves.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The results accurately reflect the Competent Persons view of the deposit.
	The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).	Nil.
Audits or reviews	The results of any audits or reviews of Ore Reserve estimates.	The Ore Reserves reporting processes has been subjected to an internal review by KCGM and the JV Owner's Senior Technical personnel in July 2020.
Discussion of relative accuracy/ confidence	Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.	The Ore Reserve Estimate has been prepared in accordance with the guideline of the 2012 JORC. Confidence in the model and Ore Reserve Estimate is considered high based on current mine and reconciliation performance. The resource model used to derive the Ore Reserve estimate is based on drill-hole data of sufficient continuity and spacing to satisfy the requirements of an Ore Reserve and his been subjected to an internal and external review.
	The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.	Estimates are global but are deemed of sufficient accuracy on a local scale.
	Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.	The Ore Reserve is an extension of the existing Fimiston Operation. Modifying factors have been reconciled against current and historic performance.
	It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	Reconciliation results from past mining at the Fimiston Operation has been considered and factored into the Ore Reserve assumptions where appropriate.

KCGM JORC (2012) TABLE 1

JORC Code, 2012 Edition – Table 1

Mount Charlotte (MTC): Resources and Reserves – July 2020

Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

<table>
<tr><th>Criteria</th><th>JORC Code explanation</th><th>Commentary</th></tr>
<tr><td rowspan="3">Sampling techniques</td><td>Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.</td><td>The sampling database for the KCGM Mineral Resource estimation has been collected over the last 115 years. The data has been collected by many different operations, using varying techniques. Assay information quality also varies with detection limit and quality: generally, the quality appears to be inversely proportional to the age of the samples. For this reason, assay information collected prior to 1984 is not used in the interpolation of element grades. All information collected prior to involvement by Northern Star Resources and Saracen Minerals in 2019 is hereafter referred to as historical data. Only historical data that is deemed as having acceptable and traceable location and assay information has been included in the Mineral Resource estimation dataset for Mt Charlotte.

For Mineral Resource estimation the MTC deposits are sampled in majority by diamond drilling (DD), reverse circulation (RC) and underground face chip samples.
<table>
<tr><th>Hole Type</th><th>No. of Collars</th><th>Total Meters</th><th>No. of Samples</th></tr>
<tr><td>Diamond</td><td>4,741</td><td>741,114</td><td>717,694</td></tr>
<tr><td>RC</td><td>41</td><td>2,470</td><td>1,690</td></tr>
<tr><td>Underground Face Chips</td><td>223</td><td>1,720</td><td>1,984</td></tr>
<tr><td>Total Number of Drillholes</td><td>5,005</td><td>745,304</td><td>721,368</td></tr>
</table></td></tr>
<tr><td>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</td><td>For DD samples, down hole depth are recorded by the drillers on core blocks. This is checked and compared to the measurements of the core by the geologist during core mark-up prior to logging, to prevent incorrect logging and sampling errors. Sample intervals are then marked on the core by a geologist, to honour geological boundaries. Sample interval lengths vary from 0.3m and 1.3m (NQ). DD core is orientated, measured and then sampled by cutting the core in half longitudinally using an “Almonte” diamond saw. Cutting was along orientation lines. The same half of the core is always selected for each sample interval, placed in numbered calico bags that contain a bar code, scanned into the database and submitted to the laboratory for analysis. The other half of the core is left in the core tray which is stamped for identification, stored and catalogued. Routine ‘field duplicates’ to assess sample representivity are not performed on diamond core as these are not considered to be true field duplicates.

RC samples were homogenised by riffle or cone splitting prior to sampling and then submitted for assay as 1m or 2m samples. Face chip sampling is performed by geologists using industry standard face sampling protocols.

Certified standard samples, ranging in grades from 0.70 g/t Au to 28.84 g/t Au, purchased from Gannet Holdings, are inserted at the rate of one in 40 samples. The results are reviewed on a per batch basis and the entire batch of samples is reanalysed if the result is greater than three standard deviations (SD) from the expected result.

All drill collars are surveyed by using a total station theodolite or total GPS.</td></tr>
<tr><td>Aspects of the determination of mineralisation that are Material to the Public Report. In cases where ‘industry standard’ work has been done this would be relatively simple (e.g. ‘reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30g charge for fire assay’). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems.</td><td>Historical sample preparation and assay procedures are variable due to the duration of historical work and the numerous companies involved. All historical sampling accepted for use in the Mineral Resource estimates are considered to have been collected by acceptable practices.

Current sample preparation and assay procedures employed by KCGM are considered as following industry standard practice. All assay determinations are conducted by internationally recognised laboratories. The primary laboratory, Bureau Veritas, meets ISO 9001:2000.</td></tr>
</table>

Criteria	JORC Code explanation	Commentary
	Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.	Samples are oven dried until a constant mass is achieved. All samples are then processed through an Essa Jaw Crusher or a Boyd Crusher to 90% < 3 mm. The crushed sample is then pulverised for 4 minutes in an LM5 pulveriser for a product of 90% passing < 75 µm. Approximately 250 - 300g of the pulp is retained and a 40g charge weight for fire assay is extracted from the pulp packet. Samples are tested for sulphides and flux adjusted, flux is added at a ratio of 1:4. Samples are fired, hammered and cupelled. Prills placed in tubes, dissolved on hotplates and analysed using AA finish with over range dilutions. Sample preparation for Sulphur determination follows the same process as for Gold, with assaying taking place using the LECO method. Sample preparation for Silver determination follows the same process as for Gold, with assaying taking place using Four Acid Digest with an ICP MS finish.
Drilling techniques	Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc.).	DD core is mostly NQ diameter with some BQ, HQ and LTK60 diameter core. Where possible diamond core was orientated using a spear, Ballmark™, Ezimark™, ACE multi electronic tool or Reflex ACTIIIRD tool. A small proportion of the Mount Charlotte database is made up of RC drilling completed from surface.
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed.	For DD, all recovery is recorded by the drillers on core blocks. This is checked and compared to the measurements of the core by the geologist and entered as interval into the hole log. Any issues are communicated back to the drilling contractor. Recovery is generally very high, in excess of 95%, and there have been no significant sample recovery problems. Historic DD core stored on site shows excellent recovery. No historic underground workings have been intersected at Mt Charlotte RC drilling sample weights were recorded for selected sample intervals and monitored for fluctuations against the expected sample weight. If samples were below the expected weight, feedback was given promptly to the RC driller to modify drilling practices to achieve the expected weights
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	For DD, drilling contractors adjust the rate of drilling and method if recovery issues arise. Minor loss occurs when drilling through fault zones. Areas of potential lower recovery are generally known before hand and controlled drilling techniques employed to maximise recovery.
	Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	No specific study has been carried out on recovery and grade. As recoveries are generally very high (95%+) it is assumed that the potential for bias due to variable sample recovery is low.
Logging	Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.	All DD core was logged by geologists with lithology, mineralisation, structure, alteration, veining and specific gravity were recorded. Quantitative measures such as structural measurements, intensity of alteration, percentage of mineralisation and vein intensity were also recorded. Geotechnical measurements on DD core include RQD, Recovery, and Fracture Frequency. For selected holes joint sets, infill, infill thickness and roughness were also geotechnically measured. All mineralised intersections are logged and sampled. Logging is entered in acQuire using a series of drop-down menus which contain the appropriate codes for description of the rock. All underground face chips are logged for lithology and mineralisation. Logging is captured on a face sample sheet underground which is then transferred to acQuire. Faces are entered into AcQuire using a series of drop-down menus which contain appropriate codes for description of the rock.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	Geology logging is qualitative in nature with visual estimates made of mineralisation percentages for core. Structural and geotechnical logging is quantitative in nature. All core is photographed wet as standard practice. Historically some core may have also been photographed dry. Underground faces are logged and sampled to provide both qualitative and quantitative data. All faces are washed down and photographed before sampling is completed.
	The total length and percentage of the relevant intersections logged.	100% of the drill core is logged.
	If core, whether cut or sawn and whether quarter, half or all core taken.	DD core is sampled by sawn half-core on intervals controlled by geological domaining represented by mineralisation, alteration and lithology. A selected number of grade control holes were full cored. Mineralised intersections are sampled with a maximum

Criteria	JORC Code explanation	Commentary
Sub-sampling techniques and sample preparation		and minimum length of 1.3m and 0.3m, respecting lithological or alteration contacts. The down hole depth of all sample interval extents are recorded.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	Development face samples are chipped directly off the face into a sample bag aiming for sample size of at least 2.5kg. Samples are a maximum of 1.3m and a minimum of 0.3m in width and honour geological boundaries. Samples are taken horizontally across the mineralisation.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	Sample preparation follows industry standard practice. Samples are oven dried until a constant mass is achieved. All samples are then processed through an Essa Jaw Crusher or a Boyd Crusher to 90% < 3 mm. The crushed sample is then pulverised for 4 minutes in an LM5 pulveriser for a product of 90% passing < 75 µm. Approximately 250 - 300 g of the pulp is retained and a 40g charge prepared.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	Coarse grind checks at the crushing stage (3mm) are carried out at a ratio of 1:40 samples with 90% passing required. Pulp grind checks at the pulverising stage (75 µm) are carried out at a ratio of 1:40 samples with 90% passing required. Laboratory duplicate samples are taken for coarse crush (3mm) and pulverising (75 µm) stages at a ratio of 1:50 samples. Repeat assays are carried om 5% of prepared pulp samples.
	Measures taken to ensure that the sampling is representative of the in-situ material collected, including for instance results for field duplicate / second-half sampling.	Quarter core sampling of diamond core is occasionally undertaken for check assays, however routine field duplicates are not performed on diamond core as these are not considered to be true field duplicates. Umpire sampling is performed monthly, where 10% of the samples are sent to the umpire lab for processing.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	The sample and size (3kg to 4kg) relative to the particle size (>90% passing 75um) of the material sampled is a commonly utilised practice for effective sample representation for gold deposits within the Eastern Goldfields of Western Australia
Quality of assay data and laboratory tests	The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.	Fire assay analysis is undertaken and this is considered to be a total assay method. Monthly QAQC reports are prepared to check for any bias or trends with conclusions discussed with the laboratory management. Holes that do not pass QAQC are not used for Mineral Resource estimation.
	For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.	No geophysical tools were used to determine any element concentrations.
	Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.	Sampling and assaying QAQC procedures include: - Periodical resubmission of samples to primary and secondary laboratories - Submittal of independent certified reference material - Sieve testing to check grind size - Sample recovery checks. - Unannounced laboratory inspections Standard control samples and blanks purchased from certified commercial suppliers are inserted at a ratio of 1:40. The results are reviewed on a per batch basis and batches of samples are re-analysed if the result is greater than three standard deviations from the expected result. Any result outside of two standard deviations is flagged for investigation by a geologist and may also be re-assayed. Blanks are inserted into the sample sequence at a nominal ratio of 1:40. The insertion points are selected at random, except where high grade mineralisation is expected. In these cases, a Blank is inserted after the high-grade sample to test for contamination. Results greater than 0.2 g/t are investigated, and re-assayed if appropriate. New pulps are prepared if anomalous results cannot be resolved. When visible gold is observed in core, a barren flush is required. Laboratory performance was monitored using the results from the QA samples mentioned above. This was supplemented by the internal QA samples used by the laboratories, which included pulp duplicates and CRMs

Criteria	JORC Code explanation	Commentary
		The QA studies indicate that accuracy and precision are within industry accepted limits.
Verification of sampling and assaying	The verification of significant intersections by either independent or alternative company personnel.	All significant and anomalous intersections are verified by a Senior Geologist during the drill hole validation process.
	The use of twinned holes.	No twinned holes were drilled for this data set. Re-drilling of some drillholes has occurred due to issues downhole (e.g. deviation). These have been captured in the database as an 'A' and have been logged and sampled as well as the original hole.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	All data are stored and validated within the site acQuire database. Data import into the database is controlled by documented standard operating procedures, and by a set of validation tools included in acQuire import routines. Electronic copies of all primary location, logging and sample results data are filed for each hole. Assay results are received in csv format and loaded directly into the database by the supervising geologist who then checks that the results have inserted correctly. Holes that cannot be accurately validated or do not meet the requirements of MTC QAQC are excluded prior to Mineral Resource estimation.
	Discuss any adjustment to assay data.	No adjustments are made to this assay data.
Location of data points	Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.	Planned holes are marked up by the KCGM surveyors he mine grid. All drill hole collar positions were surveyed. All recent DD holes were surveyed down hole by various methods including single shot down hole camera, EMS (Electronic Multi Shot) method or in-rod gyroscopic survey tools. Holes are typically surveyed at 15m and 30m intervals down hole thereafter. QAQC is performed on the speed of running, and also on the misclose rate for each gyroscopic survey. Where issues are identified, a single survey run can be chosen as preferred with the remaining data ignored. This data is converted to csv format and imported into the AcQuire database where it is validated by the project geologist. Any poor surveys are re-surveyed If survey data was missing or quality was suspect and not replaced by more recent drilling, affected data was not used in estimation.
	Specification of the grid system used.	MTC models are completed on the Mt Charlotte Grid. This is a rotated grid 38.4° from MGA 94
	Quality and adequacy of topographic control.	The topography surface wireframe is generated from an annual flyover survey completed by Fugro Australia Land PTY LTD with +/- 15cm resolution.
Data spacing and distribution	Data spacing for reporting of Exploration Results.	Drill hole spacing varies through the mine depending on the mineralisation style. For stockwork ore bodies drill spacing is nominally 16mE x 60mN down to 8mE x 30mN. For lode-style ore bodies, including Hidden Secret, drill spacing is nominally 50mE x 50mN down to 12.5mE x 12.5mN
	Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.	The data spacing in the ore lodes at MTC is considered sufficient to support the definition of Mineral Resources and Reserves as applied under the 2012 JORC Code. Appropriate geological and grade continuity have been demonstrated during the 30+ years of mining at the MTC operations.
	Whether sample compositing has been applied.	No sample compositing has been applied to the database. For grade estimation, the datasets are composited to 1m intervals prior to grade estimation. This aligns with the most common sample length taken.
Orientation of data in relation to geological structure	Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.	Orientation of drilling varies depending on the style of mineralisation. For stockwork ore bodies drilling is specifically orientated to intercept the vein sets at an optimum angle. For the lode-style orebodies, including Hidden Secret, drilling is perpendicular to the interpreted strike of the ore lodes. As a result of limited drill platforms underground actual intersections may be slightly oblique to the intended right angle intersections. The majority of drillholes are positioned to achieve optimum intersection angles to the ore zone as are practicable.
	If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.	Holes with orientations that are considered likely to introduce sampling bias are flagged during drill hole validation and are excluded from the Mineral Resource estimation datasets.

Criteria	JORC Code explanation	Commentary
Sample security	The measures taken to ensure sample security.	All core is kept within the site perimeter fence on the Mining Lease M26/353. Samples are dispatched and/or collected by an offsite delivery service on a regular basis. Each sample batch is accompanied with a: - Job number - Number of Samples - Sample Numbers (including standards and duplicates) - Required analytical methods - A job priority rating A Chain of Custody is demonstrated by both Company and Bureau Veritas in the delivery and receipt of sample materials. Any damage to or loss of samples within each batch (e.g. total loss, spillage or obvious contamination), is reported to the Company in the form of a list of samples affected and detailing the nature of the problem(s).
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	Sampling performed by KCGM staff and contractors is reviewed weekly by senior KCGM geology personnel including task observations and inspections. Data is reviewed regularly by senior KCGM geology personnel and low confidence data is excluded from the estimate.

Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	The tenement portfolio is located on land owned by the State of Western Australia on Crown reserves or vacant Crown land. KCGM manages the tenement portfolio for the KCGM operations on behalf of the Joint Venture Owners, Saracen Kalgoorlie Pty Limited (Saracen) and Northern Star (KLV) Pty Ltd (Northern Star). The portfolio comprises of 322 granted tenements which is a combination of Miscellaneous (73) and Prospecting Licenses (25), and General Purpose (107) and Mining Leases (117). The tenements cover a total area of approximately 34,000 hectares extending in a north-south direction over a distance of approximately 45km, centred on the Super Pit. There are two registered Native Title Claims that incorporate the KCGM leases. Claimant groups include the Maduwongga people (WC2017/001) and Marlinyu Ghoorlie (WC2017/007). These claims are currently before the tribunal for the Determination.
	The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.	No known impediments exist, and the tenements are in good standing.
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	In the 1970s, the goldfield was controlled by three companies: Kalgoorlie Mining Associates (KMA), Kalgoorlie Lake View (the majority owner of KMA), and North Kalgurli Mines. In 1974, all operations on the Golden Mile had ceased, with the exception of the highly mechanized Mt Charlotte Underground Mine. Modern day surface mining commenced in 1983 in the Kemlo Pit followed by the Croesus and Eclipse pits, and the Central and Paringa pits in 1985. KCGM was formed in 1989 to run the operation on behalf of its owners Homestake Gold of Australia Ltd (Homestake) and GMK, a subsidiary of Normandy Mining Limited. By 1992, all labour intensive, high cost underground mining of narrow zones stopped in the Main, Croesus, Chaffers, Lake View, and Perseverance shafts. Fimiston underground production ceased in 1994. In 2001, Homestake merged with Barrick to form Barrick Gold Australia, thereby becoming a 50% owner of KCGM. In 2002, Newmont acquired Normandy Mines Limited, thereby becoming a 50% owner of KCGM. In 2019, Saracen and Northern Star acquired the operation from Barrick and Newmont. Exploration drilling is ongoing from underground to extend the known mineral resources.
Geology	Deposit type, geological setting and style of mineralisation.	The Golden Mile deposit occurs in the Kalgoorlie Terrane, within the southern portion of the NNW trending Archaean Norseman-Wiluna Greenstone Belt. The greenstone belt has been multiply deformed and regionally metamorphosed to grades varying from lower greenschist to amphibolite grade (Swager, 1997). The stratigraphy of the Kalgoorlie Terrane consists of a lower mafic-ultramafic volcanic sequence overlain by a thick sequence of clastic sedimentary rocks and intermediate to felsic volcaniclastic rocks (Swager, 1997). Younger sedimentary basins, occurring along major faults or synclines, unconformably overly the greenstone sequence (Swager, 1997). Granitic intrusions occurring within the Norseman-Wiluna Greenstone Belt are divided into two categories: pre-folding and post-folding (Witt and Davy, 1997). The post-folding intrusions are further subdivided as syn-tectonic and late tectonic. The stratigraphy covered by the KCGM tenements consists of a basal ultramafic unit called the Hannan Lake Serpentinite. This ultramafic unit is overlain successively by the high magnesian Devon Consols Basalt, Kapai Slate, tholeiitic Paringa Basalt and the Black Flag sediments. Differentiated zones of dolerite and gabbro texture occur within the mafic sequence. The Golden Mile Dolerite, hosting the bulk of the Golden Mile and Mount Charlotte gold mineralisation, is a strongly differentiated layered gabbro, approximately 700m in thickness. The Golden Mile Dolerite is situated conformably between the Paringa Basalt and the Black Flag sediments. This entire stratigraphic sequence is intruded by numerous porphyry dykes of intermediate to felsic composition. The Mt Charlotte style gold mineralisation is hosted within the Golden Mile Dolerite and is predominantly associated with pyrite in carbonate alteration haloes around quartz veins, with a minor proportion as relatively coarse free gold within the veins, commonly close to their margins. The veins vary in width from a few millimetres to a maximum of about two metres but are commonly between two centimetres and 50 cm wide. The vein spacing varies from 20 cm to tens of metres but is typically from 50 cm to two metres in areas mined as ore. Quartz is the dominant vein-fill mineral; accessory vein minerals include calcite, ankerite, scheelite, pyrite, pyrrhotite, and gold. The Hidden Secret style gold mineralisation is hosted within the Williamstown Dolerite at the contact with the Kapai Slate and Devon Consols Basalt and spatially associated with a porphyritic intrusion and the Towns Fault. Gold is hosted in deformed a quartz vein 2-20cm wide. Vein minerals include pyrite, telluride, silica, carbonate and fuchsite.

Criteria	JORC Code explanation	Commentary
Drill hole Information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: o easting and northing of the drill hole collar o elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar o dip and azimuth of the hole o down hole length and interception depth o hole length.	Refer to the drill hole information table in the Appendix of this report for significant assay results from KCGM for each lode represented throughout the report. All mineralised intercepts are shown in the table.
	If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	Exclusion of the drill information will not detract from the understanding of the report.
Data aggregation methods	In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.	All reported assay results have been length weighted to provide a true intersection width where possible.
	Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.	Intercepts are aggregated based on underground and open pit reporting criteria. Cut off grades are based on assumed mining grades. Underground lode mineralised zones were interpreted using a nominal cut-off grade (COG) of 3g/t with a maximum internal dilution of 2 meters. Underground Stockwork mineralised zones were interpreted using a nominal cut-off grade (COG) of 1.7g/t with a maximum internal dilution of 2 meters. Where a stand out higher grade zone exists within the broader mineralised zone, the higher grade interval is reported also.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	No metal equivalent values have been used for the reporting of these exploration results.
Relationship between mineralisation widths and intercept lengths	These relationships are particularly important in the reporting of Exploration Results:	Estimated true widths have been calculated for intersections of the known ore zones, based on existing knowledge of the nature of these structures.
	If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.	Both the downhole width and estimated true width have been clearly specified when used.
	If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').	Where mineralisation orientations are known, downhole lengths are reported.
Diagrams	Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	Appropriate plans and section have been included in this report.
Balanced reporting	Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	Both high and low grades have been reported accurately, clearly identified with the drill hole attributes and 'From' and 'To' depths.
Other substantive exploration data	Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater,	No other material exploration data has been collected for this area.

Criteria	JORC Code explanation	Commentary
	geotechnical and rock characteristics; potential deleterious or contaminating substances.	
Further work	The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).	MT Charlotte is currently in production and exploration is planned to test for lateral and depth extensions to known orebodies, and to identify new satellite ore bodies.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Appropriate diagrams accompany this release.

Section 3 Estimation and Reporting of Mineral Resources

(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Database integrity	Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.	Data used for generating the mineral resource estimates is stored in an Acquire database. The Company employs a database administrator to manage the database. Where possible raw data is loaded directly into the database, with adjustments such as survey transformations occurring within the database so that they are fully traceable. Extensive validation is built into the Acquire database to ensure data integrity and user access logs are maintained for all fields in the dataset. Data validation tools and sign off facilities to record data cross-checking are used.
	Data validation procedures used.	Data that is captured in the field is entered into Excel templates which are checked on import into the AcQuire database for errors. Assay jobs are dispatched electronically to the lab to minimise the chance of data entry errors. Assay results from the lab are received in CSV format and are checked for errors on import into the database. Data is regularly validated using the mining software. The data validation process is overseen by the Database Administrator. Errors are corrected where possible. When not possible the data is flagged as confidence "0" or "1" in the database and the database is re-exported. This data will not be used in the estimation process. A proportion of the historical holes have been partially sampled, these holes are used in the resource estimation and unsampled intervals have been assigned 0.001g/t. These holes are being evaluated for twinning with additional drilling or sampling where core is still available
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	The Competent Person is a full time employee of KCGM and is based in Kalgoorlie and has full access to ensure integrity across all geological disciplines.
	If no site visits have been undertaken indicate why this is the case.	
Geological interpretation	Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.	Confidence in the interpretation varies for each deposit area dependant on geological setting and style of mineralisation. The resource categories assigned to the model directly reflect the confidence in the geological interpretation that is built using local, structural, mineral, and alteration geology obtained from mapping, logging, drill results, geochemical and geophysics.
	Nature of the data used and of any assumptions made.	The geological interpretation of the Mt Charlotte Project (MCP) area has considered all available geological information including local geology, structural deformation events, and its relationship to neighbouring mineralised deposits. Rock types, mineral, alteration and veining assemblages from diamond drill core RC chips and face sample chips were all used to help define the mineralised domains and regolith boundaries. Fault models were generated from in pit and underground mapping, diamond drilling, historic data and geophysics.
	The effect, if any, of alternative interpretations on Mineral Resource estimation.	The geological wireframes defining the mineralised zones are considered to reflect the current geological interpretations based on the style of mineralisation (lode, stockwork or oxide). Alternative interpretations were historically in place that reflected a predominantly higher grade underground mining approach reflective of a lower gold price.
	The use of geology in guiding and controlling Mineral Resource estimation.	A hard boundary approach was used during the Mineral Resource Estimation. Where there were mixed populations within the domains they were subdomained to segregate the different populations or an estimation technique that can handle multiple populations was used. Domains are constructed using all available geological information (as stated above) and terminate along known structures. Mineralisation styles, geological homogeneity, and grade distributions for each domain (used to highlight any potential for bimodal populations) are all assessed to ensure effective estimation of the domains. Geological domains were also used as estimation domains.

Criteria	JORC Code explanation	Commentary
	The factors affecting continuity both of grade and geology.	Mineralisation and grade continuity is predominantly affected by rock type, structural setting within the stratigraphy and mineralisation style. Mineralisation styles are a combination of; Mt Charlotte style stockwork veining (variable density, N plunging qtz veining with gold associated with quartz-Ankerite-Pyrite-Siderite vein halos). Fimiston lode style veining (steep dipping N-S qtz veining with Ankerite-Serecite-Siderite-Au/Ag Telluride halos). Hidden Secret lode style veining (moderately SE dipping quartz vein with pyrite, telluride, silica, carbonate and fuchsite). Dispersed mineralisation within the oxide and transitional regolith profiles. Rock type, structural deformation and vein density plays a role in the style, continuity and stratigraphic positioning of mineralisation within the Golden Mile Dolerite, Paringa Basalt, Williamstown dolerite and Dev Consuls basalt as well as local variations within these units.
Dimensions	The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.	The Mt Charlotte Project covers an area of 2.6km N-S x 2km E-W x 1.7km Vertical. Within the project area on a deposit scale the project can be broken into; Mt Ferrum (600mN x 600mE x 600mZ) which is a combination of Fimiston style subvertical lodes within the Paringa Basalt and Charlotte style stockworks within and on the contacts of the Williamstown Dolerite. Hidden Secret/Belgravia (700mN x 300mE x 600mZ) is a moderately west dipping, south plunging lode style orebody with overprinting stockwork style mineralisation associated with the Little Wonder deposit within the Dev Consuls Basalt Kal East (600mN x 300mE x 400mZ) is a Fimiston style lode deposit hosted within the Williamstown dolerite overprint by stockwork style mineralisation. Mt Charlotte Mine (1.2kmN x 300mE x 1.7kmZ) is a subvertical north plunging stockwork style deposit hosted within the Golden Mile Dolerite U8 layer. Mineralisation is bound to the north by the Charlotte fault and south by the Lord Nelson fault
Estimation and modelling techniques	The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.	Mineralisation is domained based on geological continuity and style. All domain wireframes are created using Leapfrog software and all subsequent estimation is completed using Datamine software. Lode wireframes are intersected with a validated drill database from which all RAB, air core, and erroneous drill holes have been removed. All remaining diamond, RC and face samples are flagged with a domain identifier and composited to 1m with 0.3m minimum sample. Residual samples are distributed across adjacent component intervals. Composites are analysed for population outliers by domain and topcut proximal to population disintegration. Many of the lodes exhibit bi/multi-model grade populations. These internal populations are controlled by grade indicators based on inflexion points in domain log probability plots from which indicator variograms are created. Categorical indicator kriging (CIK) is then used to sub-domain lodes with mixed populations. The block model used in the CIK estimation has blocks set at 1x5x2m to ensure sub-domain complexity is maintained then optimised and re-blocked to the parent block size of 5x10x5m. This model is then used to back flag the composite file with the defined sub-domain identifiers. Multiple Indicator Kriging (MIK) on a 5mx10mx5m block size was used to estimate the Mt Charlotte Mine ore bodies due to factors of drilling density, mineralisation style and multi mixed data populations. Variography is created for all domains and sub-domains with sufficient sample data. Output variograms are utilised in kriging neighbourhood analysis (KNA) to generate optimum parent block sizes and estimation parameters. Domains and sub-domains are estimated using ordinary kriging utilising the estimation parameters defined in the KNA as inputs. Grade is estimated into parent blocks only and all kriging quality metrics and search pass values are output.
	The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.	The Mineral Resource Estimation is checked against the previous block model estimations and reconciled production numbers. Additionally, check estimates including conventional ordinary kriging on all domains, hard-boundaries on all sub-domains used in categorical indicator kriging, and CIK versus MIK estimation runs were conducted to test the validity of the current mineral resource estimate.
	The assumptions made regarding recovery of by-products.	Silver has been estimated using Categorical Indicator Kriging (CIK) within the Hidden Secret lodes for royalty payments.
	Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).	Sulphur has been estimated within the ore domains using ordinary Kriging (OK) to assist with overall blending strategy.

Criteria	JORC Code explanation	Commentary
	In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.	The model has been created using a parent cell size of 5m (East- West) x 10m (North-South) x 5m (vertical) optimised using kriging neighbourhood analysis. Sub-cells have been used at a resolution of 1m x 1m x1m to ensure high resolution at ore boundaries. The search distances are dictated by the range of each individual variogram but typically equate to 1-1.5 times the current resource definition spacing. A 3 pass nested search strategy is employed with the first pass always set to the full range of the variogram. The second pass is set at 2 times the variogram range with the final pass set at a factor large enough to ensure all blocks comprising the domain are estimated.
	Any assumptions behind modelling of selective mining units.	No assumptions have been made regarding the modelling of selective mining units for this Mineral Resource Estimation.
	Any assumptions about correlation between variables.	Within Hidden Secret there is a high correlation between Gold and Silver.
	Description of how the geological interpretation was used to control the resource estimates.	Mineralisation is partitioned into estimation domains relative to stratigraphic position, structural orientation, recorded lithology and specific alteration assemblage. The geological interpretation is initially created from drill data and later calibrated with mapping of open pit and underground exposures. Domains are estimated individually with search geometry and variography controlled by lode orientation and grade continuity respectively. Variogram major search directions are aligned with geologically interpreted high grade shoot trends. Categorical indicator kriging has been utilised to define sub-domains in lodes with mixed grade populations to limit the spread of high grade mineralisation. Dynamic anisotropy has been employed on lodes exhibiting excessive undulation. Boundary analysis has been conducted on key lodes indicating hard boundaries should be maintained across domain and sub-domain contacts.
	Discussion of basis for using or not using grade cutting or capping.	Samples with extreme high grades that bias the mean grade and positively skew the grade population within each mineralised domain are top cut to reduce the influence of high grade outliers. Log probability plots and the coefficient of variation statistic were used to determine top-cuts.
	The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.	A number of statistical and visual measures are used to validate the accuracy of the estimation. Volume variance between the wireframe domains and block model domains are assessed. A visual inspection of input composites is compared to the estimated block model in section for each domain to ensure a robust correlation. The mean grade of the block model is compared to the naïve and declustered mean grades of the composites by domain with any variance greater than 10% investigated. Swath plots are created by domain and sub-domain in the X, Y, Z, strike and cross strike directions and viewed holistically to vector into any problematic areas. Kriging efficiency, and slope results are reviewed by domain/sub-domain to give an indication of the quality of the estimate. End of month production and individual stope reconciliations in addition to ongoing field observations are used as a feedback loop to continuously calibrate and improve the interpretation and estimation.
Moisture	Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.	Tonnages are estimated on a dry basis.
Cut-off parameters	The basis of the adopted cut-off grade(s) or quality parameters applied.	The adopted cut-off grades for Mineral Resource Estimation reporting are 1.5g/t for Underground Resources, these have been derived from current mining costs and parameters at $2,250/oz.
Mining factors or assumptions	Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.	The Fimiston Underground Mineral Resource estimate is defined by an underground mining shape optimiser (MSO) using a A$2,250/oz gold price assumption, and 2.5m minimum mining width.

Criteria	JORC Code explanation	Commentary
Metallurgical factors or assumptions	The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	The prediction of the metallurgical performance of the Mt Charlotte Project is based on extensive historical information that shows good recovery performance. Extensive multielement data is collected during drilling and metallurgical test work is carried out on all resources within the project area. Predicted mineralogy is expected to show a strong correlation to that experienced during historic operations.
Environmental factors or assumptions	Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a green fields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	Waste rock characterisation has been conducted on the deposit with no environmental issues identified except dispersive oxidised material and waste dump construction plan in place to manage. Tailings from the deposit are stored in an appropriate licensed tailings facility and closure plan in place.
Bulk density	Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.	The bulk densities for the Mt Charlotte Project were determined from significant historical data (Drilling and mining) over the entire KCGM project area with more recent testing of representative intervals from diamond drill holes supplemented with regular sampling via grab samples during underground development. The sample size is generally between 0.5 and 1.5kg and the method of calculation is the water displacement technique. Measurements have been recorded in the acquire database and extraction schemes pair this data with the major lithology code for statistical analysis.
	The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc.), moisture and differences between rock and alteration zones within the deposit.	Ore zones predominantly exist in fresh non-porous material, so additional measures to reduce moisture intake during the water displacement method is unnecessary at this stage. The density of stope backfill material consisting of Fimiston pit mineralised waste and historic tails has been given a background value of 1.6.
	Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	An average mean of densities collected for each lithological type has been uniformly applied to the modelled geological units. This includes the primary fresh lithologies as well as the weathered oxide and transitional zones.
Classification	The basis for the classification of the Mineral Resources into varying confidence categories.	The Mt Charlotte project resource is classified as Measured, Indicated, Inferred assigned by boundary string by domain based on a combination of physical and estimation quality metrics including mining exposure, drill spacing, search pass, kriging efficiency /slope of regression, grade and geological continuity. Mineralisation has been categorised as Measured if it has been exposed by mining (open pit or development), have drill spacing at <=20x20m's, estimated in the first search pass, have established grade and geological continuity, and >50% kriging efficiency and >80% slope. Indicated material is assigned if drill spacing is between 20x20m and 35x35m, search pass either 1 or 2, established grade and geological continuity, positive kriging efficiency and >50% slope of regression. Inferred material is drill spacing between 35x35m and 80x80m's with established geological and grade continuity. All other mineralisation is assigned a Potential resource category.
	Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).	All relevant factors have been taken into account and are validated through rigorous QAQC of the drillhole database, geological knowledge and interpretation of the Mt Charlotte Project. Thorough model validations and reviews ensure the integrity of the final estimation and the grade and tonnage numbers.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The reviewing process allows the Competent Person's to assess and sign off on the model.

Criteria	JORC Code explanation	Commentary
Audits or reviews	The results of any audits or reviews of Mineral Resource estimates.	KCGM has adopted a process for geological modelling, estimation and reporting of mineral resources that meets high industry standards. At the completion of resource estimation KCGM undertake an extensive review of the model that covers; • Model inventory and comparisons to previous and budget models if in existence • Geological interpretation, wireframing, domain selection, statistics by domain, assay and metal evaluation, parent cell sizes, data compositing, variography, search strategy, estimation and KNA • Model validation – swathe plots, visual checks, volume comparisons, composite to model metal comparisons. In the final stages the model and resource categorisation are all discussed and scrutinized by the geological and mine planning teams.
Discussion of relative accuracy/ confidence	Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.	The Mineral Resource has been reported in accordance with the guidelines of the 2012 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. KCGM uses a standard approach to resource estimation and the procedure requires the systematic completion of the KCGM Resource Estimation Document that is thoroughly investigated and assessed in the Model review process, as stated above.
	The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.	The statement relates to a global estimate.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	The current resource model is reconciled with production data on a monthly basis. This information is fed back into the resource modelling process and used to refine the model.

Section 4 Estimation and Reporting of Ore Reserves

(Criteria listed in section 1, and where relevant in sections 2 and 3, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.	Kalgoorlie Consolidated Gold Mines June 2020 Mineral Resource
	Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.	The Mineral Resources are reported inclusive of the Ore Reserve
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	Site visits have been undertaken by the competent person.
	If no site visits have been undertaken indicate why this is the case.	Site visits undertaken.
Study status	The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.	A minimum Pre-Feasibility level study has been completed.
	The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.	Ore reserves are re-optimised on a yearly basis taking the most up to date model, gold price and cost forecasts into account. The Ore Reserve methodology at Mount Charlotte is to complete a full mine design built from the latest block model using calculated cut-offs as a guide for designing stopes. Stope shapes are designed around material greater than the stoping cut off and evaluated using the design software. The designs are evaluated for gold and tonnes by Mineral Resource category bins. In this way, the Measured and Indicated portions of the design can easily be established. The evaluation results are automatically output to Deswik scheduling software. Deswik is used as a flagging and calculation tool in the processing of ore reserves. Factors for dilution and recovery are applied in Deswik. All stope shapes are assessed with local financial evaluations to determine if they are profitable.
Cut-off parameters	The basis of the cut-off grade(s) or quality parameters applied.	Forward looking forecast costs and physicals form the basis of the cut-off grade calculations. • The assumed AUD gold price is at a conservative assumption of $1,750/oz • Mill recovery factors are based on test work and historical averages from the mine.
Mining factors or assumptions	The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design).	Mineral Resource is converted to Ore Reserve after completing a detailed mine design complete with a detailed financial assessment. The Mineral Resource block model is the basis for design and evaluation.
	The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc.	The Mount Charlotte underground mine is accessed via a portal within the Fimiston Open Pit and the Cassidy Shaft. Production in Mount Charlotte is carried out utilising a combination of remnant Sublevel caving, modified Avoca and conventional longhole open stoping. Where possible, stopes are backfilled with development waste to save haulage costs.
	The assumptions made regarding geotechnical parameters (e.g. pit slopes, stope sizes, etc.), grade control and pre-production drilling.	The main Mt Charlotte orebodies are worked by sub-level caving; the dimensions and ground support for the mill-holes and access drives are determined using the rock mass Q value and structural information. Hidden Secret is mined using the modified Avoca method; stope dimensions and backfilling requirements are determined using hydraulic radius and Q value, modified by location of major structures. Underground operations at Mt Charlotte are subject to mine seismicity. The mechanisms for seismic activity are well understood, and a combination of careful extraction sequencing and appropriate ground support in access drives is used to limit stress build-up (and thus event magnitude) and minimise damage from those seismic events which do occur.
	The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).	This Table 1 applies to underground mining only.

Criteria	JORC Code explanation	Commentary
	The mining dilution factors used.	Dilution factors are updated annually and are based on the historical performance of each mining block and evaluation of the geotechnical block model. Average stope dilution is currently 10%.
	The mining recovery factors used.	The recovery factor is reviewed and updated annually based on historical recovery at the site. Average stope recovery is currently 85%.
	Any minimum mining widths used.	A minimum stope mining width of 2.5m has been used. This considers a minimum stope width of 1.5m +0.5m dilution in the Hangingwall and +0.5m dilution in the Footwall
	The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.	Designed stopes with greater than 50% inferred blocks are excluded from the reported Ore Reserve. No ounces have been included from Inferred material.
	The infrastructure requirements of the selected mining methods.	The Mount Charlotte mine infrastructure is developed and in place and includes mine dewatering pumps, compressed air supply and mine ventilation. The main access decline connects the mine to a portal in the north end of the Super Pit. The decline and pit ramp are well maintained. There is a radio communication system throughout the mine.
Metallurgical factors or assumptions	The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.	The Fimiston plant is made up of crushing, grinding, gravity gold recovery, flotation, UFG, CIL, elution and gold recovery circuits. The milling facilities are designed to process approximately 12 million tonnes per annum. The plant has the capability to treat both refractory and free milling ores through a flotation circuit and associated concentrate ultra-fine grinding circuit. Ore Reserves are calculated using processing plant recovery factors that are based on test work and historical performance.
	Whether the metallurgical process is well-tested technology or novel in nature.	Well tested technology.
	The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.	Recovery factors are based on lab testing and on-going operational experience
	Any assumptions or allowances made for deleterious elements.	No assumptions made
	The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.	All mineralisation systems have significant bulk drill core test work undertaken prior to mining and current resource/reserves have a history of operational experience
	For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?	Not applicable
Environmental	The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.	The Fimiston Operation includes mining of the Fimiston Open Pit and the Mt Charlotte underground mine, and mineral processing at the Fimiston Processing Plant. Tailings generated from the Fimiston Processing Plant are deposited to the Fimiston I, II and Kaltails Tailings Storage Facilities (TSFs). KCGM also operates the Gidji Gold Processing Plant, located approximately 17 km north of Kalgoorlie-Boulder, where sulphide concentrate produced at the Fimiston Processing Plant undergoes further processing. Tailings generated from the Gidji Gold Processing Plant are deposited to the Gidji II TSF. Final gold recovery (elution of the loaded carbon) is conducted at the Fimiston Processing Plant. KCGM currently manages potential environment impacts associated with the Fimiston Operation in accordance with the following Environmental Management Plans: • Fimiston Air Quality Management Plan, approved by DWER June 2016. • Noise and Vibration Monitoring and Management Plan, approved by DWER September 2016. Waste rock characterisation studies have determined that approximately 80% of the waste rock sourced from the Fimiston Open Pit is Golden Mile Dolerite. The remaining waste rock is composed primarily of Paringa Basalt (14%) and the Black Flag Shale (BFS) (4.5%). The studies have concluded that the Golden Mile Dolerite and Paringa Basalt units are classified as non acid forming (NAF). The ore zone of the BFS is potentially long lag PAF, with the risk diminishing towards the mine waste zones as the sulphur content decreases. The risk of acid rock drainage formation in the Fimiston WRDs is very low to low, due to the large amount of Golden Mile Dolerite containing

Criteria	JORC Code explanation	Commentary
		neutralisation potential in the dumps, and the relatively low sulphur content of waste rock. Further, net acid generation and associated metals leaching would only be possible after very prolonged exposure, and such exposure is unlikely given current waste management practices of blending and encapsulation of BFS material within the WRDs.
Infrastructure	The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.	KCGM Fimiston operations, including Mt Charlotte and the open pit are located adjacent to the City of Kalgoorlie-Boulder, while Gidji processing plant is located 17km north of Kalgoorlie-Boulder. Access to the operations are provided by well-maintained sealed public and private roads. Majority of employees reside in Kalgoorlie-Boulder and commute to site daily. Normal communication channels, satellite and land-based facilities are available. Potable water for the KCGM operations is supplied from the Water Corporation Kalgoorlie water supply system. Non-potable water requirements are sourced from bores fields up to 28km away from the mine site. Makeup water for the Fimiston and Gidji processing plants is supplied from bore fields, water recovered and recycled from the operations, pit dewatering as well as some water sourced from recycled or treated effluent. Electricity is provided by the state electricity grid and Parkeston Power Station. A combination of KCGM owned and Newmont Power owned lines feed all KCGM operations from Parkeston Power Station or direct from the grid. Sources of fuel, such as diesel, gasoline etc are readily available at competitive pricing from local suppliers, as there are multiple operating plants in the Kalgoorlie area.
Costs	The derivation of, or assumptions made, regarding projected capital costs in the study.	Mine development capital cost based on historical performance on site and life-of-mine forward planning. Plant and equipment capital are based on site experience and the LOM plan
	The methodology used to estimate operating costs.	All overhead costs and operational costs are projected forward based on historical data.
	Allowances made for the content of deleterious elements.	No allowances made.
	The derivation of assumptions made of metal or commodity price(s), for the principal minerals and co- products.	Single commodity pricing for gold only, using a long-term gold price of AUD $1750/oz, 2.5% WA state Government Royalty, as per KCGM corporate guidance
	The source of exchange rates used in the study.	All rates considered in Australian Dollars (AUD) as per KCGM corporate guidance.
	Derivation of transportation charges.	Historic performance.
	The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.	Historic performance.
	The allowances made for royalties payable, both Government and private.	All State Govt. and third party royalties are built into the cost model.
Revenue factors	The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc.	All revenue based on a gold price of AUD $1,750/oz.
	The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.	Corporate guidance.
Market assessment	The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.	All product is assumed to be sold direct to market at the Corporate guidance gold price.
	A customer and competitor analysis along with the identification of likely market windows for the product.	Not relevant for gold.
	Price and volume forecasts and the basis for these forecasts.	Not relevant for gold.
	For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.	Not relevant for gold.

Criteria	JORC Code explanation	Commentary
Economic	The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.	All costs assumptions are made based on historical performance from the mine and current economic forecast seen as representative of current market conditions.
	NPV ranges and sensitivity to variations in the significant assumptions and inputs.	Sensitivities assessed at varying gold prices.
Social	The status of agreements with key stakeholders and matters leading to social licence to operate.	Agreements are in place and are current with all key stakeholders.
Other	To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:	No issues foreseen.
	Any identified material naturally occurring risks.	No issues foreseen.
	The status of material legal agreements and marketing arrangements.	No issues foreseen.
	The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.	No issues foreseen.
Classification	The basis for the classification of the Ore Reserves into varying confidence categories.	The classification of the Ore Reserve estimate is in accordance with the JORC code 2012. Ore Reserves classifications are derived from the underlying Resource model classifications – i.e. Measured Resource material is able to be converted to either Proved or Probable Reserves, with Indicated Resource material able to be converted to Probable Reserves.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The results appropriately reflect the Competent Persons view of the deposit.
	The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).	None.
Audits or reviews	The results of any audits or reviews of Ore Reserve estimates.	This ore reserve has been prepared and peer reviewed internally within KCGM, NST and SAR. There have been no external reviews of this Ore Reserve estimate.
Discussion of relative accuracy/ confidence	Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.	Confidence in the model and Ore Reserve Estimate is considered high based on current mine and reconciliation performance.
	The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.	Ore reserves are best reflected as global estimates.

Criteria	JORC Code explanation	Commentary
	Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.	Other than dilution and recovery factors described above, no additional modifying factors applied. There is high confidence in these models as the areas are well known and well drilled.
	It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	Reconciliation results from past mining at the Mount Charlotte Operations reflect estimates in the Ore Reserve estimates.