Saracen Mineral Holdings Limited

Carosue Dam and Thunderbox - Reserves, Resources and guidance update

Reserves rise 12% to record 3.7Moz; FY21 guidance 380,000-400,000oz at AISC of A$1,200-1,300/oz

Saracen capitalising on strong gold price to invest in sustainable long-term production; Production ramp-up to 450,000ozpa; Plus KCGM Reserves, Resources and guidance update imminent

4th August 2020

HIGHLIGHTS

Further increase in Reserves strengthens Saracen's position as a substantial, long-life, low-cost gold miner with 100% of its production from Western Australia

- **Record Reserves** of **3.7Moz** at 30 June 2020, up 12% from 3.3Moz at 30 June 2019 (**an increase of 400,000oz** despite 396,000oz depletion); Key points include:
  - **Carosue Dam open pit Reserves increased 85% to 750,000oz**
  - **Thunderbox open pit Reserves increased 22% to 926,000oz**
  - **Karari - Dervish underground (Carosue Dam) Reserves at 1.0Moz** despite limited extensional drilling in FY20 and 214,000oz depletion; **new drill drive to facilitate the next phase of Reserve delineation in FY21**
  - **Thunderbox Underground Reserves unchanged at 710,000oz**
  - FY20 Reserves based on a **conservative gold price of A$1,750/oz**
  - **Rapidly approaching 4Moz Reserve target*, well ahead of 5-year period** outlined in 2018^

Increased Reserves and strong gold price underpin Saracen's strategy to invest in production growth

- **FY21 production guidance** of **380 - 400,000oz** at an **AISC of A$1,200 - A$1,300/oz**
- **FY21 growth capital guidance** of **A$185m** (net of capitalised revenue)
- **Production ramp-up to 450,000ozpa from FY23** (~250kozpa from Carosue Dam, ~200kozpa from Thunderbox); at least seven years at this expanded production rate 100% underwritten by Reserves
- **Growth strategy** aimed in part at **capitalising on the strong gold price to "future-proof" the business**; This strategy involves **investing capital in the short term to de-risk production and lower costs in the future**
- **Thunderbox mill** to be **expanded to 3.5Mtpa** during FY22 (currently 2.8Mtpa), **increasing production and decreasing costs**; **A$25m capital cost**
- **Carosue Dam mill expansion to 3.2Mtpa** (currently 2.4Mtpa) progressing well, **increasing production and decreasing costs** from March quarter 2021

Pipeline of further organic growth opportunities at Carosue Dam and Thunderbox

- **Mineral Resources** of **7.8Moz at 30 June 2020**, based on improved optimisation methods (pit shells and minable stopes only at a gold price of A$2,250/oz); resulting in more economically robust / higher quality ounces
- **Significant exploration upside - FY21 exploration guidance** for Carosue Dam and Thunderbox of **A$43m**
- **Growth at recent "bolt-on" acquisitions** e.g. **new drill results from Wonder North** (Thunderbox) including **43m @ 6.3g/t**, **92m @ 2.2g/t (including 23m @ 5.0g/t)**, and **19m @ 3.5g/t**; Wonder North **not yet in Reserves**

Saracen Mineral Holdings (ASX: SAR) is pleased to announce more strong progress in its goal to grow mine life and production from organic sources, with Reserves at Carosue Dam and Thunderbox rising by 12 per cent to a record 3.7Moz.

The latest increase in Reserves, which comes after depletion of 396,000oz, further underpins Saracen's strategy of investing in production growth.

Reserves have now increased more than four-fold since 2013 and almost doubled over the past three years (after mining depletion).

As a result, Saracen's FY21 production guidance for Carosue Dam and Thunderbox is 380,000-400,000oz at an all-in sustaining cost of A$1,200-1,300/oz.

Production will ramp-up to 450,000ozpa from FY23, with ~250,000ozpa coming from Carosue Dam, and ~200,000ozpa coming from Thunderbox.

Latest drilling results highlight the potential to continue increasing production and mine life. Recent results include:

- Karari (Carosue Dam) 33.0m @ 6.6g/t, 17.1m @ 10.7g/t, 32.0m @ 5.3g/t, 20.2m @ 8.4g/t and 34.0m @ 4.7g/t
- Dervish (Carosue Dam) 16.9m @ 4.8g/t, 18.0m @ 3.6g/t, 13.9m @ 4.5g/t, 10.9m @ 5.7g/t and 16.7m @ 3.7g/t
- Deep South (Carosue Dam) 7.7m @ 13.5g/t, 7.4m @ 10.3g/t and 4.6m @ 10.1g/t
- Wonder North (Thunderbox) 43m @ 6.3g/t (including 20m @ 10.7g/t), 92m @ 2.2g/t (including 23m @ 5.0g/t) and 19m @ 3.5g/t

KCGM Reserves and Resources, production and cost outlook, and drill results will be updated in a separate KCGM release later this quarter.

Saracen Managing Director Raleigh Finlayson said the updated inventory and outlook further strengthened the company's position as a substantial long-life gold producer.

"These record Reserves and growth outlook highlight Saracen's key strengths on several fronts," Mr Finlayson said.

"To grow Reserves by 400,000oz in a year despite depletion is a strong result. These ounces are made much more valuable by the fact that they are all in Western Australia and within very close proximity to existing processing facilities.

"These robust Reserves ensure we have long-term, sustainable production in what is almost certainly the best place in the world to be a gold miner.

"It also means we can invest in production growth with total confidence. This in turn means we can lower costs and help to insulate the business."

Mr Finlayson said Saracen was also investing in further growth by allocating A$43 million for exploration this financial year.

"We have a pipeline of strong organic growth opportunities which can drive further increases in mine life and production," he said.

**Forward-looking Ore Reserve growth is an aspirational target only and is not an estimate of current Ore Reserves. The potential quantity is conceptual in nature, and it is uncertain if further exploration will result in achieving this target.*

^*Refer to the ASX announcement 6th August 2018 "Diggers and Dealers Presentation"*

Ore Reserves - Carosue Dam and Thunderbox only

Table 1 - Saracen Ore Reserves^ (Carosue Dam and Thunderbox only)

Category	Gold		
	Tonnes	g/t	oz
Proved	10,000,000	1.3	400,000
Probable	55,000,000	1.7	3,300,000
Total	**66,000,000**	**1.7**	**3,700,000**

^ Tonnes, grade and contained metal have been rounded to reflect the accuracy of the calculations. Rounding errors may occur.

The Ore Reserves Statement is reported according to the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the 'JORC Code') 2012 edition.

Total gold Ore Reserves have **increased by 400koz to 3.7Moz**, despite mining depletion of 396koz. Key changes to the Ore Reserve statement from last year are:

Carosue Dam

- The Karari-Dervish Underground Ore Reserve has decreased by 200koz to 1.0Moz, despite very limited extensional drilling in FY20 and mining depletion of 214koz
- Maiden Open Pit Ore Reserve at Safari Bore of 140koz, following successful drilling
- The Million Dollar Ore Reserve has increased by 80koz to 240koz, following successful drilling
- The Wallbrook Ore Reserve has increased by 51koz to 110koz, following re-optimisation of the Mineral Resource

Thunderbox

- The Thunderbox Underground Ore Reserve has remained at 710koz
- The Thunderbox Open Pit Ore Reserve has reduced by only 90koz to 370koz, despite mining depletion of 155koz
- The Bannockburn Open Pit Ore Reserve has increased by 270koz to 460koz, following successful drilling
- The Otto Bore Ore Reserve has increased by 31koz to 91koz, following successful drilling

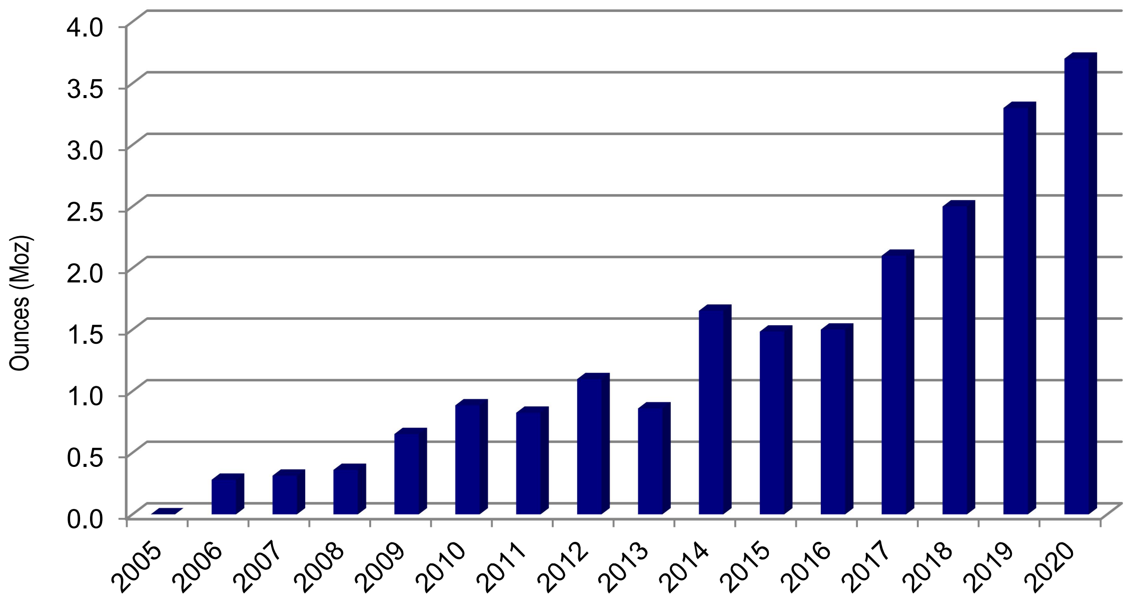

Figure 1 - Saracen Ore Reserve growth since 2005 (Carosue Dam and Thunderbox only)

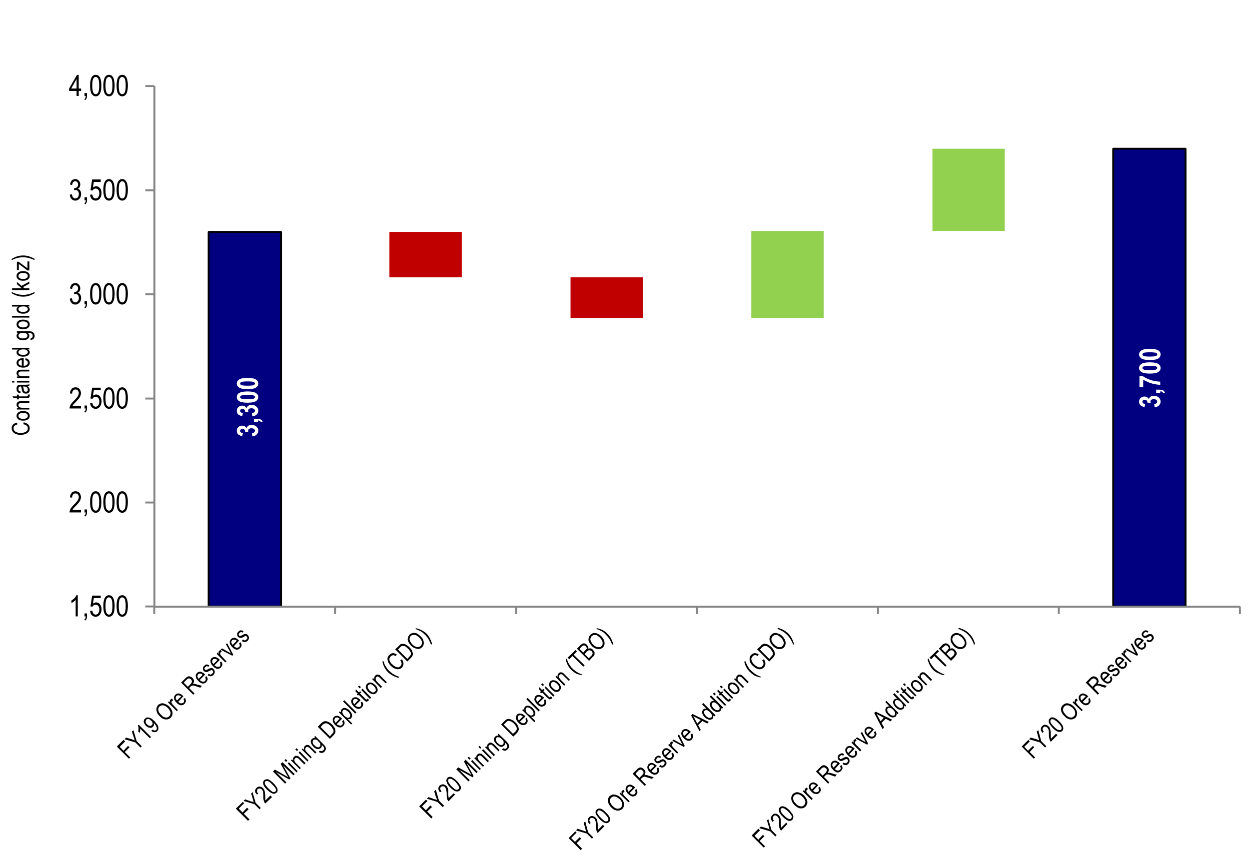

Figure 2 - Saracen group Ore Reserve reconciliation FY20 v FY19 (Carosue Dam and Thunderbox only)

Table 2 - Saracen Ore Reserves by deposit at 30 June 2020 (Carosue Dam and Thunderbox only)

Location	Deposit	Mine Type	Proved Reserves			Probable Reserves			Total Ore Reserves		
			kt.	g/t	koz.	kt.	g/t	koz.	kt.	g/t	koz.
Carosue Dam	Karari / Dervish [1]	UG	-	-	-	11,000	2.9	1,000	11,000	2.9	1,000
	Deep South	UG	-	-	-	620	3.0	60	620	3.0	60
	Porphyry	UG	-	-	-	1,200	2.8	110	1,200	2.8	110
	Carosue Dam Open Pits [2]	OP	-	-	-	3,600	1.7	190	3,600	1.7	190
	Porphyry Open Pits [3]	OP	420	1.5	20	11,000	1.2	400	11,000	1.2	420
	Safari Bore	OP	-	-	-	2,600	1.7	140	2,600	1.7	140
	Stockpiles	S	2,900	0.8	77	-	-	-	2,900	0.8	77
	Carosue Dam Operations Sub-Total		***3,300***	***0.9***	***96***	***29,000***	***2.0***	***1,900***	***33,000***	***1.9***	***2,000***
Thunderbox	Thunderbox Pits	OP	1,900	1.3	79	6,600	1.4	290	8,400	1.3	370
	Thunderbox	UG	2,200	2.0	140	9,000	2.0	570	11,000	2.0	710
	Otto Bore	OP	-	-	-	1,600	1.8	91	1,600	1.8	91
	Bannockburn	OP	-	-	-	8,800	1.6	460	8,800	1.6	460
	Kailis	OP	-	-	-	79	2.0	5	79	2.0	5
	Stockpiles	S	2,900	1.2	120	-	-	-	2,900	1.2	120
	Thunderbox Operations Sub-Total		***7,000***	***1.5***	***340***	***26,000***	***1.7***	***1,400***	***33,000***	***1.6***	***1,700***
Total Ore Reserves			***10,000***	***1.3***	***430***	***55,000***	***1.9***	***3,300***	***66,000***	***1.7***	***3,700***

All data rounded to two significant figures. Rounding errors may occur.

[1] Karari and Dervish Mineral Resources combined for reporting and operationally treated as one mine

[2] Carosue Dam Open Pits include; Karari South and Montys-Elliots

[3] Porphyry Open Pits include; Million Dollar, Enterprise, Porphyry and Wallbrook

Mineral Resources - Carosue Dam and Thunderbox only

Table 3 - Saracen Mineral Resources (Carosue Dam and Thunderbox only)

Category	Gold			Nickel		
	tonnes	g/t	oz	tonnes	%Ni	Ni t
Measured	20,000,000	1.9	1,200,000			
Indicated	83,000,000	1.9	5,100,000			
Inferred	25,000,000	2.0	1,600,000	1,400,000	2.1	30,000
Total	**130,000,000**	**1.9**	**7,800,000**	**1,400,000**	**2.1**	**30,000**

The Mineral Resources Statement is reported according to the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the 'JORC Code') 2012 edition.

FY20 Mineral Resources are **reported using an improved estimation process**:

- **Open Pit Mineral Resources -** Reported within optimised pit shells, using a **A$2,250/oz gold price**
- **Underground Mineral Resources -** Reported within **minable stope optimiser solids (MSOs) at a 1.2g/t cut-off grade**, using a **A$2,250/oz gold price**

This results in a significantly more transparent and economically robust Mineral Resources statement, with <u>higher quality ounces</u>.

The key changes to the Mineral Resources statement from last year are:

- Total gold Mineral Resources have decreased by 1.4Moz (-15%) to 7.2Moz, applying the new method
- The Thunderbox Mineral Resources have decreased by 740koz to 1.7Moz, applying the new method
- The Karari-Dervish Mineral Resources have decreased by 460koz to 1.9Moz, applying the new method
- **The average Mineral Resources grade has increased to 1.9g/t** (FY19 1.8g/t)

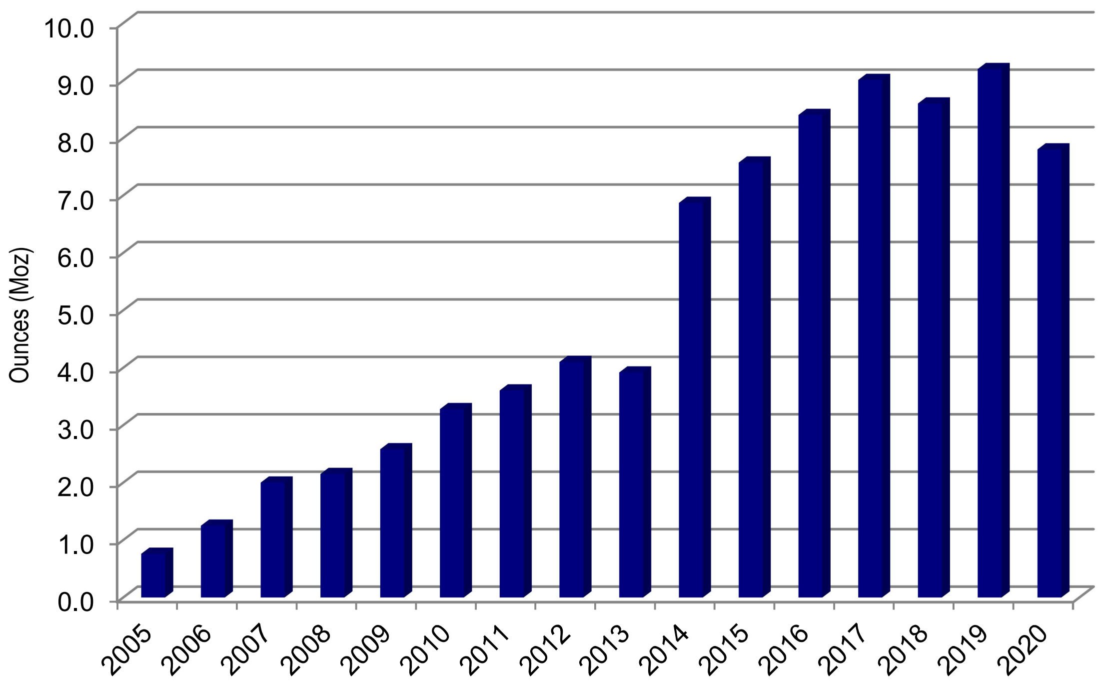

Figure 3 - Saracen Mineral Resources growth since 2005 (Carosue Dam and Thunderbox only)

Table 4 - Saracen Mineral Resources by deposit at 30 June 2020 (gold) (Carosue Dam and Thunderbox only)

Location	Deposit	Measured			Indicated			Inferred			Total		
		kt	g/t	koz	kt	g/t	koz	kt	g/t	koz	kt	g/t	koz
Carosue Dam	Karari O/P [1]	540	2.2	39	3,400	1.8	190	740	1.6	37	4,700	1.8	270
	Karari U/G [1]	4,600	2.8	420	12,000	2.6	980	2,200	2.1	150	19,000	2.6	1,600
	Monty's/Elliots				1,400	2.2	100	720	1.0	22	2,100	1.8	120
	Twin Peaks	31	2.1	2	590	3.0	57	89	2.4	7	710	2.9	66
	Pinnacles [2] (ASX:NXM JV)				28	4.8	4	31	4.5	5	59	4.6	9
	Blue Manna							660	1.7	36	660	1.7	36
	Atbara				920	1.3	40	3,000	1.1	110	3,900	1.2	150
	Porphyry O/P				3,100	1.7	160	1,300	1.6	65	4,400	1.6	230
	Porphyry U/G				3,200	2.8	280	1,800	2.8	160	5,000	2.7	440
	Million Dollar				7,800	1.3	340	710	1.4	31	8,500	1.4	370
	Wallbrook	1,200	1.1	43	3,500	1.1	120	98	0.7	2	4,800	1.1	170
	Margarets		0.0		28	1.6	1	280	1.2	11	310	1.2	12
	Enterprise	200	2.1	14	470	2.1	32	150	1.9	9	820	2.1	55
	Safari Bore				3,100	1.9	190	1,700	1.7	94	4,800	1.8	280
	Deep South O/P	57	4.1	7	210	1.9	13	31	1.8	2	300	2.3	22
	Deep South U/G	330	3.0	32	1,300	2.6	110	1,000	2.3	76	2,600	2.6	220
	Deep Well				49	2.4	4				49	2.4	4
	Moody's Reward				2,000	1.5	94	230	1.9	14	2,200	1.6	110
	Belize				160	2.1	11	38	1.4	2	200	2.0	13
	Thin Lizzie [3](ASX:AGG JV)							160	1.3	7	160	1.3	7
	Tin Dog							200	1.3	9	200	1.3	9
	Crimson Belle [3] (ASX:AGG JV)				470	1.8	27	280	1.4	13	750	1.7	40
	Butcher Well O/P [3] (ASX:AGG JV)							1,200	1.6	64	1,200	1.7	64
	Butcher Well U/G [3] (ASX:AGG JV)							1,600	4.6	230	1,600	4.5	230
	Ore Stockpiles	380	2.4	30							380	2.5	30
	Sub-grade stockpiles	2,500	0.6	47							2,500	0.6	47
	Carosue Dam Mineral Resources	***9,800***	***2.0***	***630***	***44,000***	***2.0***	***2,800***	***18,000***	***2.1***	***1,200***	***72,000***	***2.0***	***4,600***
Thunderbox	Thunderbox OP	2,300	1.5	110	7,200	1.5	350	590	1.2	22	10,000	1.5	480
	Thunderbox UG	4,700	2.0	310	13,000	1.9	810	2,000	1.8	120	20,000	1.9	1,200
	Otto Bore [4]				1,600	2.0	110	1,000	1.8	61	2,600	2.0	170
	Rainbow	220	1.5	10	540	1.2	21	350	1.3	14	1,100	1.3	45
	Bannockburn				10,000	1.8	600	160	2.0	10	10,000	1.9	610
	North Well				3,900	1.5	190	1,000	1.9	61	4,900	1.6	250
	Wonder OP				1,800	2.0	120	100	1.2	4	1,900	2.0	120
	Wonder UG				860	2.1	59	1,700	2.6	140	2,600	2.4	200
	Kailis				490	2.3	36				490	2.3	36
	Ore Stockpiles	2,700	1.3	110							2,700	1.3	110
	Sub-grade stockpiles	220	0.6	4							220	0.6	4
	Thunderbox Mineral Resources	***10,000***	***1.7***	***540***	***39,000***	***1.8***	***2,300***	***6,900***	***1.9***	***430***	***57,000***	***1.7***	***3,200***
	Total Mineral Resources	***20,000***	***1.9***	***1,200***	***83,000***	***1.9***	***5,100***	***25,000***	***2.0***	***1,600***	***130,000***	***1.9***	***7,800***

All data rounded to two significant figures. Rounding errors may occur.

[1] Karari / Dervish Mineral Resources combined for reporting and operationally treated as one mine

[2] Pinnacles Mineral Resource is a Joint Venture with Nexus Minerals (ASX:NXM). Figure reported relate only to Saracen's portion.

[3] Butcher Well, Crimson Belle and Thin Lizzie Mineral Resources are a Joint Venture with AngloGold Ashanti Australia. Figures reported relate only to Saracen's portion.

[4] Otto Bore - Figure reported includes Saracen's portion of the Warrida Well Joint Venture with Agnew Gold Mining Company Pty Limited.

Table 5 - Saracen group Mineral Resources by deposit at 30 June 2020 (nickel)

Location	Deposit	Measured			Indicated			Inferred			Total		
		tonnes	Ni %	Ni tonnes	tonnes	Ni %	Ni tonnes	kt	Ni %	Ni kt	kt	Ni %	Ni kt
Thunderbox	Waterloo							425	2.2	9	430	2.1	9
	Amorac							260	2.0	5	260	2.0	5
	Sinclair							720	2.3	16	720	2.2	16
Total	***Total Mineral Resources***							***1,400***	***2.1***	***30***	***1,400***	***2.1***	***30***

All data rounded to two significant figures. Rounding errors may occur.

Project updates - Carosue Dam

Underground mining

Karari-Dervish

The updated Karari-Dervish Ore Reserve is 1.0Moz (1.2Moz at 30th June 2019), despite very limited extensional drilling and mining depletion of 214koz.

As previously flagged, after an aggressive FY19 campaign, drilling in FY20 was focused on infill grade control whilst a new drill platform was developed lower in the mine.

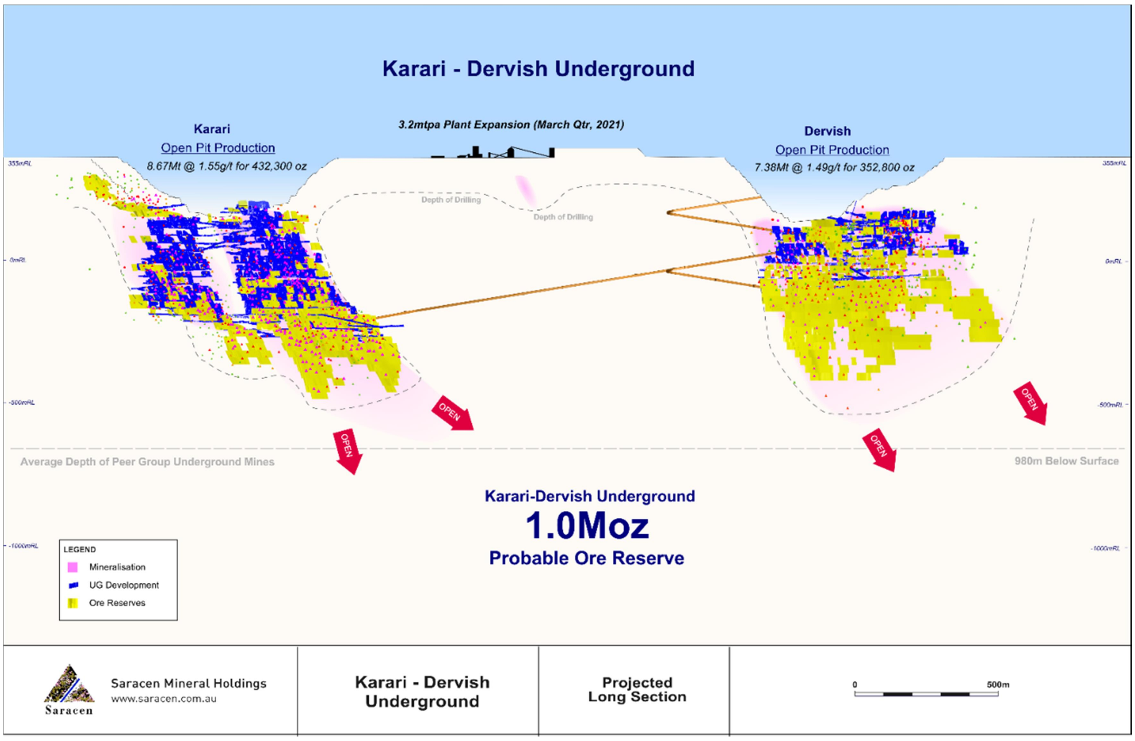

Figure 4 - Karari - Dervish Long Section, Underground Ore Reserve

With 11Mt in Reserves, Karari-Dervish is one of the largest tonnage underground gold mines in Australia. Saracen continues to investigate materials handling initiatives to further increase productivity / lower costs.

Importantly, **Karari-Dervish remains a growth asset, open along strike and at depth**. Ounces per vertical metre are increasing below current stoping fronts, pointing to robust production in the coming reporting periods.

As previously stated, **Karari drilling** continued to focus on infill grade control around the extents of the current Ore Reserve. Drilling was reduced to a single rig with a re-prioritisation of drilling to Dervish.

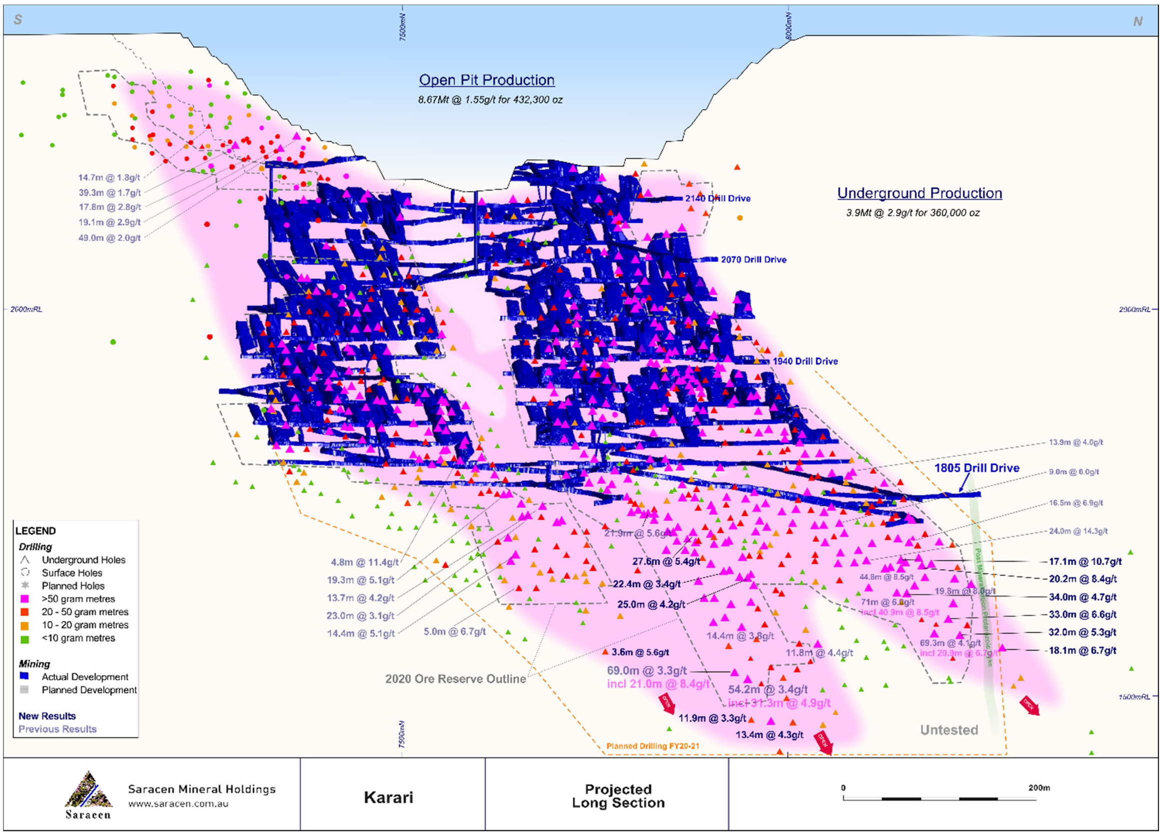

Figure 5 - Karari Long Section, New Drill Results (Karari-Dervish mine)

In FY21, the recently completed drill drive on the 1805 level will facilitate the next phase of Reserve growth, with the **focus switching back to extensional drilling**.

Drilling continues to return **thick, high-grade results** including:

- **33.0m @ 6.6g/t**
- **17.1m @ 10.7g/t**
- **32.0m @ 5.3g/t**
- **20.2m @ 8.4g/t**
- **18.1m @ 6.7g/t**
- **34.0m @ 4.7g/t**
- **27.6m @ 5.4g/t**

The high-grade shoots remain open at depth and will be tested in the next 12 months.

Dervish drilling has also focused on infill grade control immediately below the current mining areas. Strong development performance at Dervish has resulted in the mining front being ahead of schedule. A second rig was mobilised from Karari to ensure grade control remained ahead of mining.

Recent drilling has returned **thick high-grade results**, which further supports the recently approved introduction of paste fill at Dervish, enabling increased mining recovery.

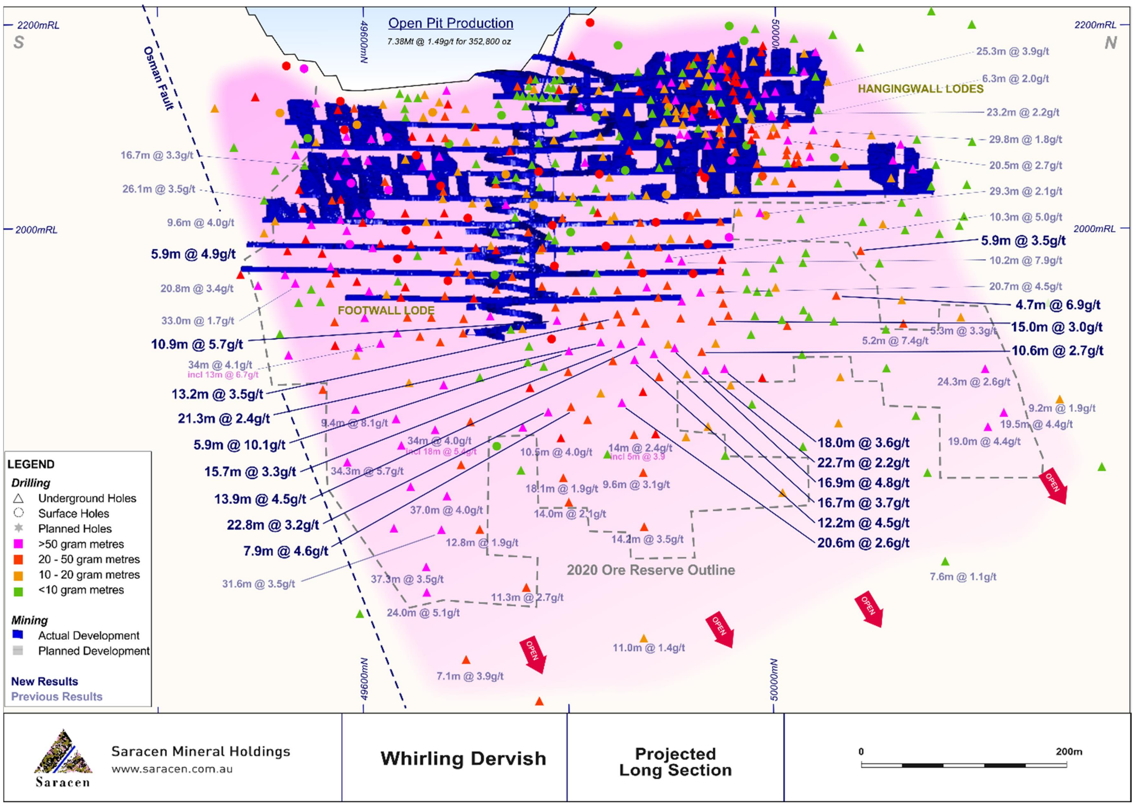

Figure 6 - Dervish Long Section, New Drill Results (Karari-Dervish mine)

Drilling continues to return **thick, high grade results** including:

- **16.9m @ 4.8g/t**
- **18.0m @ 3.6g/t**
- **13.9m @ 4.5g/t**
- **10.9m @ 5.7g/t**
- **22.8m @ 3.2g/t**
- **5.9m @ 10.1g/t**
- **12.2m @ 4.5g/t**

The high-grade shoots remain open at depth and will be tested further during FY21, including the strengthening northern trend.

Paste pump to Dervish

A contract to install a paste pump at the Carosue Dam Pastefill Plant was recently awarded to GR Engineering Services (ASX: GNG).

Paste is currently reticulated to Karari. The A$10m total investment will enable paste to also be reticulated to Dervish, unlocking additional Reserves of 77koz previously sterilised in pillars. With paste, the mining recovery in Dervish paste stopes increases from 60% to >90%.

Completion is anticipated in the June half 2021, capitalising on the increasing ounces per vertical metre below current stoping.

Carosue Dam 3D seismic survey

Interpretation of the largest high-resolution hard rock 3D seismic survey in Australia has advanced. Over the last few months, a dedicated team have been diligently interpreting the seismic data, assessing the correlation of the known mineralisation at Karari-Dervish to the observed seismic response.

Taking this knowledge to the unknown areas of the 3D seismic cube, a number of high priority Stage 1 targets have been delineated where drilling is not present.

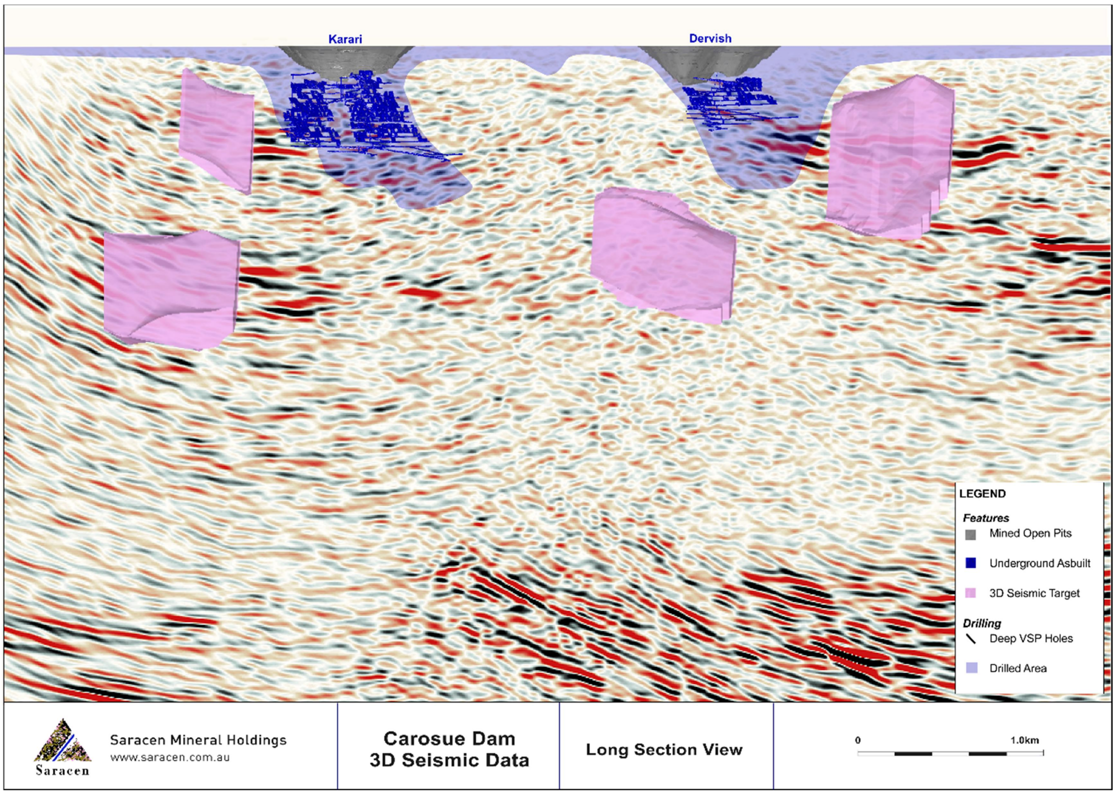

Figure 7 - Carosue Dam, 3D Seismic data and Stage 1 targets

A number of the **high priority targets will be drill tested during FY21**, initially focused on targets that are within 1km of the surface and proximal to existing underground infrastructure.

The targets will be drilled from surface and underground.

The first target to be tested will be the **upper Dervish North target**, with drilling planned for the December half 2020.

The interpretation phase is an iterative process as new mapping and drilling information is integrated and validated with the 3D seismic cube.

Deep South

Following a successful resource extension program early in FY20, the Deep South mine was taken out of care and maintenance, and **production resumed late in the June quarter 2020**.

An underground rig has been mobilised to undertake grade control and resource extension drilling ahead of ore development. Current drilling is focused on the northern high-grade shoot where a number of strong results have been returned.

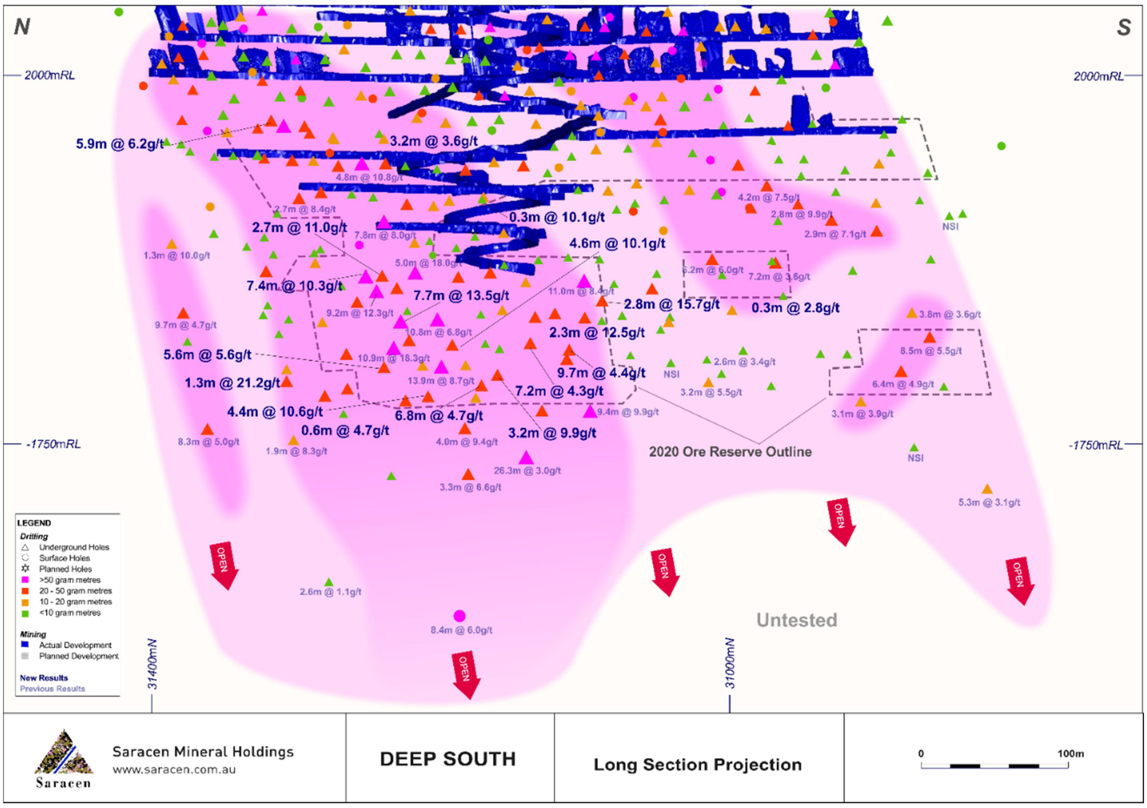

Figure 8 - Deep South Long Section, New Drill Results

Significant results include:

- **7.7m @ 13.5g/t**
- **7.4m @ 10.3g/t**
- **4.6m @ 10.1g/t**
- **4.4m @ 10.6g/t**
- **2.8m @ 15.7g/t**

The high-grade shoots remain open down plunge with further drilling to be planned.

Open pit mining

Open pit Reserves at Carosue Dam have **increased to 750koz, up 85%** from 406koz at 30 June 2019.

Table 6 - Carosue Dam Open Pit Ore Reserves by deposit at 30 June 2020

Carosue Dam open pits	Reserves				Pre-production capital^
Mining Centre - Porphyry	Mt	g/t	koz	Strip ratio*	A$m
Million Dollar	6.6	1.2	240	4.0	40
Wallbrook	3.1	1.1	110	4.6	15-20
Enterprise	0.6	1.9	35	13.2	10-15
Porphyry	0.8	1.4	35	3.4	10-15
Mining Centre - Mt Celia	Mt	g/t	koz	Strip ratio*	A$m
Safari Bore	2.5	1.7	140	12.7	25-30
Mining Centre - Carosue Dam	Mt	g/t	koz	Strip ratio*	A$m
Karari South	2.3	1.5	110	11.8	25-30
Monty's Elliot	1.3	2.0	80	16.8	20-25
TOTAL	**17.2**	**1.0**	**750**	**7.7**	**145-175**

* Includes pre-strip

^ Pre-production capital (gross) timing is spread over the life of mine to match production profile

The resumption of open pit mining at Carosue Dam coincides with the expansion of the Carosue Dam mill to 3.2Mtpa during FY21. The additional 800ktpa of mill capacity will be filled with open pit Reserves, now totalling **17.2Mt in three discrete mining areas**.

Open pit mining has commenced at the Porphyry Mining Centre. The Mt Celia Mining Centre now enters the production profile in FY22 following the addition of high-grade Reserves at Safari Bore.

Porphyry Mining Centre

Infrastructure works are now complete at the Porphyry Mining Centre, 50km north of the Carosue Dam mill.

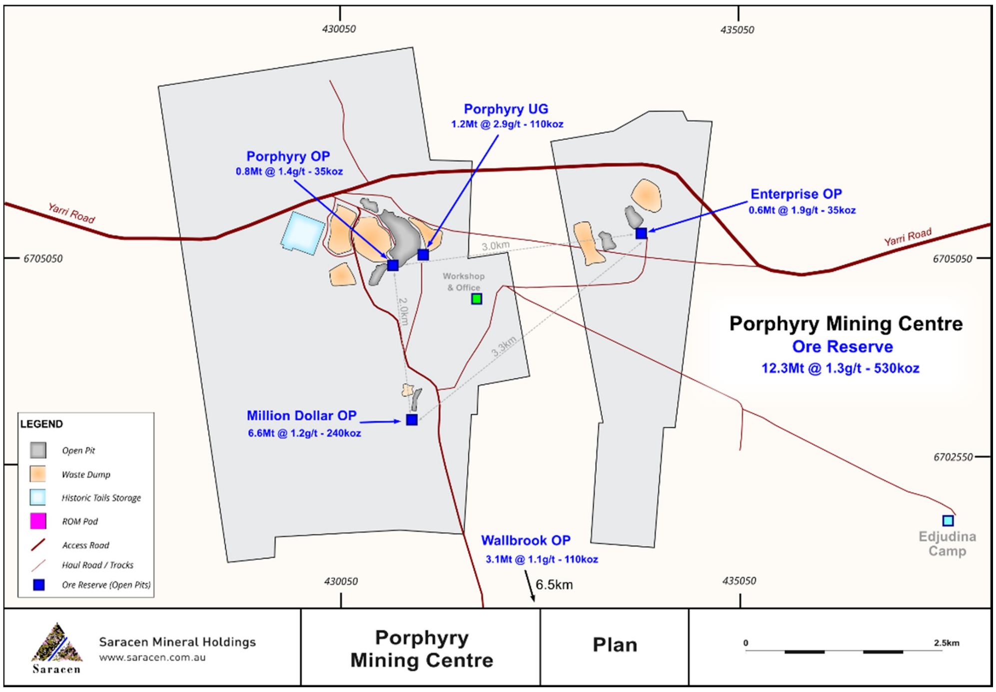

Figure 9 - Porphyry Mining Centre Plan (50km north of the Carosue Dam mill)

Open pit mining commenced at Million Dollar in July 2020. This represents **the first open pit mining at Carosue Dam since mid-2015, when the prevailing gold price was ~A$1550/oz, more than A$1,000/oz below the spot price today.**

Figure 10 - Million Dollar pit, mining underway

Following highly successful drilling outcomes in FY20, the **Million Dollar Reserve has increased 53% to 240koz**.

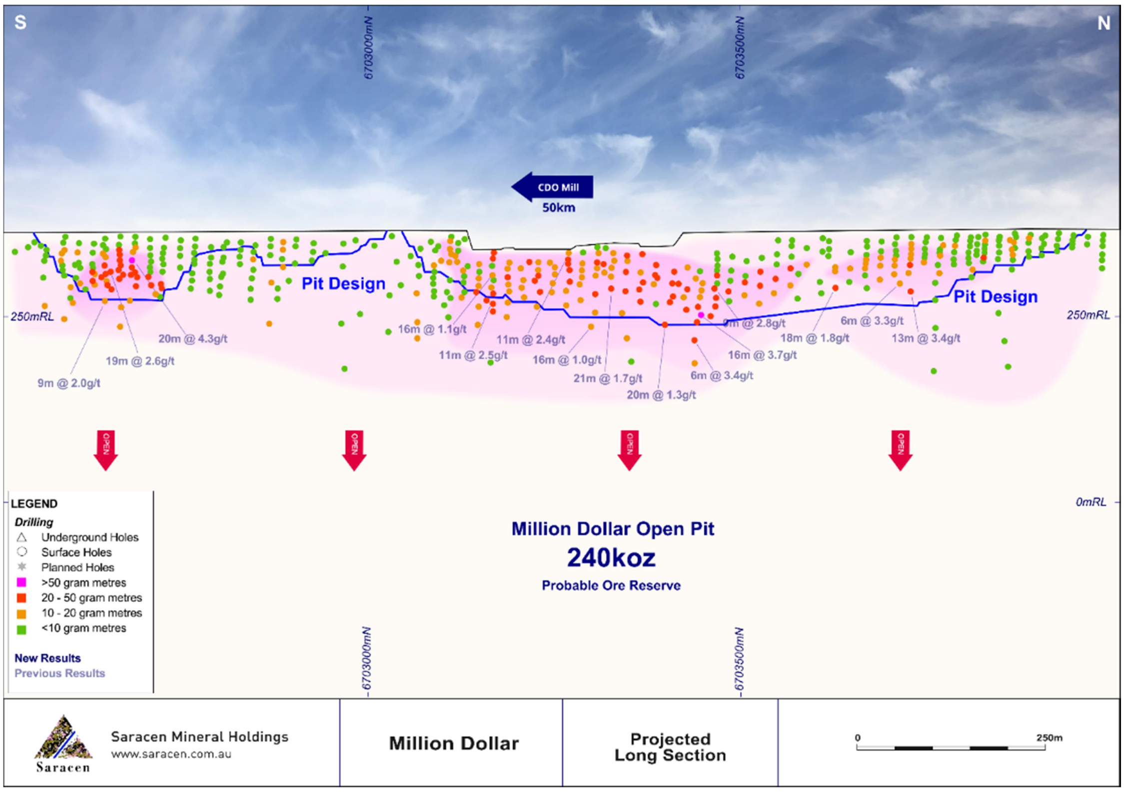

Figure 11 - Million Dollar, Long Section

Mt Celia Mining Centre

Safari Bore is located in the Mt Celia Mining Centre, 75km north of the Carosue Dam mill and 5km west of the Deep South underground mine. Safari Bore was previously mined (2003-2005), producing 210koz at an impressive open pit grade of 2.9g/t.

The maiden Safari Bore open pit Reserve of 140koz is a significant addition. With 2.5Mt @ 1.7g/t, **Safari Bore is one of the higher grade open pits of size in the district**. The high-grade shoots remain open down plunge, with further drilling planned.

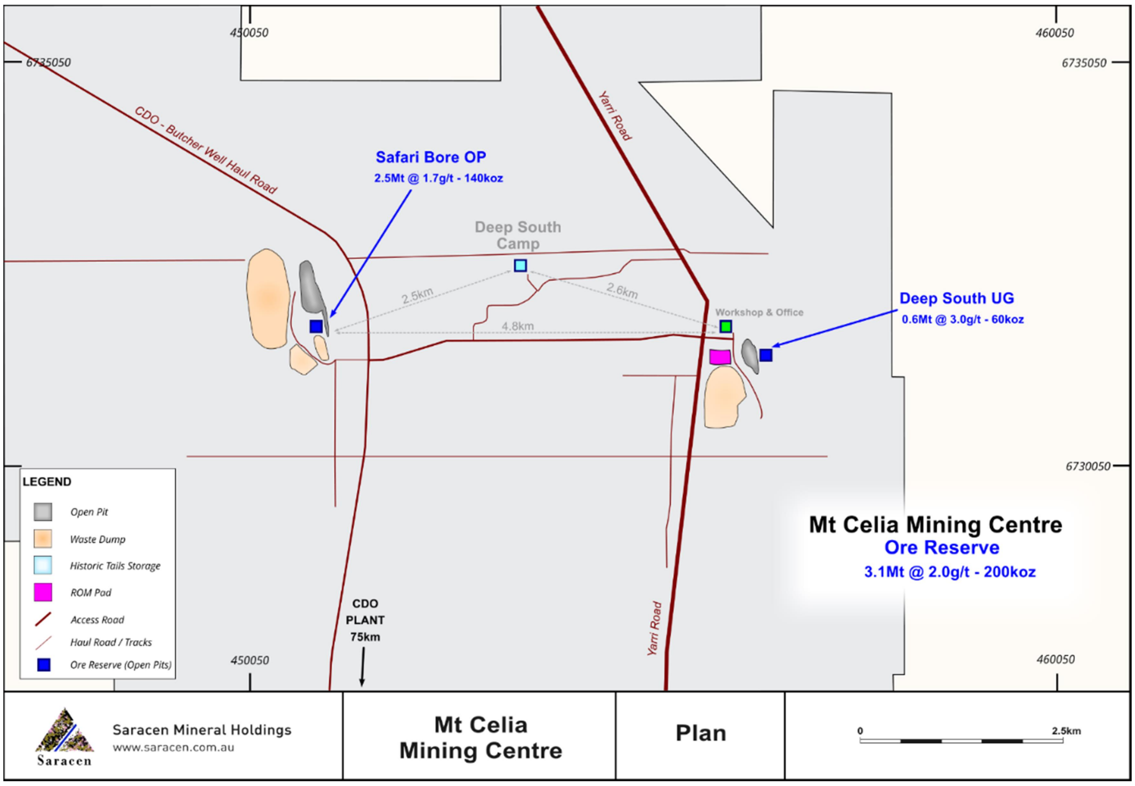

Figure 12 - Mt Celia Mining Centre Plan (75km north of the Carosue Dam mill)

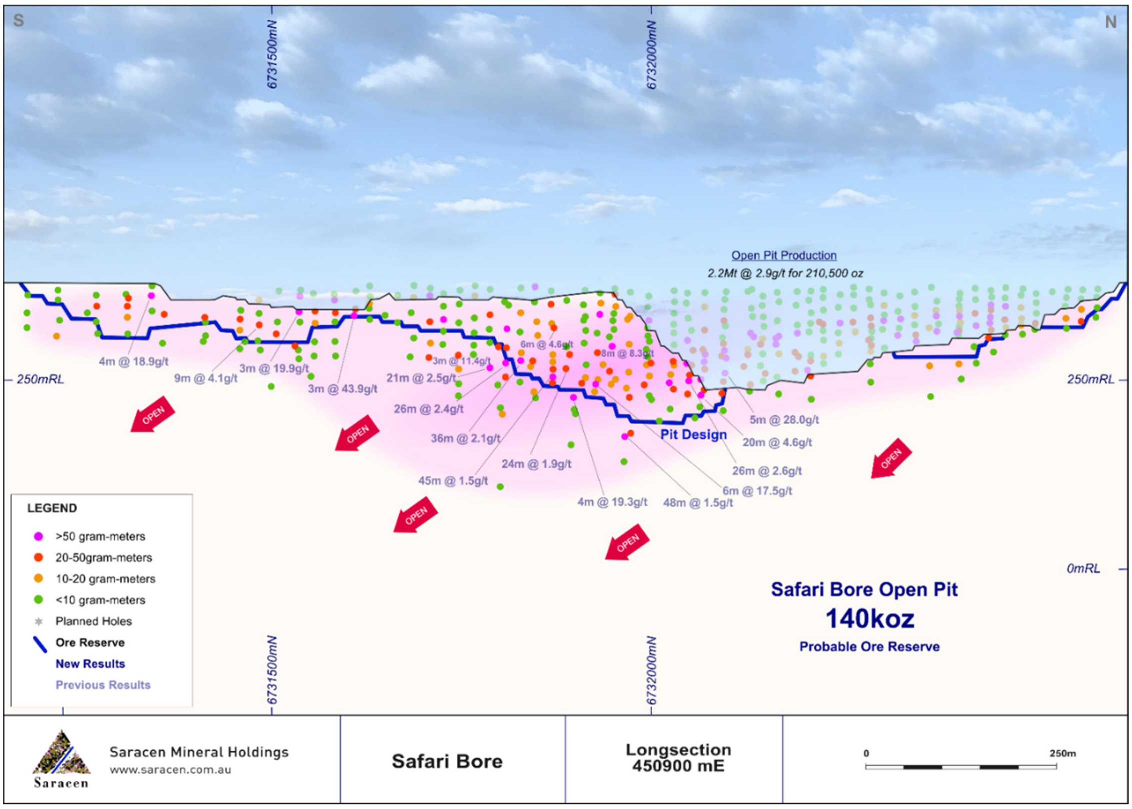

Figure 13 - Safari Bore, Long Section

Mill expansion update

The mill expansion from the current 2.4Mtpa to 3.2Mtpa continues to make good progress. GR Engineering Services has completed all civil and concrete works and installed the additional elution column. Work is now focused on the structural and mechanical work for the new mill and other process infrastructure.

Figure 14 - Carosue Dam mill expansion continues

As previously flagged, commissioning and full expanded production has been delayed by one quarter to the March quarter 2021 due to COVID-19 related delays at the mill manufacturing plant in China.

Carosue Dam production outlook

Carosue Dam FY21 production guidance is **240 - 250,000oz at an AISC of A$1,300 - A$1,400/oz**.

Ore sources (100% in Reserves) are presented below.

Table 7 - Carosue Dam production profile

Carosue Dam	FY21	FY22	FY23	FY24	FY25	FY26	FY27
Underground							
Karari-Dervish							
Deep South							
Porphyry							
Open pit							
Porphyry Mining Centre							
Mt Celia Mining Centre							
Carosue Dam Mining Centre							

Project updates - Thunderbox

Underground mining

Thunderbox Underground Reserves remain **unchanged at 710koz**.

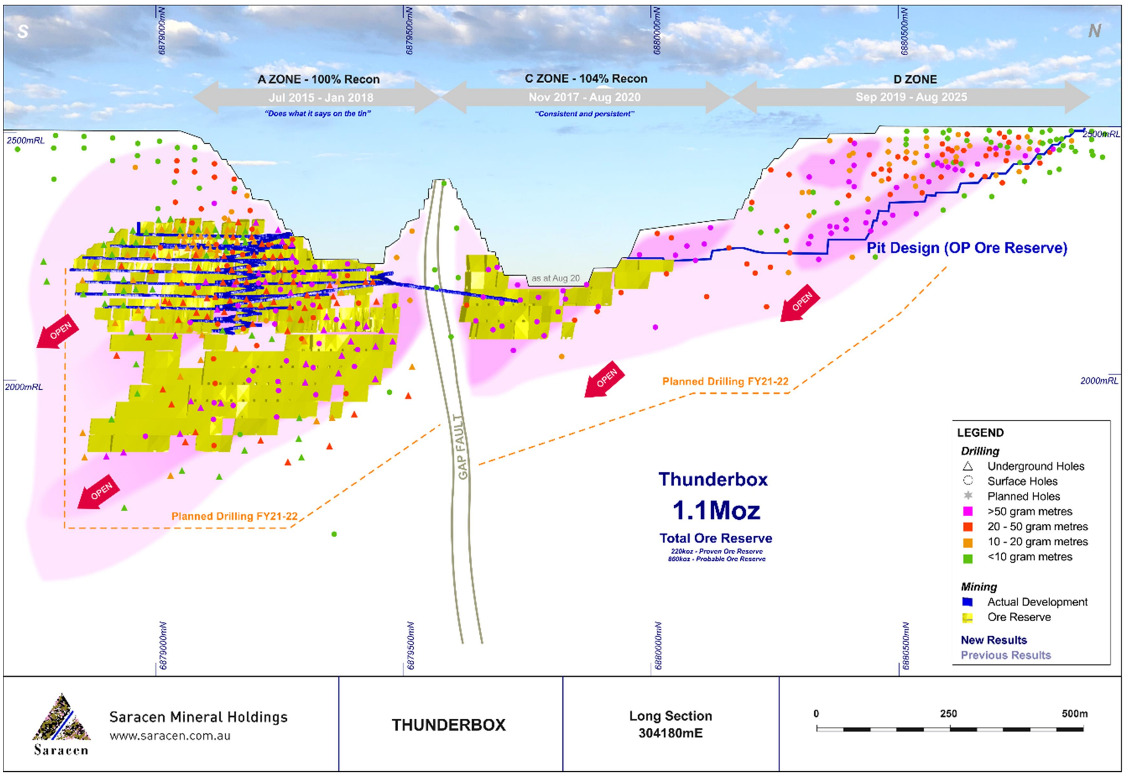

Figure 15 - Thunderbox Long Section, Underground (and C / D Zone open pit)

Following the release of the Entech-led Feasibility Study in FY19, the focus in FY20 has been on de-risking future production, in particular accelerated development in advance of stoping. This bulk underground operation now has:

- 9 levels developed
- 2.4Mt of ore stocks developed
- 38,000m of production blast holes drilled
- 225kt of ore stocks drilled

The first "Thunderground" stope was fired on the 2270 level in July with outstanding fragmentation.

Figure 16 - Thunderbox Underground, Let there be rock (first stope fired)

Stoping will now progressively ramp up to in excess of 2Mtpa ore by FY23 (updated physicals below). The grade is anticipated to increase as the mine gets deeper.

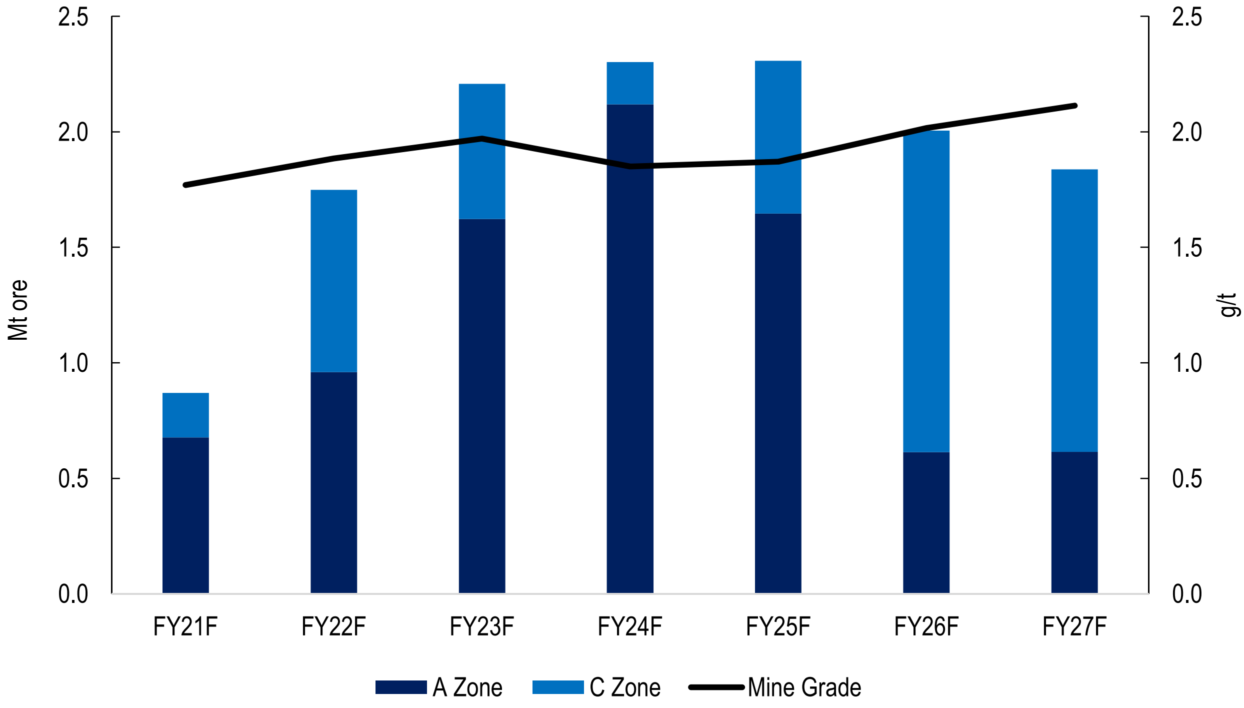

Figure 17 - Thunderbox underground, Ore tonnes by zone, grade

The Sub Level Open Stoping (SLOS) mining method will be used for the wider sections of A Zone and C Zone utilising a bottom-up primary-secondary mining sequence with paste backfill. SLOS was selected due to lower technical risk, lower execution risk, lower capital cost and less mining dilution. SLOS also provides more selectivity / optionality to future changes to gold prices and / or operating costs.

The Long Hole Open Stoping (LHOS) mining method will be used for the upper section of the A Zone orebody. This method is widely employed by the Western Australian mining industry (including at Carosue Dam).

The Thunderbox underground ore is being treated at the adjacent Thunderbox mill. Metallurgical recovery of 94% is assumed, consistent with the project to date performance of A Zone and C Zone ore (including A Zone underground development ore).

Updated unit operating costs of A$71/t ore are presented below.

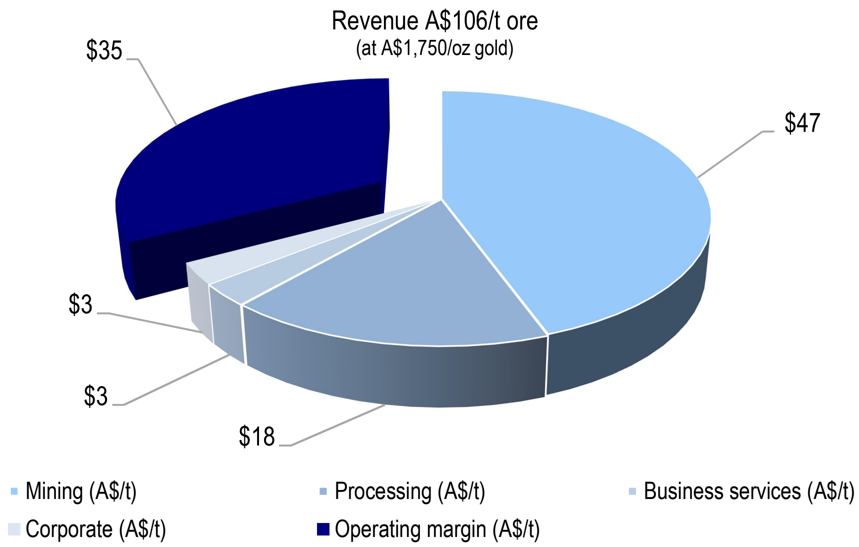

Figure 18 - Thunderbox underground, Operating margin (A$1750/oz Reserve gold price)

Operating margins are A$35/t ore or 33% at the conservative gold price of A$1,750/oz used to estimate Saracen's Reserves. The margin rises significantly at gold prices closer to the current spot price.

Table 8 - Thunderbox underground, Operating leverage

		SAR Reserves	Spot
Gold price	A$/oz	1,750	2,750
Operating margin	A$/t	35	95
Operating margin	%	33%	57%

Post the pre-production period (commercial production anticipated towards the end of FY21), 100% of capital is included in the **life of mine average AISC of A$1,296/oz**.

With 11Mt in Reserves and remaining open at depth, Thunderbox is **one of the largest tonnage underground gold mines in Australia**. Saracen continues to investigate **materials handling initiatives** to further **increase productivity / lower costs.**

Importantly, **Thunderbox remains a growth asset, open along strike and at depth**. Further drilling will aim to extend the mine life towards a potential +10 years.

For further information on the Thunderbox Underground Feasibility Study, refer to the ASX announcement 1st August 2019 "Reserves grow 32% to 3.3Moz, underpinning long life 400kozpa".

Paste fill plant

An engineering, procurement and construction (EPC) contract was recently awarded to GR Engineering Services (ASX: GNG) for the Thunderbox paste fill plant.

The works involve the design, supply, installation and commissioning of a new 150 m³/h paste fill plant, almost identical to the operational paste fill plant at Carosue Dam. GNG built the Carosue Dam paste fill plant on time and on budget, and the plant has exceeded design performance.

Figure 19 - Thunderbox paste backfill plant design

Paste fill offers several advantages over alternative backfill methods:

- Safe method of filling underground voids
- Environmental benefits of sending tailings back underground (rather than surface storage)
- Higher extraction of the Reserves / increased mine life

This A$28m investment will unlock additional Thunderbox Reserves of 245koz previously sterilised in pillars. With paste, the mining recovery increases from 65% to ~92%.

Work is underway with completion anticipated in the June half 2021.

Open pit mining

Open pit Reserves at the Thunderbox project have increased to 926koz, up 22% from 759koz at 30 June 2019. Large new contributions from Thunderbox D Zone and Bannockburn substantially outweighed depletion at Thunderbox C Zone and Kailis.

Table 9 - Thunderbox Open Pit Ore Reserves by deposit at 30 June 2020

Thunderbox open pits	Ore Reserves				Pre-production capital^
	Mt	g/t	koz	Strip ratio*	A$m
Thunderbox D	8.4	1.3	370	5.2	40-45
Otto Bore	1.6	1.8	91	13.5	10-15
Bannockburn	8.8	1.6	460	10.5	45-55
Kailis	0.08	2.0	5	11.0	-
TOTAL	**18.9**	**1.5**	**926**	**8.4**	**95-115**

* Includes pre-strip

^ Pre-production capital (gross) timing is spread over the life of mine to match production profile

The 11Mt Thunderbox underground mine is planned to ramp up to >2.0Mtpa. The remaining ~1.2-1.5Mtpa of expanded Thunderbox mill capacity will be underpinned by Thunderbox D Zone, Otto Bore and Bannockburn open pit Reserves.

D Zone

The current open pit focus at Thunderbox is the transition from the highly successful C Zone open pit, to the virgin D Zone where a large, shallow cut-back is ramping up immediately adjacent to the mill.

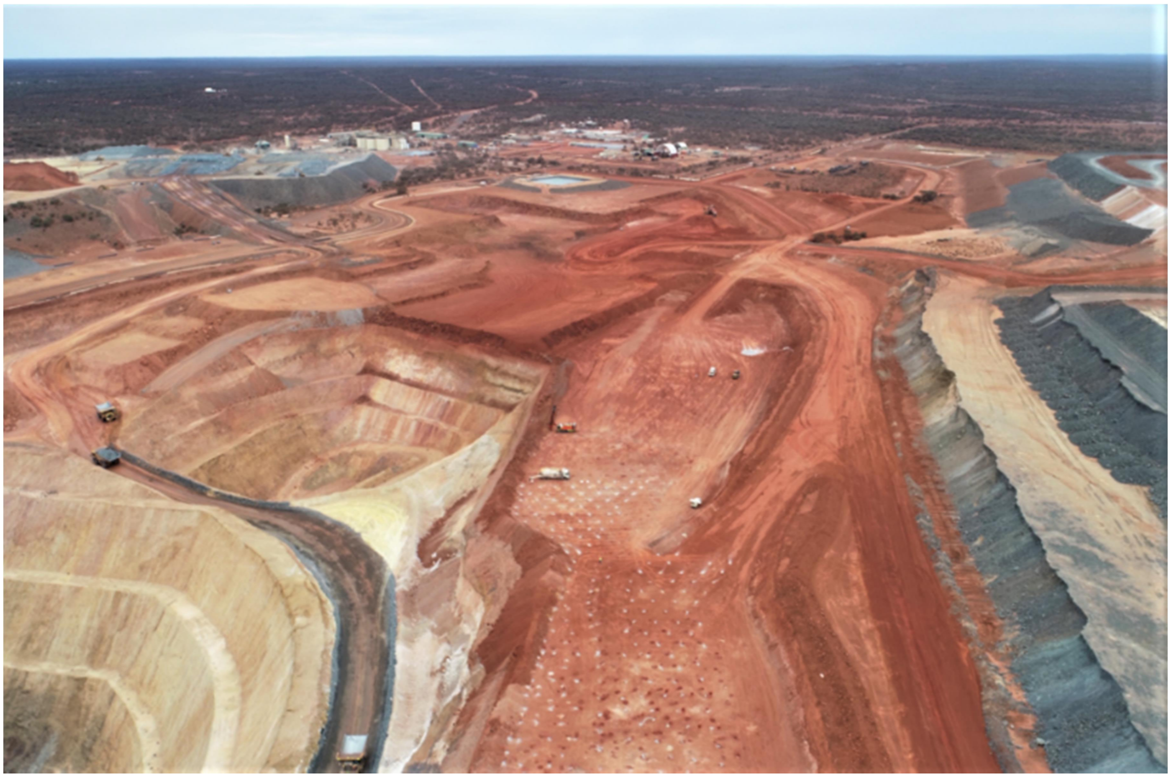

Figure 20 - Thunderbox D Zone, adjacent to the mill

At 30 June 2020, a record stockpile of 2.7Mt @ 1.3g/t for ~111koz had accumulated during the mining of C and A Zone open pits, representing ~12 months of mill feed. C and A Zone project to date reconciliations of ~100% bode well for D Zone.

D Zone is the northern extension of C Zone (refer Figure 15), and will similarly be a simple, robust open pit. Characteristics include:

- High productivity / low cost open pit mining
- Top-down, perimeter-to-perimeter sequence (no staging)
- ~94% metallurgical recoveries
- ~2.5 years of soft oxide feed blend (benefiting mill throughput / unit costs)
- Progressively lower strip ratio and higher grade

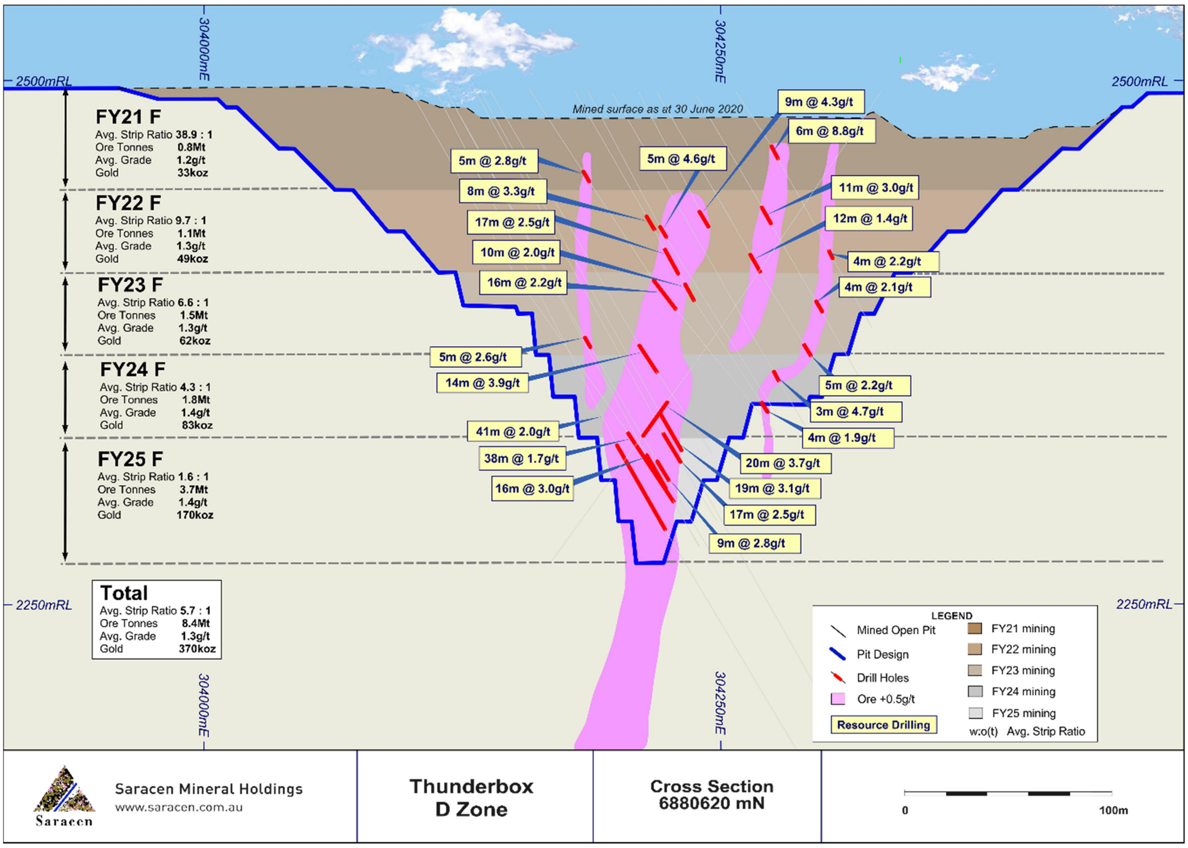

Figure 21 - Thunderbox D Zone Cross Section

Investing capital now in D Zone will enable the accumulation of significant stockpiles at Thunderbox over the life of the project (after expansion of the mill). This strategy will de-risk future production and lower costs, echoing the successful **"future-proofing" approach taken in C Zone**.

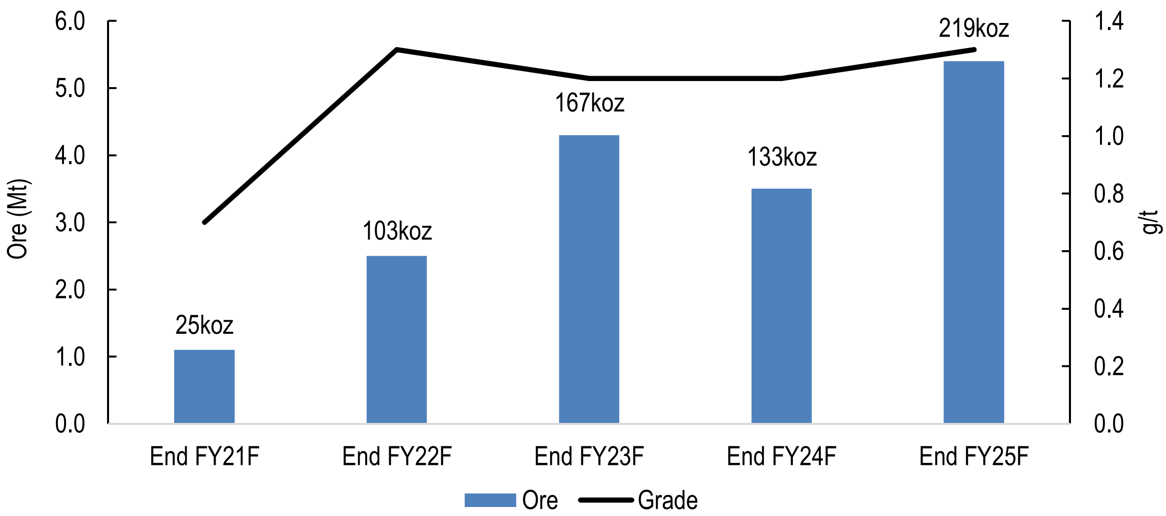

Figure 22 - Thunderbox stockpile accumulation

Bannockburn

Bannockburn Reserves increased to 460koz, up 142% from 190koz at 30 June 2019. Open pit and underground mining produced ~300koz under previous owners in the 1990's. Bannockburn is located ~30km south west of the Thunderbox mill.

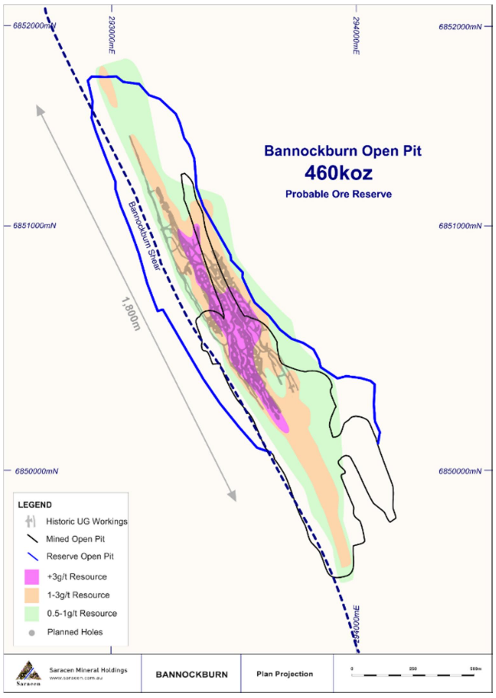

Figure 23 - Bannockburn Plan

Wonder North

In the September quarter 2019, Saracen acquired Bligh Resources (ASX: BGH) including the Bundarra Project, comprising 5 deposits adjacent to the sealed Goldfields Highway and less than 30km south of the Thunderbox mill.

The largest deposit, **Wonder North**, delivered a **maiden 320koz contribution** to Saracen's **FY20 Resources**. Saracen's first drilling at Wonder North primarily focused on infilling the resource to increase confidence and validate historical drilling. A number of excellent results have been returned, including from some extensional holes to the south that highlight further growth potential.

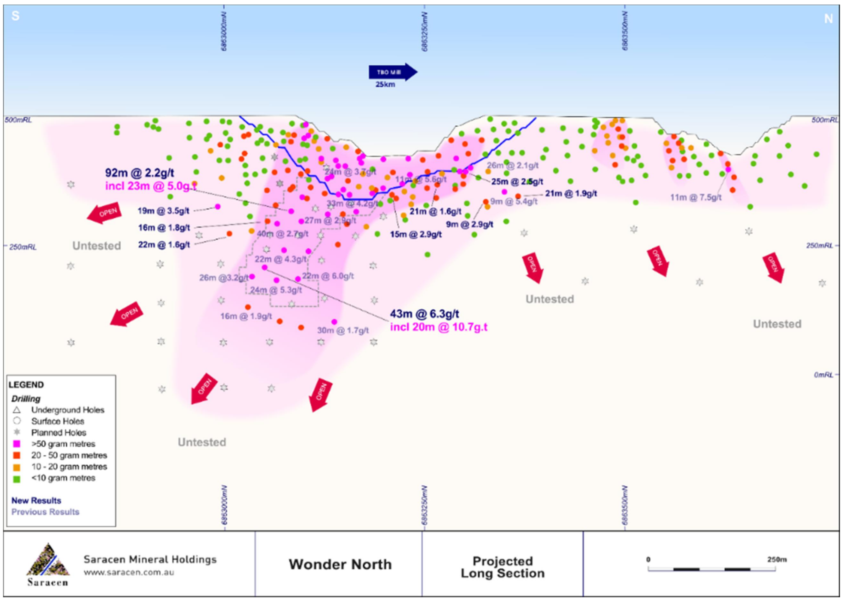

Figure 24 - Wonder North, Planned drilling

Recent drilling results at Wonder North include: **43m @ 6.3g/t (including 20m @ 10.7g/t)**, **92m @ 2.2g/t (including 23m @ 5.0g/t)**, **19m @ 3.5g/t**, **25m @ 2.5g/t**, and **15m @ 2.9g/t.** Wonder North remains open down plunge and along strike. **A maiden open pit Reserve is anticipated in FY21**.

Mill expansion

A Scoping Study has confirmed the potential to **expand the Thunderbox mill to 3.5Mtpa during FY22** (FY20 processed 2.9Mt, above current nameplate 2.5Mtpa). The additional ore required to fill the expanded mill will be sourced from the growing Thunderbox open pit Reserves and stockpiles (~5Mt added in FY20 alone).

The upgrade involves the installation of a secondary crushing circuit and a new tailings thickener for a **capital cost of ~A$25m**.

Figure 25 - Thunderbox mill expansion, Secondary crushing circuit layout

The secondary crushing circuit will deliver a finer product size to the grinding circuit. Saracen has purchased two Sandvik crushers that will be utilised (currently in storage).

Figure 26 - Thunderbox mill expansion, Crushers in storage

Plant throughput will increase to 3.5Mtpa with a 20% oxide feed blend. Metallurgical recoveries are anticipated to be similar to current levels ~94%. Unit milling costs will reduce by ~A$1.00/t.

The detailed design will be sent out for tender with a decision to award in the March quarter 2021. The expected build time is ~6 months with commissioning targeted for FY22. The upgrade will take place independent of processing operations, minimising disruption to production.

Thunderbox production outlook

Thunderbox FY21 production guidance is **140 - 150,000oz an AISC of A$1,000 - A$1,100/oz.**

Ore sources (100% in Reserves) are presented below.

Table 10 - Thunderbox production profile

Thunderbox	FY21	FY22	FY23	FY24	FY25	FY26	FY27
Underground							
Thunderground							
Open pit							
Thunderbox D Zone							
Otto Bore							
Bannockburn							
Stockpiles							

FY21 growth capital and exploration guidance - Carosue Dam and Thunderbox only

Growth capital

FY21 growth capital guidance of A$185m will enable Saracen to capitalise on the increased Reserves by **growing production to 450,000oz per annum whilst continuing to "future proof" the business** i.e. investing capital now to de-risk future production and structurally lower the cost base.

Table 11 - FY21 growth capital guidance

Item	A$m
Carosue Dam	
- Mill expansion	5
- Dervish paste fill extension	10
- Mine development	67
- Capital works	20
Total	102
Thunderbox	
- Mill expansion	5
- Mine development	32
- Paste fill plant	28
- Capital works	18
Total	83
TOTAL - CAROSUE DAM AND THUNDERBOX	**185**

Initiatives include **accelerated decline development** (well in advance of the stoping front) at the underground mines, and **"top down" mining with no staging** at the open pits.

The growth capital is net of revenue realised from gold sales relating to pre-commercial activities, estimated at A$145m assuming a gold price of A$2,500/oz.

As per accounting standards, this "capitalised revenue" will be offset against the development cost of these projects in the balance sheet, and will not be accounted for as sales revenue in the profit and loss statement.

Exploration

An increased exploration spend in recent years has delivered global-leading growth, with **Reserves increasing more than four-fold since 2013** (after mining depletion) and **almost doubling over the past three years alone** (after mining depletion). This has enabled numerous production and earnings upgrades.

This track record of success at Carosue Dam and Thunderbox has motivated **FY21 exploration guidance of A$43m.**

KCGM

FY21 growth capital and exploration guidance for KCGM will be provided in a separate KCGM-dedicated release later in the current September quarter.

This announcement has been authorised for release to the ASX by Jeremy Ryan, Manager Legal / Company Secretary.

Corporate structure:

Ordinary shares on issue:	1,102.9m
Unvested employee performance rights:	17.3m
Market Capitalisation:	A$6.9b (share price A$6.23)
Cash and bullion (30 June):	A$369m
Debt (30 June):	A$321m
Substantial Shareholders:	Van Eck Global 10.0% BlackRock Group 9.8%

For further information, please contact:

Investors:
Troy Irvin
Corporate Development Officer
Email: info@saracen.com.au
Contact (08) 6229 9100

Media Enquiries:
Read Corporate
Paul Armstrong / Nicholas Read
Email: info@readcorporate.com
Contact: (08) 9388 1474

Competent Person Statements

The information in the report to which this statement is attached that relates to Exploration Results and Mineral Resources related to Gold and Nickel is based upon information compiled by Mr Daniel Howe, a Competent Person who is a member of The Australasian Institute of Mining and Metallurgy and the Australian Institute of Geoscientists. Daniel Howe is a full-time employee of the Company. Daniel Howe 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'. Daniel Howe consents to the inclusion in the report of matters based on his 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 relating to Gold is based upon information compiled by Stephen King, a Competent Person who is a member of The Australasian Institute of Mining and Metallurgy. Stephen King is a full-time employee of the Company. Stephen King 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'. Stephen King consents to the inclusion in the report of matters based on his 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 relating to Gold is based upon information compiled by Hemal Patel, a Competent Person who is a member of The Australasian Institute of Mining and Metallurgy. Hemal Patel is a full-time employee of the Company. Hemal Patel 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'. Hemal Patel consents to the inclusion in the report of matters based on his information in the form and context in which it appears.

The information in the report to which this statement is attached that relates to underground Ore Reserves at Thunderbox is based upon information compiled by Dan Donald, a Competent Person who is a member of The Australasian Institute of Mining and Metallurgy. Dan Donald is a consultant to Saracen Mineral Holdings through Entech Mining Consultants. Dan Donald 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'. Dan Donald consents to the inclusion in the report of matters based on his information in the form and context in which it appears.

Mineral Resources and Ore Reserves – Other Material Information Summary

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 Saracen 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 Saracen Mineral Holdings Pty Ltd.

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

Karari - Dervish Underground Ore Reserve Summary

Material assumptions for Ore Reserve

The following material assumptions apply to the Karari – Dervish Ore Reserves

- Gold Price of $1750 per ounce
- Current operational capital and operating cost structures
- Current operational mining and metallurgical performance
- An allowance for 15% dilution has been applied and a mining recovery of 96%

Ore Reserve Classification

The classification of the Karari – Dervish Ore Reserve has been carried out in accordance with the recommendations of the JORC Code 2012. It is based on the density of drilling, estimation quality and the mining methods currently in operation.

The Probable Ore Reserves have been derived from Measured and Indicated Mineral Resources respectively.

Mining Method

The Karari - Dervish underground Ore Reserve has been estimated using detailed mine development and stope designs.

The current Dervish mine design allows for; some areas of the resource to remain in-situ, as either rib or sill pillars, plus some resource areas to achieve higher extraction rates via the backfilling of adjacent stopes with paste fill.

The current Karari mine design allows for paste fill to be used throughout the mine design and therefore the overall extraction ratio of this portion of the mineral resources is approximately 96%.

Some mining of remnant pillars has been included in the mine design.

Standard underground infrastructure is currently operational; this includes a decline for access and truck haulage, ventilation fans, escape-way ladders, electrical reticulation, mine services (air and water), and mine dewatering infrastructure.

Processing Method

The ore reserve will be treated at the established Carosue Dam processing facility. The Carosue Dam Process Plant is a CIL cyanide leach plant incorporating a gravity circuit which is appropriate for the extraction of gold from free milling gold ores.

An average plant processing recovery of 94% has been assumed in the Ore Reserve Estimate which is consistent with current and historical plant recoveries for Karari - Dervish ore which is currently being processed.

Cut-off Grade

For the purpose of an Ore Reserve Estimate, operating cut-off grades of 1.85g/t (Karari) and 1.55g/t (Dervish) were calculated based upon an assumed gold price of AUD$1,750/oz and applicable mining production costs, processing, haulage and administration costs. These operating cut-off grades were then used as the basis of mine design. Subsequent production designs were then reviewed, and if required, lower grading stopes were removed from the design. The resulting mine grade's, allow for the cost of capital, all operating costs, plus a return on investment.

Estimation Methodology

Please refer to Mineral Resource section.

Material Modifying Factors

There are no material modifying factors that need to be highlighted with the Ore Reserve. Karari – Dervish is an operating underground mine. All regulatory leasing, approvals, licencing, agreements, contracts and current infrastructure are in place, which considers this estimation of higher confidence than that of a feasibility study.

Karari South Open Pit Ore Reserve Summary

Material assumptions for Ore Reserve

The following material assumptions apply to the Karari South Ore Reserves

- Gold Price of $1750 per ounce
- Current operational capital and operating cost structures
- Current operational mining performance and metallurgical test work
- An allowance for 14.0% dilution has been applied and a mining recovery of 96%

Ore Reserve Classification

The classification of the Karari South Ore Reserve has been carried out in accordance with the recommendations of the JORC Code 2012. It is based on the density of drilling, estimation quality and the mining methods currently in operation.

All Proved and Probable Ore Reserves have been derived from Measured and Indicated Mineral Resources respectively.

Mining Method

The mining method to be employed at the Karari South deposit is conventional open pit mining with a hydraulic excavator, dump truck fleet, and drill and blast activity. The class of excavator employed is similar to other open pit mining operation, providing a good operating dataset for production and productivity rate measurement and financial modelling.

The Karari South Ore Reserve pit is designed as a cutback to existing mined pit in an appropriate manner to meet operational efficiencies, safety and optimal production rates. A Life of mine Ore Reserve pit has been designed following appropriate geotechnical recommendations made by independent external consultant following site visits, inspection of drill core, and a review of the geotechnical data gathered during earlier operations.

Processing Method

The ore reserve will be treated at the established Carosue Dam processing facility. The Carosue Dam Process Plant is a CIL cyanide leach plant incorporating a gravity circuit which is appropriate for the extraction of gold from free milling gold ores.

An average gold recovery for the Karari deposit is estimated at 94.0%. The recovery estimation is based on met test work and ongoing long term actual average recovery data collected at the Carosue Dam Plant.

Cut-off Grade

The Ore Reserve is estimated at cut-off grade of 0.50g/t, estimated using assumed gold price of AUD$1,750/oz and operating cost of mining, processing, haulage and general administration. A top cut has already been applied to the Mineral Resource Estimate eliminating the necessity for any further adjustment to the Ore Reserve Estimate.

Estimation Methodology

Please refer to Mineral Resource section.

Material Modifying Factors

The Karari – Dervish underground mine is currently in operation and all required Environment studies have been completed. All Statutory Government Approvals namely works approvals, dewatering and discharge licence have been granted. The Mining Approvals for current underground reserve is in place. The current Mining Approval will require to be revised to accommodate open pit reserve.

Deep South Underground Ore Reserve Summary

Material assumptions for Ore Reserve

The following material assumptions apply to the Deep South Ore Reserves

- Gold Price of $1750 per ounce
- Current operational capital and operating cost structures
- Current operational mining and metallurgical performance
- An allowance for 20.0% dilution has been applied and a mining recovery of 95%.

Ore Reserve Classification

The classification of the Deep South Ore Reserve has been carried out in accordance with the recommendations of the JORC Code 2012. It is based on the density of drilling, estimation quality and the mining methods currently in operation.

The Probable Ore Reserves have been derived from Measured and Indicated Mineral Resources respectively.

Mining Method

The Deep South underground Ore Reserve has been estimated using detailed mine development and stope designs.

Underground mechanised mining for development, ground support, and production stoping is used at Deep South. Mining and geotechnical studies determined two mining methods; 1) open stoping with remnant pillars, and 2) Modified Avoca with rock-fill to be appropriate for the deposit. Open Stoping with remnant pillars has been successfully applied at Deep South, while Modified Avoca (using rock-fill) will be implemented within a localised area to increase the resource extraction ratio. A bottom up approach incorporating production down-holes has been designed. Similar methods are currently utilised at other underground mines at Carosue Dam Operations, and used throughout the Western Australian Goldfields and Australia.

Standard underground infrastructure is currently in care and maintenance; this includes a decline for access and truck haulage, ventilation fans, escape-way ladders, electrical reticulation, mine services (air and water), and mine dewatering infrastructure. This infrastructure can readily be re-activated.

Processing Method

The ore reserve will be treated at the established Carosue Dam processing facility. The Carosue Dam Process Plant is a CIL cyanide leach plant incorporating a gravity circuit which is appropriate for the extraction of gold from free milling gold ores.

An average plant processing recovery of 94% has been assumed in the Ore Reserve Estimate which is consistent with current and historical plant recoveries for Deep South ore which have previously been processed.

Cut-off Grade

For the purpose of Ore Reserve Estimate a planning cut-off grade of 1.8g/t was calculated based upon an assumed gold price of AUD$1,750/oz and applicable processing, haulage and administration costs. A top cut has already been applied to the Mineral Resource Estimate eliminating the necessity for any further adjustment to the Ore Reserve estimate.

Estimation Methodology

Please refer to Mineral Resource section.

Material Modifying Factors

Deep South is currently compliant with all legal and regulatory requirements. All approvals (clearing permit, works approval and Mining Proposals) have been granted for ongoing mining and processing at Carosue Dam.

Million Dollar Open Pit Ore Reserve Summary

Material assumptions for Ore Reserve

The following material assumptions apply to the Million Dollar Ore Reserves

- Gold Price of $1750 per ounce
- Current operational capital and operating cost structures
- Current operational mining and metallurgical performance
- An allowance for 22.0% dilution has been applied and a mining recovery of 92%

Ore Reserve Classification

The classification of the Million Dollar Ore Reserve has been carried out in accordance with the recommendations of the JORC Code 2012. It is based on the density of drilling, estimation quality and the mining methods currently in operation.

The Probable Ore Reserves have been derived from Measured and Indicated Mineral Resources respectively.

Mining Method

Mining method employed at Million Dollar is conventional open pit with hydraulic excavator and dump truck fleet, and drill and blast activity. The class of excavator employed is similar to other open pit mining operation. That way it provides good operating dataset for production and productivity rate measurement and financial modelling.

Million Dollar Reserve pit designed to include couple of successive cutbacks to achieve life of mine Reserve such that it meets the operation efficiency, safety and production rate. Appropriate mine schedule and lead time have been applied to maintain efficient mining operations between the stages.

Processing Method

The Ore Reserve will be treated at the established Carosue Dam processing facility. The facility is a conventional crushing, gravity circuit, grind, and CIL (carbon in leach) plant and is appropriate for the extraction of gold from free milling mineralisation.

An average gold recovery for the Million Dollar deposit is estimated at 94.0%. The recovery estimation is based on met test work and ongoing long term actual average recovery data collected at the Carosue Dam Plant.

Cut-off Grade

The Ore Reserve is estimated at cut-off grade of 0.60g/t, estimated using assumed gold price of AUD$1,750/oz and operating cost of mining, processing, haulage and general administration. A top cut has already been applied to the Mineral Resource Estimate eliminating the necessity for any further adjustment to the Ore Reserve Estimate.

Estimation Methodology

Please refer to Mineral Resource section.

Material Modifying Factors

The Million Dollar open pit is now is full operation. All required Environmental studies have been completed and Statutory Government Approvals including clearing permits, works approvals, dewatering and discharge licence have been granted. A Mining Proposal has been approved for reserve pit.

The existing Ore Reserve are all located on granted mining leases. The required infrastructure for Million Dollar pit commencement has been set out including offices, workshop, fuel and water storage, drainage and camp facilities. The road haulage network footprint is underpinned by a combination of miscellaneous licences and granted mining leases.

Enterprise Open Pit Ore Reserve Summary

Material assumptions for Ore Reserve

The following material assumptions apply to the Enterprise Ore Reserves

- Gold Price of $1750 per ounce
- Current operational capital and operating cost structures
- Current operational mining performance and metallurgical test work
- An allowance for 15% dilution has been applied and a mining recovery of 95%

Ore Reserve Classification

The classification of the Enterprise Ore Reserve has been carried out in accordance with the recommendations of the JORC Code 2012. It is based on the density of drilling, estimation quality and the mining methods currently in operation.

The Proven and Probable Ore Reserves have been derived from Measured and Indicated Mineral Resources respectively.

Mining Method

The mining method to be employed at the Enterprise deposit is conventional open pit mining with a hydraulic excavator, dump truck fleet, and drill and blast activity. The class of excavator employed is similar to other open pit mining operation, providing a good operating dataset for production and productivity rate measurement and financial modelling.

The Reserve pit is designed as a cutback to the existing mined pit in an appropriate manner to meet operation efficiency, safety and production rate. The Life of mine Ore Reserve pit has been designed following appropriate geotechnical recommendations made by independent external consultant following site visits, inspection of drill core, and a review of the geotechnical data gathered during earlier operations.

Processing Method

The ore reserve will be treated at the established Carosue Dam processing facility. The Carosue Dam Process Plant is a CIL cyanide leach plant incorporating a gravity circuit which is appropriate for the extraction of gold from free milling gold ores.

An average gold recovery for Enterprise is estimated at 94.0%. The recovery estimation is based on met test work and past actual average recovery data collected at the Carosue Plant. Approximately two years of processing the Enterprise ore through this plant have resulted in a solid understanding of the metallurgical parameters of the ore.

Cut-off Grade

The Ore Reserve is estimated at cut-off grade of 0.50g/t, estimated using assumed gold price of AUD$1,750/oz and operating cost of mining, processing, haulage and general administration. A top cut has already been applied to the Mineral Resource Estimate eliminating the necessity for any further adjustment to the Ore Reserve Estimate.

Estimation Methodology

Please refer to Mineral Resource section.

Material Modifying Factors

All required Environment studies have been completed and Statutory Government Approvals including works approval, dewatering and discharge licence have been granted. A Mining Proposal has previously been granted, however will be resubmitted to accommodate updated ore reserve.

The road haulage network footprint is underpinned by a combination of miscellaneous licences and granted mining leases.

Porphyry Open Pit Ore Reserve Summary

Material assumptions for Ore Reserve

The following material assumptions apply to the Porphyry Ore Reserves

- Gold Price of $1750 per ounce
- Current operational capital and operating cost structures
- Current operational mining and metallurgical performance
- An allowance for 20.0% dilution has been applied and a production mining recovery of 97%.

Ore Reserve Classification

The classification of the Porphyry Ore Reserve has been carried out in accordance with the recommendations of the JORC Code 2012. It is based on the density of drilling, estimation quality and the mining methods currently in operation.

The Probable Ore Reserves have been derived from Measured and Indicated Mineral Resources respectively.

Mining Method

The mining method to be employed at Porphyry will be conventional open pit with hydraulic excavator and dump truck fleet, and drill and blast activity. The class of excavator employed is similar to other open pit mining operations, providing a good operating dataset for production and productivity rate measurement and financial modelling.

The Reserve pit is designed as a cutback to the existing mined pit in an appropriate manner to meet operation efficiency, safety and production rate. Appropriate mine schedule and lead time have been applied to maintain efficient mining operations between the stages. The Life of mine Ore Reserve pit has been designed following appropriate geotechnical recommendations made by independent external consultant following site visits, inspection of drill core, and a review of the geotechnical data gathered during earlier operations

Processing Method

The Ore Reserve will be treated at the established Carosue Dam processing facility. The Carosue Dam Process Plant is a CIL cyanide leach plant incorporating a gravity circuit which is appropriate for the extraction of gold from free milling gold ores.

An average gold recovery for Porphyry deposit is estimated at 94.0%. The recovery estimation is based on met test work and past actual average recovery data collected at the Carosue Plant. Approximately three years of processing the Porphyry ore through this plant have resulted in a solid understanding of the metallurgical parameters of the ore.

Cut-off Grade

The Ore Reserve is estimated at cut-off grade of 0.50g/t, estimated using assumed gold price of AUD$1,750/oz and operating cost of mining, processing, haulage and general administration. A top cut has already been applied to the Mineral Resource Estimate eliminating the necessity for any further adjustment to the Ore Reserve Estimate.

Estimation Methodology

Please refer to Mineral Resource section.

Material Modifying Factors

All required Environment studies have been completed and Statutory Government Approvals including works approvals, dewatering and discharge licence have been granted. A Mining Proposal will be resubmitted for the new reserve pit.

The road haulage network footprint is underpinned by a combination of miscellaneous licences and granted mining leases.

Wallbrook Open Pit Ore Reserve Summary

Material assumptions for Ore Reserve

The following material assumptions apply to the Wallbrook Ore Reserves

- Gold Price of $1750 per ounce
- Current operational capital and operating cost structures
- Current operational mining performance and metallurgical test work
- An allowance for 5% dilution has been applied and a mining recovery of 95%

Ore Reserve Classification

The classification of the Enterprise Ore Reserve has been carried out in accordance with the recommendations of the JORC Code 2012. It is based on the density of drilling, estimation quality and the mining methods currently in operation.

The Proven and Probable Ore Reserves have been derived from Measured and Indicated Mineral Resources respectively.

Mining Method

Mining method to be employed at Wallbrook will be conventional open pit with hydraulic excavator and dump truck fleet, and drill and blast activity. The class of excavator employed is similar to other mining operations, providing a good operating dataset for production and productivity rate measurement and financial modelling.

The Reserve pit includes two deposits namely “Eleven Bells” and “Redbrook”. Reserve pit include successive cutback to achieve life of mine such that it meet operation efficiency, safety and production rate. An appropriate mine schedule has been considered to allow campaign mining operations to switch between the two deposits. The Life of mine Ore Reserve pit has been designed following appropriate geotechnical recommendations made by independent external consultant following site visits, inspection of drill core, and a review of the geotechnical data gathered during earlier operations.

Processing Method

The ore reserve will be treated at the established Carosue Dam processing facility. The Carosue Dam Process Plant is a CIL cyanide leach plant incorporating a gravity circuit which is appropriate for the extraction of gold from free milling gold ores.

An average gold recovery for Wallbrook is estimated at 94.0%. The recovery estimation is based on met test work and past actual average recovery data collected at the Carosue Plant. Approximately two years of processing the Wallbrook ore through this plant have resulted in a solid understanding of the metallurgical parameters of the ore.

Cut-off Grade

The Ore Reserve is estimated at cut-off grade of 0.50g/t, estimated using assumed gold price of AUD$1,750/oz and operating cost of mining, processing, haulage and general administration. A top cut has already been applied to the Mineral Resource Estimate eliminating the necessity for any further adjustment to the Ore Reserve Estimate.

Estimation Methodology

Please refer to Mineral Resource section.

Material Modifying Factors

All required Environmental studies have been completed and Statutory Government Approvals including works approvals, dewatering and discharge licence have been granted. A Mining Approval has been granted for previous submission although the current application will require to be revised for new reserve pit.

The road haulage network footprint is underpinned by a combination of miscellaneous licences and granted mining leases.

Monty's Elliot Open Pit Ore Reserve Summary

Material assumptions for Ore Reserve

The following material assumptions apply to the Montys-Elliots Ore Reserves

- Gold Price of $1750 per ounce
- Current operational capital and operating cost structures
- Current operational mining performance and metallurgical test work
- An allowance for 15% dilution has been applied and a mining recovery of 95%

Ore Reserve Classification

The classification of the Montys-Elliots Ore Reserve has been carried out in accordance with the recommendations of the JORC Code 2012. It is based on the density of drilling, estimation quality and the mining methods currently in operation.

The Probable Ore Reserves have been derived from Measured and Indicated Mineral Resources respectively.

Mining Method

The mining method to be employed at the Montys-Elliots deposit is conventional open pit mining with a hydraulic excavator, dump truck fleet, and drill and blast activity. The class of excavator employed is similar to other open pit mining operation, providing a good operating dataset for production and productivity rate measurement and financial modelling.

The Reserve pit is designed for both deposits namely "Monty's" and "Elliots". Monty's reserve pit is designed as a cutback to existing mined pit, whereas Elliots reserve pit will be mined from surface. The life of mine Reserve will be mined such that it meets the operation efficiency, safety and production rate. Appropriate mine schedule and lead time have been applied to maintain efficient mining operations between the stages. The Life of mine Ore Reserve pit has been designed following appropriate geotechnical recommendations made by independent external consultant following site visits, inspection of drill core, and a review of the geotechnical data gathered during earlier operations.

Processing Method

The ore reserve will be treated at the established Carosue Dam processing facility. The Carosue Dam Process Plant is a CIL cyanide leach plant incorporating a gravity circuit which is appropriate for the extraction of gold from free milling gold ores.

An average gold recovery for Monty's Dam is estimated at 94.0%. The recovery estimation is based on met test work and past actual average recovery data collected at the Carosue Plant.

Cut-off Grade

The Ore Reserve is estimated at cut-off grade of 0.50g/t, estimated using assumed gold price of AUD$1,750/oz and operating cost of mining, processing, haulage and general administration. A top cut has already been applied to the Mineral Resource Estimate eliminating the necessity for any further adjustment to the Ore Reserve Estimate.

Estimation Methodology

Please refer to Mineral Resource section.

Material Modifying Factors

All required Environment studies have been completed and Statutory Government Approvals including works approval, dewatering and discharge licence have been granted. A Mining Proposal will required to be submitted for the mine reserve pit.

The road haulage network footprint is underpinned by a combination of miscellaneous licences and granted mining leases.

Safari Bore Open Pit Ore Reserve Summary

Material assumptions for Ore Reserve

The following material assumptions apply to the Safari Bore Ore Reserves

- Gold Price of $1750 per ounce
- Current operational capital and operating cost structures
- Current operational mining and metallurgical performance
- An allowance for 15.0% dilution has been applied and a production mining recovery of 95%.

Ore Reserve Classification

The classification of the Porphyry Ore Reserve has been carried out in accordance with the recommendations of the JORC Code 2012. It is based on the density of drilling, estimation quality and the mining methods currently in operation.

The Probable Ore Reserves have been derived from Measured and Indicated Mineral Resources respectively.

Mining Method

Mining method to be employed at Safari Bore will be conventional open pit with hydraulic excavator and dump truck fleet, and drill and blast activity. The class of excavator employed is similar to other open pit mining operation. That way it provides good operating dataset for production and productivity rate measurement and financial modelling.

Safari Bore Reserve pit is designed to mine the cutback in stages to achieve life of mine Reserve such that it meets the operation efficiency, safety aspect and production rate. Appropriate mine schedule and lead time have been considered to maintain efficient mining operations between the stages. The Life of mine Ore Reserve pit has been designed following appropriate geotechnical recommendations made by independent external consultant following site visits, inspection of drill core, and a review of the geotechnical data gathered during earlier operations.

Processing Method

The Ore Reserve will be treated at the established Carosue Dam processing facility. The Carosue Dam Process Plant is a CIL cyanide leach plant incorporating a gravity circuit which is appropriate for the extraction of gold from free milling gold ores.

An average gold recovery for Safari Bore deposit is estimated to be 94.0%. The recovery estimation is based on met test work and ongoing actual average recovery data collected at the Carosue Plant. Metallurgical test work has been carried out on samples from the Safari Bore deposit by test lab.

Cut-off Grade

The Ore Reserve is estimated at cut-off grade of 0.50g/t, estimated using assumed gold price of AUD$1,750/oz and operating cost of mining, processing, haulage and general administration. A top cut has already been applied to the Mineral Resource Estimate eliminating the necessity for any further adjustment to the Ore Reserve Estimate.

Estimation Methodology

Please refer to Mineral Resource section.

Material Modifying Factors

All required Environment studies have been completed and Statutory Government Approvals including works approvals, dewatering and discharge licence have been granted. A Mining Proposal will be submitted for the reserve pit.

The road haulage network footprint is underpinned by a combination of miscellaneous licences and granted mining leases.

Porphyry Underground Ore Reserve Summary

Material assumptions for Ore Reserve

The following material assumptions apply to the Porphyry Ore Reserves (unchanged from 2019)

- Gold Price of $1600 per ounce (unchanged)
- Prefeasibility level of mining study
- Current operational capital and operating cost structures
- Current operational mining and metallurgical performance
- An allowance for 20.0% dilution has been applied and a production mining recovery of 80%.

Ore Reserve Classification

The classification of the Porphyry Ore Reserve has been carried out in accordance with the recommendations of the JORC Code 2012. It is based on the density of drilling, estimation quality and the mining methods currently in operation.

The Probable Ore Reserves have been derived from Measured and Indicated Mineral Resources respectively.

Mining Method

The Porphyry underground Ore Reserve has been estimated using detailed mine development and stope designs.

Underground mechanised mining for development, ground support, and production stoping is planned to be used at Porphyry.

Mining and geotechnical studies determined two mining methods; 1) Jumbo Drift and Strip, and 2) Long hole open stoping with remnant in-situ pillars to be appropriate for the deposit. Both of these mining methods have been previously successfully applied at Porphyry.

Similar methods are currently utilised at other underground mines throughout the Western Australian Goldfields and Australia.

Standard underground infrastructure has been included and will be developed as part of the mine design, including a decline for access and truck haulage, ventilation fans, escape-way ladders, electrical reticulation, mine services (air and water), and mine dewatering infrastructure. No specialised infrastructure is required to accommodate these methods of mining.

Processing Method

The Ore Reserve will be treated at the established Carosue Dam processing facility. The Carosue Dam Process Plant is a CIL cyanide leach plant incorporating a gravity circuit which is appropriate for the extraction of gold from free milling gold ores.

An average plant processing recovery of 93% has been assumed in the Ore Reserve Estimate which is consistent with current and historical plant recoveries for Porphyry ore which have previously been processed.

Cut-off Grade

For the purpose of Ore Reserve Estimate a planning cut-off grade of 2.0g/t was calculated based upon an assumed gold price of AUD$1,600/Oz and applicable processing, haulage and administration costs. A top cut has already been applied to the Mineral Resource Estimate eliminating the necessity for any further adjustment to the Ore Reserve estimate.

The 2020 Ore Reserve is based upon a prefeasibility level underground mining study. It includes a detailed mine design, various capital and operating inputs, costs of mining, surface haulage, processing, general administration and environment management related costs.

Estimation Methodology

Please refer to Mineral Resource section.

Material Modifying Factors

Porphyry is currently compliant with all legal and regulatory requirements. A Mining Approval will be required to be submitted for the new underground Ore Reserve in timely manner such that it will be granted before commencement of mining. There is no reason to expect that applications for a new mining approval will not be approved.

Thunderbox Underground Ore Reserve Summary

Material assumptions for Ore Reserve

The following material assumptions apply to the Thunderbox Underground Ore Reserves

- Gold Price of $1750 per ounce
- The mine design was a refinement to the 2019 Feasibility study based on the latest resource model
- Mining capital costs are a combination of estimates from first principles and contractor tendered costs. Mining capital costs also consider paste fill, ventilation, electrical and dewatering requirements
- Current operational mining and metallurgical performance
- Average mining dilution is 6%. This is based on 0.5 m of dilution to the footwall and hanging wall at zero grade. 15% Dilution was applied for crown stopes. Any wall exposed to paste fill also incurs 0.5 m of dilution at zero grade. An average mining recovery of 93% was applied.

Ore Reserve Classification

The classification of the Thunderbox underground Ore Reserve has been carried out in accordance with the recommendations of the JORC Code 2012. It is based on the density of drilling, estimation quality and the mining methods currently in operation.

All Proved and Probable Ore Reserves have been derived from Measured and Indicated Mineral Resources respectively.

Mining Method

The Thunderbox underground Ore Reserve Estimate is based on a three-dimensional mine design, geotechnical numerical modelling, mine scheduling, and cost estimation.

The Thunderbox underground Ore Reserve is based on sub-level open stoping (SLOS) with paste fill, and long hole open stoping (LHOS) mining methods. The predominant mining method is SLOS, and accounts for 87% of the Ore Reserve estimate by tonnes. The SLOS zone, ranges in width from 3.5 m to 50 m, and dips at 75-80 degrees.

Paste fill test work, analysis, has been conducted by Outotec Pty Ltd. The paste plant cost and associated capital costs were provided by GR Engineering Services Ltd.

Standard underground infrastructure has been included in the mine design; this includes a decline for access and truck haulage, ventilation fans, escape-way ladders, electrical reticulation, mine services (air and water), and mine dewatering infrastructure.

Processing Method

The Ore Reserve will be treated at the established Thunderbox processing facility. The facility is a conventional crushing, gravity circuit, grind, and CIL (carbon in leach) plant and is appropriate for the extraction of gold from free milling mineralisation.

An average gold recovery for Thunderbox deposit is estimated at 94.0%. The recovery estimation is based on actual average recovery data collected and ongoing test work at Thunderbox plant. The plant performance is consistently between 92 to 94% while processing different ore material from a range of ore sources.

Cut-off Grade

For the purpose of Ore Reserve Estimate a planning cut-off grade of 1.5g/t was calculated based upon an assumed gold price of AUD$1,750/oz and applicable processing, haulage and administration costs. A development cut-off grade of 0.8 g/t is applied. A top cut has already been applied to the Mineral Resource Estimate eliminating the necessity for any further adjustment to the Ore Reserve estimate.

Estimation Methodology

Please refer to Mineral Resource section.

Material Modifying Factors

There are no material modifying factors that need to be highlighted with the Ore Reserve. Thunderbox open pit and underground (development) is an operating mine. All statutory government approvals namely; clearing permit, mining permit, project management and dewatering have been granted and in place for the Ore Reserve and processing plant at Thunderbox.

Thunderbox Open Pit Ore Reserve Summary

Material assumptions for Ore Reserve

The following material assumptions apply to the Thunderbox Open Pit Ore Reserves

- Gold Price of $1750 per ounce
- Current operational capital and operating cost structures
- Current operational mining and metallurgical performance
- An allowance for 14.0% dilution has been applied and a mining recovery of 96%

Ore Reserve Classification

The classification of the Thunderbox Ore Reserve has been carried out in accordance with the recommendations of the JORC Code 2012. It is based on the density of drilling, estimation quality and the mining methods currently in operation.

All Proved and Probable Ore Reserves have been derived from Measured and Indicated Mineral Resources respectively.

Mining Method

Mining method currently employed at Thunderbox is conventional open pit mining with a hydraulic excavator, dump truck fleet, and drill and blast activity. The class of excavator employed is similar to other open pit mining operations and provides good comparative data for production and productivity rate measurement and financial modelling.

Thunderbox Reserve pit is currently in operation and designed as successive cutbacks to achieve final life of mine Reserve such that it meets the operation efficiency, safety and production rate. Appropriate mine schedule, operating cost and lead time have been considered to maintain efficient mining operations. Life of mine Reserve pit has been designed following appropriate geotechnical recommendation. The geotechnical guidelines were prepared by site geotechnical team using wall stability performance data and update or modify as required through continuous monitoring program.

Processing Method

The Ore Reserve will be treated at the established Thunderbox processing facility. The facility is a conventional crushing, gravity circuit, grind, and CIL (carbon in leach) plant and is appropriate for the extraction of gold from free milling mineralisation.

An average gold recovery for Thunderbox deposit is estimated at 94.0%. The recovery estimation is based on actual average recovery data collected and ongoing test work at Thunderbox plant. The plant performance is consistently between 93 to 95% while processing different ore material from a range of ore sources.

Cut-off Grade

The Ore Reserve estimated at cut-off grade of 0.50g/t, estimated using assumed gold price of AUD$1,750/oz and operating cost of mining, processing, haulage and general administration. A top cut has already been applied to the Mineral Resource Estimate eliminating the necessity for any further adjustment to the Ore Reserve Estimate.

Estimation Methodology

Please refer to Mineral Resource section.

Material Modifying Factors

Thunderbox Ore Reserve is currently in operation and all required Environment studies have been completed prior to commencement. All other statutory government approvals including mining proposal, vegetation clearance, project management plan, operating licence and groundwater licences have been granted foe the Ore Reserve pit and processing plant.

Otto Bore Open Pit Ore Reserve Summary

Material assumptions for Ore Reserve

The following material assumptions apply to the Otto Bore Ore Reserves

- Gold Price of $1750 per ounce
- Current operational capital and operating cost structures
- Current operational mining and metallurgical test work
- An allowance for 15% dilution has been applied and a mining recovery of 95%

Ore Reserve Classification

The classification of the Otto Bore Ore Reserve has been carried out in accordance with the recommendations of the JORC Code 2012. It is based on the density of drilling, estimation quality and the mining methods currently in operation.

The Probable Ore Reserves have been derived from Measured and Indicated Mineral Resources respectively.

Mining Method

The mining method to be employed at the Otto Bore deposit is conventional open pit mining with a hydraulic excavator, dump truck fleet, and drill and blast activity. The class of excavator employed is similar to other open pit mining operation, providing a good operating dataset for production and productivity rate measurement and financial modelling.

Otto Bore Reserve pit is designed as a single large pit to achieve life of mine Reserve such that it meets the operation efficiency, safety and production rate. Appropriate mine schedule and lead time have been considered to maintain efficient mining operation. A Life of mine Ore Reserve pit has been designed following appropriate geotechnical recommendations.

Processing Method

The Ore Reserve will be treated at the established Thunderbox processing facility. The facility is a conventional crushing, gravity circuit, grind, and CIL (carbon in leach) plant and is appropriate for the extraction of gold from free milling mineralisation.

An average gold recovery for Otto Bore deposit is estimated at 94%. The recovery estimation is based on met test work and ongoing long term actual average recovery data collected at Thunderbox Plant. Metallurgical testwork has been carried out on samples from the Otto Bore deposit.

Cut-off Grade

The Ore Reserve is estimated at cut-off grade of 0.50g/t, estimated using assumed gold price of AUD$1,750/oz and operating cost of mining, processing, haulage and general administration. A top cut has already been applied to the Mineral Resource Estimate eliminating the necessity for any further adjustment to the Ore Reserve Estimate.

Estimation Methodology

Please refer to Mineral Resource section.

Material Modifying Factors

The mine is currently not in operation. All required Environment studies have commenced and all relevant Statutory Approvals including Mining proposals, vegetation clearance, operating licence and groundwater licences will be submitted at a later stage in an appropriate manner for the operation to recommence.

The Otto Bore mine is located ~15km from Thunderbox operation and connected to the processing plant via combination of Goldfields Highway and site internal access haul road. The Otto Bore operation will utilise the existing Thunderbox processing facility, and TSF storage facilities that are all lay on granted mining leases.

Bannockburn Open Pit Ore Reserve Summary

Material assumptions for Ore Reserve

The following material assumptions apply to the Bannockburn Ore Reserves

- Gold Price of $1750 per ounce
- Current operational capital and operating cost structures
- Current operational mining and metallurgical test work
- An allowance for 12% dilution has been applied and a mining recovery of 95%

Ore Reserve Classification

The classification of the Otto Bore Ore Reserve has been carried out in accordance with the recommendations of the JORC Code 2012. It is based on the density of drilling, estimation quality and the mining methods currently in operation.

The Probable Ore Reserves have been derived from Measured and Indicated Mineral Resources respectively.

Mining Method

The mining method to be employed at Bannockburn deposit is conventional open pit mining with a hydraulic excavator, dump truck fleet, and drill and blast activity. The class of excavator employed is similar to other open pit mining operation, providing a good operating dataset for production and productivity rate measurement and financial modelling.

Bannockburn reserve pit is designed as a large pit and will be mined in several stages to improve the stripping ratio. The Reserve pit will be mined such that it meets the operation efficiency, safety and production rate. Appropriate mine schedule and lead time have been considered to maintain efficient mining operations between the stages. The Life of mine Ore Reserve pit has been designed following appropriate geotechnical recommendations made by independent external consultant following site visits, inspection of drill core, and a review of the geotechnical data gathered during earlier operations.

Processing Method

The Ore Reserve will be treated at the established Thunderbox processing facility. The facility is a conventional crushing, gravity circuit, grind, and CIL (carbon in leach) plant and is appropriate for the extraction of gold from free milling mineralisation.

An average gold recovery for Bannockburn deposit is estimated at 94%. The recovery estimation is based on met test work and ongoing long term actual average recovery data collected at Thunderbox Plant. Metallurgical testwork has been carried out on samples from the Bannockburn deposit.

Cut-off Grade

The Ore Reserve is estimated at cut-off grade of 0.50g/t, estimated using assumed gold price of AUD$1,750/oz and operating cost of mining, processing, haulage and general administration. A top cut has already been applied to the Mineral Resource Estimate eliminating the necessity for any further adjustment to the Ore Reserve Estimate.

Estimation Methodology

Please refer to Mineral Resource section.

Material Modifying Factors

All required Environment studies have been completed and subsequent clearing permit and dewatering licences are in place. Mining Proposal will be submitted at later stage in appropriate manner for the operation to recommence..

Bannockburn mine is located ~35km from Thunderbox processing plant and is well connected via site internal access haul road. The Bannockburn operation will utilise the existing Thunderbox processing facility, and TSF storage facilities that are all lay on granted mining leases.

Karari - Dervish Mineral Resource Summary

Geology and Geological Interpretation

The Karari-Dervish gold deposits are located in the Carosue Basin and are defined by an anastomosing system of ductile shear zones offset by late brittle faults within a volcaniclastic terrain of metasandstones and tuffs. Early stage intrusion by monzonites (ca. 2.6Ga) introduced an initial stage of potassic alteration to the volcaniclastic units followed by sodic, muscovite, hematite, and chlorite phases in a progressive sequence. Gold mineralisation is strongly associated with sodic alteration (quartz+albite+carbonate) of the host rock that was subsequently overprinted by hematite alteration.

Drilling Techniques

In the current resource area NQ2 (75.7mm) diamond drill holes are prevalent however HQ (96mm) has been undertaken previously. RC drilling largely defines the upper mineralisation but has also been used to pre-collar deep diamond holes from surface predominantly using a 133mm bit. Historically, both aircore (AC) and rotary air blast (RAB) holes have been drilled but are not used in the current Mineral Resource Estimate (MRE).

Sampling and Sub-sampling Techniques

The Karari-Dervish deposit has been sampled primarily by RC and diamond drill holes and underground face/wall chip sampling. While not included in the Mineral Resource Estimate AC and RAB have historically been utilised. RC chips are cone or riffle split and sampled to 1m intervals. Diamond core is NQ or HQ sized, cut into half core and sampled to 1m intervals or geological boundaries where necessary. Underground faces are chip sampled to geological boundaries with a 0.2m minimum and 1m maximum intervals. Samples are crushed, dried and pulverised to a nominal 90% passing 75µm to produce a 40g or 50 g sub sample for analysis by FA/AAS.

Estimation Methodology

Mineralisation is domained and wireframed based on geological continuity. 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. Internal populations are controlled by grade indicators based on inflexion points derived from domain log probability plots from which indicator variograms are created. Categorical indicator kriging (CIK) is then used to sub-domain lodes with mixed 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 final ore model is then merged with a rock model containing all regolith, density, and depletion attributes.

Classification Criteria

The Karari-Dervish resource is classified as Measured, Indicated or Inferred based on a combination of physical and estimation quality metrics including mining exposure, drill spacing, search pass, kriging efficiency /slope, grade and geological continuity. Criteria defining Measured includes exposure by mining (open pit or development), drill spacing at <=20x20m's, estimated in the first search pass, established grade and geological continuity, and >50% kriging efficiency and >80% slope. Indicated material is assigned where drill spacing is between 20x20m and 40x40m, search pass either 1 or 2, established grade and geological continuity, positive kriging efficiency and >50% slope. Inferred material is drill spacing between 40x40m and 80x80m's with established geological continuity.

Cut-off grade(s)

The open pit resource is reported at a 0.5g/t cut-off due to the bulk mining method assumed whereas the underground resource is reported at a 1.2g/t cut-off representing approximate break even for the long hole stoping method assumed.

Mining and Metallurgical Methods

The deposit is currently being extracted via underground mining methods. Current reconciled production is sitting at 93% recovery.

Montys – Elliot's Mineral Resource Summary

Geology and Geological Interpretation

The deposits are hosted in a sequence of volcaniclastic sandstones and porphyritic units, with mineralisation associated with quartz stockwork veining adjacent to the porphyritic contacts. Lodes mostly dip at 65-70° with hematite alteration typically accompanying mineralisation. Domains are defined by a combination of lithology, alteration, colour, and textures in conjunction with anomalous grade.

Drilling Techniques

The resource area is predominantly defined by reverse circulation (RC) drilling using a 143mm bit interspaced with NQ (75.7mm) sized diamond drill holes. Historically, both aircore (AC) and rotary air blast (RAB) holes have been drilled but are not used in the current Mineral Resource Estimate (MRE).

Sampling and Sub-sampling Techniques

The Monty's Elliot deposit has been sampled primarily by RC and diamond drill holes. While not included in the MRE, AC and RAB have historically been utilised. RC chips are cone or riffle split and sampled to 1m intervals. Diamond core is cut into half core and sampled to 1m intervals or geological boundaries where necessary. All diamond holes are oriented using an Ezi-mark tool. All methods are used to produce representative sample of less than 3 kg. Samples are crushed, dried and pulverised to a nominal 90% passing 75µm to produce a 40g or 50 g sub sample for analysis by FA/AAS.

Estimation Methodology

Mineralisation is domained and wireframed based on geological continuity. 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 and RC 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 principal lodes exhibit bimodel grade populations. These internal populations are controlled by grade indicators based on inflexion points derived from domain log probability plots from which indicator variograms are created. Categorical indicator kriging (CIK) is then used to sub-domain lodes with mixed grade populations. The block model used in the CIK estimation has blocks set at 1x2x1m 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. 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. Hard boundaries are maintained across domains and sub-domains. The final ore model is then merged with a rock model containing all regolith, density, and depletion attributes.

Classification Criteria

The Monty's Elliot resource is classified as Measured, Indicated or Inferred based on a combination of physical and estimation quality metrics including mining exposure, drill spacing, search pass, kriging efficiency /slope, grade and geological continuity. Mineralisation has been categorised as Measured if it has been exposed by mining. Indicated material is assigned if drill spacing is between 20x20m and 40x40m, search pass either 1 or 2, established grade and geological continuity, positive kriging efficiency and >50% slope. Inferred material is drill spacing between 40x40m and 80x80m's with established geological continuity. All other mineralisation is assigned a Potential resource category.

Cut-off grade(s)

The open pit resource is reported at a 0.5g/t cut-off representing approximate break even for the bulk open pit mining method assumed.

Mining and Metallurgical Methods

The deposit will likely be extracted via open pit mining. Current metallurgical test work indicates average recoveries of 92% to 94.5% with a gravity component recorded at 77%.

Million Dollar Mineral Resource Summary

Geology and Geological Interpretation

Gold mineralisation at Million Dollar is primarily hosted within a syeno-monzonite granitoid unit as shallow dipping (30°) stacked en echelon quartz veins within a braided shear system. Secondary mineralisation exists at the margins of the granitoid units in interpreted strain shadows and as minor cross linking structures between the main lodes. Higher grades are largely associated with albite-silica-hematite alteration and pyrite mineral assemblages in concert with shear parallel quartz-pyrite veining.

Drilling Techniques

The resource area is predominantly defined by reverse circulation (RC) drilling using a 133mm bit interspaced with NQ2 (75.7mm) and HQ (96mm) sized diamond drill holes. Historically, both aircore (AC) and rotary air blast (RAB) holes have been drilled but are not used in the current Mineral Resource Estimate (MRE).

Sampling and Sub-sampling Techniques

The Million Dollar deposit has been sampled primarily by RC and diamond drill holes. While not included in the MRE, AC and RAB have historically been utilised. RC chips are cone or riffle split and sampled to 1m intervals. Diamond core is NQ2 or HQ sized, cut into half core and sampled to 1m intervals or geological boundaries where necessary. All diamond holes are oriented using an Ezi-mark tool. All methods are used to produce representative sample of less than 3 kg. Samples are crushed, dried and pulverised to a nominal 90% passing 75µm to produce a 40g or 50 g sub sample for analysis by FA/AAS.

Estimation Methodology

Mineralisation is domained and wireframed based on geological continuity. 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 and RC 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 principal lodes exhibit bimodel grade populations. These internal populations are controlled by grade indicators derived from 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 1x2x1m 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. 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. Grade is estimated into parent blocks only and all kriging quality metrics and search pass values are output. Hard boundaries are maintained across domains and sub-domains. The final ore model is then merged with a rock model containing all regolith, density, and depletion attributes.

Classification Criteria

The Million Dollar MRE is classified as Measured, Indicated or Inferred based on a combination of physical and estimation quality metrics including mining exposure, drill spacing, search pass, kriging efficiency /slope, grade and geological continuity. The MRE has been classified as Measured if it has been exposed by mining. Indicated material is assigned where drill spacing is between 20x20m and 40x40m, search pass either 1 or 2, established grade and geological continuity, positive kriging efficiency and >50% slope. Inferred material is drill spacing between 40x40m and 80x80m's with established geological continuity. All other mineralisation is assigned a Potential resource category.

Cut-off grade(s)

The open pit resource is reported at a 0.5g/t cut-off representing approximate break even for the bulk open pit mining method assumed.

Mining and Metallurgical Methods

The deposit will likely be extracted via open pit mining. Metallurgical testing of RC composites of oxide and transitional ores identified leach recoveries between 92% - 96% with a high gravity gold component (70% - 80%).

Deep South Mineral Resource Summary

Geology and Geological Interpretation

Deep South lies on the eastern margin of the Norseman – Wiluna greenstone belt. This belt is differentiated into numerous structural-stratigraphic domains separated by major regional structures, with Deep South located within the narrow NNW trending Linden Domain. The lithology comprises metasedimentary and felsic volcaniclastic rocks with an ultramafic and high magnesium basalt layer. Mineralisation occurs in two loads concordant to geology, the Butler and Scarlett lodes, and is confined between layered metasedimentary and felsic volcaniclastic units on both the hangingwall and footwall. The two lodes are separated by a high magnesium basalt and an ultramafic unit. The Butler lode is located in the hangingwall and is strongly silica and pyrrhotite-pyrite altered, and well laminated (appearing like a BIF within the oxidise portion). The contrasting physical properties of this unit to the surrounding unit have created fluid pathways and traps, as well as the high iron content of the unit providing a chemical trap, for gold deposition. The Scarlett lode is strongly weathered in the upper oxide portion to a gossanous material comprising hematite, goethite and quartz fragments. Weathering at Deep South has been preferential along Scarlett.

The interpretation has been based on extensive geological logging of drill core, RC chips, underground development face chips, detailed open pit and underground mapping and assay data. The main mineralised Scarlett Lode has been confined to the geologically logged carbonate unit. Similarly the Butler lode has been defined by a highly siliceous BIF horizon. Mineralisation and lithology are both highly continuous. The stratigraphic horizons that host the mineralisation extend over a length of 15km. Grade is affected by the presence of sulphides and quartz carbonate veining. A northerly plunge in both lodes is thought to be controlled by subtle changes in strike or continuity of mineralisation at boudin neck margins. A conjugate mineralised shoot plunging to the south appears to be evident in the Scarlett lode and has been interpreted as the intersection of deposit scale shearing and lithology contacts.

Drilling Techniques

The deposit was initially sampled by 114 RAB holes, 211 RC holes (assumed standard 5 ¼ ''bit size) and 29 surface HQ and unknown diameter diamond core holes. Saracen has completed 17 surface RC precollars with NQ diamond tail drill holes (precollars averaging 185m, diamond tails averaging 360m) , 3 geotechnical surface diamond NQ drillholes, 57 RC holes from surface and 107 grade control RC holes within the pit. Underground sampling activities have included 717 NQ diamond drillholes and 1818 faces. Exploration of the broader Deep South area has included 312AC holes. Diamond tails were oriented using an Ezi-mark tool.

Sampling and Sub-sampling Techniques

Sampling methods undertaken by Saracen at Deep South have included reverse circulation drillholes (RC), aircore drilling (AC), surface and underground diamond drillholes (DD), underground face chip sampling and RC grade control drilling within the pit. Sampling for diamond, face chip and RC drilling is carried out as specified within Saracen sampling and QAQC procedures as per industry standard. RC and UG face chips and diamond core provide high quality representative samples for analysis. RC chips are cone or riffle split and sampled into 1m intervals with total sample weights under 3kg. Diamond core is NQ sized, sampled to 1m intervals or geological boundaries where necessary and cut into half core to give sample weights under 3 kg. UG faces are chip sampled to geological intervals (0.2 to 1m). Samples are selected to weigh less than 3 kg to ensure total sample inclusion at the pulverisation stage.

Sample Analysis Method

Saracen core and chip samples are crushed, dried and pulverised to a nominal 90% passing 75µm to produce a 40g or 50 g sub sample for analysis by FA/AAS. Some grade control RC chips were analysed in the Saracen on site laboratory using a PAL (pulverise and leach) method.

Estimation Methodology

Block estimation has been completed in Datamine software using ordinary kriging methodology. All mineralised interval has been flagged using the interval selection tool in Leapfrog software, which were subsequently used to generate 3D mineralisation wireframes. The estimation uses these wireframes as hard boundaries except for the high grade sub-domain defined in the carbonate unit which is estimated using a soft boundary. Estimation of parent blocks are interpolated, and assigned to sub-cells. The maximum distance of extrapolation is less than 50m. Univariate statistical analysis of length weighted, (1m), domain coded downhole composites have been completed for all domains and top-cuts applied where applicable. Extreme grades are not common in the data set and all domains have been analysed individually to determine specific top-cut values. Variogram modelling was completed using Snowden's Supervisor software defining the spatial continuity within the domains. The parameters determined from this analysis were used in the interpolation process. In order to deal with multiple populations within the carbonate unit in the grade control areas (areas drilled to a spacing 25m x 20m) sub-domaining was done using the Categorical Indicator technique which uses grade thresholds to segregate the different populations within the unit. Three subdomains include the, low grade (<1 g/t Au), medium grade (1<x=<9 g/t Au) and the high grade > 9 g/t Au.

Two block sizes have been used in the resource model; a grade control (GC) block size at 5m(X) by 10m(Y) by 5m(Z) and resource block size at 10m(X) by 20m(Y) by 5m(Z).
The Grade Control block size has been utilised in areas of drill density less than 20m by 20m and typically proximal to the open pit and/or underground development. The Resource block size has been used for all other areas. Parent blocks have been sub-celled to X (1m) by Y (1m) by Z (1m) to ensure that wireframe boundaries are honoured and preserve the location and geometry of the mineralisation. Search ranges have been informed by variogram modelling heavily influence by drill spacing, geological observations and high grade shoot geometry. Three search passes are used in the estimation to ensure that all the blocks are estimated within the respective estimation domains.

Classification Criteria

The mineral resource has been classified into Measured, Indicated and Inferred categories based on drill hole spacing, geological confidence, and grade continuity and estimation quality. The combination of these factors together guide the digitising of a "cookie cutter" string in long section view which selects and codes the appropriate blocks with the nominated resource classification category.

All care has been taken to account for relevant factors influencing the mineral resource estimate. Confidence in the predicted tonnes and grade estimated in the model is high and previous mining performance suggests that the input data and geological continuity are such that a robust resource estimate can be achieved.

Cut-off grade(s)

Based on Saracen's current economic operations at Carosue Dam, and the natural grade distinction above background, a grade of 0.5g/t has been chosen.

Mining and Metallurgical Methods

The Deep South deposit is amenable to mining by both open pit and underground methods. The deposit was successfully mined by open pit during 2012/2013. Underground mining extracting the mineralised positions via long hole open stoping commenced in December 2015.
Deep South is currently being treated through the Carosue Dam treatment plant. Historical recovery has been around 85% reflecting the oxide component of the ore. Fresh material hauled from the active underground has a recovery of approximately 92%. The ore is relatively soft and the majority of the gold is free milling. The ore also has a predictable grind dependency / leach recovery relationship. Completed test work highlights that the ore is not chemically refractory and contains no preg robbing properties.

Moody's Reward Mineral Resource Summary

Geology and Geological Interpretation

Locally the geology of the Moody's Reward (formerly known as Box Well) area consists of intermediate schists and igneous intrusives adjacent to sediments.

Moody's Reward is a silicified shear zone within a broader, gold mineralised, altered stockwork quartz veined package of felsic volcanics and volcaniclastic sediments. The gold mineralised zones dip consistently at 40 and 65 degrees to the east or north east. The mineralised widths vary between 3 – >30 metres true width.

Drilling Techniques

Drilling activities at Moody's Reward initially included a number of RAB, RC and AC holes. The resource was further defined with 110 RC holes and 3 DD holes (unknown diameter). It is unknown if core was oriented.

Sampling and Sub-sampling Techniques

Saracen has complete reverse circulation (RC) drilling at Moody's Reward and is carried out as specified within Saracen sampling and QAQC procedures as per industry standard. RC chips provide high quality representative samples for analysis. RC chips are cone or riffle split and sampled into 1m intervals with total sample weights under 3kg. Sampling methods undertaken at Moody's Reward by previous owners have included aircore (AC) rotary air blast (RAB) reverse circulation (RC) and diamond (DD) drilling along with auger and soil sampling.

Sample Analysis Method

Sampling was generally analysed via 30g or 50g fire assay.

Estimation Methodology

Block estimation has been completed in Datamine software using ordinary kriging methodology. All mineralised interval has been flagged using the interval selection tool in Leapfrog software, which were subsequently used to generate 3D mineralisation wireframes. 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 1x2x1m to ensure sub-domain complexity is maintained then optimised and re-blocked to the parent block size of 5x10x5m. 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. Grade is estimated into parent blocks only and all kriging quality metrics and search pass values are output. Hard boundaries are maintained across domains and sub-domains. The final ore model is then merged with a rock model containing all regolith, density, and depletion attributes.

Classification Criteria

The Moody's Reward Mineral Resource was classified as either Indicated or Inferred based on a number of factors such as, drill hole spacing, geological confidence, and grade continuity and estimation quality. The combination of these factors together guide the digitising of a "cookie cutter" string in long section view which selects and codes the appropriate blocks with the nominated resource classification category.

Cut-off grade(s)

The open pit resource is reported at a 0.5g/t cut-off representing approximate break even for the bulk open pit mining method assumed.

Mining and Metallurgical Methods

Open pit mining is proposed once the extent of the resource is fully understood. Minimal mining dilution is expected due to the broad nature of the ore lodes at Moody's Reward. No detailed metallurgical recovery work has been undertaken at this time at Moody's Reward. Further work is ongoing to confirm that there are no deleterious properties at Moody's Reward.

Safari Bore Mineral Resource Summary

Geology and Geological Interpretation

The Safari Bore deposit sits within the Pinjin Fault, a major NNW-trending regional lineament dividing the western low-metamorphic-grade Edjudina Domain from the eastern low- to high-metamorphic grade Linden Domain, although within the area of the Safari Bore Deposit both domains display green schist facies assemblages. All lodes are associated with quartz-carbonate-albite hydraulic breccia veins. Red Lode and Serengeti mineralisation lies within and at the margins of a gently southerly plunging felsic porphyry. The interpretation has been based on extensive geological logging of drill core, RC chips, and detailed open pit mapping and assay data.

Drilling Techniques

The resource area is predominantly defined by reverse circulation (RC) drilling using a 133mm bit interspaced with NQ2 (75.7mm) and HQ (96mm) sized diamond drill holes. Historically, both aircore (AC) and rotary air blast (RAB) holes have been drilled but are not used in the current Mineral Resource Estimate (MRE).

Sampling and Sub-sampling Techniques

The Million Dollar deposit has been sampled primarily by RC and diamond drill holes. While not included in the MRE, AC and RAB have historically been utilised. RC chips are cone or riffle split and sampled to 1m intervals. All diamond holes are oriented using an Ezi-mark tool. All methods are used to produce representative sample of less than 3 kg. Samples are crushed, dried and pulverised to a nominal 90% passing 75µm to produce a 40g or 50 g sub sample for analysis by FA/AAS.

Sample Analysis Method

Sampling was generally analysed via 40g or 50g fire assay with an AAS finish.

Estimation Methodology

Block estimation has been completed in Datamine software using ordinary kriging methodology. All mineralised interval has been flagged using the interval selection tool in Leapfrog software, which were subsequently used to generate 3D mineralisation wireframes. Categorical indicator kriging (CIK) is then used to sub-domain lodes with mixed 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. Grade is estimated into parent blocks only and all kriging quality metrics and search pass values are output. Hard boundaries are maintained across domains and sub-domains. The final ore model is then merged with a rock model containing all regolith, density, and depletion attributes.

Classification Criteria

The Safari Bore MRE is classified as Measured, Indicated or Inferred based on a combination of physical and estimation quality metrics including mining exposure, drill spacing, search pass, kriging efficiency /slope, grade and geological continuity. The MRE has been classified as Measured if it has been exposed by mining. Indicated material is assigned where drill spacing is between 20x20m and 40x40m, search pass either 1 or 2, established grade and geological continuity, positive kriging efficiency and >50% slope. Inferred material is drill spacing between 40x40m and 80x80m's with established geological continuity.

Cut-off grade(s)

The open pit resource is reported at a 0.5g/t cut-off representing approximate break even for the bulk open pit mining method assumed.

Mining and Metallurgical Methods

The deposit will likely be extracted via open pit mining. Metallurgical test work was conducted on composite samples from Safari Bore of oxide and transitional ores. Initial results vary from 92% - 95% recovery for ore grading material depending on the lode, however further confirmatory test work is planned to be conducted on Safari Bore to further validate the metallurgical recoveries obtained, and to generate additional information for areas with limited results.

Thunderbox Mineral Resource Summary

Geology and Geological Interpretation

Thunderbox is a mesothermal lode gold deposit located at the southern end of the Yandal greenstone belt in an area where several major shear zones converge and join with the Perseverance Fault.

The shear zone dips at 30° to 60° WSW, with the exception in the vicinity of the mineralisation, where the shear is vertical to steeply dipping. Mineralisation is hosted by strongly deformed, silicified and carbonate altered albite-quartz porphyry in the hangingwall of the shear zone. The shear juxtaposes foliated basalts and intrusive porphyries in the hangingwall against sedimentary rocks in the footwall. The zone of shearing is over 200m wide. An ultramafic unit occurs within the shear, in the footwall of the deposit and is attenuated along the shear. At the known extremities of the mineralisation, interpreted as a pepperitic apron, the porphyry host is less continuous and interchanges with mafic volcaniclastics.

The main gold related hydrothermal alteration assemblage comprises quartz-ankerite-arsenopyrite-pyrrhotite-galena and gold. This assemblage has been overprinted by a retrograde chlorite-epidote-white mica-biotite-quartz and pyrite assemblage. Syn-mineralisation veins have a continuum of vein textures ranging from laminated to pseudo-breccias.

Throughout the Thunderbox Deposit, elevated grades occur within southerly plunging ore shoots that are more evident in the lateral pepperitic margins of the orebody. Whilst the shoots persist centrally, the gold distribution is far more uniform and ubiquitous than in other areas. On a local scale, internal to the mineralised porphyry, are lenses of non-mineralised andesite.

The Thunderbox geological interpretation is based on extensive geological logging of drill core, RC chips, detailed open pit mapping and assay data. The gross architecture of the deposit is simple and the interpretation is robust. The interpretations have been constructed using all available geological logging descriptions including but not limited to, stratigraphy, lithology, texture, and alteration. Interpreted cross cutting faults have been observed and have been use to guide disruptions in the position of the key mineralised domains.

Drilling Techniques

The deposit was initially sampled by 470 RAB holes. Further drilling included 306 RC holes (assumed standard 5 ¼ ''bit size) ,216 HQ, NQ and PQ diamond drillholes, approximately 15,400 blast holes and 2,400 RC grade control holes. Some diamond drilling carried out for geotechnical studies was oriented (the method is unknown), it is unknown if other core was oriented. Saracen completed 119 RC drillholes, 10 diamond geotechnical holes, 65 RC pre-collar diamond tail drillholes (pre-collars averaging 122m, diamond tails averaging 351m), 288 underground DD holes, 894 underground faces and 2711 RC grade control holes. The RC drilling was completed with a 5.5 inch diameter bit with a face sampling hammer. The rig was equipped with an external auxiliary booster. Diamond drilling was HQ or NQ diameter. Drill core was oriented utilising an ACT II core orientation tool.

Sampling and Sub-sampling Techniques

Sampling methods undertaken by Saracen at Thunderbox include diamond drilling (DD), reverse circulation (RC) drilling and underground face chip sampling. RC chips are cone split and sampled into 4m or 1m intervals with total sample weights under 3kg. Diamond core is NQ or HQ sized, sampled to 1m intervals or geological boundaries where necessary and cut into half core to give sample weights under 3 kg. Underground faces are chip sampled to geological boundaries (0.2-1m). Samples are selected to weigh less than 3 kg to ensure total sample inclusion at the pulverisation stage.

Sample Analysis Method

Saracen core and chip samples are crushed, dried and pulverised to a nominal 90% passing 75µm to produce a 40g sub sample for analysis by FA/AAS. RC grade control drilling was used to obtain 1m samples from which 3 kg was pulverised to create a 50g charge for fire assay.

Estimation Methodology

Block estimation using a combination of ordinary kriging (OK) and categorical indicator kriging (CIK) within domains, is completed in Datamine. CIK is utilised to define subdomains in all active mine areas where the drill density (=<20m by 20m) supports the estimation method. Grade is estimated into parent blocks, meaning all the sub-cells within a parent cell assumed the grade of the parent cell. Univariate statistical analysis of length weighted (1m), domain coded, downhole composites are completed for all domains and top-cuts applied where applicable. Extreme grades are not common in the data set and all domains are analysed individually to determine specific top-cut values. Due to the lack of extreme grades the top-cut process affects only 1-2% of the data. Boundary analysis indicates hard boundaries should be maintained across domain and sub-domain contacts.

Variogram modelling is completed with Snowden's Supervisor software to determine the spatial variance of the gold grade within the domains that have sufficient data. The parameters determined from this analysis are used in the interpolation process with variogram major search directions aligned with geologically interpreted high grade shoots. Three search estimation runs are used with the aim to satisfy the minimum sample criteria in the first search range where possible. The parent block sizes for the resource model are 5m(X) by 20m(Y) by 5m (Z). These are deemed appropriate for the majority of the resource, where drill spacing is in the order of 40m x 40m. In active mining areas where drill spacing is on average 10m x 10m, but up to 20m x 20m in the underground, the block size of 5m(X) by 5m(Y) by 2.5m (Z) is utilised during the estimation process. Parent blocks have been sub-celled to 1m(X) by 2m(Y) by 1m(Y) to ensure that the wireframe boundaries are honoured and preserve the location and shape of the mineralisation. Kriging neighbourhood analysis was carried out for Thunderbox in order to optimise the block size, search distances and sample numbers used.

For the inferred material, the maximum distance of extrapolation from last known data points is <60m which is dependent on the geological continuity and confidence across the Thunderbox deposit.

Classification Criteria

The mineral resource has been classified into Measured, Indicated and Inferred categories based on drill hole spacing, geological confidence, and grade continuity and estimation quality. The combination of these factors together guide the digitising of a "cookie cutter" string in long section view which selects and codes the appropriate blocks with the nominated resource classification category.

All care has been taken to account for relevant factors influencing the mineral resource estimate. Confidence in the predicted tonnes and grade estimated in the model is high and previous mining performance suggests that the input data and geological continuity are such that a robust resource estimate can be achieved.

Cut-off grade(s)

Based on Saracen's current economic operations at Carosue Dam and Thunderbox, and the natural grade distinction above background, a grade of 0.5g/t has been chosen for Open Pits and 1.2g/t for underground operations.

To best capture "reasonable prospects of eventual economic extraction", the mineral resource is reported within an optimised pit shell at $2250 at a 0.5g/t cut off for the open pit resources, and for the underground resource, within MSO underground shells generated at a 1.2g/t cut off.

Mining and Metallurgical Methods

The Thunderbox deposit is amenable to mining by both open pit and underground methods. The deposit has successfully been mined by open pit in the past between 2002 and 2007. Since 2015, Saracen has successfully mined the C-Zone and D-Zone pit using Open pit methods and the A-Zone using underground methods. Beneath the mined C Zone pit is a portion of the mineral resource that will be extracted by a bulk underground method. It was discussed that wider potions of the resource may utilise an underground caving approach as an efficient means of economic extraction. It will be supplemented with traditional long hole stoping in areas with narrower widths.

The Thunderbox gold deposit consists of free milling gold which occurs as inclusions within, and at the rims of arsenopyrite crystals, and as free gold clusters within quartz-carbonate veins. The Thunderbox mine ore is processed at the onsite processing facility. The Thunderbox mill employs a conventional crushing, grinding and CIL leaching process to extract the gold. The mill operated successfully between 2002 and 2007, processing in excess of 9Mt of ore. The conventional plant displayed excellent performance with gold recoveries between 93.4 to 96.6 % over the life of the mine. It has since been upgraded to include a gravity recovery circuit facilitating continued high recoveries with increased throughput rates. Ongoing supply of Thunderbox ore to the processing facility will continue to be sourced from a combination of open pit oxide and fresh rock from the underground operations.

Otto Bore Mineral Resource Summary

Geology and Geological Interpretation

Otto Bore is located within the Kurnalpi terrane to the east of the Ockerburry Fault, separating the Kalgoorlie and Kurnalpi terranes. The deposit is hosted within a greenstone package consisting of basalts, high-Mg basalts, dolerites and ultramafics with minor intermediate porphyries observed within the upper portion of the stratigraphy. Locally Otto Bore is situated within an NNW trending shear zone that dips moderately (50-60degrees) to the west. The mineralised zone largely hugs the rheological contact between the high-mg basalts and basalts. To the north mineralisation is also associated with a series of dolerites. Two cross cutting NW trending faults are interpreted to disrupt the strike continuity of the main mineralisation to the north whilst the southern extent of the Otto Bore deposit is terminated by a regional NNE trending shear. At depth high grade mineralisation is typically associated with pervasive quartz veining and form southerly plunging shoots.

The geological interpretation is based on extensive geological logging of drill core, xrf data, downhole structural data, RC chips, and assay data. The addition of diamond drill hole data and twinning of historic data has resulted in cross validation of the RC chips. This has led to improvements in geological consistency and knowledge. As such the confidence in the geological interpretation of the Otto Bore deposit has improved. The shear system hosting the deposit is understood at a deposit scale and there are other known gold mines associated with it on a regional scale.

Drilling Techniques

Drilling activities at Otto Bore have included 31 AC holes, 748 RAB holes, 141 RC holes (assumed standard 5 ¼'' bit size) and 4 DD holes (HQ and unknown diameter). Limited historic diamond core hole was oriented by unknown methods. Saracen completed 257 RC holes and 6 geotechnical DD holes. The RC drilling was completed with a 5.5-inch diameter bit with a face sampling hammer. The rig was equipped with an external auxiliary booster. Diamond drilling was HQ sized and orientated using an ACT 11 core orientation tool. Historical drilling is assumed completed to industry standard at that time.

Sampling and Sub-sampling Techniques

Sampling methods undertaken by Saracen at Otto Bore include reverse circulation (RC) and diamond (DD) drillholes. Sampling methods undertaken at Otto Bore by previous owners have included aircore (AC), rotary air blast (RAB), RC and diamond drillholes (DD). RC chips are cone split and sampled into 1m intervals with total sample weights under 3kg. Diamond core is HQ sized, sampled to 1m intervals or geological boundaries where necessary and cut into half core to give sample weights under 3 kg.

Sample Analysis Method

Saracen core and chip samples are crushed, dried and pulverised to a nominal 90% passing 75µm to produce a 40g sub sample for analysis by FA/AAS. More recent RAB and RC drilling has involved a total preparation sample protocol involving 4m composite or 1m samples from which a 50g charge is produced for aqua regia or fire assay digest and flame AAS finish.

Estimation Methodology

Block estimation using a combination of ordinary kriging (OK) and categorical indicator kriging (CIK) within domains, is completed in Datamine. CIK is utilised to define internal subdomains (low grade, medium grade and high-grade populations) in all areas where the drill density =<40m by 40m, but mostly 20mx20m, supports the estimation method. Grade is estimated into parent blocks, meaning all the sub-cells within a parent cell assumed the grade of the parent cell. Univariate statistical analysis of length weighted (1m) domain coded downhole composites have been completed for all domains, (over 90% of the sample intervals are 1m) and top-cuts applied where applicable. The influence of extreme grades was assessed by domain using a combination of top-cut analysis tools. Boundary analysis indicates hard boundaries should be maintained across domain and sub-domain contacts.

Variogram modelling was completed with Snowden's Supervisor software. This measures the spatial variance of the gold grade within the domains. The parameters determined from this analysis are used in the interpolation process with variogram major search directions aligned with geologically interpreted high grade shoots.

A single block model for Otto Bore was constructed using a 5mE by 10mN by 5mRL parent block size with sub-celling to 1mE by 1mN by 1mRL for domain volume resolution. The block size supports the overriding drill spacing of 20mX20m and up to 40mX40m in the inferred areas. Three search estimation runs are used with the aim to satisfy the minimum sample criteria in the first search range where possible. Kriging neighbourhood analysis was carried out for Otto Bore in order to optimise the block size, search distances and sample numbers used.

The maximum distance of extrapolation from data points was set to 40m for inferred material.

Classification Criteria

The mineral resource has been classified into Indicated and Inferred categories based on drill hole spacing, geological confidence, and grade continuity and estimation quality. The combination of these factors together guide the digitising of a "cookie cutter" string in long section view which selects and codes the appropriate blocks with the nominated resource classification category.

All care has been taken to account for relevant factors influencing the mineral resource estimate. Confidence in the predicted tonnes and grade estimated in the model is high and previous mining performance suggests that the input data and geological continuity are such that a robust resource estimate can be achieved.

Cut-off grade(s)

Based on Saracen's current economic operations at Carosue Dam and Thunderbox, and the natural grade distinction above background, a grade of 0.5g/t has been chosen for Open Pits.

To best capture "reasonable prospects of eventual economic extraction", the mineral resource is reported within an optimised pit shell at $2250 at a 0.5g/t cut off for the open pit resources.

Mining and Metallurgical Methods

The mining method to be employed at the Otto Bore deposit is conventional open pit with hydraulic excavator and dump truck fleet, and drill and blast activity. The class of excavator employed is similar to other current open pit mining operation, providing a good operating dataset for production and productivity rate measurement and financial modelling. The Otto Bore Reserve pit is designed to include a series of successive cutbacks to achieve life of mine Reserve such that it meets the operation efficiency and production rate.

It is expected that any future mining of the Otto Bore deposit will be processed at the Thunderbox processing facility which is currently processing ore from the Thunderbox open pit and underground operations. The Thunderbox mill employs a conventional crushing, grinding and CIL leaching process to extract the gold. The mill operated successfully between 2002 and 2007, processing in excess of 9Mt of ore. The conventional plant displayed excellent performance with gold recoveries between 93.4 to 96.6 % over the life of the mine. Test work by Ammtec completed suggests Otto Bore mineralisation should achieve similar recoveries to the mineralisation previously processed at Thunderbox. The ore indicates a high amenability for gravity recovery, fast kinetics an indicative recoveries in the 94- 97% range for both oxide and fresh mineralogies.

Wonder Mineral Resource Summary

Geology and Geological Interpretation

Bundarra is located in the Murrin Domain of the Kurnalpi Terrain. The geology is characterised by large volumes of tonalites and granodiorite with assimilated rafts of mafic xenoliths from the greenstone in which the tonalite laccolith intruded. The Bundarra tonalities have been intruded by a number of Andesites, Lamprophyres and fractionated intrusions such as "mafic granites". Cutting across the tonalites is the NW trending Wonder Shear which dips steeply to the NE. It controls the main mineralised packages that stretches 1000m. Quartz veining with chlorite+sericite alteration is closely associated with mineralisation. Geological and structural evidence suggests an overall southerly plunge to the mineralisation, which is indicative of the regional geology.

The interpretation of Wonder was based primarily on previous work completed by previous owners, Bligh Resources. Saracen has reviewed and scrutinised the available data that includes, geophysical and geological regional interpretations, regional to local and pit mapping, interpreted structures over aeromagnetic data, logging that was converted into Saracen codes and familiarisation with the local host and waste rock types from rock boards and pit reconnaissance. The historic Grade Control data, that was previously omitted from the interpretation, was used to provide local/small scaled detail which was insightful for mineralisation trends in the hangingwall and footwall positions of the main Wonder Shear. In addition, Saracen drilled 22 RC holes into Wonder North that confirmed the previous interpretation.

Drilling Techniques

Historic drilling included 1335 RAB holes, 772 RC holes (assumed standard 5 ¼" face sampling hammer bit) 62 RC collar/diamond tail holes, 1228 grade control drillholes and 21 NQ and unknown diameter diamond drillholes. Saracen has completed 1 NQ diamond hole, 22 RC drillholes, completed with a 5.5 inch diameter bit with a face sampling hammer. The rig was equipped with an external auxiliary booster. 5 RC precollar/ diamond tail (tails averaging 160m) drillholes have also been completed.
Diamond drilling was orientated using a Reflex ACT 3 orientation unit. It is unknown if historic diamond drill core was oriented.

Sampling and Sub-sampling Techniques

Saracen has completed reverse circulation drilling (RC) and diamond (DD) drilling at Wonder. Sampling methods undertaken at Wonder by previous owners have included rotary air blast (RAB), (RC), and diamond drillholes (DD).
RC Chips are cone split and sampled into 1m intervals with total sample weights under 3kg to ensure total sample inclusion at the pulverisation stage. Diamond core is NQ sized, sampled to 1m intervals or geological boundaries where necessary and cut into half core to give sample weights under 3 kg. Samples are selected to weigh less than 3 kg to ensure total sample inclusion at the pulverisation stage.

Sample Analysis Method

Saracen core and chip samples are crushed, dried and pulverised to a nominal 90% passing 75µm to produce a 40g sub sample for analysis by FA/AAS. All RAB, RC and DD and sampling is assumed to have been carried out to industry standard at that time.

Estimation Methodology

All domain wireframes are constructed in Leapfrog and are used as hard boundaries for the estimations. Datamine is used for the estimation of the Wonder resource. The domains were extrapolated 50m beyond the last data point and controlled by the resource classifications.

Block estimation uses a combination of ordinary kriging (OK) and categorical indicator kriging (CIK). CIK estimation is used to define high- and low-grade subdomains within the main lodes, supported by drill density of 5mX10m, and up to 40mX40m. To ensure good emulation of the gold trends, dynamic anisotropy (unfolding) is used in the definition of the subdomains. The major CIK variography and search directions aligned with the southerly plunge of the mineralisation. This method of estimating subdomains is deemed more reliable than using hard wireframe boundaries.

Grade is estimated into parent blocks, meaning all the sub-cells within a parent cell assumed the grade of the parent cell. Univariate statistical analysis of length weighted (1m) domain coded downhole composites have been completed for all domains and top-cuts applied where applicable.
Extreme grades are not common in the data set and all domains have been analysed individually to determine specific top-cut values. The top-cut process affects only 2% of the data. Variogram modelling was completed with Snowden's Supervisor software. This measures the spatial variance of the gold grade within the domains. The parameters determined from this analysis are used in the interpolation process with variogram major search directions aligned with geologically interpreted ore shoots.

The parent block sizes for the resource model are 10m(X) by 10m(Y) by 5m (Z). These are deemed appropriate for the majority of the resource, where drill spacing is in the order of 40m x 40m. Parent blocks have been sub-celled to 1m(X) by 1m(Y) by 1m(Y) to ensure that the wireframe boundaries are honoured and preserve the location and shape of the mineralisation. Search ranges have been derived from the variogram modelling and knowledge of the drill spacing and the known mineralisation geometry including direction of maximum continuity. Three search estimation runs are used with the aim to satisfy the minimum sample criteria in the first search range where possible. A kriging neighbourhood analysis study conducted ensured that the block sized and the search volume used in the resource estimate are optimal after considering all the relevant factors

Classification Criteria

The mineral resource has been classified into Measured, Indicated and Inferred categories based on drill hole spacing, geological confidence, and grade continuity and estimation quality. The combination of these factors together guide the digitising of a "cookie cutter" string in long section view which selects and codes the appropriate blocks with the nominated resource classification category.

All care has been taken to account for relevant factors influencing the mineral resource estimate. Confidence in the predicted tonnes and grade estimated in the model is high and previous mining performance suggests that the input data and geological continuity are such that a robust resource estimate can be achieved.

Cut-off grade(s)

Based on Saracen's current economic operations at Carosue Dam and Thunderbox, and the natural grade distinction above background, a grade of 0.5g/t has been chosen for Open Pits and 1.2g/t for underground operations

To best capture "reasonable prospects of eventual economic extraction", the mineral resource is reported within an optimised pit shell at $2250 at a 0.5g/t cut off for the open pit resources, and for the underground resource, within MSO underground shells generated at a 1.2g/t cut off.

Mining and Metallurgical Methods

The Wonder deposit is amenable to mining by both open pit and underground methods. Currently there is no mining activities, however Wonder North has the potential to be extracted by both open cut and underground methods. The details of those methods are still in discussion.

Upcoming are a number of planned diamond holes that will be used to assess the metallurgical amenability. Historic reports indicate there was no issue with metallurgy. It is expected that any future mining of the Wonder deposit will be processed at the Thunderbox processing facility which is currently processing ore from the Thunderbox Open Pit.
The Thunderbox mill employs a conventional crushing, grinding and CIL leaching process to extract the gold. The mill has operated successfully displaying excellent performance with gold recoveries between 93.4 to 96.6 % over the life of the mine.

Bannockburn Mineral Resource Summary

Geology and Geological Interpretation

The Bannockburn deposit is located along the western margin within the central portion of the Norseman-Wiluna greenstone belt. Locally the project area is dominated by an extensive sequence of tholeiitic, high-Mg and komatiitic basalts with intercalated sedimentary and intermediate volcaniclastic horizons. Dolerite and gabbro sills intrude the sequence. The deposit is complex with multiple controlling factors. The gross geometry of the deposit is controlled by the Bannockburn fault, a steeply dipping NNW trending fault that is continuous over at least 2.3km on the western margin of the orebody. The fault separates an ultramafic unit in the west from the Bannockburn host sequence in the east. It dips steeply east, rolling to vertical and steep west dipping in the northern part of the orebody. The Bannockburn fault is effectively the western boundary to the orebody with very little mineralisation penetrating the western side of the fault. The Central fault which hosts the Central orebody has a shallow northerly plunge and is the orebody on which the majority of the underground workings is focused. There are a series of steeply east dipping lodes in the hangingwall of the central lode; these are interpreted as either tensional veins of reverse faults with shearing present along the veins. Black graphic shale units present within the stratigraphy have acted as a localised control on the mineralisation. The black shale units have taken up some of the deformation with stratigraphy parallel shearing and mafic sequences between the shales have extended to form steep east dipping extension veins.

The interpretations have been constructed using all available geological logging descriptions including but not limited to, stratigraphy, lithology, texture, and alteration. Open pit and underground observations, mapping and face maps have all been included in the interpretation; whilst this data only assists the delineation of the domain boundaries and structures locally, it does highlight both mineralogical and structural trends, and timing relationships between lodes that can be applied throughout the deposit. These relationships and observations are honoured in the creation of the geological and ore lode models (3D hard boundaries) within Leapfrog.

Drilling Techniques

Historic drilling activities at Bannockburn have included 684 RAB holes, 1694 RC holes (some with diamond tails) and 78 DD holes (HQ, NQ, and unknown diameter). Saracen has completed 148 RC drillholes, 6 DD drillholes and 1132 AC holes. The RC drilling was completed with a 5.5-inch diameter bit with a face sampling hammer. The rig was equipped with an external auxiliary booster. Diamond drilling was HQ or NQ sized and core was orientated using an ACT III core orientation tool.
Some historic HQ core was oriented by unknown methods.

Sampling and Sub-sampling Techniques

Sampling methods undertaken by Saracen at Bannockburn include diamond drilling (DD), reverse circulation (RC) drilling and aircore (AC) drilling. Sampling methods undertaken at Bannockburn by previous owners have included rotary air blast (RAB), reverse circulation (RC) and diamond drillholes (DD). Limited historical data has been provided by previous owners. RC chips are cone split, while AC samples are spear sampled, with both sampled into 4m or 1m intervals with total sample weights under 3kg. Diamond core is NQ or HQ sized, sampled to 1m intervals or geological boundaries where necessary and cut into half core to give sample weights under 3 kg. Samples are selected to weigh less than 3 kg to ensure total sample inclusion at the pulverisation stage.

Sample Analysis Method

Saracen core and chip samples are crushed, dried and pulverised to a nominal 90% passing 75µm to produce a 40g sub sample for analysis by FA/AAS. Initial RC drilling in the early 1990s included single stage mix and grind sample preparation to create a 300g pulp from which a 50g charge was used for assay determination. More recent RC drilling involved total preparation of a 4m composite sample to provide a 40g charge for fire assay.

No other information has been found or supplied so it is assumed all RAB, RC and DD and sampling was carried out to industry standard at that time.

Estimation Methodology

Block estimation is completed in Datamine software. All wireframes are constructed in leapfrog. All estimation uses these wireframes as hard boundaries. Ordinary Kriging is chosen as the estimation method. Dynamic Anisotropy is used to improve the estimation of domains that have variable dip and plunge orientations. A total of 100 domains are defined in the deposit. Estimation of parent blocks are interpolated, and assigned to sub-cells. The maximum distance of extrapolation is less than 40m.

Univariate statistical analysis of length weighted, (1m), domain coded down hole composites are completed for all domains and top-cuts applied where applicable. Extreme grades are appraised in each domain and are analysed to determine specific top-cut values. Log-probability plots are used supplementary to the histogram analysis.
KNA is performed on the major domains to determine appropriate block size, sample support, search dimensions and block discretisation values.

Variogram modelling was completed with Snowden's Supervisor software. This measures the spatial variance of the gold grade within the domains. The parameters determined from this analysis are used in the interpolation process with variogram major search directions aligned with geologically interpreted orientations

The parent block sizes for the rock model are X (10m) by Y (20m) by Z (10m) and for resource domain model are X (5m) by Y (10m) by Z (5m). These are deemed appropriate for the majority of the resource, where KNA and drill spacing is in the order of 20m x 15m to 25m x 20m and less than in the underground GC area. Parent blocks have been sub-celled to X (1.0m) by Y (1.0m) by Z (0.5m) to ensure that the wireframe boundaries are honoured and preserve the location and shape of the mineralisation. Search ranges have been informed by the KNA, knowledge of the drill spacing and the known mineralisation geometry including direction of maximum continuity. Three search estimation runs are used with the aim to satisfy the minimum sample criteria in the first search range where possible.

Classification Criteria

The mineral resource has been classified into Measured, Indicated and Inferred categories based on drill hole spacing, geological confidence, and grade continuity and estimation quality. The combination of these factors together guide the digitising of a "cookie cutter" string in long section view which selects and codes the appropriate blocks with the nominated resource classification category.

All care has been taken to account for relevant factors influencing the mineral resource estimate. Confidence in the predicted tonnes and grade estimated in the model is high and previous mining performance suggests that the input data and geological continuity are such that a robust resource estimate can be achieved.

Cut-off grade(s)

Based on Saracen's current economic operations at Carosue Dam and Thunderbox, and the natural grade distinction above background, a grade of 0.5g/t has been chosen for Open Pits.

To best capture "reasonable prospects of eventual economic extraction", the mineral resource is reported within an optimised pit shell at $2250 at a 0.5g/t cut off for the open pit resources.

Mining and Metallurgical Methods

The Bannockburn deposit is amenable to mining by both open pit and underground methods. The deposit has been mined by open pit and underground methods historically. There are reasonable grounds to assume that in the future this deposit will again be mined by conventional open pit load and haul operations.

Carosue Dam Operations

Karari

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
Sampling Techniques	*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.*	Sampling methods undertaken by Saracen at Karari have included reverse circulation drillholes (RC), diamond drillholes (DD) and RC grade control drilling within the pit, and diamond drilling and face chip sampling underground. Historic sampling methods conducted since 1991 have included aircore (AC), rotary air blast (RAB), reverse circulation and diamond drillholes.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used	Sampling for diamond and RC drilling and face chip sampling is carried out as specified within Saracen sampling and QAQC procedures as per industry standard. RC chips and diamond core provide high quality representative samples for analysis. RC, RAB, AC and DD core drilling was completed by previous holders to industry standard at that time (1991- 2004).
	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 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information	RC chips are cone or riffle split and sampled into 1m intervals, diamond core is NQ or HQ sized, sampled to 1m intervals or geological boundaries where necessary and cut into half core and underground faces are chip sampled to geological boundaries (0.2-1m). All methods are used to produce representative sample of less than 3 kg. Samples are selected to weigh less than 3 kg to ensure total sample inclusion at the pulverisation stage. Saracen core and chip samples are crushed, dried and pulverised to a nominal 90% passing 75µm to produce a 40g or 50 g sub sample for analysis by FA/AAS. Some grade control RC chips were analysed in the Saracen on site laboratory using a PAL (pulverise and leach) method. Visible gold is sometimes encountered in underground drill core and face samples. Historical AC, RAB, RC and diamond sampling was carried out to industry standard at that time. Analysis methods include fire assay and unspecified methods.
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 deposit was initially sampled by 11 AC holes, 452 RAB holes, 496 RC holes (assumed standard 5 ¼ ''bit size) and 25 surface unknown diameter diamond core holes. Saracen has completed 17 surface RC precollars with HQ and NQ diamond tail drill holes (precollars averaging 287m, diamond tails averaging 168m) , 76 RC holes from both surface and within the pit (recent drilling utilised a 143mm diameter bit with a face sampling hammer and an external auxiliary booster) and 3052 grade control RC holes within the pit. 1,225 NQ diamond holes have been drilled underground. 2,998 underground faces and walls have been chip sampled. Diamond tails were oriented using an Ezi-mark tool. Some historic surface diamond drill core appears to have been oriented by unknown methods.
Drill Sample Recovery	*Method of recording and assessing core and chip sample recoveries and results assessed*	RC sampling recoveries are recorded in the database as a percentage based on a visual weight estimate; no historic recoveries have been recorded. Diamond core recovery percentages calculated from measured core versus drilled intervals are logged and recorded in the database. Recoveries average >90%.
	Measures taken to maximise sample recovery and ensure representative nature of the samples	RC drilling daily rig inspections are carried out to check splitter condition, general site and address general issues.

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
		Diamond core is reconstructed into continuous runs on an angle iron cradle for orientation marking. Depths are checked against depth given on the core blocks. UG faces are sampled from left to right across the face at the same height from the floor. During GC campaigns the sample bags weight versus bulk reject weight are compared to ensure adequate and even sample recovery. Historical AC, RAB, RC and diamond drilling to industry standard at that time.
	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.	There is no known relationship between sample recovery and grade for RC drilling. Diamond drilling has high recoveries due to the competent nature of the ground meaning loss of material is minimal. Any historical relationship is not known.
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.* *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.*	Logging of RC chips and diamond drill core records lithology, mineralogy, texture, mineralisation, weathering, alteration and veining. Geotechnical and structural logging is carried out on all diamond holes to record recovery, RQD, defect number, type, fill material, shape and roughness and alpha and beta angles. All faces are photographed and mapped. Chips from all RC holes (exploration and GC) are stored in chip trays for future reference while remaining core is stored in core trays and archived on site. Core is photographed in both dry and wet state. Qualitative and quantitative logging of historic data varies in its completeness.
	The total length and percentage of the relevant intersections logged	All RC and diamond drillholes holes are logged in full and all faces are mapped. Every second drill line is logged in grade control programs with infill logging carried out as deemed necessary. Historical logging is approximately 95% complete.
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.*	All drill core is cut in half onsite using an automatic core saw. Samples are always collected from the same side.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	All exploration and grade control RC samples are cone or riffle split. Occasional wet samples are encountered. Underground faces are chip sampled using a hammer. AC, RAB and RC drilling has been sampled using riffle and unknown methods.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	The sample preparation of diamond core and RC and underground face chips adhere to industry best practice. It is conducted by a commercial laboratory and involves oven drying, coarse crushing then total grinding to a size of 90% passing 75 microns. Best practice is assumed at the time of historic sampling.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	All subsampling activities are carried out by commercial laboratory and are considered to be satisfactory. Sampling by previous holders assumed to be industry standard at the time.
	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.	RC field duplicate samples are carried out at a rate of 1:20 and are sampled directly from the on-board splitter on the rig. These are submitted for the same assay process as the original samples and the laboratory are unaware of such submissions. No duplicates have been taken of underground core or face samples. Sampling by previous holders assumed to be industry standard at the time.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Sample sizes of 3kg are considered to be appropriate given the grain size (90% passing 75 microns) of the material sampled.

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
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.*	RC chip samples, grade control chip samples, underground face chip samples and diamond core are analysed by external laboratories using a 40g or 50g fire assay with AAS finish. These methods are considered suitable for determining gold concentrations in rock and are total digest methods. Some GC samples were analysed in the Saracen onsite laboratory using pulverise and leach method. This method is a partial digest. Historic sampling includes fire assay and unknown methods.
	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 have been utilised for reporting gold mineralisation.
	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.	Certified reference material (standards and blanks) with a wide range of values are inserted into every drillhole at a rate of 1:25 for exploration RC and DD, and 1:40 for GC drilling. These are not identifiable to the laboratory. QAQC data returned are checked against pass/fail limits with the SQL database and are passed or failed on import. A report is generated and reviewed by the geologist as necessary upon failure to determine further action. QAQC data is reported monthly. Sample preparation checks for fineness are carried out to ensure a grindsize of 90% passing 75 microns. The laboratory performs a number of internal processes including standards, blanks, repeats and checks. QAQC data analysis demonstrates sufficient accuracy and precision. Industry best practice is assumed for previous holders.
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.*	Significant intercepts are verified by the Geology Manager and corporate personnel.
	The use of twinned holes.	No specific twinned holes have been drilled at Karari but grade control drilling and underground diamond drilling has confirmed the width and grade of previous exploration drilling.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols	Primary data is collated in a set of excel templates utilising lookup codes. This data is forwarded to the Database Administrator for entry into a secure acQuire database with inbuilt validation functions. Data from previous owners was taken from a database compilation and validated as much as practicable before entry into the Saracen acQuire database.
	Discuss any adjustment to assay data.	No adjustments have been made to assay data. First gold assay is utilised for resource estimation.
Location of data points	*Accuracy and quality of surveys used to locate drillholes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.*	Exploration drillholes are located using a Leica 1200 GPS with an accuracy of +/- 10mm. Drillhole collars within the pit and immediate surrounds are picked up by company surveyors using a Trimble R8 GNSS (GPS) with an expected accuracy of +/-8mm. All underground drillhole collars are picked up by company surveyors using a Leica TS15i (total station) with an expected accuracy of +/-2mm. Underground faces are located using a Leica D5 disto with and accuracy of +/- 1mm from a known survey point. Downhole surveys are carried out using the DeviFlex RAPID continuous inrod survey instrument taking readings every 5 seconds, In and Out runs and reported in 3m intervals, survey accuracy +-3:1000. A number of drillholes have also been gyroscopically surveyed. Previous holders' survey accuracy and quality is unknown
	Specification of the grid system used.	A local grid system (KarariDervish) is used. The two point conversion to MGA_GDA94 zone 51 is

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
		<table><tr><td></td><td>KDEast</td><td>KDNorth</td><td>RL</td><td>MGAEast</td><td>MGANorth</td><td>RL</td></tr><tr><td>Point 1</td><td>2986.31</td><td>7233.832</td><td>0</td><td>438346.166</td><td>6663021.817</td><td>0</td></tr><tr><td>Point 2</td><td>3010.884</td><td>9675.445</td><td>0</td><td>438370.5380</td><td>6665462.457</td><td>0</td></tr></table>Historic data is converted to the Karari local grid upon export from the database.
	Quality and adequacy of topographic control.	Topographic control originally used site based survey pickups in addition to Kevron aerial photogrammetric surveys with +/- 5m resolution. Pre mining, new and more detailed topography has since been captured and will be used in future updates and for subsequent planning purposes.
Data spacing and distribution	*Data spacing for reporting of Exploration Results.*	The nominal spacing for drilling is 25m x 25m.
	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.	Data spacing and distribution are sufficient to establish the degree of geological and grade continuity appropriate for JORC classifications applied.
Orientation of data in relation to geological structure	*Whether sample compositing has been applied.*	Sample compositing is not applied until the estimation stage. Some historic RAB and RC sampling was composited into 3-4m samples with areas of interest re-sampled to 1m intervals. It is unknown at what threshold this occurred.
	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 drillholes are positioned to achieve optimum intersection angles to the ore zone as are practicable. Underground diamond drilling is designed to intersect the orebody in the best possible orientation given the constraints of underground drill locations. UG faces are sampled left to right across the face allowing a representative sample to be taken.
	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.	No significant sampling bias has been recognised due to orientation of drilling in regards to mineralised structures.
Sample security	*The measures taken to ensure sample security.*	Samples are prepared on site under supervision of Saracen geological staff. Samples are selected, bagged into tied numbered calico bags then grouped into secured cages and collected by the laboratory personnel. Sample submissions are documented via laboratory tracking systems and assays are returned via email
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	An internal review of companywide sampling methodologies was conducted to create the current sampling and QAQC procedures. No external audits or reviews have been conducted.

Section 2: Reporting of Exploration Results		
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 Karari pit is located on M28/166 and M28/167 Mining Leases M28/166 and M28/167 are held 100% by Saracen Gold Mines Pty Ltd a wholly owned subsidiary of Saracen Mineral Holdings Limited. Mining Leases M28/166 and M28/167 have a 21 year life (held until 2041) and are renewable for a further 21 years on a continuing basis. The tenements are the subject of a Westpac Administration Pty Limited bank mortgage (Mortgage 499142). The tenement are the subject of two caveats (Caveat 51H/067 and 52H/067, respectively).

Section 2: Reporting of Exploration Results		
Criteria	**JORC Code Explanation**	**Commentary**
		The tenements are the subject to a royalty of 1.5 % of Sale Proceeds or otherwise Mineral Value of all minerals extracted (excluding Operating Expenses) payable to Resource Capital Fund III L.P. The tenements are the subject to a royalty of 4% of Net Profit after the first 1,000,000 ounces of Mineral extraction payable to Resource Capital Fund III L.P. All production is subject to a Western Australian state government NSR royalty of 2.5%. The tenements are subject to the Pinjin Pastoral Compensation Agreement. The tenements are affected by the Maduwongga (WC2017/001) and the Nyalpa Pirniku (WC2019/002) registered native title claims. There are no registered Aboriginal Heritage sites within Mining Leases M28/166 and M28/167. The Mining Rehabilitation Fund applies to the tenements.
	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.	The tenements are in good standing and the licence to operate already exists
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	The Carosue Dam project area in which the Karari deposit is located has been subjected to extensive gold exploration by numerous companies since 1991. Karari was highlighted as an area of interest following an aeromagnetic survey conducted by CRA Exploration. Auger sampling of the target defined a widespread gold anomaly with follow up RAB drilling intersecting significant gold mineralisation. RC and DD drilling further defined the mineralisation before Aberfoyle entered into a joint venture agreement with CRA. Further drilling by Aberfoyle defined mineralisation over a 600m strike length. Aberfoyle were subject to a hostile takeover by Western Metals with PacMin then purchasing the Carosue Dam project. An intensive resource definition program consisting of both RC and DD drilling was carried out before mining of Karari commenced in 2000.
Geology	*Deposit type, geological setting and style of mineralisation.*	The Karari deposit sits along the regional NNW-trending Keith-Kilkenny fault zone within the eastern edge of the Norseman-Wiluna greenstone belt. The deposit itself is lithologically and structurally controlled and sits within an altered volcaniclastic sandstone unit that has been offset along a series of major faults running NE-SW and NW-SE, as well as intruded by large lamprophyre units post mineralization. Mineralization is dominated by pyrite and hosted in broad hematite altered sandstone units with a central high grade siliceous core light-moderately dipping to the North.
Drillhole 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:* • *easting and northing of the drill hole collar* • *elevation or RL (Reduced Level – elevation* • *above sea level in metres) of the drill hole collar* • *dip and azimuth of the hole* • *down hole length and interception depth* • *hole length.*	All material data is periodically released on the ASX: 18/2/2020, 11/11/2019, 30/07/2019, 30/04/2019, 18/02/2019, 27/11/2018, 31/07/2018, 01/05/2018,15/02/2018, 27/11/2017, 26/09/2017, 13/07/2017, 01/05/2017, 21/02/2017, 13/04/2016, 23/02/2016, 10/12/2015, 03/07/2015, 25/05/2015, 05/05/2015, 11/03/2015, 16/01/2014, 14/10/2013, 25/01/2013, 28/07/2011, 03/06/2011, 21/04/2011, 09/02/2011, 03/11/2008

Section 2: Reporting of Exploration Results		
Criteria	**JORC Code Explanation**	**Commentary**
	• *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.*	
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 underground diamond drillhole significant intercepts have been length weighted with a minimum Au grade of 2.5ppm. No high grade cut off has been applied.
	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 with minimum width of 0.5m and maximum width of 3m for internal dilution. Where stand out higher grade zone exist with in 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	There are no metal equivalents reported in this release.
Relationship between mineralisation widths and intercept lengths	*These relationships are particularly important in the reporting of Exploration Results.* *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* *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').*	Previous announcements included sufficient detail to clearly illustrate the geometry of the mineralisation and the recent drilling. All results are reported as downhole lengths.
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.*	No Diagrams are referenced in this release.
Balanced Reporting	*Where comprehensive reporting of all Exploration Results are not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	All results from previous campaigns have been reported, irrespective of success or not.
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*	No substantive data acquisition has been completed in recent times.

Section 2: Reporting of Exploration Results		
Criteria	**JORC Code Explanation**	**Commentary**
	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).* *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive*	Further infill drilling may be carried out inside the reserve pit design to improve confidence. The drilling is getting to the depth where exploration is expensive and the approach needs to be carefully considered.

Section 3: Estimation and Reporting of Mineral Resources		
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.*	The database used for the estimate is an extract from an Acquire SQL database. The primary database is regulated by a locked framework called the acquire data model which fixes the relationships between tables. The data model minimises the potential for data collection and data usage errors through pre-determined look up tables, storage and export functions. User defined permissions also regulate the ability to add, edit or extract data. Primary data is recorded using typical manual translation of logging and data capture from digital logs and direct import of csv tables through an automated data import scheme where data is validated upon import into the database using predefined look up values.
	Data validation procedures used.	The rigid structure of the acquire data model is such that predefined rules and look up tables are applied to all data entry. Data that does not meet the criteria are highlighted and moved to a buffer area until the data is rectified to meet the passing rules. 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.
Site Visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.*	The Competent Person regularly visits site (monthly and more so when the geological work is more complex and demanding) to assess geological competency and 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.*	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 and geophysics. Confidence in the interpretation improves with increased data density from close-spaced resource definition drilling, underground grade control drilling at 20m X 20m, face sampling of development rounds, and in pit and underground mapping.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC Code Explanation	Commentary
	Nature of the data used and any assumptions made.	The geological interpretation of Karari 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 development face/backs mapping were all used to help define the mineralised domains and regolith boundaries. Interpreted shears and faults obtained from in pit and underground mapping further constrained the domaining. The current resource has been interpreted from 1,277 diamond holes, 7 RCDD holes, 3,634 RC holes, and 2,998 simulated drill holes representing face sampling.
	The affect, if any, of alternative interpretations on Mineral Resource estimation.	The geological wireframes defining the mineralised zones are considered to be robust as they provide a realistic representation of the mineralised structures. Alternative interpretations that were trialled earlier do not affect the current Mineral Resource Estimation.
	The use of geology in guiding and controlling the Mineral Resource estimation.	Geological domains interpreted from all available geological data are used as estimation domains. They are further sub-domained where internal multi-modal grade populations and sufficient sample data is available in order to improve grade homogeneity and reduce variance.
	The factors affecting continuity both of grade and geology.	Cross cutting structures (NE - SW trending) grouped with flatter westerly dipping structures and intrusive rock types largely affect mineralisation continuity both along strike and down dip. Grade continuity is related to intense haematite, silica and sericite alteration and quartz breccia zones adjacent to shears and intrusive contacts.
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.*	Mineralisation at Karari has continuity over 1000m along strike, 1100m down dip and 250m across strike. High grade mineralisation is controlled by 60° East dipping shear zones. Mineralisation is hosted within extensive quartz vein breccia zones adjacent to the shears. The high grade mineralisation is associated with intense haematite, silica and sericite alteration that occurs predominantly where flatter cross-linking structures intersect with the steeper dipping shears.
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.*	Mineralisation is domained based on geological continuity. 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 are topcut proximal to population disintegration. Extreme grades are not common in the data set and all domains are analysed individually to determine specific top-cut values. Due to the lack of extreme grades the top-cut process affects only 1-2% of the data. Many of the principal lodes exhibit bi/multi-model grade populations. These internal populations are controlled by grade indicators based on inflexion points derived from 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 1x2x1m 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. 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 maximum distance of extrapolation from last known data points for the inferred material is dependent on the geological continuity and confidence across the lode, but less than 40m for the deposit.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC Code Explanation	Commentary
	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 on a monthly and yearly basis.
	The assumptions made regarding recovery of by-products.	No assumptions are made regarding the recovery of by-products for this Mineral Resource Estimation.
	Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).	No estimation of deleterious elements or non-grade variables is required
	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 quantitative kriging neighbourhood analysis. Sub-cells have been used at a resolution of 1m x 2m 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 40x40m 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 1.5-2 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.	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 from 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 and positively skew the grade population within each domain are top cut to reduce the influence of high grade outliers. Log probability plots and the coefficient of variation statistic are used to determine top-cuts. Topcuts are typically set proximal to population disintegration.
	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. 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. 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.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC Code Explanation	Commentary
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 determined by the current mining cut-off grades.
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 mineral resource is reported as open pit and underground components at different cut-off's reflective of current break even grade requirements for the mining method assumed. To best capture "reasonable prospects for eventual economic of extraction", the mineral resource was reported within an optimised pit shell at $2250 at a 0.5g/t cut off for the open pit resources, and for the underground resource, within MSO underground shells generated at 1.2 g/t cut-off. No assumptions have been made for mining dilution.
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 process 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 Karari deposit is based on the geological foundation consisting of a free milling ore body contained within metamorphosed volcaniclastic sediments. Metallurgical testwork carried out by independent consultancies has indicated that there is moderate to high gravity recovery, with total cyanide soluble recoveries reporting 93-97%. Historical performance at the Carosue Dam processing plant has evaluated the gold contained within the ore body to be approximately 92% recoverable.
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 greenfields 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 which is mitigated by the waste dump construction plan. Tailings from the deposit are stored in an appropriate licensed tailings facility with a closure plan in place.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	**JORC Code Explanation**	**Commentary**
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 Karari were determined via testing of representative intervals from diamond drillholes, regular sampling via grab samples from the pit and 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 transitional to fresh non porous material, so additional measures to reduce moisture intake during the water displacement method is unnecessary at this stage. Coating more friable oxides and sediments (to reduce moisture loss or moisture gain during the process) is considered on a deposit by deposit basis.
	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 assigned 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 Karari resource is classified as Measured, Indicated Mine Defined, Indicated or Inferred assigned via boundary string by domain based on a combination of physical and estimation quality metrics including mining exposure, drill spacing, search pass, kriging efficiency / slope / variance, 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. Material in this category is available for stoping. Indicated Mine defined is assigned where drill spacing <=20x20m, search pass 1, established grade and geological continuity, positive kriging efficiency and >50% slope. This material is available for lateral development. 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. Inferred material is drill spacing between 35x35m and 80x80m's with established geological continuity. All other mineralisation is assigned a Potential resource category.
	Whether appropriate account has been taken of all the 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 thorough QAQC of the drill hole database and geological knowledge and interpretation of the Karari deposit. 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 geological model and the mineral resource estimate reflect the competent person's view of the deposit.
Audits or reviews	*The results of any audits or reviews of Mineral Resource estimates.*	Saracen has adopted a process for geological modelling, estimation and reporting of mineral resources that meets high industry standards. At the completion of resource estimation Saracen 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.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC Code Explanation	Commentary
		The resource estimation process is also annually reviewed by external consultants to ensure estimation methodology is robust and aligned to current industry best practice. Recommendations are always reviewed and implemented as appropriate
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. Saracen Gold Mine uses a standard approach to resource estimation and the procedure requires the systematic completion of the Saracen 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 global estimates.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	Previous Mineral Resource estimates have had a positive reconciliation against mill figures.

Section 4: Estimation and Reporting of Ore Reserves		
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 for the Karari deposit is a robust global estimate that was used as a basis for conversion to the Ore Reserve estimate. Resource estimate was compiled by Saracen using exploration, resource definition, and grade control drilling and assay data, geological mapping and historical mining records to validate the model against and solid interpretation wireframes of the geology. This information was used to construct a model estimated by various kriging methods. The block model was depleted with end of June 2020 survey pickup for Reserve Estimation.
	Clear statement as to whether the Mineral Resources are reported additional to. Or inclusive of, the Ore Reserves.	The Mineral Resource reported is inclusive of the Ore Reserve.
Site Visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.*	<u>Open Pit Reserve</u> Competent Person along with geotechnical consultant has conducted several site visits to the Karari open pit since the inclusion in Carosue Dam operations life of mine plan. The purpose of these visits is to collect information for optimisation work, validating input parameters, visual pit inspection, discussion and feedback for life of mine planning. The information also includes the discussion around current mining performance, wall conditions and overall stability, and groundwater condition. <u>Underground Reserve</u>

Section 4: Estimation and Reporting of Ore Reserves		
Criteria	JORC Code Explanation	Commentary
		The competent person is conducting frequent ongoing site visits to the Carosue Dam Operations (CDO) mine site, where the Karari deposit is located. Saracen and consultant geotechnical engineers regularly visit Karari to inspect the mine and gather data used in the preparation of geotechnical reports to define parameters for underground mining. Hydrogeology consultants have visited Carosue Dam to gather data and inspect the inflow of groundwater into the open pit, used in the preparation of reports used to determine water management strategies.
	If no site visits have been undertaken indicate why this is the case.	N/A
Study status	*The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves*	<u>Open Pit Reserve</u> The Karari deposit has been mined as open pit previously by Saracen and is currently operating as an8underground operation. A revised feasibility study was undertaken with the view to recommence open pit operation to mine southern part of the orebody, which is not subject to underground reserve. The study includes all aspect of technical, economy and social environment risk assessment and has positively passed through the hurdle rate The 2020 Ore Reserve has been subject to validating all aspects of operational inputs such as production parameters, operating costs of mining, processing, general administration and environment management related costs. <u>Underground Reserve</u> The Karari deposit has been mined by Sons of Gwalia and Saracen as an open pit. Saracen commenced the underground operation in November 2014. Ore from Karari continues to be treated at the Carosue Dam processing facility. Karari is an active underground operation with a detailed mine design and an economic analysis, to define the ore reserve. From October 2017 until March 2018, external consultants (Outotec & Entech) were used to investigate the application of Paste backfill at Karari. Construction of CDO's wet paste plant was completed in April 2019, with successful commissioning and first paste pours occurring at Karari in May 2019.
	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.	<u>Open Pit Reserve</u> Modifying factors have been applied to the optimisation study and resultant Reserve pit design work to ensure the rigor of the financial analysis. Operational costs and production parameters have been estimated from actual mining and processing performance. Saracen has completed all appropriate supporting mining studies required for Ore Reserve estimate. <u>Underground Reserve</u> Modifying factors have been applied to the mine design, as well as a financial analysis completed, both of these have been the subject to peer review. As mentioned above paste fill feasibility studies have been carried out and it determined a mine plan that is both technically achievable and economically viable. Recent paste plant commissioning and QAQC testing on recent paste pours, confirms high quality paste at various binder ranges have been achieved at Karari.
Cut-off parameters	*The basis of the cut-off grade(s) or quality parameters applied*	<u>Open Pit Reserve</u> The Ore Reserve is estimated at cut-off grade of 0.50g/t, estimated using assumed gold price of AUD$1,750/oz and operating cost of mining, processing, haulage and general administration. A top cut has already been applied to the Mineral Resource Estimate eliminating the necessity for any further adjustment to the Ore Reserve Estimate.

Section 4: Estimation and Reporting of Ore Reserves		
Criteria	JORC Code Explanation	Commentary
		Underground Reserve For the purpose of Ore Reserve Estimate an operating cut-off grade of 1.85g/t was calculated based upon an assumed gold price of AUD$1,750/Oz and applicable mining production costs, processing, haulage and administration costs. This operating cut-off grade was then used as the basis of mine design. Subsequent production designs were then reviewed, and if required, lower grading stopes were removed from the design. The resulting mine grade's, allow for the cost of capital, all operating costs, plus a return on investment.
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).*	Open Pit Reserve The resource model used in the Mineral Resource Estimation was the basis for the generation of a range of Whittle 4X pit optimisation shells. The generation of these shells was reliant upon costs and inputs derived from current operational data, contractors and independent consultant recommendations. An appropriate shell was then selected as the basis for an iterative process of pit design work, culminating in the finalisation of a detailed pit design for the Karari Reserve. Underground Reserve The Karari underground ore reserve has been estimated using detailed mine development and stope designs. Paste backfill has been incorporated throughout the mine design. A feasibility study into this design change was completed by a third party consultant, and is supported by recent underground paste pours. Suitable modifying factors for dilution and recovery have been applied to the economic analysis of the design to generate the ore reserve.
	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.	Open Pit Reserve Mining method to be employed at Karari will be conventional open pit with hydraulic excavator, dump truck fleet, and drill and blast activity The class of excavator employed is similar to other open pit operation, providing a good operating dataset for production and productivity rate measurement and financial modelling. The Reserve pit is designed as a cutback to existing mined pit in an appropriate manner to meet operation efficiency, safety aspect and production rate. Underground Reserve Underground mechanised mining for development, ground support, and open stoping is utilised at Karari. Mining and geotechnical studies have determined open stoping (both transverse and longitudinal) with paste fill is appropriate for the deposit. Some stoping locations will utilise remnant rib and sill pillars for either geotechnical reasons and/or availability of paste fill. This mining method of open stoping and backfilling with paste fill is widely used throughout the Western Australian Goldfields and Australia.
	The assumptions made regarding geotechnical parameters (e.g. pit slopes, stope sizes, etc.), grade control, and pre-production drilling.	Open Pit Reserve Geotechnical recommendations were made by independent external consultant following site visits, inspection of drill core, and a review of the geotechnical data gathered during earlier operations. The geotechnical consultant was engaged by Saracen to oversee geotechnical aspect of technical study and ongoing support. It is expected that once the pits are in operation there may be some need for additional geotechnical input and reflect any changes to into life of mine pit design. The Grade control method to be employed at Karari will utilise RC drilling and sampling method. The method and practice has been utilised successfully at all current and past mining operations at Saracen. Underground Reserve

Section 4: Estimation and Reporting of Ore Reserves		
Criteria	JORC Code Explanation	Commentary
		Assumptions are based upon actual mining conditions. A review of the previous analysis and assessment of the designed stopes were performed by Saracen's geotechnical team. Several external consultants have also reviewed the deposit and results / analysis found assumptions were acceptable. The current mine design allows for extensive use of paste fill with only a minor amount of upper mine production stopes utilising remnant rib and sill pillars, therefore the overall extraction ratio of the mineral resources is approximately 92%. Some mining of remnant pillars has been included in the mine design. A grade control program with associated development for drilling platforms, grade control drilling designs, and sampling costs have been include in the mine design, mine schedule and economic analysis.
	The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).	The Ore Reserve Estimate is based on detailed life of mine pit design work by using geology approved resource model, and making appropriate dilution and recovery factor allowance for mining fleet and method utilised. <u>Open Pit Reserve</u> The resource model used for the ore reserve calculations was ka2004_gc_mine.dm <u>Underground Reserve</u> The resource model used for the ore reserve calculations was KA2006_RES_MINE.dm
	The mining dilution factors used.	<u>Open Pit Reserve</u> A mining dilution factor of 14% is applied in the Ore Reserve estimation and reflect the expected mining performance for the given ore body characteristic, selected mining method and equipment. <u>Underground Reserve</u> An allowance for mining dilution has been incorporated into the mine designs. An additional dilution allowance of 150% at 0.5g/t has been applied for stoping.
	The mining recovery factors used.	<u>Open Pit Reserve</u> A mining ore loss factor of 5% is applied in the Ore Reserve estimation and reflect the expected mining performance for the given ore body characteristic, selected mining method and equipment. <u>Underground Reserve</u> A mining recovery factor of 95% has been assumed for all stopes.
	Any minimum mining widths used	<u>Open Pit Reserve</u> A minimum mining width of 25m has been adopted for the primary excavation fleet. Where 'pinch-points' occur or "Good Bye" cuts are considered at the base of the pit, it is assumed that a smaller or more versatile excavator will be employed. The practice is very consistent across both Saracen operations and reflects the suitability and efficiency of the mining performance. <u>Underground Reserve</u> A minimum stope width of 3m was applied in the design process.
	The manner in which inferred Mineral resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.	<u>Open Pit Reserve</u> Inferred material is excluded from the ore reserves and treated as waste material which incurs a mining cost but is not processed and does not generate any revenue. Therefore final pit reserve inventory has excluded any inferred mineral resources. <u>Underground Reserve</u> A minor amount (<1% of tonnes) of inferred resources are contained within the underground mine design, in stopes and development at the periphery of the indicated resource category material. This material contributes a minor

Section 4: Estimation and Reporting of Ore Reserves		
Criteria	JORC Code Explanation	Commentary
		amount of metal (<1% of ounces) within the design. Therefore the reserve has a minor sensitivity to the inclusion of inferred resources
	The infrastructure requirements of the selected mining methods.	<u>Open Pit Reserve</u> The selected mining method and location of the deposit is within the main Carosue Dam operation, which consists of underground mines, 3.3mt processing plant, modern camp site and all other required infrastructure to support current and future mine plan. <u>Underground Reserve</u> Standard underground infrastructure is currently operational; this includes twin declines for access and truck haulage, ventilation fans, escape-way ladders, electrical reticulation, mine services (air and water), and mine dewatering infrastructure. Construction of CDO's wet paste plant was completed in April 2019, with successful commissioning and first paste pours occurring at Karari in May 2019.
Metallurgical factors or assumptions	*The metallurgical process proposed and the appropriateness of that process to the style of mineralisation*	The Ore Reserve will be treated at the established Carosue Dam processing facility. The facility is a conventional crushing, gravity circuit, grind, and CIL (carbon in leach) plant and is appropriate for the extraction of gold from free milling mineralisation.
	Whether the metallurgical process is well-tested technology or novel in nature.	The current processing plant and method applied utilises well tried and proven technology since being in operation with average gold recovery typically between 92 to 94% for all available material types near Carosue Dam operations.
	The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.	An average gold recovery for Karari deposit is estimated at 94.0%. The recovery estimation is based on met test work and current and past actual average recovery data collected at the Carosue Plant. The plant performance is consistent between 92 to 94% while processing Karari material with other material blend with range different ore sources without any issue. Karari mine is currently in operation and all material has processed through Carosue Dam plant have resulted in a solid understanding of the metallurgical parameters of the ore.
	Any assumptions or allowances made for deleterious elements.	No deleterious elements have been identified during the processing of Karari ores since 2010.
	The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the ore body as a whole.	Current underground reserve and past open pit ore from Karari have processed through to Carosue Dam plant representing a sizeable bulk sample/pilot test. Processing plant regularly carries out bulk sample/pilot test for continuous improvement and check balance.
	For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications.	N/A
Environmental factors or assumptions	*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.*	Karari is currently compliant with all legal and regulatory requirements. All approvals (clearing permit, works approval and Mining Proposals) have been granted for ongoing mining and processing at Carosue Dam. The site currently holds an Environmental Protection Act licence 7465/1999/8 for processing, mine dewatering and power generation. The existing Carosue Dam mine, including the area of Karari underground mine, and the accommodation village all lay on granted mining leases.

Section 4: Estimation and Reporting of Ore Reserves		
Criteria	JORC Code Explanation	Commentary
		The following studies have been completed and provided to support for the required statutory approvals: Flora surveys of areas to be cleared, waste rock characterisation studies, surface water studies and tailings storage facility documentation.
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.*	Carosue Dam Operations are well established, with mining activities being conducted by Saracen since 2009. The CDO operation comprises at 3.3mtpa CIL ore processing facility, aerodrome with sealed runway, associated tailings storage facilities, several power stations, water supply, workshops, and administration offices. Karari underground mine is located within 500m of the CDO plant. A modern accommodation camp is sited within a few kilometres of the administration offices and processing facility. A 70km gravel access road links Carosue Dam Operations to the gravel section of Yarri Road. Both the Saracen and Shire of Kalgoorlie gravel roads are well maintained. The mine site is ~120km from the sealed section or Yarri Road leading to Kalgoorlie.
Costs	*The derivation of, or assumptions made, regarding projected capital costs in the study.*	<u>Open Pit Reserve</u> Capital cost relating to the pre striping of the pit is included in the financial modelling. <u>Underground Reserve</u> Capital costs relate to establishment of capital infra-structure and continuing expansion of capital works for Karari underground. The cost estimates are based on historical costs for similar work undertaken at Carosue Dam for the establishment and operation of the Karari, Whirling Dervish and Deep South underground mines. Actual mine operating and capital costs have been used in the reserve calculations.
	The methodology used to estimate operating costs.	<u>Open Pit Reserve</u> Operating costs for open pit mining have been derived from a combination of actual costs from SGM's Carosue Dam/Thunderbox Operations and costs supplied by various contract mining companies and independent consultants. Operating costs for ore processing, haulage and administration have been derived from known parameters at Carosue Dam operations. <u>Underground Reserve</u> Operating costs for underground mining have been derived from a combination of actual costs from Karari and tendered contract costs supplied by independent mining contractors. Operating costs for ore processing have been derived from known parameters at Carosue Dam, with additional costs such as labour sourced from current operational data.
	Allowances made for the content of deleterious elements	Current operational experience at Karari did not reveal any deleterious elements within the ore or waste that required any additional cost allowances.
	The derivation of assumptions made of metal or commodity price(s), for the principal minerals and co-products	An assumed gold price of AUD$1,750/oz has been adopted for financial modelling. No allowance is made for silver by-products.
	The source of exchange rates used in study	All revenue and cost calculations have been made in AUD, so no exchange rate usage or assumptions have been necessary.
	Derivation of transportation charges	Costs associated with bullion transportation have been derived from existing contractual arrangements at Carouse Dam.
	The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.	Costs associated with refining have been derived from existing contractual arrangements at Carouse Dam.

Section 4: Estimation and Reporting of Ore Reserves		
Criteria	JORC Code Explanation	Commentary
	The allowances made for royalties payable, both Government and private.	Royalty costs are the WA state government royalty of 2.5%, and a third party royalty of 1.5% is payable.
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.*	For the purposes of the Ore Reserve Estimation it has been assumed that there is no gold hedging. All gold production will be sold at spot price to the Perth Mint.
	The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products	Assumed gold price of AUD$1,750/oz. has been adopted for financial modelling. No allowance is made for silver by-products.
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.	There is a transparent quoted market for the sale of gold.
	For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.	N/A
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.*	<u>Open Pit Reserve</u> The Ore Reserve Estimation is based on detailed life of mine pit design and reflects positive economic outcomes. All relevant capital and operating costs as well as revenue and royalty factors have been included with appropriate discount factor for cash flow analysis. <u>Underground Reserve</u> All costs assumptions are made based on a combination of historical performance at Carosue Dam and Karari mine. The economic analysis is viewed as representative of the current market conditions.
	NPV ranges and sensitivity to variations in the significant assumptions and inputs.	<u>Open Pit Reserve</u> A full financial model was developed with sensitivities applied to all key inputs and assumptions. <u>Underground Reserve</u> Sensitivities were not assessed.
Social	*The status of agreements with key stakeholders and matters leading to social licence to operate*	Carosue Dam is currently operating and has good relationships with neighbouring stakeholders, including engagement with the local pastoralists and the traditional owners. The mine is located on leasehold pastoral land with compensation agreements in place with the local pastoralist. Granted mining leases cover all of the proposed mining and processing assets and there are no Native title claims pending.
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	Water inrush is identified as a naturally occurring risk with in the operation and was addressed by the construction of appropriate water diversion bunds to provide a safe and risk free work environment. The sufficient long term bund wall is constructed across the mine footprint and currently still in place.

Section 4: Estimation and Reporting of Ore Reserves		
Criteria	JORC Code Explanation	Commentary
	The status of material legal agreements and marketing arrangements	Contracts are in place for all critical goods and services to operate Carosue Dam Operations.
	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.	Open Pit Reserve The Mining Approvals for current underground reserve is in place. The current Mining Approval will require to be revised to accommodate open pit reserve. All other Statutory Approvals namely environment, clearing permit, works approvals, dewatering and discharge licence have been granted. Underground Reserve Carosue Dam Operations is in production with all required government statutory permits and approvals in place for the operating mines and processing plant. The required statutory approvals for Karari have been granted.
Classification	*The basis for the classification of the Ore Reserve into varying confidence categories*	Open Pit Reserve The Ore Reserve Estimate classification has been in accordance with the JORC code 2012. The Ore Reserve Estimate is classified as being Proved and Probable has been derived from Mineral Resource classified as Indicated and Measured only. Underground Reserve The Ore Reserve Estimate classification for Karari underground has been in accordance with the JORC code 2012. The estimated Ore Reserve is classified as being Probable with the majority of the reserve being derived from that portion of the Mineral Resource classified as indicated. A minor amount (<1% of tonnes) of inferred resources are contained within underground mine design, in stopes and development at the periphery of the indicated resource category material. This material contributes a minor amount of metal (<1% of ounces) within the design. Therefore the reserve has a minor sensitivity to the inclusion of inferred resources.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	Open Pit Reserve Cost assumptions and modifying factors applied to the pit optimisation and subsequent designs were derived from current operational data relating to Saracen's Carosue Dam and Thunderbox operations, and supplied from contract mining companies and independent consultants. Results of these optimisations and the resultant analysis reflect the Competent Person's view regarding the Karari deposit. Underground Reserve Cost assumptions and inputs factors applied to the underground project were derived from a combination of historical site data, current operational data relating to Carouse Dam Operations, actual mining costs, and recommendations from industry consultants. Results of the detailed design and analysis reflect the views of Competent Person regarding the Karari deposit.
	The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any)	Open Pit Reserve 7% of Probable ore from Ore Reserve estimate has been derived from Measured Mineral Resource category. Underground Reserve Only 33% (by ore tonnes) of the reserve were classified as Measured Mineral Resources within the underground mine design that formed the physical extent of the estimated Ore Reserve.
Audits or reviews	*The results of any audits or reviews of Ore Reserve estimates*	The Ore Reserve Estimation process is in line with the Saracen Ore Reserve Policy and has undergone internal review. There have been no external reviews of this Ore reserve estimate.

Section 4: Estimation and Reporting of Ore Reserves		
Criteria	JORC Code Explanation	Commentary
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 geo-statistical 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 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.* *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.* *It is recognised that this may not be possible or appropriate in all circumstances. These statements or relative accuracy and confidence of the estimate should be compared with production data, where available.*	The Ore Reserve estimate has been prepared within the guidelines of the 2012 JORC Code. The relative confidence of the estimate complies with the criteria of Probable Ore Reserves. Based upon; - Resource estimate - significant operating history, - application of current industry practices, - appropriate operating and capital costs, The range of the modifying factors and mining parameters applied are reasonable and confidence in the resulting reserve estimate is reasonable. The reserve mine design has adopted all reasonable modifying factors and financial analysis used in the estimated Ore Reserve have been the subject to peer review internally, and the Competent Person is confident that it is an accurate estimation of the reserve. The Karari pit will utilise the same grade control methods that are widely utilised at current Saracen open pit operations.

Monty's Elliot's

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
Sampling Techniques	*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.*	Sampling methods undertaken by Saracen at Monty's Dam-Elliot's Lode have included reverse circulation drillholes (RC) and diamond drilling (DD). Historic sampling methods conducted since 1983 have included auger, aircore (AC), rotary air blast (RAB), RC and DD drillholes.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used	Sampling for diamond and RC drilling is carried out as specified within Saracen sampling and QAQC procedures as per industry standard. RC chips and diamond core provide high quality representative samples for analysis. RC, RAB, AC and DD core drilling was completed by previous holders to industry standard at that time (1991-2003).
	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 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information	RC chips are cone or riffle split and sampled into 1m intervals with total sample weights under 3kg. Diamond core is NQ or HQ sized, sampled to 1m intervals or geological boundaries where necessary and cut into half core to give sample weights under 3 kg. Samples are selected to weigh less than 3 kg to ensure total sample inclusion at the pulverisation stage. Saracen core and chip samples are crushed, dried and pulverised to a nominal 90% passing 75µm to produce a 40g or 50 g sub sample for analysis by FA/AAS. Some grade control RC chips were analysed in the Saracen on site laboratory using a PAL (pulverise and leach) method. Historical AC, RAB, RC and diamond sampling was carried out to industry standard at that time. Analysis methods include fire assay and unspecified methods.
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 Monty's Dam-Elliot's Lode deposit was initially sampled by 93 AC holes, 249 RAB holes, 329 RC holes (assumed standard 5 ¼ ''bit size) and 15 surface diamond core holes of unknown diameter. Of the 329 RC holes, Saracen drilled 110 RC holes using a 143mm diameter bit with a face sampling hammer. The rig was equipped with an external auxiliary/ booster. Saracen has completed 10 surface RC precollar with NQ diamond tail drillhole (precollar averaging 259m, diamond tails averaging 154m) and 5 diamond drillholes (NQ sized) Diamond tails were oriented using an Ezi-mark tool. Some historic surface diamond drill core appears to have been oriented by unknown methods.
Drill Sample Recovery	*Method of recording and assessing core and chip sample recoveries and results assessed*	RC sampling recoveries are recorded in the database as a percentage based on a visual weight estimate; no historic recoveries have been recorded. Diamond core recovery percentages calculated from measured core versus drilled intervals are logged and recorded in the database. Recoveries average >90%.
	Measures taken to maximise sample recovery and ensure representative nature of the samples	During RC drilling daily rig inspections are carried out to check splitter condition, general site and address general issues. Diamond core is reconstructed into continuous runs on an angle iron cradle for orientation marking. Depths are checked against depth given on the core blocks.

Section 1: Sampling Techniques and Data		
Criteria	JORC Code Explanation	Commentary
		During GC campaigns the sample bags weight versus bulk reject weight are compared to ensure adequate and even sample recovery. Historical AC, RAB, RC and diamond drilling to industry standard at that time.
	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.	There is no known relationship between sample recovery and grade for RC drilling. Diamond drilling has high recoveries meaning loss of material is minimal. Any historical relationship is not known.
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.* *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.*	Logging of RC chips and diamond drill core records lithology, mineralogy, texture, mineralisation, weathering, alteration and veining. Geotechnical and structural logging is carried out on all diamond holes to record recovery, RQD, defect number, type, fill material, shape and roughness, and alpha and beta angles. Chips from all RC holes are stored in chip trays for future reference while remaining core is stored in core trays and archived on site. Core is photographed in both dry and wet state. Qualitative and quantitative logging of historic data varies in its completeness.
	The total length and percentage of the relevant intersections logged	All RC and diamond drillholes holes are logged in full. Historical logging is approximately 100% complete.
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.*	All drill core is cut in half onsite using an automatic core saw. Samples are always collected from the same side.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	All RC samples are cone or riffle split. Occasional wet samples are encountered. AC, RAB and RC drilling has been sampled using riffle and unknown methods.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	The sample preparation of diamond core and RC chips adhere to industry best practice. It is conducted by a commercial laboratory and involves oven drying, coarse crushing then total grinding to a size of 90% passing 75 microns. Best practice is assumed at the time of historic sampling.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	All subsampling activities are carried out by commercial laboratory and are considered to be satisfactory. Sampling by previous holders assumed to be industry standard at the time.
	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.	RC field duplicate samples are carried out at a rate of 1:20 and are sampled directly from the on-board splitter on the rig. These are submitted for the same assay process as the original samples and the laboratory are unaware of such submissions. Sampling by previous holders assumed to be industry standard at the time.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Sample sizes of 3kg are considered to be appropriate given the grain size (90% passing 75 microns) of the material sampled.
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.*	RC chip samples and diamond core are analysed by external laboratories using a 40g or 50g fire assay with AAS finish. These methods are considered suitable for determining gold concentrations in rock and are total digest methods. Historic sampling includes fire assay and unknown methods.
	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 have been utilised for reporting gold mineralisation.

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
	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.	Certified reference material (standards and blanks) with a wide range of values are inserted into every drillhole at a rate of 1:25 for exploration RC and DD. These are not identifiable to the laboratory. QAQC data returned are checked against pass/fail limits with the SQL database and are passed or failed on import. A report is generated and reviewed by the geologist as necessary upon failure to determine further action. QAQC data is reported monthly. Sample preparation checks for fineness are carried out to ensure a grindsize of 90% passing 75 microns. The laboratory performs a number of internal processes including standards, blanks, repeats and checks. QAQC data analysis demonstrates sufficient accuracy and precision. Industry best practice is assumed for previous holders.
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.*	Significant intercepts are verified by the Geology Manager and corporate personnel.
	The use of twinned holes.	No specific twinned holes have been drilled at Monty's Dam-Elliot's Lode by Saracen. It is unknown if previous holders twinned any hole.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols	Primary data is collated in a set of acquire data entry objects utilising lookup codes. This data is forwarded to the Database Administrator for entry into a secure acQuire database with inbuilt validation functions. Data from previous owners was taken from a database compilation and validated as much as practicable before entry into the Saracen acQuire database.
	Discuss any adjustment to assay data.	No adjustments have been made to assay data. First gold assay is utilised for resource estimation.
Location of data points	*Accuracy and quality of surveys used to locate drillholes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.*	Drillholes are located using a Leica 1200 GPS with an accuracy of +/-10mm. Downhole surveys are carried out using an Eastman single shot camera at regular intervals (usually 30m). A number of drillholes have also been gyroscopically surveyed. Previous holders' survey accuracy and quality is unknown
	Specification of the grid system used.	A local grid system, Old Plough Dam West (OPDW) is used. The two point conversion to MGA_GDA94 zone 51 is: OPDWEast OPDWNorth RL MGAEast MGANorth RL Point 1 8035.58 20901.34 0 431948.52 6674917.54 0 Point 2 8147.50 17313.10 0 434806.92 6672750.25 0 Historic data is converted to the Old Plough Dam West local grid upon export from the database.
	Quality and adequacy of topographic control.	Topographic control originally used site based survey pickups in addition to Kevron aerial photogrammetric surveys with +/- 5m resolution. Pre mining, new and more detailed topography has since been captured and will be used in future updates and for subsequent planning purposes.
Data spacing and distribution	*Data spacing for reporting of Exploration Results.*	Monty's Dam has a nominal drill spacing ranging from 10m x 10m to 20m x 20m, while Elliot's Lode has nominal 20m x 20m drill spacing.
	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.	Data spacing and distribution are sufficient to establish the degree of geological and grade continuity appropriate for JORC classifications applied.
	Whether sample compositing has been applied.	Sample compositing is not applied until the estimation stage.

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
Orientation of data in relation to geological structure		Some historic RAB and RC sampling was composited into 3-4m samples with areas of interest re-sampled to 1m intervals. It is unknown at what threshold this occurred.
	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 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.	No significant sampling bias has been recognised due to orientation of drilling in regards to mineralised structures.
Sample security	*The measures taken to ensure sample security.*	Samples are prepared on site under supervision of Saracen geological staff. Samples are selected, bagged into tied numbered calico bags then grouped into secured cages and collected by the laboratory personnel. Sample submissions are documented via laboratory tracking systems and assays are returned via email
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	An internal review of company-wide sampling methodologies was conducted to create the current sampling and QAQC procedures. No external audits or reviews have been conducted.

Section 2: Reporting of Exploration Results		
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 Monty's Dam-Elliot's Lode gold deposit is located in M31/209. The tenement is held 100% by Saracen Gold Mines Pty Ltd, a wholly owned subsidiary of Saracen Mineral Holdings Limited. Mining Lease M31/209 has a 21 year life (held until 2023) and is renewable for a further 21 years on a continuing basis. Mining Lease M31/209 is subject to two caveats; IRC (61H/067) and RG Royalties, LLC (340983). The tenement is the subject to a royalty of 1.5 % of Sale Proceeds or otherwise Mineral Value of all minerals extracted (excluding Operating Expenses) payable to Resource Capital Fund III L.P. The tenement is the subject of two royalties payable to Royal Gold. The first involves a royalty of $6 per ounce of gold which is in excess of 265,745 ounces of gold produced from the tenement. The second involves a royalty of $10 per ounce of gold in excess of 160,333 ounces of gold produced from the area. All production is subject to a Western Australian state government NSR royalty of 2.5%. Mining Lease M31/209 is subject to the Gindalbie Pastoral Compensation Agreement. The tenement is affected by the Maduwongga (WC2017/001) and Nyalpa Pirniku (WC2019/002) native title registered claims. There are no registered Aboriginal Heritage sites on the tenement. The Mining Rehabilitation Fund applies to the tenement.
	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.	The tenements are in good standing and the licence to operate already exists.

Section 2: Reporting of Exploration Results		
Criteria	JORC Code Explanation	Commentary
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	The Old Plough Dam project area in which the Monty's Dam-Elliot's Lode deposit is located has been subjected to extensive gold exploration by numerous companies since the 1980s. Monty's Dam was highlighted as an area of interest following a geochemical and ground magnetic survey conducted by Freeport-McMoran Australia in 1983. Auger sampling undertaken by Pancontinental Mining in 1991 further defined a target which was followed up by RAB drilling. Gold mineralisation at Monty's Dam was confirmed in March 1993 and additional RAB and step-out RC drilling discovered the adjacent Elliot's Lode to the north in 1994-1995. By this time, control over the prospects was transferred to Goldfields Exploration which conducted resource definition drilling, geophysical surveys and metallurgical tests until 2000. Tenement ownership then transferred to Oriole Resources which conducted infill drilling to follow up on previous works. In 2001, Sons of Gwalia (SOG) took over from Oriole Resources and undertook step-out AC drilling to test the NW extension of the deposit. SOG started mining at Monty's Dam in 2002 while drilling AC, RC and DD at the Elliot's Lode prospect. The tenement was then acquired by St Barbara and mined the Monty's Dam deposit until 2005. In 2006, Saracen took over the tenement and started step-out and infill RC drilling in 2010 at the Elliot's Lode prospect
Geology	*Deposit type, geological setting and style of mineralisation.*	The Monty's Dam and Elliot's Lode deposits are classified as a late-tectonic, epigenetic (mesothermal) gold deposit reported to be associated with late (D4) N-NNE-trending faults. Stockwork mineralization overprinting wallwork foliation was produced by low-salinity H2O-CO2 fluids. Mineralization at Monty's Dam-Elliot's Lode is related to moderately intense quartz veining centered along the contact between fine-grained porphyry and underlying sediment with a strong and pervasive hematite alteration halo that also extends around felsic porphyry unit. Disseminated pyrite and moderate to weak sericitization also characterize the mineralized zone at Monty's Dam. As such, the mineralized zone is pinkish and the grade is correlatable to the degree of coloration (Fig. 12). These lensoidal to anastomosing mineralized zones vary in widths from 5 to 40 m. Because of this shape, the orientation can only be inferred to trend northwest, dipping 50 to 60 degrees to the east with a shallow plunge of 10 degrees to the south, which is similar to the regional geologic fabric (Longworth, 1994). Gold commonly occurs as blebs, intergrown within pyrite or as disseminated particles throughout the host rocks.
Drillhole 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:* • *easting and northing of the drill hole collar* • *elevation or RL (Reduced Level – elevation* • *above sea level in metres) of the drill hole collar* • *dip and azimuth of the hole* • *down hole length and interception depth* • *hole length.* • *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.*	All material data is periodically released on the ASX, notably on 9 December 2011 and 27 April 2012. Future drill hole data will be periodically released or when a results materially change the economic value of the project. Exclusion of the drilling information will not detract from the reader's view of the report.

Section 2: Reporting of Exploration Results		
Criteria	JORC Code Explanation	Commentary
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 significant intercepts have been length weighted with a minimum Au grade of 1ppm.
	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 with minimum width of 1m and maximum width of 3m for internal dilution.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	Metal equivalent values are not reported
Relationship between mineralisation widths and intercept lengths	*These relationships are particularly important in the reporting of Exploration Results.* *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* *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').*	Previous announcements included sufficient detail to clearly illustrate the geometry of the mineralisation and the recent drilling. All results were reported as downhole lengths.
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.*	All significant exploration results released by Saracen are accompanied by the appropriate diagrams and maps at the time of the release.
Balanced Reporting	*Where comprehensive reporting of all Exploration Results are not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	All results from the recent campaign have been reported, irrespective of success or not.
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 substantive data acquisition has been completed in recent times.
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).*	No further drilling is currently planned. Open pit evaluation work is ongoing.

Section 2: Reporting of Exploration Results		
Criteria	**JORC Code Explanation**	**Commentary**
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive	

Section 3: Estimation and Reporting of Mineral Resources		
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.*	The database used for the estimate an extract from an Acquire SQL database. The primary database is regulated by a locked framework called the acquire data model which fixes the relationships between tables. The data model minimises the potential for data collection and data usage errors through pre-determined look up tables, storage and export functions. User defined permissions also regulate the ability to add, edit or extract data. Primary data is recorded using typical manual translation of logging and data capture from written logs and direct import of csv tables through a data import scheme where data is validated upon import or direct data entry options into the database using predefined look up values.
	Data validation procedures used.	Data that is captured in the field is entered into Excel templates which are checked on import into the 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.
Site Visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.*	The Competent Person regularly visits site (monthly and more so when the geological work is more complex and demanding) to assess geological competency and 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.*	A combination of well documented historic geology and structural information, exploration mapping, geophysical surveys, sufficient drill hole information and geological data collected during production at Monty's Dam has resulted in a confident geological interpretation. Subsequent infill drilling of both Monty's, Elliot's and North West has increased confidence in the current interpretation.
	Nature of the data used and any assumptions made.	The geological interpretation of Monty's Elliot 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 pit high wall mapping were all used to help define the mineralised domains and regolith boundaries. Interpreted shears and faults obtained from pit exposures and geophysical data further constrained the domaining. The current resource has been interpreted from 20 diamond holes, 10 RCDD holes and 519 RC holes.
	The affect, if any, of alternative interpretations on Mineral Resource estimation.	Over the life of the project additional drilling campaigns have confirmed and further clarified the ubiquitous pinch and swell geometry of the mineralised lodes in a structurally controlled environment. Whilst structural theories have altered slightly over time, the general trend, dip and plunge of the lodes has remained constant.
	The use of geology in guiding and controlling the Mineral Resource estimation.	The geology has heavily influenced the extent of the domains controlling the mineral resource estimation. Mineralisation at Monty's Dam is structurally controlled by the intersection of the local Eliot Lode Shear, (ELS) with

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	**JORC Code Explanation**	**Commentary**
		the Monty North Shear, (MNS). The northern extent of the ELS intersects a secondary hangingwall shear and hosts the "Elliot Lode". The deposits are hosted in a sequence of volcaniclastic sandstones and porphyritic units, with mineralisation associated with quartz stockwork veining adjacent to the porphyritic contacts. Hematite alteration accompanies mineralisation. Such lithology, alteration, colour, and textures in conjunction with anomalous grade help define the domains. At Monty's North also known as North West (north of Monty's Dam) the mineralisation is of lower grade due to the absence of potassic and hematite alteration within an andesitic porphyritic host. Domaining is predominantly based on economic Au values as the alteration assemblages mimic those of the surrounding waste rock. All mineralised domains were wireframed with hard boundaries.
	The factors affecting continuity both of grade and geology.	ENE (local orientation) shear zones cross cutting the Elliot Lode Shear are most likely responsible for the northern termination or dextral offset of the Monty Dam deposit and similarly for the Elliot lodes. Biotitic assemblages increase in close proximity to these cross cutting shears and economic Au grade dissipates. It is also possible that these shears affect the continuity of the weakly mineralised Monty North lodes. The intersection of the MNS with the ELS closes out the Monty Dam deposit to the south.
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.*	Monty's Elliot has been interpreted in MGA grid with lodes extending along strike >950m's along strike, 400m's down dip and up to 50m's width when stacked together. The total mineralised package including Monty's, Elliot's, and North West is situated between 433950-434700mE, 6672500-6673400mN, and -80-360mRL
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.*	Mineralisation is domained based on geological continuity. 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 and RC 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 principal lodes exhibit bimodal grade populations. These internal populations are controlled by grade indicators based on inflexion points derived from domain log probability plots from which indicator variograms are created. Categorical indicator kriging (CIK) is then used to sub-domain lodes with mixed grade populations. The block model used in the CIK estimation has blocks set at 1x2x1m 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. 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.	Conventional ordinary kriging was conducted on the full domains as a check estimate however it was deemed unsuitable as a method to accurately quantify mineralisation due to the obvious bimodal grade populations and subsequent smearing of grade into internal waste zones. The current Mineral Resource Estimation is checked against the previous estimations. No historical production data from the Monty's open pit is available to calibrate the estimate.
	The assumptions made regarding recovery of by-products.	No assumptions have been made with respect to the recovery of by-products.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	**JORC Code Explanation**	**Commentary**
	Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulfur for acid mine drainage characterisation).	No estimation of deleterious elements or non-grade variables is required
	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 quantitative 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. 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 selective mining units have been assumed.
	Any assumptions about correlation between variables.	No assumptions have been made regarding correlation between variables.
	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 from open pit exposures and geophysical data. 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. 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. Topcuts are typically set proximal to population disintegration.
	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. 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. Global change of support plots are created and reviewed for principal domains.
Moisture	*Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	All tonnages are estimated on a dry basis.
Cut-off parameters	*The basis of the adopted cut-off grade(s) or quality parameters applied.*	Based on Saracen's current economic status the natural grade distinction above background for the Monty's Elliot deposit is at a grade of 0.5g/t.
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*	Historic open pit mining has been conducted at Monty's Dam. There are reasonable grounds to assume that in the future the remaining resource at Monty's Dam and the total resource at Elliot's will be mined by conventional open pit methods given the close proximity to surface and the mean average grade of the mineralisation. To best capture

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	**JORC Code Explanation**	**Commentary**
	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.	"reasonable prospects for eventual economic of extraction", the mineral resource was reported within an optimised pit shell at $2250 at a 0.5g/t cut off for the open pit resources.
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 process 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.*	Historic metallurgical data from the Monty's Dam operation cannot be sourced. Current test work from the 2019 resource definition drill program showed average recoveries of 92% to 94.5% with the gravity component recorded at 77%.
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 greenfields 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.*	Environmental considerations are captured by Program of Work (PoW) requirements. Operations on these tenements are purely exploratory in nature to date.
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 density values applied to the Monty Dam's and Elliot Deposits estimation are largely based on historic density measures from drilling and production at Monty's Dam during SOG's ownership. With recent RC and diamond drilling, historic densities have been calibrated. Density samples are 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 non porous material, so additional measures to reduce moisture intake during the water displacement method is unnecessary at this stage. Coating more friable oxides and sediments (to reduce moisture loss or moisture gain during the process) is considered on a deposit by deposit basis.
	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 assigned to the modelled geological units. This includes the primary fresh lithologies as well as the weathered oxide and transitional zones.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC Code Explanation	Commentary
Classification	*The basis for the classification of the Mineral Resources into varying confidence categories.*	The Monty's Elliot resource is classified as Measured, Indicated or 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, grade and geological continuity. Mineralisation has been categorised as Measured if it has been exposed by mining. Indicated material is assigned if drill spacing is between 20x20m and 40x40m, search pass either 1 or 2, established grade and geological continuity, positive kriging efficiency and >50% slope. Inferred material is drill spacing between 40x40m and 80x80m's with established geological continuity. All other mineralisation is assigned a Potential resource category.
	Whether appropriate account has been taken of all the 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 thorough QAQC of the drill hole database and geological knowledge and interpretation of the Karari deposit. 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 geological model and the mineral resource estimate reflect the competent person's view of the deposit.
Audits or reviews	*The results of any audits or reviews of Mineral Resource estimates.*	Saracen has adopted a process for geological modelling, estimation and reporting of mineral resources that meets high industry standards. At the completion of resource estimation Saracen Metals 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. Saracen Gold Mine uses a standard approach to resource estimation and the procedure requires the systematic completion of the Saracen 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 statements relate to a global estimate of tonnes and grade.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC Code Explanation	Commentary
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	The confidence in the model is reflected by the designation of Resource categories. Given the thorough geological analysis of this area and adequate drilling definition, it is a robust estimation of the resource at Monty's Dam and Elliot's Lode. Monty's North, an Inferred resource, is of lower grade and has attracted far less drilling at this stage.

Section 4: Estimation and Reporting of Ore Reserves		
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 for the Monty's Elliot's deposit is a robust global estimate that was used as a basis for conversion to the Ore Reserve estimate. Resource estimate was compiled by Saracen using exploration, resource definition, and grade control drilling and assay data, geological mapping and historical mining records to validate the model against and solid interpretation wireframes of the geology. This information was used to construct a model estimated by various kriging methods. The block model was depleted with end of June 2020 survey pickup for Reserve Estimation.
	Clear statement as to whether the Mineral Resources are reported additional to. Or inclusive of, the Ore Reserves.	The Mineral Resource reported is inclusive of the Ore Reserve.
Site Visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.*	A Competent Person along with a geotechnical consultant has conducted several site visits to the Monty's Elliot's open pit since the inclusion in Carosue Dam operations' life of mine plan. The purpose of these visits is to collect information for optimisation work, validating input parameters, visual pit inspection, discussion and feedback for life of mine planning. The information also includes the discussion around current mining performance, wall conditions and overall stability, and groundwater condition.
	If no site visits have been undertaken indicate why this is the case.	N/A
Study status	*The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves*	The Monty's Elliot's deposit was mined previously as an open pit mine during early 2000's with ore processed at the Carosue Dam plant. Saracen has conducted a revised feasibility level study with the view to recommence open pit operations to been included in the Carosue Dam life of mine plan. The 2020 Ore Reserve has been subject to validating all aspects of operational inputs such as production parameters, operating costs of mining, processing, general administration and environment management related costs.
	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.	Modifying factors have been applied to the optimisation study and resultant Reserve pit design work to ensure the rigor of the financial analysis. Operational costs and production parameters have been estimated from actual mining and processing performance. Saracen has completed all appropriate supporting mining studies required for Ore Reserve estimate.
Cut-off parameters	*The basis of the cut-off grade(s) or quality parameters applied*	The Ore Reserve is estimated at a cut-off grade of 0.50g/t, and an assumed gold price of AUD$1,750/oz and operating costs of mining, processing, haulage and general administration. A top cut has already been applied to the Mineral Resource Estimate eliminating the necessity for any further adjustment to the Ore Reserve Estimate.
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*	The resource model used in the Mineral Resource Estimation was the basis for the generation of a range of Whittle 4X pit optimisation shells. The generation of these shells was reliant upon costs and inputs derived from current operational data, contractors and independent consultant recommendations. An appropriate shell was then selected

Section 4: Estimation and Reporting of Ore Reserves		
Criteria	JORC Code Explanation	Commentary
	appropriate factors by optimisation or by preliminary or detailed design).	as the basis for an iterative process of pit design work, culminating in the finalisation of a detailed pit design for the Monty's Elliot's Reserve.
	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 mining method to be employed at Monty's Elliot's will be conventional open pit with hydraulic excavator and dump truck fleet, and drill and blast activity. The class of excavator employed is similar to other mining operations, providing a good operating dataset for production and productivity rate measurement and financial modelling. The Reserve pit is designed for both deposits namely "Monty's" and "Elliot's". Monty's reserve pit is designed as a cutback to existing mined pit, whereas Elliot's reserve pit will be mined from surface. The life of mine Reserve will be mined such that it meets the operational efficiency, safety and production rates. Appropriate mine schedules and lead times have been applied to maintain efficient mining operations between the stages.
	The assumptions made regarding geotechnical parameters (e.g. pit slopes, stope sizes, etc.), grade control, and pre-production drilling.	Geotechnical recommendations were made by an independent external consultant following site visits, inspection of drill core, and a review of the geotechnical data gathered during earlier operations. The geotechnical consultant was engaged by Saracen to oversee the geotechnical aspects of the technical study and ongoing support. It is expected that once the pits are in operation there may be some need for additional geotechnical input and any reflected changes to the life of mine pit design. The Grade control method to be employed at Monty's Elliot's will utilise an RC drilling and sampling method. The method and practice has been utilised successfully at all current and past mining operations at Saracen.
	The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).	The Ore Reserve Estimate is based on detailed life of mine pit design work by using a geology approved resource model, and making appropriate dilution and recovery factor allowance for the mining fleet and method utilised.
	The mining dilution factors used.	A mining dilution factor of 14% is applied on the Ore Reserve estimation and reflects the expected mining performance for the given ore body characteristics, selected mining method and equipment.
	The mining recovery factors used.	A mining ore loss factor of 5% is applied on the Ore Reserve estimation and reflects the expected mining performance for the given ore body characteristics, selected mining method and equipment.
	Any minimum mining widths used	A minimum mining width of 25m has been adopted for the primary excavation fleet. Where 'pinch-points' occur or "Good Bye" cuts are considered at the base of the pit, it is assumed that a smaller or more versatile excavator will be employed. The practice is very consistent across both Saracen operations and reflects the suitability and efficiency of the mining performance.
	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 does not generate any revenue. Therefore final pit reserve inventory has excluded any inferred mineral resources.
	The infrastructure requirements of the selected mining methods.	The selected mining method and location of the pit is close to existing Carosue Dam mining operations, which consists of underground mines, 3.3mt processing plant, modern camp site and all other required infrastructure to support the current and future mine plan.
Metallurgical factors or assumptions	*The metallurgical process proposed and the appropriateness of that process to the style of mineralisation*	The Ore Reserve will be treated at the established Carosue Dam processing facility. The facility is a conventional crushing, gravity circuit, grind, and CIL (carbon in leach) plant and is appropriate for the extraction of gold from free milling mineralisation.
	Whether the metallurgical process is well-tested technology or novel in nature.	The current processing plant and method applied utilises well tried and proven technology since being in operation with gold recovery typically averaging between 92 to 94% for all available material types near Carosue Dam operations.
	The nature, amount and representativeness of metallurgical test work undertaken, the nature of the	An average gold recovery for Monty's Elliot's deposit is estimated at 94.0%. The recovery estimation is based on met test work and past actual average recovery data collected at the Carosue Plant. The plant performance is consistent

Section 4: Estimation and Reporting of Ore Reserves		
Criteria	JORC Code Explanation	Commentary
	metallurgical domaining applied and the corresponding metallurgical recovery factors applied.	between 92 to 94% while processing similar type of ore material blended with a range of other ore sources without any issue. Metallurgical testwork has been carried out on samples from the Monty's Elliot's deposit by test lab, with recoveries in the range of 92-95% hence the estimated recovery is in line with expectation.
	Any assumptions or allowances made for deleterious elements.	There are no known deleterious elements present in Monty's Elliot's ore that can impact on ore recoveries at Carosue Plant.
	The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the ore body as a whole.	A number of samples of each expected rock type and grade bin have been sampled through the Carosue Dam processing plant for trial test work. These bulk samples/pilot test work are considered as sufficient to represent the Monty's Elliot's ore body as a whole.
	For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications.	N/A
Environmental factors or assumptions	*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 pit is currently on 'care and maintenance'. All required Environmental studies have been completed and Statutory Government Approvals including works approval, dewatering and discharge licences have been granted. A Mining Proposal will be required to be submitted for the mine reserve pit. The existing Carosue Dam processing facility where ore will be processed, and the accommodation village all lay on granted mining leases. The road haulage network footprint is underpinned by a combination of miscellaneous licences and granted mining leases. A waste rock characterisation study has been carried out and it is expected to be representative of waste rock. An appropriate landform design criteria has been considered based on rock characteristic to mitigate current and any future pit expansion plan.
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.*	The Reserve pit will require minimum infrastructure due to its close proximity to Carosue Dam and hence will provide the ability to recommence operation in a short timeframe. The Monty's Elliot's pit is located ~18km from the CDO Processing Plant via internal private haul road. The CDO operation now comprises at 3.3mtpa CIL ore processing facility, aerodrome with sealed runway, associated tailings storage facilities, several power stations, water supply, workshops, and administration offices. A modern accommodation camp is located within a few kilometres of the Enterprise mining area. A 70km gravel access road links Carosue Dam Operations to the gravel section of Yarri Road. Both the Saracen and Shire of Kalgoorlie gravel roads are well maintained.
Costs	*The derivation of, or assumptions made, regarding projected capital costs in the study.*	Capital costs relating to the start-up establishment and pre striping of the pit is included in the financial modelling. Other capital costs around camp and accommodation are minor given the close proximity to existing Carosue Dam Operations.
	The methodology used to estimate operating costs.	Operating costs for open pit mining have been derived from a combination of actual costs from SGM's Carosue Dam/Thunderbox Operations and costs supplied by various contract mining companies and independent consultants. Operating costs for ore processing, haulage and administration have been derived from known parameters at Carosue Dam operations.
	Allowances made for the content of deleterious elements	Previous operational experience at Monty's Elliot's did not reveal any deleterious elements within the ore or waste that required any additional cost allowances.

Section 4: Estimation and Reporting of Ore Reserves		
Criteria	JORC Code Explanation	Commentary
	The derivation of assumptions made of metal or commodity price(s), for the principal minerals and co-products	An assumed gold price of AUD$1,750/oz has been adopted for financial modelling. No allowance is made for silver by-products.
	The source of exchange rates used in study	All revenue and cost calculations have been made in AUD, so no exchange rate usage or assumptions have been necessary.
	Derivation of transportation charges	Costs associated with bullion transportation have been derived from existing contractual arrangements at Carouse Dam.
	The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.	Costs associated with refining have been derived from existing contractual arrangements at Carouse Dam.
	The allowances made for royalties payable, both Government and private.	Royalty costs are a 2.5% royalty payable to the Western Australian state government, and a 1.5% royalty payable to IRC.
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.*	For the purposes of the Ore Reserve Estimation it has been assumed that there is no gold hedging. All gold production will be sold at spot price to the Perth Mint.
	The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products	Assumed gold price of AUD$1,750/oz has been adopted for financial modelling. No allowance is made for silver by-products.
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.	There is a transparent quoted market for the sale of gold.
	For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.	N/A
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.*	The Ore Reserve Estimation is based on a detailed life of mine pit design and reflects positive economic outcomes. All relevant capital and operating costs as well as revenue and royalty factors have been included with appropriate discount factor for cash flow analysis.
	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*	Monty's Elliot's is located within close proximity to Carosue Dam operations, in production since 2009. Saracen has good relations with neighbouring stakeholders, including engagement with the local pastoralists and the traditional owners and those relationships have been maintained and strengthened over the time. The mine is located on leasehold pastoral land with compensation agreements in place with the local pastoralist. Granted mining leases cover all of the proposed mining and processing assets.

Section 4: Estimation and Reporting of Ore Reserves		
Criteria	JORC Code Explanation	Commentary
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	Water inrush is identified as naturally occurring risk with in the operation and has been addressed by the construction of appropriate water diversion bunds to provide safe and risk free work environment. The sufficient bund wall constructed when pit was in operation and currently still in place.
	The status of material legal agreements and marketing arrangements	Contracts are in place for all critical goods and services to operate Carosue Dam Operations.
	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.	A Mining Proposal will be required to be submitted for the mine reserve pit. All other Statutory permits including vegetation clearing, dewatering and discharge licences are in place and valid.
Classification	*The basis for the classification of the Ore Reserve into varying confidence categories*	The Ore Reserve Estimate classification has been made in accordance with the JORC code 2012. The Ore Reserve Estimate classified as being Proved and Probable has been derived from the Mineral Resource classified as Indicated and Measured only.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	Cost assumptions and modifying factors applied to the pit optimisation and subsequent designs were derived from current operational data relating to Saracen's Carosue Dam and Thunderbox operations, and supplied from contract mining companies and independent consultants. Results of these optimisations and the resultant analysis reflect the Competent Person's view regarding the Monty's Elliot's deposit.
	The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any)	100% of Probable ore from the Ore Reserve estimate has been derived from the Indicated Mineral Resource category.
Audits or reviews	*The results of any audits or reviews of Ore Reserve estimates*	The Ore Reserve Estimation process is in line with the Saracen Ore Reserve Policy and undergone internal review.
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 geo-statistical 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 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*	The Ore Reserve estimate has been prepared within the guidelines of the 2012 JORC Code. The relative confidence of the estimate complies with the criteria of Probable Ore Reserves. Based upon; - Resource estimate - significant operating history, - application of current industry practices, - appropriate operating and capital costs, The range of the modifying factors and mining parameters applied are reasonable and confidence in the resulting reserve estimate is reasonable. The reserve mine design has adopted all reasonable modifying factors and financial analysis used in the estimated Ore Reserve have been the subject to peer review internally, and the Competent Person is confident that it is an accurate estimation of the reserve. The Monty's Elliot's pit will utilise the same grade control methods that are widely utilised at current Saracen open pit operations.

Section 4: Estimation and Reporting of Ore Reserves		
Criteria	JORC Code Explanation	Commentary
	evaluation. Documentation should include assumptions made and the procedures used. *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.* *It is recognised that this may not be possible or appropriate in all circumstances. These statements or relative accuracy and confidence of the estimate should be compared with production data, where available.*	

Twin Peaks

Section 1 Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
Sampling Techniques	*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.*	Sampling methods undertaken by Saracen at Twin Peaks have included reverse circulation (RC) and diamond drillholes (DD). Historic methods conducted since 1991 have included aircore (AC), rotary air blast (RAB), reverse circulation and diamond drillholes.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used	Sampling for diamond and RC drilling is carried out as specified within Saracen sampling and QAQC procedures as per industry standard. RC chips and diamond core provide high quality representative samples for analysis. RC, RAB, AC and DD core drilling was completed by previous holders to industry standard at that time (1991- 2004).
	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 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. *Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information*	Diamond core is NQ sized, sampled to 1m intervals and geological boundaries where necessary and cut into half core to give sample weights under 3 kg. Samples are selected to weigh less than 3 kg to ensure total sample inclusion at the pulverisation stage. RC chips are cone split and sampled into 1m intervals with total sample weights under 3kg Saracen core and chip samples are crushed, dried and pulverised to a nominal 90% passing 75µm to produce a 50 g sub sample for analysis by FA/AAS. Historical AC, RAB, RC and diamond sampling was carried out to industry standard at that time. Analysis methods include fire assay, aqua regia and unspecified methods.
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 deposit was initially sampled by 41 AC holes, 185 RAB holes, 110 RC holes (assumed standard 5 ¼" bit size) and 21 surface diamond HQ core and unknown diameter holes. Saracen has completed 7 surface RC precollar with NQ diamond tail drill holes (precollars averaging 241m, diamond tails averaging 209m) , and 11 RC holes. Diamond tails were oriented using an Ezy-mark tool. It is unknown if historic surface diamond drill core was oriented.
Drill Sample Recovery	*Method of recording and assessing core and chip sample recoveries and results assessed*	Diamond core recovery percentages calculated from measured core versus drilled intervals are logged and recorded in the database. Recoveries average >98%. RC sampling recoveries are recorded as a percentage based on a visual weight estimate; no historic recoveries have been recorded.
	Measures taken to maximise sample recovery and ensure representative nature of the samples	Diamond core is reconstructed into continuous runs on an angle iron cradle for orientation marking. Depths are checked against depth given on the core blocks. During RC campaigns daily rig inspections are carried out to check splitter condition, general site and address general issues. Historical AC, RAB, RC and diamond drilling to industry standard at that time.

Section 1 Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
	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.	Diamond drilling has high recoveries meaning loss of material is minimal. There is no known relationship between sample recovery and grade for RC drilling. Any historical relationship is not known.
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.* *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.*	Logging of diamond drill core and RC chips records lithology, mineralogy, texture, mineralisation, weathering, alteration, veining and other features. Geotechnical and structural logging is carried out on all diamond holes to record recovery, RQD, defect number, type, fill material, shape and roughness and alpha and beta angles. Chips from all RC holes are stored in chip trays for future reference. Core is photographed in both dry and wet state. Qualitative and quantitative logging of historic data varies in its completeness.
	The total length and percentage of the relevant intersections logged	All diamond drillholes and exploration RC holes are logged in full. Historical logging is approximately 95% complete.
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.*	All drill core is cut in half onsite using an automatic core saw. Samples are always collected from the same side. Historic diamond drilling was half core sampled or sampled via unknown methods.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	All RC samples are cone split. Occasional wet samples are encountered; increased air capacity is routinely used to aid in keeping the sample dry when water is encountered. Historic AC, RAB and RC drilling was sampled using spear, riffle and unknown methods.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	The sample preparation of diamond core and RC chips adhere to industry best practice. It is conducted by a commercial laboratory and involves oven drying, coarse crushing then total grinding to a size of 90% passing 75 microns. Best practice is assumed at the time of historic sampling.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	All subsampling activities are carried out by commercial laboratory and are considered to be satisfactory. Sampling by previous holders assumed to be industry standard at the time.
	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.	Duplicate sampling is carried out at a rate of 1:10 for exploration drilling and is sampled directly from the on-board splitter on the rig. These are submitted for the same assay process as the original samples and the laboratory are unaware of such submissions. Sampling by previous holders assumed to be industry standard at the time.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Sample sizes are considered to be appropriate.
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.*	RC chip samples, grade control chip samples and diamond core are analysed by external laboratories using a 50g fire assay with AAS finish. This method is considered suitable for determining gold concentration in rock and is a total digest method. Historic sampling includes fire assay, aqua regia and unknown methods.
	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 have been utilised for reporting gold mineralisation at Twin Peaks.
	Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks)	Certified reference material (standards and blanks) with a wide range of values are inserted into every drillhole at a rate of 1:25 for exploration RC and DD drilling. These are not identifiable to the laboratory.

Section 1 Sampling Techniques and Data

Criteria	JORC Code Explanation	Commentary
	and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.	QAQC data returned are checked against pass/fail limits with the SQL database and are passed or failed on import. A report is generated and reviewed by the geologist as necessary upon failure to determine further action. QAQC data is reported monthly. Sample preparation checks for fineness are carried out to ensure a grind size of 90% passing 75 microns. The laboratory performs a number of internal processes including standards, blanks, repeats and checks. QAQC data analysis demonstrates sufficient accuracy and precision. Industry best practice is assumed for previous holders.
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.*	Significant intercepts are verified by the Geology Manager and corporate personnel.
	The use of twinned holes.	No specific twinned holes have been drilled at Twin Peaks.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols	Primary data is collated in a set of excel templates utilising lookup codes. This data is forwarded to the Database Administrator for entry into a secure acQuire database with inbuilt validation functions. Data from previous owners was taken from a database compilation and validated as much as practicable before entry into the Saracen acQuire database.
	Discuss any adjustment to assay data.	No adjustments have been made to assay data. First gold assay is utilised for resource estimation.
Location of data points	*Accuracy and quality of surveys used to locate drillholes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.*	Exploration drillholes are located using a Leica 1200 GPS with an accuracy of +/- 10mm. Downhole surveys are carried out using an Eastman single shot camera at regular intervals (usually 30m). A number of drillholes have also been gyroscopically surveyed. Previous holders' survey accuracy and quality is unknown.
	Specification of the grid system used.	A local grid system (Old Plough Dam West) is used. The two point conversion to MGA_GDA94 zone 51 is OPDWEast OPDWNorth RL MGAEast MGANorth RL Point 1 8035.58 20901.34 0 431948.52 6674917.54 0 Point 2 8147.50 17313.10 0 434806.92 6672750.25 0 Historic data is converted to Old Plough Dam West local grid upon export from the database.
	Quality and adequacy of topographic control.	Topographic control originally used site based survey pickups in addition to Kevron aerial photogrammetric surveys with +/- 5m resolution. Pre mining, new and more detailed topography has since been captured and will be used in future updates and for subsequent planning purposes.
Data spacing and distribution	*Data spacing for reporting of Exploration Results.*	The nominal spacing for exploration drilling is 20 m x 20 m
	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.	Data spacing and distribution are sufficient to establish the degree of geological and grade continuity appropriate for JORC classifications applied.
Orientation of data in relation to geological structure	*Whether sample compositing has been applied.*	Sample compositing is not applied until the estimation stage. Some historic RAB and RC sampling was composited into 3-4m samples with areas of interest re-sampled to 1m intervals. It is unknown at what threshold this occurred.
	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 drillholes are positioned to achieve optimum intersection angles to the ore zone as are practicable.

Section 1 Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
	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.	No significant sampling bias is thought to occur due to orientation of drilling in regards to mineralised structures.
Sample security	*The measures taken to ensure sample security.*	Samples are prepared on site under supervision of Saracen geological staff. Samples are selected, bagged into tied numbered calico bags then grouped into secured cages and collected by the laboratory personnel. Sample submissions are documented via laboratory tracking systems and assays are returned via email
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	An internal review of companywide sampling methodologies was conducted to create the current sampling and QAQC procedures.

Section 2 Reporting of Exploration Results		
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 Twin Peaks pit is located on M31/208. The tenement is held 100% by Saracen Gold Mines Pty Ltd, a wholly owned subsidiary of Saracen Mineral Holdings Limited. Mining Lease M31/208 has a 21 year life (held until 2023) and is renewable for a further 21 years on a continuing basis. Mining Lease M31/208 is subject to two caveats; IRC (60H/067) and RG Royalties, LLC (513933). The tenement is the subject of royalty of 1.5 % of Sale Proceeds or otherwise Mineral Value of all minerals extracted (excluding Operating Expenses) payable to Resource Capital Fund III L.P. The tenement is the subject of two royalties payable to Royal Gold. The first involves a royalty of $6 per ounce of gold which is in excess of 265,745 ounces of gold produced from the tenement. The second involves a royalty of $10 per ounce of gold in excess of 160,333 ounces of gold produced from the area. All production is subject to a Western Australian state government NSR royalty of 2.5%. Mining Lease M31/208 is subject to the Gindalbie Pastoral Compensation Agreement. The tenement is affected by the Maduwongga (WC2017/001) and Nyalpa Pirniku (WC2019/002) native title claims. There are no registered Aboriginal Heritage sites on the tenement. The Mining Rehabilitation Fund applies to the tenement.
	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.	The tenement is in good standing and there are no known impediments to obtaining a licence to operate.
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	Exploration at Twin Peaks began in 1991 with a soil auger program carried out by PanContinental Mining outlining a number of anomalies that were followed up with RAB drilling, intersecting encouraging mineralisation. Geophysical surveys followed by RAB, RC and diamond drilling were then carried out by PanCon to further define the mineralised zone and strike extensions of the Twin Peaks deposit and calculate a resource. Goldfields acquired the project and completed further RC and DD resource definition drilling as well as RAB and aircore traverses targeting mineralisation extensions, and geophysical surveys. PacMin carried out infill resource drilling before Sons of Gwalia took ownership of the project and mined the Twin Peaks open pit between 2003 and 2004. Regional aircore and RC drilling was carried out before the collapse of Sons of Gwalia and takeover of the project by St Barbara.

Section 2 Reporting of Exploration Results		
Criteria	**JORC Code Explanation**	**Commentary**
Geology	*Deposit type, geological setting and style of mineralisation.*	The Twin Peaks deposit lies within a greenstone-granite belt within the Edjudina-Kanowna region of the Archaean Yilgarn Block. The Twin Peaks mineralisation is located in metasedimentary rocks below the regional-scale Kilkenny-Yilgangi Fault within an intensely fractured, easterly plunging alteration zone. The mineralisation is associated with potassic alteration surrounded by carbonate zones within a quartz-feldspar dominated turbiditic sequence that appears to be isoclinally folded, with silt to sand particle size. The stratigraphy strikes northwest and dips on average 60 - 70 degrees to the northeast with 'way up' indicators suggesting the entire section in overturned.
Drillhole 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:* • *easting and northing of the drill hole collar* • *elevation or RL (Reduced Level – elevation* • *above sea level in metres) of the drill hole collar* • *dip and azimuth of the hole* • *down hole length and interception depth* • *hole length.* • *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.*	All material data is periodically released on the ASX: Material relating to Twin Peaks was released on 27/01/2012. Future drill hole data will be periodically released or when a results materially change the economic value of the project.
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 significant intercepts have been length weighted with a minimum Au grade of 1ppm. No high grade cut off has been applied.
	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 with minimum width of 1m and maximum width of 3m for internal dilution. Where stand out higher grade zone exist with in 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.	Metal equivalent values are not reported
Relationship between mineralisation widths and intercept lengths	*These relationships are particularly important in the reporting of Exploration Results. If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* *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').*	Previous announcements included sufficient detail to clearly illustrate the geometry of the mineralisation and the recent drilling.

Section 2 Reporting of Exploration Results		
Criteria	**JORC Code Explanation**	**Commentary**
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.*	All significant exploration results released by Saracen are accompanied by the appropriate diagrams and maps at the time of the release.
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.*	All results from the recent campaign have been reported, irrespective of success or not
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 substantive data acquisition has been completed in recent times.
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).* *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive*	Twin Peaks is a current exploration play that will be further reviewed post optimisation processes.

Section 3: Estimation and Reporting of Mineral Resources		
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.*	The database used for the estimate an extract from an AcQuire SQL database. The primary database is regulated by a locked framework called the AcQuire data model which fixes the relationships between tables. The data model minimises the potential for data collection and data usage errors through pre-determined look up tables, storage and export functions. User defined permissions also regulate the ability to add, edit or extract data. Primary data is recorded using typical manual translation of logging and data capture from written logs and direct import of csv tables through a data import scheme where data is validated upon import or direct data entry options into the database using predefined look up values.
	Data validation procedures used.	The rigid structure of the AcQuire data model is such that predefined rules and look up tables are applied to all data entry. Data that does not meet the criteria are highlighted and moved to a buffer area until the data is rectified to meet the passing rules.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	**JORC Code Explanation**	**Commentary**
Site Visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.*	The competent person together with other Saracen's geology personnel have carried out site visits to the Twin Peaks deposit on numerous occasions. The competent person has inspected the deposit and has built a sound understanding of the deposit geology. All geological processes undertaken by Saracen concerning Twin Peaks Resource have been done using Saracen's standard procedures.
	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.*	The interpretation has been based on the detailed geological information obtained from both exploration and GC data. This knowledge is based on extensive geological logging of drill core, RC chips, detailed open pit mapping and assay data. The Twin Peaks mineralisation is located in metasedimentary rocks below the regional-scale Kilkenny-Yilgangi Fault within an intensely fractured, easterly plunging alteration zone The mineralisation is associated with potassic alteration surrounded by carbonate zones within a quartz-feldspar dominated turbiditic sequence that appears to be isoclinally folded, with silt to sand particle size. The stratigraphy strikes northwest and dips on average 60 - 70 degrees to the northeast with 'way up' indicators suggesting the entire section in overturned.
	Nature of the data used and any assumptions made.	The interpretations have been constructed using all available geological logging descriptions including but not limited to, stratigraphy, lithology, texture, and alteration. GC data has been used to fine tune the dip geometries of the ore lodes and help define the subsidiary domains. Interpreted cross cutting faults have been observed and have been use to guide disruptions in the position of the key mineralised domains. The dominant structural controls on mineralisation appear to be the east dipping foliation, the fault hosting the east-west dyke and south-plunging folds. The large ellipsoid above 100 metres appears to have developed at the intersection of the two main structural controls. Surface mapping had been included in the interpretation. Cross sectional interpretations of the mineralisation have been created and from the basic framework through which the 3D wireframe solid is built.
	The affect, if any, of alternative interpretations on Mineral Resource estimation.	In the 2015 reinterpretation the GC data was also considered which highlighted a more moderate dip to the major domains and the occurrence of subsidiary lodes that were previously undefined by exploration data alone. Saracen has conducted extensional down dip drilling which supports the current interpretation which is considered to be robust.
	The use of geology in guiding and controlling the Mineral Resource estimation.	Geological controls and relationships were used to define mineralised domains. The most important distinction is between the Breccia Zone and the Footwall Zone. This separation was handled by the position of the transitional to fresh boundary. The breccia zone is within the transitional area and the footwall zone is in the fresh area.
	The factors affecting continuity both of grade and geology.	At the deposit scale the gold distribution is predominantly characterised by a quartz-arsenopyrite breccia within a sericite-carbonate alteration envelope. This has been overprinted by a later quartz-pyrite-biotite vein event, which has remobilised or introduced a new phase of Au mineralisation. The dominant structural controls on mineralisation appear to be the east dipping foliation, the fault hosting the east-west dyke and south-plunging folds. The large ellipsoid above 100 metres appears to have developed at the intersection of the two main structural controls.
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.*	Within 100 metres of the surface, the orebody has an ellipsoid shape measuring approximately 90 x 45 metres. Below this depth, mineralisation is pipe-shaped, measuring approximately 50 x 20 metres (in the horizontal plane) and plunging to grid south east at around 50°. The deposit is open below 300m.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	**JORC Code Explanation**	**Commentary**
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.*	Based on drill spacing 20m x 20m to 8m x 6m (GC), the gold grade was estimated by ordinary kriging in Micromine into the parent cells, 10m East X 20m North X 5m RL that were subcelled to 1m x 2m x 1m. Hard boundaries were utilised between the major domains at Twin Peaks. There were two model runs, one that used exploration data only; the other used both exploration and GC data. These models used different composites and topcuts, however the estimation technique and model parameters remained consistent. The exploration data was composited to 1m with a minimum of 0.3m which represented the majority (97%) length of the data. With the addition of the GC data to the dataset, the composited length was changed to 1.5m and a minimum of 0.3m. This represented the data with 79% at an average length of 1.5m. Intervals with no assays were excluded from the compositing routine. The influence of extreme sample distribution outliers was reduced by top-cutting where required. The top-cut levels were determined using a combination of top-cut analysis tools (grade histograms, mean variance plots and CVs). Top-cuts were reviewed and applied on a domain basis for each dataset. Due to the flexures in the mineralised envelopes, the estimation process was in unfolded space. The blocks are relocated back to their original space after the estimation. Variography was conducted in unfolded space using Snowden's supervisor software. KNA was utilised to determine the optimal block size, sample numbers and search parameters. Finally, based on estimate validation, the GC & exploration informed model was spliced above the 220mRL and the exploration only informed estimate was utilised below the 220mRL.
	The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.	Comparisons with previous estimates, (2009, & 2011) indicate that the current model contains 25% more tonnes, 22% less grade for the same ounces.
	The assumptions made regarding recovery of by-products.	No assumptions have been made with respect to the recovery of by-products.
	Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulfur for acid mine drainage characterisation).	There has been no estimate at this point of deleterious elements.
	In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.	Based on drill spacing 20m x 20m to 8m x 6m (GC), the gold grade was estimated by ordinary kriging in Micromine into the parent cells, 10m East X 20m North X 5m RL that were subcelled to 1m x 2m x 1m. Hard boundaries were utilised between the major domains at Twin Peaks Estimation was into the Parent Cells. A three pass search was used, whereby the search ellipse dimensions for the first search corresponded to the mineralisation continuity ranges interpreted from the variogram analysis, (15 – 25m in major direction). The second search expanded the ellipse to outer ranges of the variogram (25 – 50m major direction) and the minimum number of samples required to inform the estimation were decreased. The dimensions of the third search were doubled and the minimum samples dropped to ensure complete estimation of domains in zones of limited data. The minimum and maximum samples used were 6 and 32 samples respectively, where the minimum dropped to 4 for more sparsely populated domains, particularly for the 3rd search.
	Any assumptions behind modelling of selective mining units.	No selective mining units have been assumed.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	**JORC Code Explanation**	**Commentary**
	Any assumptions about correlation between variables.	No assumptions have been made regarding correlation between variables.
	Description of how the geological interpretation was used to control the resource estimates.	The geological interpretation strongly correlates with the mineralised domains within metasediments, inside an intensely fractured, pipe like, easterly plunging alteration zone. This alteration pipe has a central high gold grade core associated with potassic alteration and surrounded by carbonate zones. All wireframe boundaries including those where lithology and mineralisation correspond, hard boundaries are enforced.
	Discussion of basis for using or not using grade cutting or capping.	Statistical analysis showed the populations in each domain at Twin Peaks to generally have a reasonable coefficient of variation (<1.6) but it was noted that some of the estimation domains included outlier values that required top-cut values to be applied.
	The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.	Validation of the block model involved a volumetric comparison of the resource wireframes to the block model volumes with 100% reconciliation. Validating the estimate, compared block model grades to the input data that resulted in comparisons within the 10% allowed tolerance. Swathe plots were also used showing northing, easting and elevation comparisons. These showed good conformance. Visual validation of grade trends and metal distributions was carried out. Discrepancies with historic mined data and reported poor reconciliations at the time make direct comparisons to the current model inaccurate. The final ounces reported for the mined material of the 2015 model sits between the two reported mined values from 2004.
Moisture	*Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	All tonnages are estimated on a dry basis.
Cut-off parameters	*The basis of the adopted cut-off grade(s) or quality parameters applied.*	Based on Saracen's current economic operations at Carosue Dam, and the natural grade distinction above background, a grade of 0.5g/t has been chosen. A 1.2 g/t cut-off was used to define the underground resource based on economic considerations.
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.*	Mining of the Twin Peaks at this stage deposit will be dominantly by underground mining methods involving mechanised mining techniques. The geometry of the deposit will make it amenable to mining methods currently employed in many underground operations in similar deposits around the world. No assumptions on mining methodology have been made as yet. To best capture "reasonable prospects for eventual economic of extraction", the mineral resource was reported within MSO underground shells generated at 1.2 g/t cut-off.
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 process and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported*	The following conclusions can be made from the test work conducted at Twin Peaks: • Mineralogical analysis of the ore showed a large proportion of free gold with particles at 10m to 100m in size. No composite gold was detected. Sulphides present were mainly as pyrite and arsenopyrite. • High proportion of gold recovered to Knelson concentrate (up to 83%). • An overall gold recovery of 93% was obtained for this material. The gold recoveries ranged between 90% to 93%, with the lower recovery attributed to gravity stage / intensive cyanidation inefficiencies. • Grindability tests showed low ore hardness with a BWi result of 6.9 kWh/t, and low abrasiveness with an abrasion index value of 0.116.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC Code Explanation	Commentary
	with an explanation of the basis of the metallurgical assumptions made.	• The slurry viscosity measurements at the various shear rates showed no major pumping or mixing issues should be experienced with this material. • The samples exhibited low cyanide consumptions and very low oxygen demands. A large variation in gold recoveries were obtained depending on test work methods used. Tests which utilised a gravity stage were deemed as most appropriate for assessing anticipated plant performance. The testwork showed that high gold recoveries of 93% for the Twin Peaks material, is achievable. No major processing difficulties are anticipated for this deposits (assuming the material tested is representative of the ore deposit).
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 greenfields 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.*	No processing or beneficiation of ore expected on these tenements, as ore is hauled to Carosue Dam Mine site for processing. Rehabilitation of Twin Peaks WRL is progressing with 45% of the total area rated as stable with self-sustaining vegetation. The landform is functionally intact and there is no loss of material to the surrounding landscape. While ecosystem diversity completion targets are mostly achieved, landscape stability targets are yet to be achieved. Approximately 70% of the rehabilitated ROM landform, east of Twin Peaks' WRL is poorly vegetated, of which 50% is highly saline. Remedial treatment may be required to achieve 'sign-off'. Repair works are currently under review by SGM management and will be factored into future budgets.
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.*	Previous owners have taken routine density measurements when drilling diamond core. The method of calculation is the water displacement technique. Density in the current model has been assigned based on oxidation state, using the most recent density determinations carried out by Saracen on the diamond drill samples. A detailed set of density data were available for Twin Peaks; these had been rigorously validated. The data was flagged by domain and analysed statistically.
	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.	The frequency and distribution is unknown at this point in time. It has assumed from the good reconciliation performance from mine to mill that the determined density assignments from the mine are accurate.
	Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	Average mean of densities collected for each lithological and weathering profile 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 mineral resource has been classified into Measured, Indicated and Inferred categories based on drill hole spacing, geological confidence, and grade continuity and estimation quality. The combination of these factors together guide the construction of wireframes which select and codes the appropriate blocks with the nominated resource classification category.
	Whether appropriate account has been taken of all the relevant factors (i.e. relative confidence in tonnage/grade	The input data is comprehensive in its coverage of the mineralisation and does not favour or misrepresent in-situ mineralisation. Geological control at Twin Peaks consists of a primary mineralisation is associated with easterly

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC Code Explanation	Commentary
	estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).	plunging alteration zone. The definition of mineralised zones is based on a high level of geological understanding producing a robust model of mineralised domains. The validation of the block model shows good correlation of the input data to the estimated grades.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The geological model and the mineral resource estimate reflect the competent person's view of the deposit.
Audits or reviews	*The results of any audits or reviews of Mineral Resource estimates.*	Saracen has adopted a process for geological modelling, estimation and reporting of mineral resources that meets high industry standards. No external audits have been conducted on this deposit as Saracen is still conducting an internal scoping study.
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 relative accuracy of the Mineral Resource estimate is reflected in the reporting of the Mineral Resource as per the guidelines of the 2012 JORC Code. The resource estimates have undergone a robust validation process, and as such, the competent person is satisfied that the resources estimated in the block model are a true representation of the global insitu resources.
	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 statements relate to a global estimate of tonnes and grade.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	The Twin Peaks resource model was done using Saracen's resource estimation procedures. The model has been validated thoroughly and the competent person is satisfied that the estimated gold grades give a true reflection of the global insitu resources. The model had been compared with previous production data and it can be concluded that the model is conservative based on all the available data.

Pinnacles

Section 1: Sampling Techniques and Data

Criteria	JORC Code Explanation	Commentary
Sampling Techniques	*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.*	Saracen has undertaken reverse circulation (RC) drilling at Pinnacles. Historic sampling methods conducted since 1984 have included rotary air blast (RAB) and RC drillholes.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used	Sampling for diamond and RC drilling is carried out as specified within Saracen sampling and QAQC procedures as per industry standard. RC chips provide high quality representative samples for analysis. RC and RAB drilling was completed by previous holders to industry standard at that time (1984- 2003).
	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 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information	RC chips are cone split and sampled into 1m intervals with total sample weights under 3kg Samples are selected to weigh less than 3 kg to ensure total sample inclusion at the pulverisation stage. Saracen chip samples are crushed, dried and pulverised to a nominal 90% passing 75µm to produce a 50g sub sample for analysis by FA/AAS. Historical RAB and RC sampling was carried out to industry standard at that time. Analysis methods include fire assay and atomic absorption spectroscopy.
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 deposit was initially sampled by 36 RAB holes and 63 RC holes (assumed standard 5 ¼ ''bit size). Saracen has completed 42 surface RC drill holes.
Drill Sample Recovery	*Method of recording and assessing core and chip sample recoveries and results assessed*	RC sampling recoveries are recorded in the database as a percentage based on a visual weight estimate; no historic recoveries have been recorded.
	Measures taken to maximise sample recovery and ensure representative nature of the samples	During RC drilling daily rig inspections are carried out to check splitter condition, general site and address general issues. Historical RAB and RC drilling to industry standard at that time.
	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.	There is no known relationship between sample recovery and grade for RC drilling. Any historical relationship is not known.
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.*	Logging of RC chips records lithology, mineralogy, texture, mineralisation, weathering, alteration and veining. Chips from all RC holes are stored in chip trays for future reference. Qualitative and quantitative logging of historic data varies in its completeness.

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	
	The total length and percentage of the relevant intersections logged	All RC drillholes holes are logged in full. Historical logging is approximately 95% complete.
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.*	No diamond drilling has been completed at Pinnacles.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	All exploration RC samples are cone split. Occasional wet samples are encountered; increased air capacity is routinely used to aid in keeping the sample dry when water is encountered. Historic RAB and RC drilling was sampled using riffle and unknown methods.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	The sample preparation of RC chips adheres to industry best practice. It is conducted by a commercial laboratory and involves oven drying, coarse crushing then total grinding to a size of 90% passing 75 microns. Best practice is assumed at the time of historic sampling.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	All subsampling activities are carried out by commercial laboratory and are considered to be satisfactory. Sampling by previous holders assumed to be industry standard at the time.
	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.	RC field duplicate samples are carried out at a rate of 1:20 and are sampled directly from the on-board splitter on the rig. These are submitted for the same assay process as the original samples and the laboratory are unaware of such submissions. Sampling by previous holders assumed to be industry standard at the time.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Sample sizes of 3kg are considered to be appropriate given the grain size (90% passing 75 microns) of the material sampled.
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.*	RC chip samples are analysed by external laboratories using a 50g fire assay with AAS finish. This method is considered suitable for determining gold concentrations in rock and is a total digest method. Historic sampling includes fire assay and atomic absorption spectroscopy.
	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 have been utilised for reporting gold mineralisation.
	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.	Certified reference material (standards and blanks) with a wide range of values are inserted into every drillhole at a rate of 1:25 for exploration RC. These are not identifiable to the laboratory. QAQC data returned are checked against pass/fail limits with the SQL database and are passed or failed on import. A report is generated and reviewed by the geologist as necessary upon failure to determine further action. QAQC data is reported monthly. Sample preparation checks for fineness are carried out to ensure a grindsize of 90% passing 75 microns. The laboratory performs a number of internal processes including standards, blanks, repeats and checks. QAQC data analysis demonstrates sufficient accuracy and precision. Industry best practice is assumed for previous holders.
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.*	Significant intercepts are verified by the Geology Manager and corporate personnel.
	The use of twinned holes.	No specific twinned holes have been drilled at Pinnacles.

Section 1: Sampling Techniques and Data

Criteria	JORC Code Explanation	Commentary
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols	Primary data is collated in a set of excel templates utilising lookup codes. This data is forwarded to the Database Administrator for entry into a secure acQuire database with inbuilt validation functions. Data from previous owners was taken from a database compilation and validated as much as practicable before entry into the Saracen acQuire database.
	Discuss any adjustment to assay data.	No adjustments have been made to assay data. First gold assay is utilised for resource estimation.
Location of data points	*Accuracy and quality of surveys used to locate drillholes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.*	Exploration drillholes are located using a Leica 1200 GPS with an accuracy of +/- 10mm. Downhole surveys are carried out using an Eastman single shot camera at regular intervals (usually 30m). A number of drillholes have also been gyroscopically surveyed. Previous holders' survey accuracy and quality is unknown
	Specification of the grid system used.	A local grid system (Pinnacles East) is used. The two point conversion to MGA_GDA94 zone 51 is PEEast PENorth RL MGAEast MGANorth RL Point 1 993 976 0 439656.00 6649294.68 0 Point 2 974 1060 0 439660.00 6649381.68 0 Historic data is converted to the Pinnacles East local grid upon export from the database.
	Quality and adequacy of topographic control.	Topographic control originally used site based survey pickups in addition to Kevron aerial photogrammetric surveys with +/- 5m resolution. Pre mining, new and more detailed topography has since been captured and will be used in future updates and for subsequent planning purposes.
Data spacing and distribution	*Data spacing for reporting of Exploration Results.*	The nominal spacing for drilling is predominantly 15m x15m.
	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.	Data spacing and distribution are sufficient to establish the degree of geological and grade continuity appropriate for JORC classifications applied.
Orientation of data in relation to geological structure	*Whether sample compositing has been applied*	Sample compositing is not applied until the estimation stage. Some historic RC sampling was composited into 3m samples.
	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 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.	No significant sampling bias has been recognised due to orientation of drilling in regards to mineralised structures.
Sample security	*The measures taken to ensure sample security.*	Samples are prepared on site under supervision of Saracen geological staff. Samples are selected, bagged into tied numbered calico bags then grouped into secured cages and collected by the laboratory personnel. Sample submissions are documented via laboratory tracking systems and assays are returned via email
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	An internal review of companywide sampling methodologies was conducted to create the current sampling and QAQC procedures. No external audits or reviews have been conducted.

Section 2: Reporting of Exploration Results		
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 Pinnacles resource is located on M28/243. The tenement is held 100% by Saracen Gold Mines Pty Ltd, a wholly owned subsidiary of Saracen Mineral Holdings Limited. Mining Lease M28/243 has a 21 year life (held until 2031) and is renewable for a further 21 years on a continuing basis. Mining Lease M28/243 is subject to one royalty agreement and a caveat (454H/067). All production is subject to a Western Australian state government NSR royalty of 2.5%. There is one registered Aboriginal Heritage site within Mining Lease M28/243 (ID19141).
	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.	The tenement is in good standing and there are no known impediments to obtaining a license to operate.
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	Numerous companies have undertaken extensive gold exploration in the Pinnacles region beginning in the 1980's. Central Kalgoorlie Gold Mines carried out mapping, geological and aerial surveys and RC drilling, yielding no significant results. Esmeralda Resources acquired the project and carried out channel and costean sampling, rock chip and RC drilling, intersecting mineralisation and defining a resource. Various geochemical and geophysical surveys were then conducted by Cesium International, MIM and Troy Resources, outlining a number of anomalies. Aberfoyle acquired the leases and carried out RAB drilling to test previously defined anomalies. Minor mineralisation was encountered. Sons of Gwalia carried out a successful RC drilling program designed to intersect mineralisation at depth and further define the resource, as well as a regional shallow RAB program, which returned no significant gold. The project was acquired by St Barbara's following the collapse of Sons of Gwalia.
Geology	*Deposit type, geological setting and style of mineralisation.*	The Pinnacles project area is situated within the Eastern Goldfields Province of the Archaean Yilgarn Craton, on the eastern margin of the Norseman- Wiluna greenstone belt. Geology of the project area is dominated by volcanically derived sandstones, black shales, mafic and ultramafic volcanics and granites. Gold mineralisation at Pinnacles is structurally controlled and defines three major domains, (Dom01, Dom02 and Dom02A) hosted within the black shale units. Intense mineralisation is associated with quartz veining and significant hematite and sulphide alteration and clay, which gives the highly mineralised zones a distinct orange brown colour. The high grade zones plunge gently (20 degrees) to the south. At depth (around the 245 to 255mRL) there is evidence of an easterly dipping (80 degrees) syn/post shear zone that obliterates the mineralisation in the major domain, Dom01.
Drillhole information	*A summary of all information material to the understanding of the exploration results including atabulation of the following information for all Material drill holes:* • *easting and northing of the drill hole collar* • *elevation or RL (Reduced Level – elevation* • *above sea level in metres) of the drill hole collar* • *dip and azimuth of the hole* • *down hole length and interception depth* • *hole length.*	All material data was periodically released on the ASX dated; 25/01/2013, 27/04/2012, 05/03/2012, 27/01/2012, 06/01/2012, 30/07/2008, 16/06/2008. Future drill hole data will be periodically released or when a results materially change the economic value of the project. Exclusion of the drilling information will not detract from the reader's view of the report.

Section 2: Reporting of Exploration Results		
Criteria	**JORC Code Explanation**	**Commentary**
	• *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.*	
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 significant intercepts have been length weighted with a minimum Au grade of 1ppm. No high grade cut off has been applied.
	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 with minimum width of 1m and maximum width of 3m for internal dilution. Where stand out higher grade zone exist with in 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.	Metal equivalent values are not reported
Relationship between mineralisation widths and intercept lengths	*These relationships are particularly important in the reporting of Exploration Results.* *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* *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').*	Previous announcements included sufficient detail to clearly illustrate the geometry of the mineralisation and the recent drilling. All results are reported as downhole lengths.
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.*	All significant exploration results released by Saracen are accompanied by the appropriate diagrams and maps at the time of the release.
Balanced Reporting	*Where comprehensive reporting of all Exploration Results are not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	All results from previous campaigns have been reported, irrespective of success or not.
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 substantive data acquisition has been completed in recent times.

Section 2: Reporting of Exploration Results		
Criteria	**JORC Code Explanation**	**Commentary**
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).* *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive*	The Pinnacle Deposit is a current exploration play that will be further reviewed post optimisation processes.

Section 3: Estimation and Reporting of Mineral Resources		
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.*	Saracen utilises AcQuire software on an SQL server database to securely store and manage all drillhole and sample information. Data integrity protocols are built into the system to ensure data validity and minimise errors.
	Data validation procedures used.	Data that is captured in the field is entered into Excel templates which are checked on import into the 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.
Site Visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.*	The Competent Person visited the geological area to assess geological competency and ensure integrity across all exploration 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.*	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 logging, drill results and geophysics.
	Nature of the data used and any assumptions made.	The interpretations have been constructed using all available geological logging descriptions including but not limited to, stratigraphy, lithology, texture, and alteration. It was highlighted that alteration style and colour can be adequately used to define hangingwall and footwall positions of the mineralised zone as well as a fault zone that cuts the primary ore zone and obliterates gold. Relogging of various historic RC holes and downhole magnetic surveys assisted in ore definition and propelled a geological theory of micro folding and fold nose geometry to the north of the deposit. Cross sectional interpretations of the mineralisation have been created and from the basic framework through which the 3D wireframe solid is built.
	The affect, if any, of alternative interpretations on Mineral Resource estimation.	Due to the reasonably simplistic nature of the mineralisation no alternative interpretations have been considered. Over the life of the project additional drilling campaigns have confirmed the strong north-south strike of the main mineralised zone.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC Code Explanation	Commentary
	The use of geology in guiding and controlling the Mineral Resource estimation.	The geology has heavily influenced the domains controlling the mineral resource estimation. The structurally controlled mineralisation within a sedimentary host is clearly defined by alteration style and colour that is dominated by a quartz-hematite-sulphide-clay assemblage. These mineralised domains were wireframed with hard boundaries.
	The factors affecting continuity both of grade and geology.	At depth (around the 245 to 255mRL) there is evidence of a north-south trending steeply east dipping syn/post faulted/shear zone that is not gold bearing. This creates a 10m barren zone within the main mineralised domain. Where drilling intersects this fault zone, sheared and altered sediments can be identified and are visually different to that of the Au bearing zones. Four southerly plunging high grade shoots were identified within the Main mineralised domain. These shoots, with increased alteration and sulphide enrichment, were wireframed as hard boundaries.
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.*	Pinnacles mineralisation extends from 850mN to 1180mN, 950mE – 1020mE to 180m below surface. The Pinnacles shear generally strikes North-South and dips 80 to 85° towards the West with a gentle southerly plunge. The plunge steepens to the north (up to 60°) in closer proximity to the interpreted fold nose. In the vicinity of the strongest gold mineralisation the high grade zones plunge consistently at 20° to south mimicking that of its host.
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.*	Block estimation has been completed using Datamine software. All compositing, wireframes, surfaces, rock and domain models were constructed in Micromine. All estimation uses these wireframes as hard boundaries. Estimation of parent blocks are interpolated, and assigned to sub-cells. The maximum distance of extrapolation is less than 40m. Univariate statistical analysis of length weighted, (1m), domain and regolith coded downhole composites have been completed for all domains and top-cuts applied where applicable. Extreme grades are not common in the data set excluding the high grade zones. The high grade shoots exhibited a greater number of outliers up to 61g/t. All domains have been analysed individually to determine specific top-cut values. Estimations used only RC and Diamond Drill results, negative Au grades were replaced with a value of 0.001g/t, and null assays were excluded from the sample data. Unfolding was carried out prior to variography and estimation to remove the local variances in dip and strike observed in the domains. Variogram modelling was completed with GeoAccess Professional software. This defined the special continuity with in the domains. The parameters determined from this analysis were used in the interpolation process.
	The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.	An inverse distance cubed estimate was run simultaneously with the ordinary kriged resource estimate, with an insignificant (0.01) variance between the global Au grade values. The Pinnacles resource model was compared to the previously run OK model of 2010. Additional drilling completed in 2011 and 2012 expanded the current resource to have additional 40% more tonnes and 42% more ounces than the prior 2010 model. This increase is geologically supported. There has been no production recorded for this deposit.
	The assumptions made regarding recovery of by-products.	No assumptions have been made with respect to the recovery of by-products.
	Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulfur for acid mine drainage characterisation).	There has been no estimate at this point of deleterious elements. Saracen is unaware if any elements other than gold have been assayed.

Section 3: Estimation and Reporting of Mineral Resources		
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 parent block sizes for the resource model are X (5m) by Y (10m) by Z (5m). These are deemed appropriate for the majority of the resource, where drill spacing is in the order of 15m x 15m to 10m x 15m. Parent blocks have been sub-celled to X (1.0m) by Y (1.0m) by Z (1.0m) to ensure that the wireframe boundaries are honoured and preserve the location and shape of the mineralisation. Search ranges have been informed by variogram modelling and knowledge of the drill spacing and the known mineralisation geometry including direction of maximum continuity. Three search estimation runs are used with the aim to satisfy the minimum sample criteria in the first search range where possible.
	Any assumptions behind modelling of selective mining units.	No selective mining units have been assumed.
	Any assumptions about correlation between variables.	No assumptions have been made regarding correlation between variables.
	Description of how the geological interpretation was used to control the resource estimates.	The geological interpretation strongly correlates with the mineralised domains and clearly defines the high grade zones. Hard wireframes were used to define all the mineralised domains. The estimation search parameters helped to control the extent of the barren waste zone (10-15m) observed in the main ore shoot.
	Discussion of basis for using or not using grade cutting or capping.	Statistical analysis of all domains highlighted minimal outliers and only the main domain (Dom01) and its associated high grade shoots required top cutting to eliminate the risk of overestimating in the local areas. Normal histogram and log probability plots were used to determine appropriate 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.	Several key model validation steps have been taken to validate the resource estimate. The mineral resource model has been stepped through visually in sectional and plan view to appreciate the composite grades used in the estimate and the resultant block grades. This has also been carried out in 3D with the composite grades and a point cloud of the model grades. Easting, Northing and Elevation swathe plots have been constructed to evaluate the composited assay means versus the mean block estimates. The mineral resource model has been constructed to include kriging efficiency and the slope of regression values. These values are used to measure the quality of the estimate. Natural deterioration of the quality is observed in areas where data density is lower. No production has taken place for this deposit.
Moisture	*Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	All tonnages are estimated on a dry basis.
Cut-off parameters	*The basis of the adopted cut-off grade(s) or quality parameters applied.*	Based on Saracen’s current economic operations at Carosue Dam, and the natural grade distinction above background, a grade of 0.4g/t has been chosen.
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*	There are reasonable grounds to assume that in the future the Pinnacles resource will be mined by conventional open pit methods given the close proximity to surface and the mean average grade of the mineralisation.

Section 3: Estimation and Reporting of Mineral Resources		
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 process 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.*	At this stage of the project there is no metallurgical data available.
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 greenfields 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.*	Environmental considerations are captured by Program of Work (PoW) requirements. Operations on these tenements are purely exploratory in nature to date.
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 density values applied to the Pinnacles estimation are largely based on historic density measures for similar lithological units in the same geological zones. The absence of diamond holes into the Pinnacles Deposit does not allow for accurate bulk density testing.
	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.	It is unknown how the historic bulk densities were measured. Any future bulk density measurements will follow the Saracen Metals standardised procedures. Saracen Metals have standardised procedures for bulk density testing. Most ore zones predominantly exist in transitional to fresh non porous material, however additional measures are taken to reduce moisture intake during the water displacement process if the coating is made of more friable oxides and sediments. This latter method aims to reduce moisture loss or moisture gain during the process and is considered on a deposit by deposit basis.
	Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	Density values are allocated uniformly to each lithological and regolith type. 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 mineral resource has been classified into Indicated and Inferred categories based on drill hole spacing, geological confidence, and grade continuity and estimation quality. The combination of these factors together guided

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	**JORC Code Explanation**	**Commentary**
		the hard boundary wireframe used to define the Indicated zone. Ore zones outside this wireframe were coded with the inferred category.
	Whether appropriate account has been taken of all the 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 care has been taken to account for relevant factors influencing the mineral resource estimate. The diligent Saracen Metals Resource review process ensures that data reliability and geological and metal confidence and continuity are reflected in the resource classification.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The geological model and the mineral resource estimate reflect the competent person's view of the deposit.
Audits or reviews	*The results of any audits or reviews of Mineral Resource estimates.*	Saracen has adopted a process for geological modelling, estimation and reporting of mineral resources that meets high industry standards. At the completion of resource estimation Saracen Metals 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. Due to the simple geological setting of the Pinnacles Deposit no external audits have been conducted.
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 established in the 2012 edition of the JORC code. Saracen Gold Mine uses a standard approach to resource estimation and the procedure requires the systematic completion of the Saracen Resource Estimation Document that is thoroughly investigated and assessed in the Model review process, as stated above. It was identified that further work on KNA for block size, minimum and maximum number of samples, search ellipses would help to further improve the optimisation of the block model.
	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 statements relate to a global estimate of tonnes and grade.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	No previous mining has occurred at this deposit.

Blue Manna

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
Sampling Techniques	*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.*	Sampling methods undertaken at Blue Manna have included surface aircore (AC), reverse circulation (RC) and diamond drilling (DD). Auger sampling has also been carried out.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used	Sampling was guided by Saracen Sampling and QAQC procedures as per industry standard. Historical RC and AC drilling was completed by previous holders to industry standard at that time (1994).
	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 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information	Saracen RC and aircore samples are crushed, dried and pulverised to a nominal 90% passing 75µm to produce a 40 g sub sample for analysis by FA/AAS. Historical AC and RC sampling was carried out to industry standard at that time. Analysis methods include fire assay, aqua regia and unspecified methods.
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 deposit was initially sampled by 77 AC holes and 24 RC holes (assumed standard 5 ¼" bit size). Saracen has completed 97 surface RC holes, 1688 auger samples and 2 surface HQ diameter DD holes.
Drill Sample Recovery	*Method of recording and assessing core and chip sample recoveries and results assessed*	Sampling recoveries of Saracen RC holes were recorded as a percentage based on a visual weight estimate. No historical record exists in the Saracen database of previous RC and AC sampling recoveries. Diamond core recovery percentages calculated from measured core versus drilled intervals are logged and recorded in the database. Recoveries average >90%
	Measures taken to maximise sample recovery and ensure representative nature of the samples	At the RC rig, sampling systems are routinely cleaned to minimise contamination and drilling methods are focused on sample quality. Previous AC and RC drilling were carried out according to industry standard at that time.
	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 sample recovery issues have impacted on potential sample bias. Any relationship with historical drilling is not known.

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
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.* *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.*	Logging of RC chips and diamond core records lithology, mineralogy, texture, mineralisation, weathering, alteration, veining and other features. Geotechnical logging was carried out on all drill core, and all core was photographed. Structural logging was carried out in selected RC holes using Televiewer acoustic logging technology which recorded the interpreted structure, its depth, dip and dip direction. Qualitative logging varies in the level of detail.
	The total length and percentage of the relevant intersections logged	Logging is 100% complete with all AC, RC and DD information available.
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.*	Diamond core is likely to be half cored following further structural analysis.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	Saracen RC samples were cone split, while historic AC and RC samples were sampled using unknown methods. Occasional wet samples were encountered.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	The sample preparation of AC and RC chips adhere to industry best practice. It is conducted by a commercial laboratory and involves oven drying, coarse crushing then total grinding using an LM5 to a grind size of 90% passing 75 microns. Best practice is assumed at the time of historic sampling.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	All subsampling activities are carried out by commercial laboratory and are considered to be satisfactory. Sampling by previous holders assumed to be industry standard at the time.
	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.	RC field duplicate samples are carried out at a rate of 1:20 and are sampled directly from the on-board splitter on the rig. These are submitted for the same assay process as the original samples and the laboratory are unaware of such submissions. Sampling by previous holders assumed to be industry standard at the time.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Sample sizes of 3kg are considered to be appropriate given the grain size (90% passing 75 microns) of the material sampled.
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.*	RC chip samples are analysed by external laboratories using a 40g or 50g fire assay with AAS finish. This method is considered suitable for determining gold concentrations in rock and is a total digest method. Historic sampling includes fire assay and unknown methods.
	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, spectrometer, handheld XRF have been utilised for reporting gold mineralisation.
	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.	Certified reference material (standards and blanks) with a wide range of values are inserted into every drillhole at a rate of 1:25 for exploration RC drilling. These are not identifiable to the laboratory. QAQC data returned are checked against pass/fail limits with the SQL database and are passed or failed on import. A report is generated and reviewed by the geologist as necessary upon failure to determine further action. QAQC data is reported monthly. Sample preparation checks for fineness are carried out to ensure a grindsize of 90% passing 75 microns. The laboratory performs a number of internal processes including standards, blanks, repeats and checks. QAQC data analysis demonstrates sufficient accuracy and precision. Industry best practice is assumed for previous holders.

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.*	Significant intercepts are verified by the Geology Manager and corporate personnel.
	The use of twinned holes.	No twinned holes have been drilled at Blue Manna.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols	Primary data is collated in a set of Excel templates utilising lookup codes. This data is forwarded to the Database Administrator for entry into a secure acQuire database with inbuilt validation functions. Data from previous owners was taken from a database compilation and validated as much as practicable before entry into the Saracen acQuire database.
	Discuss any adjustment to assay data.	No adjustments have been made to assay data. First gold assay is utilised for resource estimation.
Location of data points	*Accuracy and quality of surveys used to locate drillholes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.*	Exploration drillholes are located using a Leica 1200 GPS with an accuracy of +/- 10mm. Historic RC collars within the immediate surrounds of Saracen-drilled holes were picked up using the same instrument. Downhole surveys are carried out using an Eastman single shot camera at regular intervals (usually 30m). A number of drillholes have also been gyroscopically surveyed. Previous holders' survey accuracy and quality is unknown
	Specification of the grid system used.	A local grid system (Old Plough Dam East) is used. The two point conversion to MGA_GDA94 zone 51 is: OPDEEast OPDENorth RL MGAEast MGANorth RL Point 1 51933.86 51985.59 0 436148.56 6675821.82 0 Point 2 51312.14 51120.80 0 436061.05 6674760.34 0 Historic data is converted to the Old Plough Dam East local grid upon export from the database.
	Quality and adequacy of topographic control.	DGPS survey has been used to establish a topographic surface.
Data spacing and distribution	*Data spacing for reporting of Exploration Results.*	The nominal spacing for drilling is 25m x 25m.
	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.	Data spacing and distribution are sufficient to establish the degree of geological and grade continuity appropriate for JORC classifications applied.
Orientation of data in relation to geological structure	*Whether sample compositing has been applied.*	Sample compositing is not applied until the estimation stage. Historic AC sampling was composited into 4m samples with areas of interest re-sampled to 1m intervals. It is unknown at what threshold this occurred.
	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 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.	No significant sampling bias is thought to occur due to orientation of drilling in regards to mineralised structures
Sample security	*The measures taken to ensure sample security.*	Samples are prepared on site under supervision of Saracen geological staff. Samples are selected, bagged into tied numbered calico bags then grouped into secured cages and collected by the laboratory personnel. Sample submissions are documented via laboratory tracking systems and assays are returned via email.
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	An internal review of companywide sampling methodologies was conducted to create the current sampling and QAQC procedures. No external audits or reviews have been conducted.

Section 2: Reporting of Exploration Results		
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.*	Blue Manna is wholly located within Mining Lease M31/156. The tenement is held 100% by Saracen Gold Mines Pty Ltd, a wholly owned subsidiary of Saracen Mineral Holdings Limited. Mining Lease M31/156 has a 21 year life (held until 2029) and is renewable for a further 21 years on a continuing basis. Mining Lease M31/156 is subject to two third party royalties and two caveats (Caveats 340981 and 432950). All production is subject to a Western Australian state government NSR royalty of 2.5%. Mining Lease M31/156 is subject to the Gindalbie Pastoral Compensation Agreement. The tenement is affected by the Maduwongga (WC2017/001) and Nyalpa Pirniku (WC2019/002) registered claims.
	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.	The tenement is in good standing.
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	The Blue Manna area was covered by Pancontinental Mining's regional exploration programme in the early 1990s. The prospect itself was traversed by auger and a few AC and RC drillholes (drilled in 1994). RAB holes, drilled between 1993 and 1997, are located further to the NW of the Blue Manna deposit. Saracen tightened up the auger sampling in 2008 and followed it up by 4 RC drillholes in 2012. Significant intercepts were encountered in all the drillholes such that follow up drilling was carried out in May 2013.
Geology	*Deposit type, geological setting and style of mineralisation.*	The Blue Manna deposit sits along the regional NNW-trending Keith-Kilkenny fault zone within the eastern edge of the Norseman-Wiluna greenstone belt. Mineralization appears to be associated with lithological and/or structural contacts in between the shale and sandstone-siltstone interbed, with the best grades occurring within a dilated sandstone unit. Mineralization is accompanied by silicification, quartz veining, and minor sulphidation. Sericite alteration has been logged in some mineralized intervals.
Drillhole 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:* • *easting and northing of the drill hole collar* • *elevation or RL (Reduced Level – elevation* • *above sea level in metres) of the drill hole collar* • *dip and azimuth of the hole* • *down hole length and interception depth* • *hole length.* • *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.*	Material information about Saracen's Blue Manna drilling campaign were reported on ASX releases dated 22 July 2015, 10 June 2015, 17 April 2013, 6 August 2013 and in the 2013 Annual Report. Future drill hole data will be periodically released or when a results materially change the economic value of the project. Exclusion of the drilling information will not detract from the reader's view of the report.
Data aggregation methods	*In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations*	All significant intercepts have been length-weighted with a minimum Au grade of 1ppm.

Section 2: Reporting of Exploration Results		
Criteria	**JORC Code Explanation**	**Commentary**
	(e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.	
	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.	No interval below 1m was sampled.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	There are no metal equivalents reported in this release.
Relationship between mineralisation widths and intercept lengths	*These relationships are particularly important in the reporting of Exploration Results.* *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* *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').*	Drillholes on average are at 50 degrees to the mineralised contacts, thus the ratio of down length to true width is 1m: 0.75m.
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.*	All significant exploration results released by Saracen are accompanied by the appropriate diagrams and maps at the time of the release.
Balanced Reporting	*Where comprehensive reporting of all Exploration Results are not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	All results from the recent campaign have been reported, irrespective of success or not.
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.*	Auger drilling, SAM and Gravity geophysical surveys were completed over the Blue Manna region allowing the drill program to be refined and prioritised by the results.
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).* *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive*	Blue Manna is a current exploration play that will be further reviewed post optimisation processes.

Section 3: Estimation and Reporting of Mineral Resources		
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.*	Saracen utilises AcQuire software on an SQL server database to securely store and manage all drillhole and sample information. Data integrity protocols are built into the system to ensure data validity and minimise errors.
	Data validation procedures used.	Data that is captured in the field is entered into Excel templates which are checked on import into the 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.
Site Visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.*	Site visits were undertaken at the Blue Manna prospect during review and exploration stages by the competent person.
	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.*	Blue Manna is interpreted as a series of stacked parallel lodes that follow the lithological or structural contacts between the shale and sandstone-siltstone interbed. Best grades are observed within a dilated sandstone unit. There is reasonable confidence in the global interpretation, however given the current drill spacing and the variability in AU (high nugget) the estimation is classified as Inferred.
	Nature of the data used and any assumptions made.	The interpretations have been constructed using all available geological logging descriptions including but not limited to, stratigraphy, lithology, weathering, sulphide content and alteration. It is identified that mineralization is accompanied by silicification, sericite alteration, quartz veining, and minor sulphidation.
	The affect, if any, of alternative interpretations on Mineral Resource estimation.	Given the drill results and the known geological regime, the current interpretation is the best fit. There are currently no alternative interpretations.
	The use of geology in guiding and controlling the Mineral Resource estimation.	The lithological geology has influenced the extent and dip of the domains controlling the mineral resource estimation.
	The factors affecting continuity both of grade and geology.	The continuity of the ore zones that make up Blue Manna are limited only by the extents of drilling. Within the drilled areas gold and geology continuity is largely controlled by the interlayers of metasediments, particularly the rheological contrast that occurs with the shale marker unit. Sericite alteration and quartz veining locally affect the grade continuity. Possible cross cutting structures (NE trending) appear to disjoint or offset the mineralisation along strike.
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 mineral resource covers an area 500m in the strike direction X 150m in width. It extends to 150m below the surface. Blue Manna sits within the local coordinates 51000mE – 51150mE, 49100mN – 49600mN and 340mRL – 192.5mRL.
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.*	A combination of categorical and ordinary kriged estimation was deemed appropriate for the Blue Manna deposit. Categorical estimation was used for the main lodes that were well defined by geology. An indicator at 0.4g/t cut off threshold (and resulting indicator variogram) was used to define the high grade and low grade subdomains within these main lodes. These subdomains and other subsidiary structures were then ordinary kriged to produce a robust Au estimation. KNA, swathe plots, comparative studies of mean composite and model grades and a visual inspection of the model support the level of confidence in the estimation. All estimation uses these wireframes as hard boundaries. Estimation of parent blocks are interpolated, and assigned to sub-cells.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	**JORC Code Explanation**	**Commentary**
		The maximum distance of extrapolation is less than 40m. Analyses of sample data lengths show all are 1m. A composite interval of 1m was chosen to maintain the differentiation of internal high grade and waste zones within the mineralised domains. Composites were broken where there was a change of mineralisation domain, subdomain code or regolith code. Clusters of higher grade outliers that could bias the mean were identified by domain by the use of log probability and mean variance plots. High grade outliers were used to determine specific top-cut values for each domain. Estimations used 100% RC Drill results, negative Au grades were replaced with a value of 0.001g/t, and null assays were excluded from the sample data. Variogram modelling was completed with Supervisor software. This defined the sample continuity and nugget value for each domain. The parameters determined from this analysis were used in the interpolation process.
	The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.	With the increased and extended drilling the current Blue Manna resource extends beyond the previous resource estimation. A comparison was completed for the same dimensions of the previous estimation as a check. A slight variation in the ounces can be easily accounted for as the current resource is more informed with newer assay results. Mining has not commenced at Blue Manna.
	The assumptions made regarding recovery of by-products.	No assumptions have been made with respect to the recovery of by-products.
	Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulfur for acid mine drainage characterisation).	Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulfur for acid mine drainage characterisation): There has been no estimate at this point of deleterious elements
	In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.	The parent block sizes for the resource model are X (10m) by Y (25m) by Z (5m). These were deemed globally appropriate for the resource, where drill spacing is in the order from 25m x 25m. Parent blocks have been sub-celled to X (1.0m) by Y (2.5m) by Z (1.0m) to ensure that the wireframe boundaries were honoured and preserved the location and shape of the mineralisation. Search ranges have been informed by variogram modelling and knowledge of the drill spacing and the known mineralisation geometry including direction of maximum continuity. Three search estimation runs are used with the aim to satisfy the minimum sample criteria in the first search range where possible.
	Any assumptions behind modelling of selective mining units.	No selective mining units have been assumed.
	Any assumptions about correlation between variables.	No assumptions have been made regarding correlation between variables.
	Description of how the geological interpretation was used to control the resource estimates.	The geology was used to define the hard wireframed domains, which were subsequently used in the estimation.
	Discussion of basis for using or not using grade cutting or capping.	Linear interpolation methods such as Ordinary Kriging are sensitive to the presence of high-grade outliers that positively skew the data and bias the mean. Domain histogram and Log probability plots were used to determine appropriate 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 validation and checking processes was used to ensure the integrity of the estimation. These checks included; Volume comparison of wireframes to estimate domain volumes Mean composite grade comparison to mean estimate grade of the estimate by domain Swathe plots in northing, easting and RL slices for each domain

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC Code Explanation	Commentary
		Slope and KE means for each domain A step through visual inspection comparing the estimates to composited data. All validation steps indicated that the Blue Manna estimate was a globally robust model.
Moisture	*Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	All tonnages were calculated on a dry basis and the density values take into consideration the moisture potential in the oxide horizons.
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 0.5g/t for Open Pit Resource
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.*	There are reasonable grounds to assume that in the future the Blue Manna resource will be mined by conventional open pit methods given the close proximity to surface and the mean average grade of the mineralisation. To best capture “reasonable prospects for eventual economic of extraction”, the mineral resource was cut to an optimised pit shell at $2250 at a 0.5g/t cut off.
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 process 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.*	At this stage of the project there is no metallurgical data available.
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 greenfields 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*	Environmental considerations captured by Program of Work (PoW) requirements. Operations on these tenements purely exploratory in nature to date.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC Code Explanation	Commentary
	with an explanation of the environmental assumptions made.	
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.*	Bulk density values are based on similar rock types and regolith profiles from deposits within the same geological area and environment. In the last drill campaign two diamond holes were drilled and bulk density measurements were carried out on representative samples.
	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.	The density measurements methods will follow standard Saracen procedures that take into account porosity and moisture variances. It was found that the oxide horizons contain moisture and affect the density value.
	Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	Density values are allocated uniformly to each lithological and regolith type. This includes the primary fresh lithologies as well as the weathered oxide and transitional zones. The number of density values has increased significantly with the most recent 2014 and 2015 drill programs.
Classification	*The basis for the classification of the Mineral Resources into varying confidence categories.*	Based on the variability of the Au results and the decreased confidence in the predictability of AU values, the Blue Manna deposit is categorised as an Inferred resource.
	Whether appropriate account has been taken of all the 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 care has been taken to account for relevant factors influencing the mineral resource estimate. The Saracen Resource review process ensures that data reliability and geological and metal confidence and continuity are reflected in the resource classification.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The geological model and the mineral resource estimate reflect the competent person's view of the deposit.
Audits or reviews	*The results of any audits or reviews of Mineral Resource estimates.*	The standard review process adopted by Saracen, indicates that Blue Manna is a robust global inferred model. Due to the simple geological setting of the Blue Manna Deposit no external audits have been conducted.
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 established in the 2012 edition of the JORC code. Saracen uses a standard approach to resource estimation and the procedure requires the systematic completion of the Saracen Resource Estimation Document. It was identified that further information from XRD, ASD and diamond core structural analysis and sampling will help to validate the relationship of Au mineralisation with alteration and increase the understanding of Au variability.
	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 statements relate to a global estimate of tonnes and grade.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC Code Explanation	Commentary
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	No previous mining has occurred at this deposit.

Atbara

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
Sampling Techniques	*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.*	Sampling methods undertaken by Saracen at Atbara has consisted of reverse circulation (RC) drilling and diamond drilling (DD). Historic methods conducted since 1993 have included aircore (AC), rotary air blast (RAB), reverse circulation and diamond drillholes.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used	Sampling for RC and DD drilling is carried out as specified within Saracen sampling and QAQC procedures as per industry standard. RC chips and DD core provide high quality representative samples for analysis. RC, RAB, AC and DD core drilling was completed by previous holders to industry standard at that time (1993- 2002).
	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 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information	RC chips are cone split and sampled into 4m composite intervals and 1m intervals with total sample weights under 3kg. Diamond core is NQ or HQ sized, sampled to 1m intervals or geological boundaries where necessary and cut into half core. All methods are used to produce representative samples of less than 3 kg. Samples are selected to weigh less than 3 kg to ensure total sample inclusion at the pulverisation stage Saracen core and chip samples are crushed, dried and pulverised to a nominal 90% passing 75µm to produce a 40g or 50 g sub sample for analysis by FA/AAS. Historical AC, RAB, RC and diamond sampling was carried out to industry standard at that time. Analysis methods include fire assay, aqua regia, B/ETA and unspecified methods.
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 Atbara area was initially sampled by 85 AC holes, 170 RAB holes, 224 RC holes (assumed standard 5 ¼ ''bit size) and 22 surface diamond HQ core and unknown diameter holes. Saracen has completed 39 surface RC drill holes, 45 surface diamond holes and 18 RC precollar /diamond tail drillholes (tail depths averaging 166m) Diamond holes were oriented using an Ezy-mark tool. Some historic surface diamond drill core appears to have been oriented by unknown methods.
Drill Sample Recovery	*Method of recording and assessing core and chip sample recoveries and results assessed*	Diamond core recovery percentages calculated from measured core versus drilled intervals are logged and recorded in the database. Recoveries average >90%. RC sampling recoveries are recorded as a percentage based on a visual weight estimate; no historic recoveries have been recorded.
	Measures taken to maximise sample recovery and ensure representative nature of the samples	Diamond core is reconstructed into continuous runs on an angle iron cradle for orientation marking. Depths are checked against depth given on the core blocks. Daily rig inspections are carried out to check splitter condition, general site and address general issues. The sample bags weight versus bulk reject weight is compared to ensure adequate and even sample recovery. Historical AC, RAB, RC and diamond drilling to industry standard at that time.

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
	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.	Diamond drilling has high recoveries meaning loss of material is minimal. There is no known relationship between sample recovery and grade for RC drilling. Any historical relationship is not known.
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.* *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.*	Logging of diamond drill core and RC chips records lithology, mineralogy, texture, mineralisation, weathering, alteration, veining and other features. Geotechnical and structural logging is carried out on all diamond holes to record recovery, RQD, defect number, type, fill material, shape and roughness and alpha and beta angles. Chips from all RC holes (exploration and GC) are stored in chip trays for future reference. Core is photographed in both dry and wet state. Qualitative and quantitative logging of historic data varies in its completeness.
	The total length and percentage of the relevant intersections logged	All diamond drillholes and exploration RC holes are logged in full. Every drill line is logged in grade control programs. Historical logging is approximately 95% complete.
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.*	All drill core is cut in half onsite using an automatic core saw. Samples are always collected from the same side. Historic diamond drilling has been half core sampled.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	All exploration RC samples are cone or riffle split. Occasional wet samples are encountered; increased air capacity is routinely used to aid in keeping the sample dry when water is encountered. Historic AC, RAB and RC drilling was sampled using spear, grab, riffle and unknown methods.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	The sample preparation of diamond core and RC chips adhere to industry best practice. It is conducted by a commercial laboratory and involves oven drying, coarse crushing then total grinding to a size of 90% passing 75 microns. Best practice is assumed at the time of historic sampling.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	All subsampling activities are carried out by commercial laboratory and are considered to be satisfactory. Sampling by previous holders assumed to be industry standard at the time.
	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.	Duplicate sampling is carried out at a rate of 1:10 for exploration drilling and is sampled directly from the on-board splitter on the rig. These are submitted for the same assay process as the original samples and the laboratory are unaware of such submissions. Sampling by previous holders assumed to be industry standard at the time.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Sample sizes are considered to be appropriate.
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.*	RC chip samples and diamond core are analysed by external laboratories using a 40g fire assay with AAS finish. This methods are considered suitable for determining gold concentrations in rock and are total digest methods. Historic sampling includes fire assay, aqua regia, B/ETA and unknown methods.
	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 have been utilised for reporting gold mineralisation at Atbara.

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
	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.	Certified reference material (standards and blanks) with a wide range of values are inserted into every drillhole at a rate of 1:25 for exploration RC and DD drilling. These are not identifiable to the laboratory. QAQC data returned are checked against pass/fail limits with the SQL database and are passed or failed on import. A report is generated and reviewed by the geologist as necessary upon failure to determine further action. QAQC data is reported monthly. Sample preparation checks for fineness are carried out to ensure a grindsize of 90% passing 75 microns. The laboratory performs a number of internal processes including standards, blanks, repeats and checks. QAQC data analysis demonstrates sufficient accuracy and precision. Industry best practice is assumed for previous holders.
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.*	Significant intercepts are verified by the Geology Manager and corporate personnel.
	The use of twinned holes.	No specific twinned holes have been drilled at Atbara
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols	Primary data is collated in a set of excel templates utilising lookup codes. This data is forwarded to the Database Administrator for entry into a secure acQuire database with inbuilt validation functions. Data from previous owners was taken from a database compilation and validated as much as practicable before entry into the Saracen acQuire database.
	Discuss any adjustment to assay data.	No adjustments have been made to assay data. First gold assay is utilised for resource estimation.
Location of data points	*Accuracy and quality of surveys used to locate drillholes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.*	Exploration drillholes are located using a Leica 1200 GPS with an accuracy of +/- 10mm. Downhole surveys are carried out using the Axis Champ north seeking Gyroscopic continuous inrod survey instrument taking readings every 18m (diamond drilling) or 30m (RC drilling) down hole as drilling progresses, with a continuous survey conducted at the end of the hole taking a reading every 1m metre. Previous holders' survey accuracy and quality is unknown
	Specification of the grid system used.	MGA_GDA94 zone 51 is used
	Quality and adequacy of topographic control.	Topographic control originally used site based survey pickups in addition to Kevron aerial photogrammetric surveys with +/- 5m resolution.
Data spacing and distribution	*Data spacing for reporting of Exploration Results.*	The nominal spacing for early stage exploration drilling is 80m x 80m. Later stage exploration drilling is 40m x 40m
	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.	Data spacing and distribution are sufficient to establish the degree of geological and grade continuity appropriate for JORC classifications applied.
	Whether sample compositing has been applied.	RC drillholes were composited into 4m samples, with mineralised areas being resampled to 1m intervals. Some historic RAB and RC sampling was composited into 3-4m samples with areas of interest re-sampled to 1m intervals. It is unknown at what threshold this occurred.
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 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.	No significant sampling bias is thought to occur due to orientation of drilling in regards to mineralised structures.

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
Sample security	*The measures taken to ensure sample security.*	Samples are prepared on site under supervision of Saracen geological staff. Samples are selected, bagged into tied numbered calico bags then grouped into secured cages and collected by the laboratory personnel. Sample submissions are documented via laboratory tracking systems and assays are returned via email.
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	An internal review of companywide sampling methodologies was conducted to create the current sampling and QAQC procedures.

Section 2: Reporting of Exploration Results		
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 Atbara area is located on M31/210, M31/219, and M31/220 The tenements are held 100% by Saracen Gold Mines Pty Ltd, a wholly owned subsidiary of Saracen Mineral Holdings Limited. Mining Leases M31/219 and M31/220 have a 21 year life (held until 2041) and are renewable for a further 21 years on a continuing basis. Mining Lease M31/210 has a 21 year life (held until 2023) and is renewable for a further 21 years on a continuing basis. Mining Lease M31/210 is subject to two third party royalties and associated caveats (Caveat 62H/067 and Caveat 513935) Mining Lease M31/219 is subject to two third party royalties and one caveat (Caveat 63H/067). Mining Lease M31/220 is subject to two third party royalties and one caveat (Caveat 64H/067). Mining Lease M31/220 is subject to a bank mortgage (Mortgage 499142). All production is subject to a Western Australian state government NSR royalty of 2.5%. Mining Leases M31/210 and M31/219 are subject to the Gindalbie Pastoral Compensation Agreement. Mining Lease M31/220 is subject to the Pinjin and Gindalbie Pastoral Compensation Agreements. Mining Leases M31/210, M31/220, and M31/219 are affected by the Maduwongga (WC2017/001) and Nyalpa Pirniku (WC2019/002) registered claims. The Mining Rehabilitation Fund applies to the tenements.
	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.	The tenements are in good standing and the licence to operate already exists.
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	The Carosue Dam project area in which Atbara is located has been subjected to extensive gold exploration by numerous companies since 1991. Airborne geophysics conducted by Aberfoyle Resources in 1997 highlighted numerous targets in the project area with subsequent AC, RAB and RC drilling intersecting mineralisation. Oriole Resources obtained the project in 1998 and, through wholly owned subsidiary company PacMin, completed closely spaced RC drilling to develop the Luvironza resource through to reserve status. Sons of Gwalia carried out minor drilling before their collapse and takeover of the project by St Barbara.
Geology	*Deposit type, geological setting and style of mineralisation.*	The Atbara mineralisation is situated along the Kilkenny-Yilgangi fault zone on the boundary of the Steeple Hill and Mulgabbie domains. The lithology comprises primarily intermediate felsic volcaniclastic sandstones, intermediate tuffs and intermediate porphyry units intruded by granites of varying composition, with stratigraphy dipping generally to the east at approx. 60 degrees.

Section 2: Reporting of Exploration Results		
Criteria	**JORC Code Explanation**	**Commentary**
		Mineralization has a combined lithological and structurally control dipping parallel to the stratigraphy. Mineralization is continuous along strike in the footwall but is very discontinuous and patchy in the hanging wall structures and overall controlled by the general NW trending ductile faulting and is characterized by weak Hematite banding on the margins to intense hematite-silica alteration hosted in breccia zones adjacent to the faulting with high grade cores typically sericite-silica breccia. Pyrite is the dominant sulphide.
Drillhole 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:* • *easting and northing of the drill hole collar* • *elevation or RL (Reduced Level – elevation* • *above sea level in metres) of the drill hole collar* • *dip and azimuth of the hole* • *down hole length and interception depth* • *hole length.* • *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.*	A total of 906 holes have been used in the mineral resource and are deemed to be material. It is not practical to summarise all of the holes here in this release. All material data is periodically released on the ASX: 18/02/2020, 11/11/2019, 30/7/2019, 30/04/2019, 18/02/2019, 27/11/2018 Exclusion of the drilling information will not detract from the reader's view 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 significant intercepts have been length weighted with a minimum Au grade of 0.5ppm. No high grade cut off has been applied.
	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 with minimum width of 1m and maximum width of 3m for internal dilution. Where stand out higher grade zone exist with in 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.	There are no metal equivalents reported in this release.
Relationship between mineralisation widths and intercept lengths	*These relationships are particularly important in the reporting of Exploration Results. If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported. 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').*	Previous announcements included sufficient detail to clearly illustrate the geometry of the mineralisation and the recent drilling. All results are reported as downhole lengths.
Diagrams	*Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include,*	No Diagrams are referenced in this release.

Section 2: Reporting of Exploration Results		
Criteria	**JORC Code Explanation**	**Commentary**
	but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	
Balanced Reporting	*Where comprehensive reporting of all Exploration Results are not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	All results from previous campaigns have been reported, irrespective of success or not.
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 substantive data acquisition has been completed in recent times.
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).* *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive*	Extensional exploration for the Atbara area at this time is under review.

Section 3: Estimation and Reporting of Mineral Resources		
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.*	The database used for the estimate an extract from an Acquire SQL database. The primary database is regulated by a locked framework called the acquire data model which fixes the relationships between tables. The data model minimises the potential for data collection and data usage errors through pre-determined look up tables, storage and export functions. User defined permissions also regulate the ability to add, edit or extract data. Primary data is recorded using typical manual translation of logging and data capture from written logs and direct import of csv tables through a data import scheme where data is validated upon import or direct data entry options into the database using predefined look up values.
	Data validation procedures used.	Data that is captured in the field is entered into Excel templates which are checked on import into the 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.
Site Visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.*	The Competent Person regularly visits site to assess geological competency and ensure integrity across all geological disciplines.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC Code Explanation	Commentary
	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.*	The resource categories assigned to the model directly reflect the confidence in the geological interpretation. The interpretation is built using local, structural, mineral, and alteration geology obtained from mapping, logging, drill results and geophysics.
	Nature of the data used and any assumptions made.	The geological interpretation of Atbara 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 and RC Chips were all used to help define the mineralised domains and regolith boundaries. Interpreted shears and faults obtained from pit and underground drive mapping further constrained the domaining. The current resource has been interpreted from 39 surface RC drill holes, 45 surface diamond holes and 18 RC precollar /diamond tail drillholes (tail depths averaging 166m)
	The affect, if any, of alternative interpretations on Mineral Resource estimation.	The geological wireframes defining the mineralised zones are considered to be robust. The mineralisation interpretations have evolved with more drilling density to the point where the current interpretation is considered given the available data.
	The use of geology in guiding and controlling the Mineral Resource estimation.	Geological domains interpreted from all available geological data are used as estimation domains. They are further sub-domained where internal multi-modal grade populations and sufficient sample data is available in order to improve grade homogeneity and reduce variance.
	The factors affecting continuity both of grade and geology.	The Atbara monzonite is the dominant rock type in the Atbara deposit. The Atbara monzonite is a large unit 1200m long and up to 600m wide and is concordant with stratigraphy. The unit is typified by crystal packed coarse k-feldspar dominance with very little internal variation within the unit. Prior to Saracens involvement this unit was logged as conglomerate by previous workers. Generally, the unit is variably altered, where not altered primary hornblende can be seen. Deep weathering can be observed in places apparently associated with the development of major structures. Au-Cu-Mo-Ag mineralisation is widespread throughout this unit and is intimately associated with potassic alteration in the form of potassium feldspar veining and biotite veining.
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.*	Current knowledge of mineralisation indicates an 800m long by 450m wide by 450m deep package with multiple lodes developed. Significant copper and molybdenum and silver assays have been received from the system

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	**JORC Code Explanation**	**Commentary**
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.*	Mineralisation is domained based on geological continuity. 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 principal lodes exhibit bi/multi-model grade populations. These internal populations are controlled by grade indicators derived from 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 1x2x1m 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. 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. Hard boundaries are maintained across low and medium grade sub-domains however a one way soft boundary allowing the high grade sub-domain to use both high and medium grade samples in the estimate is enforced.
	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. Additionally, check estimates including conventional ordinary kriging on all domains, hard-boundaries on all sub-domains used in categorical indicator kriging, and multiple indicator kriging estimation runs were conducted to test the validity and sensitivity of the current mineral resource estimate.
	The assumptions made regarding recovery of by-products.	No assumptions have been made regarding the recovery of by-products for this Mineral Resource Estimation.
	Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).	It has been identified during the early stages of the drill-out that Atbara potentially presents a poly-metallic (gold-copper-molybdenum) resource. Pulp samples previously assayed for gold only have been sent to Lab West to test for both the presence of copper and molybdenum. Future programs intend to assay for multi-elements including gold, copper and molybdenum to better assess this economic potential.
	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) and optimised using kriging neighbourhood analysis. Sub-cells have been used at a resolution of 1m x 1m x1m to ensure high volume 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 40x40m resource definition spacing. A three 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.	No assumptions have been made regarding the correlation between variables for this Mineral Resource Estimation.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	**JORC Code Explanation**	**Commentary**
	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 mostly based on drill data. 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. Domain composites are visually compared to the estimated block model in cross and long section 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.
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 0.5g/t for Open Pit Resources within a $2,250 optimised shell
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 mineral resource is reported as open pit at a cut-off's reflective of current breakeven grade requirements for the mining method assumed. The open pit resource is reported at a 0.5g/t cut-off within a $2250 optimised shell reflecting the bulk mining method assumed.

Section 3: Estimation and Reporting of Mineral Resources		
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 process 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.*	Preliminary work shows, at a 212 micron grind and a residence time of 26 hours, a head grade of 1.3 g/t Au 60% Au is recovered via gravity and a further 28% Au is recovered through cyanidation for a total of 88% Au recovered. At a 108 micron grind and a residence time of 26 hours, a head grade of 1.3 g/t Au 70% Au is recovered via gravity and a further 24 % Au is recovered through cyanidation for a total of 94% AU recovered. Flotation testwork on a separate sample has indicated ~80% recovery of Copper, ~40% recovery of Molybdenum. Follow up work on grind size variability is being undertaken for the flotation testwork.
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 greenfields 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.*	No waste rock characterisation studies have been done. No environmental issues have been identified except dispersive oxidised material. Atbara is 4km north of Saracen's Carosue Mill where a waste dump construction plan is 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 Atbara were determined via testing of representative intervals from diamond drill holes. 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 non-porous material, so additional measures to reduce moisture intake during the water displacement method is unnecessary at this stage. Coating more friable oxides and sediments (to reduce moisture loss or moisture gain during the process) is considered on a deposit by deposit basis.
	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 and position in the weathering profile 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 Atbara resource is classified as Inferred. The resource classification has been classified on a whole of domain basis using a string in long section considering mainly estimation quality metrics, drill spacing, grade and geological continuity. Mineralisation has been categorised as inferred if material is within a drill spacing of 80x80. All other mineralisation is assigned a Potential resource category.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC Code Explanation	Commentary
	Whether appropriate account has been taken of all the 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 drill hole database, geological knowledge and interpretation of the Atbara deposit. 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.
Audits or reviews	*The results of any audits or reviews of Mineral Resource estimates.*	Saracen has adopted a process for geological modelling, estimation and reporting of mineral resources that meets high industry standards. At the completion of resource estimation Saracen 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, and 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. The resource estimation process is also annually reviewed by external consultants to ensure estimation methodology is robust and aligned to current industry best practice. Recommendations are always reviewed and implemented as appropriate.
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. Saracen Gold Mine uses a standard approach to resource estimation and the procedure requires the systematic completion of the Saracen 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.

Porphyry

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
Sampling Techniques	*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.*	Sampling methods undertaken in the Porphyry project area by Saracen have included reverse circulation (RC), diamond drillholes (DD) and RC grade control drilling within the pits. Historic methods conducted since 1945 have included rotary air blast (RAB), reverse circulation and diamond drillholes.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used	Sampling for diamond and RC drilling is carried out as specified within Saracen sampling and QAQC procedures as per industry standard. RC chips and diamond core provide high quality representative samples for analysis. RC, RAB and DD core drilling was completed by previous holders to industry standard at that time (1945- 2003).
	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 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information	Diamond core is HQ or NQ sized, sampled to 1m intervals and geological boundaries where necessary and cut into half core to give sample weights under 3 kg. Samples are selected to weigh less than 3 kg to ensure total sample inclusion at the pulverisation stage. RC chips are riffle or cone split and sampled into 1m intervals with total sample weights under 3kg Saracen core and chip samples are crushed, dried and pulverised to a nominal 90% passing 75µm to produce a 40g or 50 g sub sample for analysis by FA/AAS. Historical RAB, RC and diamond sampling was carried out to industry standard at that time. Analysis methods include fire assay, aqua regia and unspecified methods.
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 deposit was initially sampled by 574 RAB holes, 1781 RC holes (assumed standard 5 ¼ ''bit size) and 276 surface diamond core drillholes of unknown diameter. Saracen has completed 38 surface RC precollar with NQ diamond tail drill holes (precollars averaging 215m, diamond tails averaging 55m) , 1 HQ and 4 NQ diamond geotechnical holes , 2 NQ diamond holes for metallurgical test work, 544 RC holes from surface and 3168 grade control RC holes from within the pits. Diamond tails were oriented using an Ezy-mark tool. Limited historic surface diamond drill core was oriented via unknown methods.
Drill Sample Recovery	*Method of recording and assessing core and chip sample recoveries and results assessed*	Diamond core recovery percentages calculated from measured core versus drilled intervals are logged and recorded in the database. Recoveries average >98%. RC sampling recoveries are recorded as a percentage based on a visual weight estimate; no historic recoveries have been recorded.
	Measures taken to maximise sample recovery and ensure representative nature of the samples	Diamond core is reconstructed into continuous runs on an angle iron cradle for orientation marking. Depths are checked against depth given on the core blocks. During GC campaigns daily rig inspections are carried out to check splitter condition, general site and address general issues. The sample bags weight versus bulk reject weight is compared to ensure adequate and even sample recovery.

Section 1: Sampling Techniques and Data		
Criteria	JORC Code Explanation	Commentary
		Historical RAB, RC and diamond drilling to industry standard at that time.
	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.	Diamond drilling has high recoveries meaning loss of material is minimal. There is no known relationship between sample recovery and grade for RC drilling. Any historical relationship is not known.
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.* *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.*	Logging of diamond drill core and RC chips records lithology, mineralogy, texture, mineralisation, weathering, alteration, veining and other features. Geotechnical and structural logging is carried out on all diamond holes to record recovery, RQD, defect number, type, fill material, shape and roughness and alpha and beta angles. Chips from all RC holes (exploration and GC) are stored in chip trays for future reference. Core is photographed in both dry and wet state. Qualitative and quantitative logging of historic data varies in its completeness.
	The total length and percentage of the relevant intersections logged	All diamond drillholes and exploration RC holes are logged in full. Every second drill line is logged in grade control programs with infill logging carried out as necessary. Historical logging is complete.
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.*	All drill core is cut onsite using an automatic core saw. Geotechnical drillholes were quarter core sampled, metallurgical drillholes were full core sampled and all exploration drillholes were half core sampled. Samples are always collected from the same side. Historic diamond drilling has been sampled via unknown methods.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	All exploration and GC RC samples are cone or riffle split. Occasional wet samples are encountered; increased air capacity is routinely used to aid in keeping the sample dry when water is encountered. Historic RAB and RC drilling was sampled using spear, riffle and unknown methods.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	The sample preparation of diamond core and RC chips adhere to industry best practice. It is conducted by a commercial laboratory and involves oven drying, coarse crushing then total grinding to a size of 90% passing 75 microns. Best practice is assumed at the time of historic sampling.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	All subsampling activities are carried out by commercial laboratory and are considered to be satisfactory. Sampling by previous holders assumed to be industry standard at the time.
	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.	Duplicate sampling is carried out at a rate of 1:10 for exploration drilling and 1:20 for GC drilling and is sampled directly from the on-board splitter on the rig. These are submitted for the same assay process as the original samples and the laboratory are unaware of such submissions. Sampling by previous holders assumed to be industry standard at the time.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Sample sizes are considered to be appropriate.
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.*	RC chip samples, grade control chip samples and diamond core are analysed by external laboratories using a 40g or 50g fire assay with AAS finish. These methods are considered suitable for determining gold concentrations in rock and are total digest methods. Historic sampling includes fire assay, aqua regia and unknown methods.
	For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the	No geophysical tools have been utilised for reporting gold mineralisation at Porphyry.

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
	analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.	
	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.	Certified reference material (standards and blanks) with a wide range of values are inserted into every drillhole at a rate of 1:25 for exploration RC and DD, and 1:40 for GC drilling. These are not identifiable to the laboratory. QAQC data returned are checked against pass/fail limits with the SQL database and are passed or failed on import. A report is generated and reviewed by the geologist as necessary upon failure to determine further action. QAQC data is reported monthly. Sample preparation checks for fineness are carried out to ensure a grindsize of 90% passing 75 microns. The laboratory performs a number of internal processes including standards, blanks, repeats and checks. QAQC data analysis demonstrates sufficient accuracy and precision. Industry best practice is assumed for previous holders.
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.*	Significant intercepts are verified by the Geology Manager and corporate personnel.
	The use of twinned holes.	No specific twinned holes have been drilled at Porphyry but grade control drilling has confirmed the width and grade of previous exploration drilling.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols	Primary data is collated in a set of excel templates utilising lookup codes. This data is forwarded to the Database Administrator for entry into a secure acQuire database with inbuilt validation functions. Data from previous owners was taken from a database compilation and validated as much as practicable before entry into the Saracen acQuire database.
	Discuss any adjustment to assay data.	No adjustments have been made to assay data. First gold assay is utilised for resource estimation.
Location of data points	*Accuracy and quality of surveys used to locate drillholes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.*	Exploration drillholes are located using a Leica 1200 GPS with an accuracy of +/- 10mm. Drillhole collars within the pit and immediate surrounds are picked up by company surveyors using a Trimble R8 GNSS (GPS) with an expected accuracy of +/-8mm. Downhole surveys are carried out using an Eastman single shot camera at regular intervals (usually 30m). A number of drillholes have also been gyroscopically surveyed. Previous holders' survey accuracy and quality is unknown
	Specification of the grid system used.	A local grid system (Porphyry) is used. The two point conversion to MGA_GDA94 zone 51 is POREast PORNorth RL MGAEast MGANorth RL Point 1 3000 9000 0 430968.22 6706569.44 0 Point 2 3000 5000 0 430865.29 6702572.36 0 Historic data is converted to the Porphyry local grid upon export from the database.
	Quality and adequacy of topographic control.	Topographic control originally used site based survey pickups in addition to Kevron aerial photogrammetric surveys with +/- 5m resolution. Pre mining, new and more detailed topography has since been captured and will be used in future updates and for subsequent planning purposes.
Data spacing and distribution	*Data spacing for reporting of Exploration Results.*	The nominal spacing for exploration drilling ranges from 20m x20m to 50mx50m
	Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity	Data spacing and distribution are sufficient to establish the degree of geological and grade continuity appropriate for JORC classifications applied.

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
	appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.	
Orientation of data in relation to geological structure	*Whether sample compositing has been applied.*	Sample compositing is not applied until the estimation stage. Some historic reconnaissance RAB and RC sampling was composited into 2, 3 or 4m samples.
	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 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.	No significant sampling bias is thought to occur due to orientation of drilling in regards to mineralised structures.
Sample security	*The measures taken to ensure sample security.*	Samples are prepared on site under supervision of Saracen geological staff. Samples are selected, bagged into tied numbered calico bags then grouped into secured cages and collected by the laboratory personnel. Sample submissions are documented via laboratory tracking systems and assays are returned via email.
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	An internal review of companywide sampling methodologies was conducted to create the current sampling and QAQC procedures.

Section 2: Reporting of Exploration Results		
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 Porphyry pit is located on M31/3, with related deposits Pioneer Paddock and Maingays situated on M31/3 and M31/5. Near mine exploration extends onto M31/4 and M31/6. The tenements are held 100% by Saracen Gold Mines Pty Ltd, a wholly owned subsidiary of Saracen Mineral Holdings Limited. Mining Leases M31/3, M31/4, M31/5 and M31/6 have a 21 year life and are held until 2025. All are renewable for a further 21 years on a continuing basis. Mining Leases M31/3, M31/4, M31/5 and M31/6 are each subject to one royalty agreement and one caveat (54H/067, 55H/067, 56H/067 and 57H/067, respectively). M31/3, M31/4 and M31/5 are each subject to a bank mortgage (415495). All production is subject to a Western Australian state government NSR royalty of 2.5%. Mining Leases M31/3, M31/4, M31/5 and M31/6 are subject to the Edjudina Pastoral Compensation Agreement. The tenements are affected by the Maduwongga (WC2017/001) and Nyalpa Pirniku (WC2019/002) native title claims. There are no registered Aboriginal Heritage sites within M31/3, M31/5 and M31/6. A single Aboriginal artefact scatter (ID2323) lies within the northern portion of M31/4 but is not impacted by current mining and exploration activities. The Mining Rehabilitation Fund applies to the tenements.
	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.	The tenements are in good standing and the licence to operate already exists.

Section 2: Reporting of Exploration Results		
Criteria	JORC Code Explanation	Commentary
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	The Porphyry deposit was discovered in the 1930s with mining operations carried out from 1936 to 1943 and minor works occurring up until 1972. Near mine exploration programs were carried out during this time. Pennzoil acquired the project in the late 1970s and embarked on an extensive RAB and DD program. The creation of Edjudina Gold Mines led to the reopening of the mine in 1984, with operations at Porphyry and Million Dollar continuing until 1988. Extensive RC and DD drilling was carried out also during this period, outlining the Maingays mineralisation. In 1989 Westralian acquired the lease and completed further resource and exploration drilling, finding mineralisation at Pioneer Paddock. Mining did not recommence due to production rate concerns. Mount Edon acquired the project and carried out limited RAB and RC drilling before being taken over by PacMin who suspended work at the project. Sons of Gwalia carried out minor drilling before their collapse and takeover of the project by St Barbara.
Geology	*Deposit type, geological setting and style of mineralisation.*	The Porphyry deposit lies in a belt of greenstone-granite within the Edjudina-Kanowna region of the Archaean Yilgarn Block. The region of alternating mafic-ultramafic and felsic clastic sequences are currently considered overlapping contemporaneous volcanic episodes. The deposit is contained within a quartz monzonite, which intrudes the greenschist facies greenstone within the Murrin-Margaret sector. Mineralisation, especially high gold values is associated with intense shearing and confined to thin, intensely sheared bands approximately 10cm thick. The edge of the mineralisation feathers out into multiple, thin low grade bands. Generally, a halo of weak sheared and carbonatisation envelope the strongly sheared and mineralised zone of quartz-pyrite veining and hematite alteration. The most obvious guides to gold mineralisation are shearing, quartz-pyrite veining and strong hematite alteration. mineralisation is structurally controlled. The deposit is segregated into a series of lenses, with the largest measuring 400m by 150m. The ore lenses maybe separated by faults, but are generally stacked en echelon. Within each lens, the distribution of gold mineralisation is a complex series of en echelon sub-lens of 20m to 40m in width, segregated by waste bands. The lenses contain ore pods that strike perpendicular to the orebody and may dip approximately 40° south. (Smith, 2004). Ore lenses also step to the right in longitudinal section suggesting sinistral movement on the north-south portion of the mineralised structure
Drillhole 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:* • *easting and northing of the drill hole collar* • *elevation or RL (Reduced Level – elevation* • *above sea level in metres) of the drill hole collar* • *dip and azimuth of the hole* • *down hole length and interception depth* • *hole length.* • *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.*	All material data is periodically released on the ASX: 27/04/2012, 28/07/2011, 03/06/2011, 30/01/2009 Future drill hole data will be periodically released or when a results materially change the economic value of the project.
Data aggregation methods	*In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations*	All significant intercepts have been length weighted with a minimum Au grade of 1ppm. No high grade cut off has been applied.

Section 2: Reporting of Exploration Results		
Criteria	JORC Code Explanation	Commentary
	(e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.	
	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 with minimum width of 1m and maximum width of 3m for internal dilution. Where stand out higher grade zone exist with in 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.	There are no metal equivalents reported in this release.
Relationship between mineralisation widths and intercept lengths	*These relationships are particularly important in the reporting of Exploration Results.* *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* *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').*	Previous announcements included sufficient detail to clearly illustrate the geometry of the mineralisation and the latest drilling. All results were reported as downhole lengths.
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.*	All significant exploration results released by Saracen are accompanied by the appropriate diagrams and maps at the time of the release.
Balanced Reporting	*Where comprehensive reporting of all Exploration Results are not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	All results from the recent campaign have been reported, irrespective of success or not.
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 substantive data acquisition has been completed in recent times.
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).* *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive*	Porphyry is a current exploration play that is currently being reviewed for greater exploration potential.

Section 3: Estimation and Reporting of Mineral Resources		
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.*	The database used for the estimate an extract from an acquire SQL database. The primary database is regulated by a locked framework called the acquire data model which fixes the relationships between tables. The data model minimises the potential for data collection and data usage errors through pre-determined look up tables, storage and export functions. User defined permissions also regulate the ability to add, edit or extract data. Primary data is recorded using typical manual translation of logging and data capture from written logs and direct import of csv tables through a data import scheme where data is validated upon import or direct data entry options into the database using predefined look up values.
	Data validation procedures used.	The rigid structure of the acquire data model is such that predefined rules and look up tables are applied to all data entry. Data that does not meet the criteria are highlighted and moved to a buffer area until the data is rectified to meet the passing rules.
Site Visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.*	The Competent Person regularly visited the site during exploration and mining phases to assess geological competency and ensure integrity across all geological disciplines. The competent person has built a sound understanding of the deposit geology thus far.
	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.*	The confidence in the geological interpretation of the Porphyry deposit is considered robust. The interpretation has been based on the detailed geological work completed by Saracen and previous owners of the project. This knowledge is based on extensive geological logging of drill core, RC chips, detailed open pit mapping and assay data. The Porphyry deposit lies in a belt of greenstone-granite within the Edjudina-Kanowna region of the Archaean Yilgarn Block. The region of alternating mafic-ultramafic and felsic clastic sequences are currently considered overlapping contemporaneous volcanic episodes. The deposit is contained within a quartz monzonite, which intrudes the greenschist facies greenstone within the Murrin-Margaret sector. Mineralisation, especially high gold values is associated with intense shearing and confined to thin, intensely sheared bands approximately 10cm thick. The edge of the mineralisation feathers out into multiple, thin low grade bands. Generally, a halo of weak sheared and carbonatisation envelope the strongly sheared and mineralised zone of quartz-pyrite veining and hematite alteration. The most obvious guides to gold mineralisation are shearing, quartz-pyrite veining and strong hematite alteration.
	Nature of the data used and any assumptions made.	The interpretations have been constructed using all available geological logging descriptions including but not limited to, stratigraphy, lithology, texture, structure and alteration. Interpreted cross cutting regional faults have been observed and have been use to guide disruptions in the position of the key mineralised domains.
	The affect, if any, of alternative interpretations on Mineral Resource estimation.	The Porphyry deposit is generally sub vertical in geometry, with clear well defined zones that show the tenor of the mineralisation. Saracen considers the current interpretation to be robust based on all the examined geological data.
	The use of geology in guiding and controlling the Mineral Resource estimation.	Geological controls and relationships were used to define mineralised domains. Structural controls on mineralisation are shallow dipping brittle shear zones, related to the NNW trending regional faults. Mineralisation is confined within 2 sub-parallel shear zones, the northern Porphyry shear zone and the southern Million Dollar shear zone. The 2 shear zones strike North and dip 20°- 25° east, lying close to the contact along much of its length. The Porphyry shear forms a broad, east plunging antiform. Mineralisation thickens in the middle of the structure and plunges to the SE. The majority of ounces have been mined from this shear.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	**JORC Code Explanation**	**Commentary**
	The factors affecting continuity both of grade and geology.	Gold mineralisation at Porphyry is primarily hosted within a quartz monzonite and mineralisation is structurally controlled. The deposit is segregated into a series of lenses, with the largest measuring 400m by 150m. The ore lenses maybe separated by faults, but are generally stacked en echelon. Within each lens, the distribution of gold mineralisation is a complex series of en echelon sub-lens of 20m to 40m in width, segregated by waste bands. The lenses contain ore pods that strike perpendicular to the orebody and may dip approximately 40° south. (Smith, 2004). Ore lenses also step to the right in longitudinal section suggesting sinistral movement on the north-south portion of the mineralised structure.
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 gold mineralisation at Porphyry strikes about 1.4 km in length spanning over an area with 150m in width. The mineralisation extends to below 300m below surface.
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.*	Grade estimation using Ordinary Kriging (OK) was completed for Porphyry. CAE Studio 3 was used to estimate gold grades into 5m x10m x 5m size parent blocks. Drill grid spacing ranges from 20 m X 20 m to 50 m x 50 m. Drill hole sample data was flagged using domain codes generated from three dimensional mineralisation domains and oxidation surfaces. Sample data was composited to 1 metre downhole length. Intervals with no assays were excluded from the compositing routine. The influence of extreme sample distribution outliers was reduced by top-cutting where required. The top-cut levels were determined using a combination of top-cut analysis tools (grade histograms, log probability plots and CVs). Top-cuts were reviewed and applied on a domain basis. Due to the flexures in the mineralised envelopes, the estimation process was in unfolded space. The blocks are relocated back to their original space after the estimation. Variography was conducted in unfolded space using Geo Access software.
	The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.	No comparison have been done with previous estimates
	The assumptions made regarding recovery of by-products.	No assumptions have been made with respect to the recovery of by-products.
	Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).	There has been no estimate at this point of deleterious elements or other non-grade variables of economic significance.
	In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.	A single block model for Porphyry was constructed using a 5 mE by 10 mN by 5 mRL parent block size with sub-celling to 1 mE by 1 mN by 1 mRL for domain volume resolution. All estimation was completed at the parent cell size scale. Search ellipses and passes and minimum and maximum search number parameters are detailed below. The search strategy was set up such that the first search pass would fill blocks informed by the typical drill spacing. The second search used search ellipse multiplied by a factor of 2.5, while the third search increased the dimensions by a factor of 5 to ensure filling of all blocks. With the very limited across structure variogram range, a limit of 4 composites per drill hole was set. The first search pass used a maximum of 24 and a minimum of 16 samples. The second search pass used a maximum of 24 with a minimum of 8 samples while the third search pass used a maximum of 24 with a minimum of 1 sample.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	**JORC Code Explanation**	**Commentary**
	Any assumptions behind modelling of selective mining units.	No selective mining units have been assumed.
	Any assumptions about correlation between variables.	No assumptions have been made regarding correlation between variables.
	Description of how the geological interpretation was used to control the resource estimates.	Geological controls and relationships were used to define mineralised domains. The mineralisation at Porphyry is structurally controlled. The deposit is segregated into a series of lenses, with the largest measuring 400m by 150m. The ore lenses maybe separated by faults, but are generally stacked en echelon. Within each lens, the distribution of gold mineralisation is a complex series of en echelon sub-lens of 20m to 40m in width, segregated by waste bands. The lenses contain ore pods that strike perpendicular to the orebody and may dip approximately 40° south. (Smith, 2004). Ore lenses also step to the right in longitudinal section suggesting sinistral movement on the north-south portion of the mineralised structure
	Discussion of basis for using or not using grade cutting or capping.	A top cut was used in each sub-zone both within the main domains and according to regolith, based on a review of the histogram, log probability plot, and a summary graph of the effects of top-cutting for each domain combination. A top cut was selected to minimise the effects of isolated high grade outliers, without cutting a large proportion of the data or contained metal within the domain.
	The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.	Validation of the block model carried out a volumetric comparison of the resource wireframes to the block model volumes. Validating the estimate compared block model grades to the input data using tables of values, and swath plots showing northing, easting and elevation comparisons. Visual validation of grade trends and metal distributions was carried out. Reconciliation studies for Porphyry show that the model compares well with historical production
Moisture	*Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	All tonnages are estimated on a dry basis.
Cut-off parameters	*The basis of the adopted cut-off grade(s) or quality parameters applied.*	Based on Saracen's current economic operations at Carosue Dam, and the natural grade distinction above background, a grade of 0.5 g/t has been chosen.
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.*	Mining of the Porphyry at this stage deposit will be by Open pit mining methods or Underground methods involving mechanised mining techniques. Open pit mining will most likely by a cut-back on the existing Porphyry Pit. Some of the factor used in consideration of the mining method include, proximity of the mineralisation to surface, geotechnical and hydrogeological factors, prevailing gold price, planned mining dilution and mining recoveries and the average plant processing recoveries. To best capture "reasonable prospects for eventual economic of extraction", the mineral resource was reported within an optimised pit shell at $2250 at a 0.5g/t cut off for the open pit resources, and for the underground resource within MSO underground shells generated at 1.2 g/t cut-off.
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 process and parameters made when reporting Mineral Resources may not always be*	Metallurgical testing (and processing operations at CDO) identified Porphyry ores as being free milling at coarse grind sizes with leach recoveries in excess of 90% with a high gravity gold component (>50%).

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC Code Explanation	Commentary
	rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	
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 greenfields 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.*	No processing or benefication of ore expected on these tenements, as ore is hauled to Carosue Dam Mine site for Processing. Waste characterisation showed that Regoliths and waste bedrock associated with the Porphyry deposit pose no geochemical concerns due to the low sulphide content of the deposit and waste bedrock that is variously calcitic. The tailings solids in the historic TSF tailings solids are essentially barren and geochemically benign and do not pose any geochemical concerns for management. All long term infrastructures at Porphyry have been rehabilitated. Closure Plan is in place covering the Porphyry Mining area and infrastructure. Discharge from Porphyry Pit has occurred in the past to nearby Lake Rebecca under existing approvals and is closely monitored, no negative effects have been observed to date.
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.*	Previous owners have taken routine density measurements when drilling diamond core. The method of calculation is the water displacement technique. Density in the current model has been assigned based on oxidation state, using averaged historical measurements.
	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.	The frequency and distribution is unknown at this point in time. It has assumed from the good reconciliation performance from mine to mill that the determined density assignments from the mine are accurate.
	Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	Average mean of densities collected for each lithological and weathering profile 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 mineral resource has been classified into Measured, Indicated and Inferred categories based on drill hole spacing, geological confidence, and grade continuity and estimation quality. The combination of these factors together guides the construction of wireframes which select and codes the appropriate blocks with the nominated resource classification category.
	Whether appropriate account has been taken of all the 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).	The input data is comprehensive in its coverage of the mineralisation and does not favour or misrepresent in-situ mineralisation. The mineralisation at Porphyry is structurally controlled and the deposit is segregated into a series of lenses. The definition of mineralised zones is based on a high level of geological understanding producing a robust model of mineralised domains. The validation of the block model shows good correlation of the input data to the estimated grades.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The geological model and the mineral resource estimate reflect the competent person’s view of the deposit.
Audits or reviews	*The results of any audits or reviews of Mineral Resource estimates.*	Saracen has adopted a process for geological modelling, estimation and reporting of mineral resources that meets high industry standards. The Porphyry Resource model was completed by an external consultant under guidance

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC Code Explanation	Commentary
		from Saracen geology personnel. Saracen has reviewed the resource estimates and is satisfied that they are a true reflection of the global insitu resources for Porphyry.
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 relative accuracy of the Mineral Resource estimate is reflected in the reporting of the Mineral Resource as per the guidelines of the 2012 JORC Code. The resource estimates have undergone a robust validation process, and as such, the competent person is satisfied that the resources estimated in the block model are a true representation of the global insitu resources.
	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 statements relate to a global estimate of tonnes and grade.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	The Porphyry resource model was completed by an external consultant and reviewed by Saracen geology personnel. The model has been validated and the competent person is satisfied that the estimated gold grades give a true reflection of the global insitu resources. Reconciliation studies for Porphyry show that the resource model for Porphyry has a good predictive capacity and is a good representation of the insitu resources.

Section 4: Estimation and Reporting of Ore Reserves		
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 estimate for the Porphyry gold deposit used as a basis for conversion to the Ore Reserve estimate was compiled by Saracen. The data included drilling and assay data, geological mapping and historical mining records to validate the model against and solid interpretation wireframes of the geology.
	Clear statement as to whether the Mineral Resources are reported additional to. Or inclusive of, the Ore Reserves.	The Mineral Resource reported is inclusive of the Ore Reserve.
Site Visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.*	The competent person is conducting frequent ongoing site visits to the Carosue Dam Operations (CDO) mine site. Porphyry is located 50kms north west of the CDO Processing Plant and regularly visits the mine. Saracen and consultant geotechnical engineers regularly visit Porphyry to inspect the mine and gather data used in the preparation of geotechnical reports to define parameters for underground mining. Hydrogeology consultants have visited Carosue Dam to gather data and inspect the inflow of groundwater into the open pit, used in the preparation of reports used to determine water management strategies.
	If no site visits have been undertaken indicate why this is the case.	N/A
Study status	*The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves*	The Porphyry deposit was mined as open pit mine for a period of 24 months between 2010-2012 under Saracen ownership. Ore from Porphyry open pit was treated at the CDO Processing Plant. The Porphyry deposit was originally mined by various companies during 1990 to 2000, with both an open pit and underground working mined.

Section 4: Estimation and Reporting of Ore Reserves

Criteria	JORC Code Explanation	Commentary
		Since completion of the recent open pit cut-back, various mining studies have been completed on the resource. The 2020 Ore Reserve is based upon a prefeasibility level underground mining study. It includes a detailed mine design, various capital and operating inputs, costs of mining, surface haulage, processing, general administration and environment management related costs.
	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.	Modifying factors have been applied to the study to ensure the rigor of the financial analysis. All of the parameters assumed and adopted, as well as the financial analysis completed, have been the subject to peer review
Cut-off parameters	*The basis of the cut-off grade(s) or quality parameters applied*	For the purpose of Ore Reserve Estimate a planning cut-off grade of 2.0g/t was calculated based upon an assumed gold price of AUD$1,600/Oz and applicable processing, haulage and administration costs. A top cut has already been applied to the Mineral Resource Estimate eliminating the necessity for any further adjustment to the Ore Reserve estimate
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).*	The Porphyry underground ore reserve has been estimated using detailed mine development and stope designs. Modifying factors for Ore loss due to in-situ pillars, unplanned dilution and mining recovery have been applied to the economic analysis of the design to generate the ore reserve.
	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.	Underground mechanised mining for development, ground support, and production stoping is planned to be used at Porphyry. Mining and geotechnical studies determined two mining methods; 1) Jumbo Drift and Strip, and 2) Long hole open stoping with remnant in-situ pillars to be appropriate for the deposit. Both of these mining methods have been previously successfully applied at Porphyry. Similar methods are currently utilised at other underground mines throughout the Western Australian Goldfields and Australia.
	The assumptions made regarding geotechnical parameters (e.g. pit slopes, stope sizes, etc.), grade control, and pre-production drilling.	Several external consultants have reviewed the deposit and previous production results. Recommendations regarding mine design and production mining methods have been incorporated within the mine design. An allowance for 25% Ore loss due to in-situ pillars has been incorporated into the mine design. A grade control program with associated development for drilling platforms, grade control drilling designs, and sampling costs have been include in the mine design, mine schedule and economic analysis.
	The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).	The resource model used for the ore reserve calculations was PO160727ore.dm
	The mining dilution factors used.	An allowance for mining dilution was incorporated into the mine design. An additional unplanned dilution factor of 20% has been assumed for all stopes, including both production methods. An additional unplanned dilution factor of 10% has been assumed for all lateral development activities.
	The mining recovery factors used.	A mining recovery factor of 80% has been assumed for all stopes, while a mining recovery factor of 95% has been assumed for all development activities.
	Any minimum mining widths used	A minimum stope width of 3.0m was adopted in the design process.

Section 4: Estimation and Reporting of Ore Reserves

Criteria	JORC Code Explanation	Commentary
	The manner in which inferred Mineral resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.	No inferred resource metal has been reported. All inferred and unclassified material has been excluded from the stope optimisation process and subsequent block model interrogation. As such, all dilution material beyond the orebody boundary carries zero grade. The dilution material is mineralised, but grade was zeroed to avoid reporting inferred material in the Ore Reserves inventory.
	The infrastructure requirements of the selected mining methods.	Standard underground infrastructure has been included and will be developed as part of the mine design, including a decline for access and truck haulage, ventilation fans, escape-way ladders, electrical reticulation, mine services (air and water), and mine dewatering infrastructure. No specialised infrastructure is required to accommodate these methods of mining.
Metallurgical factors or assumptions	*The metallurgical process proposed and the appropriateness of that process to the style of mineralisation*	The ore reserve will be treated at the established Carosue Dam processing facility. The Carosue Dam Process Plant is a CIL cyanide leach plant incorporating a gravity circuit which is appropriate for the extraction of gold from free milling gold ores. An average plant processing recovery of 93% has been assumed in the Ore Reserve Estimate which is consistent with current and historical plant recoveries for Porphyry ore.
	Whether the metallurgical process is well-tested technology or novel in nature.	The method of ore processing and extraction proposed utilises well tried and proven technology dating back to the 1960's and practiced extensively around the world.
	The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.	An average gold recovery for Porphyry deposit is estimated at 93.0%. The recovery estimation is based on met test work and past actual average recovery data collected at the Carosue Plant. The plant performance is consistent between 92 to 94% while processing similar type of ore material blend with range of other ore sources without any issue. Approximately three years of processing the Porphyry ore through this plant have resulted in a solid understanding of the metallurgical parameters of the ore.
	Any assumptions or allowances made for deleterious elements.	There are no known deleterious elements present in Porphyry ore that can impact on ore recoveries at Carosue Plant.
	The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the ore body as a whole.	Ore from the Porphyry open pit and underground has been treated at the CDO Processing Plant since 2010. When in operation the Porphyry ore were processed through to Carosue Dam that representing a sizeable bulk sample/pilot test.
	For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications.	N/A
Environmental factors or assumptions	*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.*	Porphyry open pit is currently on 'care and maintenance'. All required Environmental studies have been completed and Statutory Government Approvals namely works approvals, dewatering and discharge licences have been granted. Mining Approvals will require to be reapplied for the new mine reserve in a timely manner such that it will be granted before the actual commencement. The existing Carosue Dam processing facility at which the Porphyry ore will be processed and the accommodation village all lay on granted mining leases. The road haulage network footprint is underpinned by a combination of miscellaneous licences and granted mining leases. Waste rock characteristic study has been carried out and it is expected to be representative of waste rock. It is proposed that all underground waste rock will remain within the existing open pit.

Section 4: Estimation and Reporting of Ore Reserves

Criteria	JORC Code Explanation	Commentary
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.*	Carosue Dam Operations are well established, with mining activities being conducted by Saracen since 2009. The operation extends from the south (CDO plant, administration, Whirling Dervish & Karari mines) to the North (Deep South mine) and is connected via a private haulage road. The CDO operation comprises at 3.3mtpa CIL ore processing facility, aerodrome with sealed runway, associated tailings storage facilities, several power stations, water supply, workshops, and administration offices. A modern accommodation camp is sited within a few kilometres of the administration offices and processing facility. A 70km gravel access road links Carosue Dam Operations to the gravel section of Yarri Road. Both the Saracen and Shire of Kalgoorlie gravel roads are well maintained. The Porphyry mine site is ~50km from the CDO Processing Plant and ~120km northeast of Kalgoorlie, adjacent to Yarri Road.
Costs	*The derivation of, or assumptions made, regarding projected capital costs in the study.*	Capital costs relate to establishment of capital infra-structure and continuing expansion of capital works for Porphyry underground. The cost estimates are based on historical costs for similar work undertaken at Carosue Dam for the establishment and operation of the Deep South, Karari and Whirling Dervish underground mines
	The methodology used to estimate operating costs.	Operating costs for underground mining have been derived from a combination of actual costs from Carosue Dam Operations and submitted indicative pricing supplied by independent mining contractors. Operating costs for ore processing have been derived from known parameters at Carosue Dam, with additional costs such as labour sourced from current operational data.
	Allowances made for the content of deleterious elements	Previous operational experience on the Porphyry deposit at Carouse Dam did not reveal any deleterious elements within the ore or waste that required any additional cost allowances.
	The derivation of assumptions made of metal or commodity price(s), for the principal minerals and co-products	An assumed gold price of AUD$1,600/oz. has been adopted for financial modelling.
	The source of exchange rates used in study	All revenue and cost calculations have been made in AUD, so no exchange rate usage or assumptions have been necessary.
	Derivation of transportation charges	Costs associated with bullion transportation have been derived from existing contractual arrangements at Carouse Dam.
	The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.	Costs associated with refining have been derived from existing contractual arrangements at Carouse Dam.
	The allowances made for royalties payable, both Government and private.	Royalty costs are a 2.5% royalty payable to the Western Australian state government, and a 1.5% royalty payable to IRC.
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.*	N/A
	The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products	An assumed gold price of AUD$1,600/oz. has been adopted for financial modelling

Section 4: Estimation and Reporting of Ore Reserves

Criteria	JORC Code Explanation	Commentary
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.	There is a transparent quoted market for the sale of gold.
	For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.	N/A
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.*	Cost assumptions have been made using a combination of historical performance at Carosue Dam and contract mining costs from an experienced mining contractor. The economic analysis is viewed as representative of the current market conditions.
	NPV ranges and sensitivity to variations in the significant assumptions and inputs.	Sensitivities were not assessed.
Social	*The status of agreements with key stakeholders and matters leading to social licence to operate*	Carosue Dam is currently operating and has good relationships with neighbouring stakeholders, including engagement with the local pastoralists and the traditional owners. When Porphyry was previously in operation, Saracen has experienced good relations with neighbouring stakeholders, including engagement with the local pastoralists and the traditional owners and those relationships have been maintained over the time. The mine is located on leasehold pastoral land with compensation agreements in place with the local pastoralist. Granted mining leases cover all of the proposed mining and processing assets
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	Water inrush is the only naturally occurring risk identified. Inrush from regional surface water flows has been addressed by the construction of appropriate water diversion bunds as part of previous open pit mining operations. A containment pond and dewatering infrastructure has provided for in the mine design and capital costs to mitigate water inrush from rainfall captured within the existing open pit.
	The status of material legal agreements and marketing arrangements	Contracts are in place for all critical goods and services to operate Carosue Dam Operations. A mining contract will be tendered for Porphyry underground and open pit works prior to the commencement of mining.
	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	A new Mining Approval will be required for the updated reserve mine in a timely manner such that it will be granted before the actual commencement. Statutory Government Approvals namely dewatering and discharge licence have been granted.

Section 4: Estimation and Reporting of Ore Reserves

Criteria	JORC Code Explanation	Commentary
	any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.	
Classification	*The basis for the classification of the Ore Reserve into varying confidence categories*	The Ore Reserve Estimate classification for Porphyry underground has been in accordance with the JORC code 2012. The estimated Ore Reserve is classified as Probable (100%) with the majority of the reserve being derived from that portion of the Mineral Resource classified as indicated.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	Cost assumptions and inputs factors applied to the underground project were derived from a combination of historical site data, current operational data relating to Carouse Dam Operations, mining costs supplied by independent mining contractors, and recommendations from industry consultants. Results of the detailed design and analysis reflect the views of Competent Person regarding the Porphyry deposit.
	The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any)	100% of Probable ore from the Ore Reserve estimate has been derived from Indicated Mineral Resource category.
Audits or reviews	*The results of any audits or reviews of Ore Reserve estimates*	The Ore Reserve Estimation process is in line with the Saracen Ore Reserve Policy and has undergone internal review. 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 geo-statistical 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 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.* *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.* *It is recognised that this may not be possible or appropriate in all circumstances. These statements or relative accuracy and confidence of the estimate should be compared with production data, where available.*	The Ore Reserve estimate has been prepared within the guidelines of the 2012 JORC Code. The relative confidence of the estimate complies with the criteria of Probable Ore Reserves. Based upon; - Resource estimate - significant operating history, - application of current industry practices, - appropriate operating and capital costs, The range of the modifying factors is reasonable and confidence in the resulting reserve estimate is reasonable. Estimates are global but will be reasonably accurate on a local scale. The complete mine design with all of the modifying factors assumed and adopted, and financial analysis used in the estimated Ore Reserve have been the subject to peer review internally, and the Competent Person is confident that it is an accurate estimation of the current Porphyry reserve. Reconciliation results from past mining at Porphyry, independent consultant recommendations, and suitable factors from currently active underground operations at CDO have been considered and factored into the reserve assumptions where appropriate.

Million Dollar

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
Sampling Techniques	*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.*	Saracen has undertaken reverse circulation drilling (RC) and diamond drilling (DD) at Million Dollar. Historic sampling methods conducted since 1979 have included rotary air blast (RAB), reverse circulation and diamond drillholes (DD).
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used	Sampling for RC and DD drilling is carried out as specified within Saracen sampling and QAQC procedures as per industry standard. RC chips and DD core provide high quality representative samples for analysis. RC, RAB and DD core drilling was completed by previous holders to industry standard at that time (1979- 2004).
	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 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information	RC chips are cone split and sampled into 1m intervals with total sample weights less than 3 kg. Diamond core is HQ sized, sampled to 1m intervals or geological boundaries where necessary and cut into half core. Samples are selected to weigh less than 3 kg to ensure total sample inclusion at the pulverisation stage. Saracen chip and core samples are crushed, dried and pulverised to a nominal 90% passing 75µm to produce a 50g sub sample for analysis by FA/AAS. Historical RAB, RC and diamond sampling was carried out to industry standard at that time. Analysis methods include fire assay, screen fire assay, aqua regia and unspecified methods.
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 deposit was initially sampled by 706 RAB holes, 595 RC holes (assumed standard 5 ¼ ''bit size) and 49 surface unknown diameter diamond core holes. Saracen have completed 1482 RC drillholes, with recent drilling utilising a 143mm diameter bit with a face sampling hammer and an external auxiliary booster. 4 HQ diamond drillholes have also been completed by Saracen for a total of 92 diamond drill holes through the deposit. Diamond holes were oriented using an ACT 111 tool It is unknown if historic diamond drill core was oriented.
Drill Sample Recovery	*Method of recording and assessing core and chip sample recoveries and results assessed*	RC sampling recoveries are recorded in the database as a percentage based on a visual weight estimate; no historic recoveries have been recorded. Diamond core recovery percentages calculated from measured core versus drilled intervals are logged and recorded in the database No historic diamond core recovery data has been recorded.
	Measures taken to maximise sample recovery and ensure representative nature of the samples	During RC drilling daily rig inspections are carried out to check splitter condition, general site and address general issues. Diamond core is reconstructed into continuous runs on an angle iron cradle for orientation marking. Depths are checked against depth given on the core blocks. Historical RAB, RC and diamond drilling to industry standard at that time.

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
	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.	There is no known relationship between sample recovery and grade for RC drilling. Diamond drilling has high recoveries due to the competent nature of the ground meaning loss of material is minimal. Any historical relationship is not known.
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.* *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.*	Logging of RC chips and diamond core records lithology, mineralogy, texture, mineralisation, weathering, alteration and veining. Geotechnical and structural logging is carried out on all diamond holes to record recovery, RQD, defect number, type, fill material, shape and roughness and alpha and beta angles. Chips from all RC drillholes are stored in chip trays for future reference. Core is photographed in both dry and wet state Qualitative and quantitative logging of historic data varies in its completeness.
	The total length and percentage of the relevant intersections logged	All RC and DD drillholes holes are logged in full. Historical logging is approximately 95% complete.
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.*	All drill core is cut in half onsite using an automatic core saw. Samples are always collected from the same side. Historic diamond drilling has been sampled via unknown methods.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	All chip samples are cone split. Occasional wet samples are encountered; increased air capacity is routinely used to aid in keeping the sample dry when water is encountered. Historic RAB and RC drilling was sampled using riffle, grab, spear and unknown methods.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	The sample preparation of RC chips and DD core adheres to industry best practice. It is conducted by a commercial laboratory and involves oven drying, coarse crushing then total grinding to a size of 90% passing 75 microns. Best practice is assumed at the time of historic sampling.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	All subsampling activities are carried out by commercial laboratory and are considered to be satisfactory. Sampling by previous holders assumed to be industry standard at the time.
	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.	RC field duplicate samples are carried out at a rate of 1:10 and are sampled directly from the on-board splitter on the rig. These are submitted for the same assay process as the original samples and the laboratory are unaware of such submissions. Sampling by previous holders assumed to be industry standard at the time.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Sample sizes of 3kg are considered to be appropriate given the grain size (90% passing 75 microns) of the material sampled.
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.*	RC chip samples and diamond core samples are analysed by external laboratories using a 40g or 50g fire assay with AAS finish. This method is considered suitable for determining gold concentrations in rock and is a total digest method. Historic sampling includes fire assay, screen fire assay, aqua regia and unspecified methods.
	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 have been utilised for reporting gold mineralisation.
	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.	Certified reference material (standards and blanks) with a wide range of values are inserted into every drillhole at a rate of 1:25 for exploration RC and diamond drilling. These are not identifiable to the laboratory. QAQC data returned are checked against pass/fail limits with the SQL database and are passed or failed on import. A report is generated and reviewed by the geologist as necessary upon failure to determine further action.

Section 1: Sampling Techniques and Data		
Criteria	JORC Code Explanation	Commentary
		QAQC data is reported monthly. Sample preparation checks for fineness are carried out to ensure a grindsize of 90% passing 75 microns. The laboratory performs a number of internal processes including standards, blanks, repeats and checks. QAQC data analysis demonstrates sufficient accuracy and precision. Industry best practice is assumed for previous holders.
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.*	Significant intercepts are verified by the Geology Manager and corporate personnel.
	The use of twinned holes.	No twinned holes have been drilled at Million Dollar.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols	Primary data is collated in a set of excel templates utilising lookup codes. This data is forwarded to the Database Administrator for entry into a secure acQuire database with inbuilt validation functions. Data from previous owners was taken from a database compilation and validated as much as practicable before entry into the Saracen acQuire database.
	Discuss any adjustment to assay data.	No adjustments have been made to assay data. First gold assay is utilised for resource estimation.
Location of data points	*Accuracy and quality of surveys used to locate drillholes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.*	Exploration drillholes are located using a Leica 1200 GPS with an accuracy of +/- 10mm. Downhole surveys are carried out using an Eastman single shot camera at regular intervals (usually 30m). Previous holders' survey accuracy and quality is unknown
	Specification of the grid system used.	A local grid system (Million Dollar) is used. The one point conversion to MGA_GDA94 zone 51 is MDEast MDNorth RL MGAEast MGANorth RL Point 1 5000 20000 0 430962.99 6703259.80 0 Historic data is converted to the Million Dollar local grid upon export from the database.
	Quality and adequacy of topographic control.	Topographic control originally used site based survey pickups in addition to Kevron aerial photogrammetric surveys with +/- 5m resolution. Pre mining, new and more detailed topography has since been captured and will be used in future updates and for subsequent planning purposes.
Data spacing and distribution	*Data spacing for reporting of Exploration Results.*	The nominal spacing for drilling is 20m x 20m to 50mx50m. Grade control drilling is 10mX5m.
	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.	Data spacing and distribution are sufficient to establish the degree of geological and grade continuity appropriate for JORC classifications applied.
Orientation of data in relation to geological structure	*Whether sample compositing has been applied.*	Sample compositing is not applied until the estimation stage. Some historic RAB sampling was composited into 4m samples.
	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 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.	No significant sampling bias has been recognised due to orientation of drilling in regards to mineralised structures.

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
Sample security	*The measures taken to ensure sample security.*	Samples are prepared on site under supervision of Saracen geological staff. Samples are selected, bagged into tied numbered calico bags then grouped into secured cages and collected by the laboratory personnel. Sample submissions are documented via laboratory tracking systems and assays are returned via email
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	An internal review of companywide sampling methodologies was conducted to create the current sampling and QAQC procedures. No external audits or reviews have been conducted.

Section 2: Reporting of Exploration Results		
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 Million Dollar pit is located on M31/3 with the southern extension extending on to M31/76. The tenements are held 100% by Saracen Gold Mines Pty Ltd, a wholly owned subsidiary of Saracen Mineral Holdings Limited. Mining Leases M31/3 and M31/76 have a 21 year life and are held until 2025 and 2030 respectively. Both tenements are renewable for a further 21 years on a continuing basis. Mining Lease M31/3 is subject to one royalty agreement and one caveat (59H/067). Mining Lease M31/76 is subject to three royalty agreements, one caveat (59H/067), and a pre-emptive right. Mining Lease M31/76 is subject to a bank mortgage (499142). All production is subject to a Western Australian state government NSR royalty of 2.5%. Mining Leases M31/3 and M31/76 are subject to the Edjudina Pastoral Compensation Agreement. Mining Leases M31/3 and M31/76 are affected by the Maduwongga (WC2017/001) and Nyalpa Pirniku (WC2019/002) native title claims. There are no registered Aboriginal Heritage Sites on M31/3 and M31/76 that affect the Million Dollar deposit. The Mining Rehabilitation Fund applies to the tenements.
	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.	The tenements are in good standing and there are no known impediments to obtaining a licence to operate.
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	Exploration began in the area in the 1930s, with the Porphyry orebody discovered to the north of Million Dollar with mining operations continuing into the 1940s. Pennzoil carried out exploration in the late 1970s, focussing on the Porphyry area and discovering the Million Dollar mineralisation. Concurrent exploration by Seltrust delineated the Million Dollar South mineralisation. Edjudina Gold Mines, a joint venture between Pennzoil, Picon and Pioneer Concrete, reopened the Porphyry mine, carried out extensive drilling and developed the Million Dollar pit. Poor recovery and excessive dilution led to the closure of the operation. In the late 1980's Audax carried out RAB, RC and diamond drilling at Million Dollar south, delineating the resource. Enterprise Gold entered into a JV with Audax and completed further drilling. Consolidated Resources acquired the Million Dollar project area and carried out further RC drilling at Million Dollar South and a feasibility study before being taken over by Mount Edon Gold Mines who suspended further work. Following an aeromagnetic survey of the Porphyry - Million Dollar area, Mount Edon carried out a RAB and RC program.

Section 2: Reporting of Exploration Results		
Criteria	**JORC Code Explanation**	**Commentary**
		PacMin acquired the tenements following the takeover of Mount Edon, who then merged with Sons of Gwalia. A wide spaced infill drilling program was commenced to test for extensions and deeper repetitions of the mineralisation before their collapse and takeover of the project by St Barbara.
Geology	*Deposit type, geological setting and style of mineralisation.*	The Million Dollar deposits lie in a greenstone-granite belt within the Eastern Goldfields Province of the Archaean Yilgarn Block. The deposits are hosted predominately within porphyritic quartz monzonite intruded into andesitic volcanic rocks. Gold mineralisation is associated with albite-silica-hematite-sericite-pyrite alteration and quartz pyrite veining. Structural controls on the mineralisation are shallow easterly dipping north striking brittle shear zones related to the NNW trending regional faults. The thickness of the shear zones vary between 1m and 10m wide.
Drillhole 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:* • *easting and northing of the drill hole collar* • *elevation or RL (Reduced Level – elevation* • *above sea level in metres) of the drill hole collar* • *dip and azimuth of the hole* • *down hole length and interception depth* • *hole length.* • *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.*	All material data was periodically released on the ASX: nominally the report dated 30/07/2019, 29/07/2010 Future drill hole data will be periodically released or when a results materially change the economic value of the project.
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 significant intercepts have been length weighted with a minimum Au grade of 1ppm. No high grade cut off has been applied.
	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 with minimum width of 1m and maximum width of 3m for internal dilution. Where stand out higher grade zone exist with in 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.	There are no metal equivalents reported in this release.
Relationship between mineralisation widths and intercept lengths	*These relationships are particularly important in the reporting of Exploration Results.* *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.*	Previous announcements included sufficient detail to clearly illustrate the geometry of the mineralisation and the latest drilling. All results were reported as downhole lengths.

Section 2: Reporting of Exploration Results		
Criteria	**JORC Code Explanation**	**Commentary**
	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').	
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.*	All significant exploration results released by Saracen are accompanied by the appropriate diagrams and maps at the time of the release.
Balanced Reporting	*Where comprehensive reporting of all Exploration Results are not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	All results from the recent campaign have been reported, irrespective of success or not.
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 substantive data acquisition has been completed in recent times.
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).* *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive*	Million Dollar is a current exploration play that is currently being reviewed for greater exploration potential.

Section 3: Estimation and Reporting of Mineral Resources		
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.*	The database used for the estimate an extract from an Acquire SQL database. The primary database is regulated by a locked framework called the acquire data model which fixes the relationships between tables. The data model minimises the potential for data collection and data usage errors through pre-determined look up tables, storage and export functions. User defined permissions also regulate the ability to add, edit or extract data. Primary data is recorded using typical manual translation of logging and data capture from written logs and direct import of csv tables through a data import scheme where data is validated upon import or direct data entry options into the database using predefined look up values.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC Code Explanation	Commentary
	Data validation procedures used.	Data that is captured in the field is entered into Excel templates which are checked on import into the 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.
Site Visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.*	The Competent Person regularly visited the site during exploration phases to assess geological competency and ensure integrity across all geological disciplines. The competent person has built a sound understanding of the deposit geology thus far.
	If no site visits have been undertaken indicate why this is the case.	NA
Geological Interpretation	*Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.*	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 and geophysics.
	Nature of the data used and any assumptions made.	The geological interpretation of Million Dollar 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 development face/backs mapping were all used to help define the mineralised domains and regolith boundaries. Interpreted shears and faults obtained from in pit mapping further constrained the domaining. The current resource has been interpreted from 92 diamond holes, and 2077 RC holes
	The affect, if any, of alternative interpretations on Mineral Resource estimation.	The geological wireframes defining the discrete mineralised zones are considered to be robust. Alternative interpretations bulking mineralisation together have been considered but deemed unsuitable to appropriately constraining metal distribution
	The use of geology in guiding and controlling the Mineral Resource estimation.	Geological domains interpreted from all available geological data are used as estimation domains. They are further sub-domained where internal multi-modal grade populations and sufficient sample data is available in order to improve grade homogeneity and reduce variance.
	The factors affecting continuity both of grade and geology.	Gold mineralisation at Million Dollar is primarily hosted within a syeno-monzonite granitoid unit as stacked en echelon quartz veins within a braided shear system. Secondary mineralisation does exist at the margins of the granitoid units in interpreted strain shadows and as minor cross linking structures between the main lodes. Higher grades are largely associated with albite-silica-hematite alteration and pyrite mineral assemblages in concert with shear parallel quartz-pyrite veining.
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.*	Million Dollar mineralisation extends from 6702245mN to 6704030mN, 430870mE to 431380mE and 250 metres below surface.
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.*	Mineralisation is domained based on geological continuity. 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 and RC 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. Extreme grades are not common in the data set and all domains are analysed individually to determine specific top-cut values. Due to the lack of extreme grades the

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	**JORC Code Explanation**	**Commentary**
		top-cut process affects only 1-2% of the data. Many of the principal lodes exhibit bimodal grade populations. These internal populations are controlled by grade indicators derived from 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 2x2x1m to ensure sub-domain complexity is maintained then optimised and re-blocked to the parent block size of 10x10x5m. This model is then used to back flag the composite file with the defined sub-domain identifiers. 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. Hard boundaries are maintained across sub-domains. The maximum distance of extrapolation from last known data points for the inferred material is dependent on the geological continuity and confidence across the lode, but less than 40m for the deposit.
	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 ordinary kriged resource estimate has been cross checked against several previous estimates. Historic mine production records are not available to evaluate the estimated model.
	The assumptions made regarding recovery of by-products.	No assumptions have been made with respect to the recovery of by-products.
	Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulfur for acid mine drainage characterisation).	There has been no estimate at this point of deleterious elements.
	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 10m (East- West) x 10m (North-South) x 5m (vertical) and optimised using kriging neighbourhood analysis. Sub-cells have been used at a resolution of 1m x 1m x1m to ensure high volume 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 40x40m resource definition spacing. A three 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 selective mining units have been assumed.
	Any assumptions about correlation between variables.	No assumptions have been made regarding correlation between variables.
	Description of how the geological interpretation was used to control the resource estimates.	Mineralisation is partitioned into estimation domains relative to structural orientation and specific alteration assemblage. The geological interpretation is initially created from drill data but calibrated with mapping of open pit 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.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC Code Explanation	Commentary
	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. Domain composites are visually compared to the estimated block model in cross and long section 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.
Moisture	*Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	All tonnages are estimated on a dry basis.
Cut-off parameters	*The basis of the adopted cut-off grade(s) or quality parameters applied.*	Based on Saracen's current economic operations at Carosue Dam, and the natural grade distinction above background, a cut-off grade of 0.5g/t has been implemented.
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 deposit has previously been mined as an open pit, and it is assumed that in the future this deposit will again be mined by conventional open pit load and haul operations. To best capture "reasonable prospects for eventual economic of extraction", the mineral resource was reported within an optimised pit shell at $2250 at a 0.5g/t cut off for the open pit resources.
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 process 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.*	Metallurgical testing of RC composites of oxide and transitional ores identified leach recoveries from 92% to 96% with a high gravity gold component (70% - 80%).
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*	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.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	**JORC Code Explanation**	**Commentary**
	operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields 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.	
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 Million Dollar were determined via testing of representative intervals from diamond drill holes. 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 non porous material, so additional measures to reduce moisture intake during the water displacement method is unnecessary at this stage. Coating more friable oxides and sediments (to reduce moisture loss or moisture gain during the process) is considered on a deposit by deposit basis.
	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 Million Dollar resource is classified as Measured, Indicated or Inferred assigned via boundary string by domain based on a combination of physical and estimation quality metrics including mining exposure, drill spacing, search pass, kriging efficiency / slope / variance, 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 40x40m, search pass either 1 or 2, established grade and geological continuity, predominantly positive kriging efficiency and >50% slope. Inferred material is drill spacing between 40x40m and 80x80m's with established geological continuity. All other mineralisation is assigned a Potential resource category.
	Whether appropriate account has been taken of all the 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 care has been taken to account for relevant factors influencing the mineral resource estimate. Confidence in the predicted tonnes and grade estimated in the model is high.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The geological model and the mineral resource estimate reflect the competent person's view of the deposit.
Audits or reviews	*The results of any audits or reviews of Mineral Resource estimates.*	Saracen has adopted a process for geological modelling, estimation and reporting of mineral resources that meets high industry standards. At the completion of resource estimation Saracen 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

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC Code Explanation	Commentary
		• Model validation – swathe plots, visual checks, volume comparisons, and 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. Saracen Gold Mines uses a standard approach to resource estimation and the procedure requires the systematic completion of the Saracen 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 statements relate to a global estimate of tonnes and grade.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	Historical production data is not available so no comparison of the model has been made.

Section 4: Estimation and Reporting of Ore Reserves		
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 for the Million Dollar gold deposit is a robust global estimate that was used as a basis for conversion to the Ore Reserve estimate. The Resource estimate was compiled by Saracen using exploration, resource definition, and grade control drilling and assay data, geological mapping and historical mining records to validate the model against, and solid interpretation wireframes of the geology. This information was used to construct a model estimated by various kriging methods. The block model was depleted with the end of June 2020 monthly survey pickup for Reserve Estimation.
	Clear statement as to whether the Mineral Resources are reported additional to. Or inclusive of, the Ore Reserves.	The Mineral Resource reported is inclusive of the Ore Reserve.
Site Visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.*	A Competent Person along with a geotechnical consultant has conducted several site visits to the Million Dollar open pit since the inclusion in the Carosue Dam operations' life of mine plan. The purpose of these visits is to collect information for optimisation work, validating input parameters, visual pit inspection, discussion and feedback for life of mine planning. The information also includes the discussion around current mining performance, wall conditions and overall stability, and groundwater condition.

Section 4: Estimation and Reporting of Ore Reserves		
Criteria	JORC Code Explanation	Commentary
	If no site visits have been undertaken indicate why this is the case.	N/A
Study status	*The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves*	The Million Dollar deposit was mined as an open pit for a short period during the late 1980's. The existing historic pit excavation work is limited to shallow depth. Saracen has completed all required feasibility studies and Million Dollar has positively passed through all economic and social risk management criteria for recommencement and all statutory approvals have been granted. The 2020 Ore Reserve has included all aspects of operational inputs including actual production parameters, operating costs of mining, processing, general administration and environment management related costs.
	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.	Modifying factors have been applied to the optimisation study and resultant Reserve pit design work to ensure the rigor of the financial analysis. Operational costs and production parameters have been used from actual and ongoing mining and processing performance. Saracen has completed all appropriate supporting mining studies required for the Ore Reserve estimate.
Cut-off parameters	*The basis of the cut-off grade(s) or quality parameters applied*	The Ore Reserve is estimated at cut-off grade of 0.60g/t, estimated using assumed gold price of AUD$1,750/oz and operating cost of mining, processing, haulage and general administration. A top cut has already been applied to the Mineral Resource Estimate eliminating the necessity for any further adjustment to the Ore Reserve Estimate.
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).*	The resource model used in the Mineral Resource Estimation was the basis for the generation of a range of Whittle 4X pit optimisation shells. The generation of these shells was reliant upon costs and input parameters derived from current operational data, contractors and independent consultant recommendations. An appropriate shell was then selected as the basis for an iterative process of pit design work, culminating in the finalisation of a detailed pit design for the Million Dollar Reserve.
	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 mining method employed at Million Dollar is conventional open pit with hydraulic excavator and dump truck fleet, and drill and blast activity. The class of excavator employed is similar to that at other open pit mining operations, providing a good operating dataset for production and productivity rate measurement and financial modelling. Million Dollar Reserve pit designed to include a series of successive cutbacks to achieve life of mine Reserve such that it meets the operational efficiency, safety and production rates. Appropriate mine schedules and lead times have been applied to maintain efficient mining operations between the stages.
	The assumptions made regarding geotechnical parameters (e.g. pit slopes, stope sizes, etc.), grade control, and pre-production drilling.	Life of Mine geotechnical recommendations were made by an independent external consultant following site visits, inspection of drill core, and a review of the geotechnical data gathered during earlier operations. The geotechnical consultant was engaged by Saracen to assist with the geotechnical aspects of technical studies. The pit is in operation and site geotechnical team is assessing and monitoring continuously the pit wall and stability performance. The Grade control method to be employed at Million Dollar will utilise RC drilling and sampling method. The method and practice has been utilised successfully at all current and past mining operations at Saracen.
	The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).	The Ore Reserve Estimate is based on detailed life of mine pit design work by using a geology approved resource model, and making appropriate dilution and recovery factor allowances for mining fleet and methods utilised.
	The mining dilution factors used.	A mining dilution factor of 23% is applied on the Ore Reserve estimation and reflects the mining performance based on ore body characteristics, mining method and equipment utilised.
	The mining recovery factors used.	A mining ore loss factor of 8% is applied on the Ore Reserve estimation and reflects the mining performance based on ore body characteristics, mining method and equipment utilised.

Section 4: Estimation and Reporting of Ore Reserves		
Criteria	JORC Code Explanation	Commentary
	Any minimum mining widths used	A minimum mining width of 25m has been adopted for the primary excavation fleet. Where ‘pinch-points’ occur or “Good Bye” cuts are considered at the base of the pit, it is assumed that a smaller or more versatile excavator will be employed. The practice is very consistent across both Saracen operations and reflects the suitability and efficiency of the mining performance.
	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 does not generate any revenue. Therefore final pit reserve inventory has excluded any inferred mineral resources.
	The infrastructure requirements of the selected mining methods.	The selected mining method and location of the pit is close to existing Carosue Dam mining operations, which consists of underground mines, 3.3mt processing plant, modern camp site and all other required infrastructure to support the current and future mine plan.
Metallurgical factors or assumptions	*The metallurgical process proposed and the appropriateness of that process to the style of mineralisation*	The Ore Reserve will be treated at the established Carosue Dam processing facility. The facility is a conventional crushing, gravity circuit, grind, and CIL (carbon in leach) plant and is appropriate for the extraction of gold from free milling mineralisation.
	Whether the metallurgical process is well-tested technology or novel in nature.	The current processing plant and method applied utilises well tried and proven technology since being in operation with average gold recovery falling typically between 92 to 94% for all available material types near Carosue Dam operations.
	The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.	An average gold recovery for the Million Dollar deposit is estimated at 94.0%. The recovery estimation is based on met test work and ongoing actual average recovery data collected at the Carosue Plant. The plant performance is consistently between 92 to 94% while processing similar types of ore material blended with range of other ore sources without any issue. Metallurgical testwork has been carried out on samples from the Million Dollar deposit by a test lab, with recoveries in the range of 90%-96% hence the estimated recovery is in line with expectation.
	Any assumptions or allowances made for deleterious elements.	There are no known deleterious elements present in Million Dollar ore that can impact on ore recoveries at the Carosue Plant.
	The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the ore body as a whole.	A number of samples of each expected rock type and grade bin has been sampled through the Carosue Dam processing plant for trial test work. These bulk samples/pilot test work are considered as sufficient to represent the Million Dollar ore body as a whole.
	For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications.	N/A
Environmental factors or assumptions	*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 Million Dollar open pit is now is full operation. All required Environmental studies have been completed and Statutory Government Approvals including clearing permits, works approvals, dewatering and discharge licence have been granted. A Mining Proposal has been approved for reserve pit. The existing Carosue Dam processing facility at which the Million Dollar ore will be processed and the accommodation village all lay on granted mining leases. The road haulage network footprint is underpinned by a combination of miscellaneous licences and granted mining leases. A waste rock characterisation study has been carried out and it is expected to be representative of waste rock. An appropriate landform design criterion has been applied based on rock characteristics to accommodate the current and any future pit expansion plan.

Section 4: Estimation and Reporting of Ore Reserves		
Criteria	JORC Code Explanation	Commentary
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.*	The required infrastructure for Million Dollar pit commencement has been set out including offices, workshop, fuel and water storage, drainage and camp facilities. The Million Dollar mine site is ~50km from the CDO Processing Plant and ~120km northeast of Kalgoorlie, adjacent to Yarri Road. The processing facility and major infrastructure are in place and fully operational at Carosue Dam. Power is generated from a powerhouse containing gas/diesel generators and processing water is sourced by dewatering old pits. Potable water is sourced from borefields and then processed through a reverse osmosis plant. A modern well maintained accommodation camp is in place and fully operational at Carosue Dam. Access to the site for FIFO workers is via direct commercial flights to site and via direct haul road to Carosue Dam from Kalgoorlie.
Costs	*The derivation of, or assumptions made, regarding projected capital costs in the study.*	The majority of capital work relating to infrastructure setup and geology drill program has been completed. Further allowance has been made in financial modelling for the pre striping of the pit.
	The methodology used to estimate operating costs.	Operating costs for open pit mining have been derived from a combination of actual costs from SGM's Carosue Dam/Thunderbox Operations and costs supplied by various contract mining companies, and consultants. Operating costs for ore processing, haulage and administration have been derived from known parameters at Carosue Dam operations.
	Allowances made for the content of deleterious elements	There is no evidence of any deleterious elements within the ore or waste that required any additional cost allowances.
	The derivation of assumptions made of metal or commodity price(s), for the principal minerals and co-products	Assumed gold price of AUD$1,750/oz has been adopted for the financial modelling. No allowance is made for silver by-products.
	The source of exchange rates used in study	All revenue and cost calculations have been made in AUD, so no exchange rate usage or assumptions have been necessary.
	Derivation of transportation charges	Costs associated with bullion transportation have been derived from existing contractual arrangements at Carouse Dam.
	The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.	Costs associated with refining have been derived from existing contractual arrangements at Carouse Dam.
	The allowances made for royalties payable, both Government and private.	Royalty costs are the WA state government royalty of 2.5%, and a third party royalty of 1.5% is payable.
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.*	For the purposes of Ore Reserve estimation it has been assumed that there is no gold hedging. All gold production will be sold at spot price to the Perth Mint.
	The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products	Assumed gold price of AUD$1,750/oz has been adopted for the financial modelling. No allowance is made for silver by-products.
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.	There is a transparent quoted market for the sale of gold.
	For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.	N/A

Section 4: Estimation and Reporting of Ore Reserves		
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.*	The Ore Reserve Estimation is based on detailed life of mine pit design and reflects positive economic outcomes. All relevant capital and operating costs as well as revenue and royalty factors have been included with appropriate discount factor for cash flow analysis.
	NPV ranges and sensitivity to variations in the significant assumptions and inputs.	A full financial model is 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*	Saracen has good relations with neighbouring stakeholders, including engagement with the local pastoralists and the traditional owners, with those relationships maintained and strengthened over time. The mine is located on leasehold pastoral land and all appropriate compensation agreements are in place. Aboriginal heritage surveys have been recently conducted in the project area. Granted mining leases cover all of the proposed mining and processing assets.
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	Water inrush is identified as naturally occurring risk with in the operation and has been addressed appropriately. Adequate water diversion bunds have constructed during the project commencement of the operation to provide safe and risk free work environment.
	The status of material legal agreements and marketing arrangements	Contracts are in place for all critical goods and services to operate Carosue Dam Operations.
	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.	A Mining Proposal has been granted for the reserve pit, as well as other Statutory Government permits including vegetation clearing, dewatering and discharge licences.
Classification	*The basis for the classification of the Ore Reserve into varying confidence categories*	The Ore Reserve Estimate classification has been in accordance with the JORC code 2012. The Ore Reserve Estimate classified as being Probable has been derived from the Mineral Resource classified as Indicated and Measured only.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	Cost assumptions and modifying factors applied to the pit optimisation and subsequent designs were derived from current operational data relating to Saracen's Carosue Dam and Thunderbox operations, and supplied from contract mining companies and consultants. Results of these optimisations and the resultant analysis reflect the Competent Person's view regarding the Million Dollar deposit.
	The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any)	100% of Probable ore from the Ore Reserve estimate has been derived from the Indicated category of the Mineral Resource.
Audits or reviews	*The results of any audits or reviews of Ore Reserve estimates*	The Ore Reserve estimation process is in line with the Saracen Ore Reserve Policy and has undergone internal review.
Discussion of relative accuracy/confidence	*Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an*	The Ore Reserve estimate has been prepared in accordance with the guideline of the 2012 JORC Code. The relative confidence of the estimate complies with the criteria of Probable Ore Reserves. Based upon;

Section 4: Estimation and Reporting of Ore Reserves		
Criteria	JORC Code Explanation	Commentary
	approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geo-statistical 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 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.* *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 ay the current study stage.* *It is recognised that this may not be possible or appropriate in all circumstances. These statements or relative accuracy and confidence of the estimate should be compared with production data, where available.*	- Resource estimate - significant operating history, - application of current industry practices, - appropriate operating and capital costs, The range of the modifying factors and mining parameters applied are reasonable and confidence in the resulting reserve estimate is reasonable. The reserve mine design has adopted all reasonable modifying factors and financial analysis used in the estimated Ore Reserve have been the subject to peer review internally, and the Competent Person is confident that it is an accurate estimation of the reserve. The Million Dollar operation will utilise the same grade control methods that are widely utilised at current Carosue Dam operations.

Wallbrook

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
Sampling Techniques	*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.*	Sampling methods undertaken by Saracen at the Wallbrook project area have included reverse circulation (RC), diamond drillholes (DD) and RC grade control drilling within the pits. Historic methods conducted since 1977 have included rotary air blast (RAB), reverse circulation and diamond drillholes.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used	Sampling for diamond and RC drilling is carried out as specified within Saracen sampling and QAQC procedures as per industry standard. RC chips and diamond core provide high quality representative samples for analysis. RC, RAB and DD core drilling was completed by previous holders to industry standard at that time (1977- 2006).
	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 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information	Diamond core is NQ sized, sampled to 1m intervals and geological boundaries where necessary and cut into half core to give sample weights under 3 kg. Samples are selected to weigh less than 3 kg to ensure total sample inclusion at the pulverisation stage. RC chips are riffle or cone split and sampled into 1m intervals with total sample weights under 3kg Saracen core and chip samples are crushed, dried and pulverised to a nominal 90% passing 75µm to produce a 50 g sub sample for analysis by FA/AAS. Historical RAB, RC and diamond sampling was carried out to industry standard at that time. Analysis methods include fire assay, aqua regia and unspecified methods.
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 deposit was initially sampled by 516 RAB holes, 360 RC holes (assumed standard 5 ¼ ''bit size) and 10 surface diamond HQ, PQ and unknown diameter holes. Saracen has completed 2 NQ diameter diamond geotechnical holes, 1 HQ diameter diamond drillhole for metallurgical test work, 210 RC holes from surface and 1868 grade control RC holes within the pits. Diamond drillholes were oriented using an Ezy-mark tool. It is unknown if historic diamond drill core was oriented.
Drill Sample Recovery	*Method of recording and assessing core and chip sample recoveries and results assessed*	Diamond core recovery percentages calculated from measured core versus drilled intervals are logged and recorded in the database. No historic recoveries have been recorded. Recoveries average >95%. RC sampling recoveries are recorded as a percentage based on a visual weight estimate; limited historic recoveries have been recorded.
	Measures taken to maximise sample recovery and ensure representative nature of the samples	Diamond core is reconstructed into continuous runs on an angle iron cradle for orientation marking. Depths are checked against depth given on the core blocks. During exploration RC drilling minimum tolerance shrouds were used to improve sample recovery. These were adjusted based on the difficulty of the clay.

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
		During GC campaigns daily rig inspections are carried out to check splitter condition, general site and address general issues. The sample bags weight versus bulk reject weight is compared to ensure adequate and even sample recovery. Historical RAB, RC and diamond drilling to industry standard at that time.
	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.	Diamond drilling has high recoveries meaning loss of material is minimal. There is no known relationship between sample recovery and grade for RC drilling. Any historical relationship is not known.
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.* *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.*	Logging of diamond drill core and RC chips records lithology, mineralogy, texture, mineralisation, weathering, alteration, veining and other features. Geotechnical and structural logging is carried out on all diamond holes to record recovery, RQD, defect number, type, fill material, shape and roughness and alpha and beta angles. Chips from all RC holes (exploration and GC) are stored in chip trays for future reference. Core is photographed in both dry and wet state. Qualitative and quantitative logging of historic data varies in its completeness.
	The total length and percentage of the relevant intersections logged	All diamond drillholes and exploration RC holes are logged in full. Every second drill line is logged in grade control programs with infill logging carried out as necessary. Historical logging is approximately 95% complete.
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.*	All drill core is cut in half onsite using an automatic core saw. Samples are always collected from the same side. Historic drill core had been half core, quarter core and full core sampled.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	All exploration and GC RC samples are cone or riffle split. Occasional wet samples are encountered; increased air capacity is routinely used to aid in keeping the sample dry when water is encountered. Historic RAB and RC drilling was sampled using riffle and unknown methods.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	The sample preparation of diamond core and RC chips adhere to industry best practice. It is conducted by a commercial laboratory or onsite laboratory and involves oven drying, coarse crushing then total grinding to a size of 90% passing 75 microns. Best practice is assumed at the time of historic sampling.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	All subsampling activities are carried out by commercial laboratory or onsite laboratory and are considered to be satisfactory. Sampling by previous holders assumed to be industry standard at the time.
	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.	Duplicate sampling is carried out at a rate of 1:10 for exploration drilling and 1:20 for GC drilling and is sampled directly from the on-board splitter on the rig. These are submitted for the same assay process as the original samples and the laboratory are unaware of such submissions. Sampling by previous holders assumed to be industry standard at the time.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Sample sizes are considered to be appropriate.
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.*	RC chip samples, diamond core and some grade control chip samples are analysed by external laboratories using a 50g fire assay with AAS finish. This method is considered suitable for determining gold concentrations in rock and is a total digest method. Some GC samples were analysed in the Saracen onsite laboratory using a pulverise and leach method. This method is a partial digest.

Section 1: Sampling Techniques and Data		
Criteria	JORC Code Explanation	Commentary
		Historic sampling includes fire assay, aqua regia and unknown methods.
	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 have been utilised for reporting gold mineralisation within the Wallbrook project.
	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.	Certified reference material (standards and blanks) with a wide range of values are inserted into every drillhole at a rate of 1:25 for exploration RC and DD, and 1:40 for GC drilling. These are not identifiable to the laboratory. QAQC data returned are checked against pass/fail limits with the SQL database and are passed or failed on import. A report is generated and reviewed by the geologist as necessary upon failure to determine further action. QAQC data is reported monthly. Sample preparation checks for fineness are carried out to ensure a grindsize of 90% passing 75 microns. The laboratory performs a number of internal processes including standards, blanks, repeats and checks. QAQC data analysis demonstrates sufficient accuracy and precision. Industry best practice is assumed for previous holders.
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.*	Significant intercepts are verified by the Geology Manager and corporate personnel.
	The use of twinned holes.	No specific twinned holes have been drilled in the Wallbrook project area but grade control drilling has confirmed the width and grade of previous exploration drilling.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols	Primary data is collated in a set of excel templates utilising lookup codes. This data is forwarded to the Database Administrator for entry into a secure acQuire database with inbuilt validation functions. Data from previous owners was taken from a database compilation and validated as much as practicable before entry into the Saracen acQuire database.
	Discuss any adjustment to assay data.	No adjustments have been made to assay data. First gold assay is utilised for resource estimation.
Location of data points	*Accuracy and quality of surveys used to locate drillholes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.*	Exploration drillholes are located using a Leica 1200 GPS with an accuracy of +/- 10mm. Drillhole collars within the pit and immediate surrounds are picked up by company surveyors using a Trimble R8 GNSS (GPS) with an expected accuracy of +/-8mm. Downhole surveys are carried out using an Eastman single shot camera at regular intervals (usually 30m). A number of drillholes have also been gyroscopically surveyed. Previous holders' survey accuracy and quality is unknown.
	Specification of the grid system used.	The gird system used at the Wallbrook project area is MGA94 zone 51.
	Quality and adequacy of topographic control.	Topographic control originally used site based survey pickups in addition to Kevron aerial photogrammetric surveys with +/- 5m resolution. Pre mining, new and more detailed topography has since been captured and will be used in future updates and for subsequent planning purposes.
Data spacing and distribution	*Data spacing for reporting of Exploration Results.*	The nominal spacing for exploration drilling is 25m X 25m to 25m/20m X 12.5m.
	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.	Data spacing and distribution are sufficient to establish the degree of geological and grade continuity appropriate for JORC classifications applied.

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
Orientation of data in relation to geological structure	*Whether sample compositing has been applied.*	Sample compositing is not applied until the estimation stage. Some historic RAB and RC sampling was composited into 3-4m samples with areas of interest re-sampled to 1m intervals. It is unknown at what threshold this occurred.
	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 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.	No significant sampling bias is thought to occur due to orientation of drilling in regards to mineralised structures.
Sample security	*The measures taken to ensure sample security.*	Samples are prepared on site under supervision of Saracen geological staff. Samples are selected, bagged into tied numbered calico bags then grouped into secured cages and collected by the laboratory personnel. Sample submissions are documented via laboratory tracking systems and assays are returned via email
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	An internal review of companywide sampling methodologies was conducted to create the current sampling and QAQC procedures.

Section 2: Reporting of Exploration Results		
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 Wallbrook resource is located on M31/172 The tenements are held 100% by Saracen Gold Mines Pty Ltd, a wholly owned subsidiary of Saracen Mineral Holdings Limited. The tenements have a 21 year mine life (held until 2029) and are renewable for a further 21 years on a continuing basis. M31/172 is the subject of royalty of 1.5 % of Sale Proceeds or otherwise Mineral Value of all minerals extracted (excluding Operating Expenses) payable to Resource Capital Fund III L.P. All production is subject to a Western Australian state government NSR royalty of 2.5%. The tenement is subject to the Edjudina Pastoral Compensation agreement. The tenement is affected by the Maduwongga (WC2017/001) and Nyalpa Pirniku (WC2019/002) native title registered claims. There are no registered Aboriginal Heritage sites on the tenement. The Mining Rehabilitation Fund applies to the tenement.
	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.	The tenement is in good standing and the licence to operate already exists.
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	Gold mining began in the Wallbrook area at Redbrook as early as 1903 and continued sporadically until 1942. Regional exploration carried out the 1960's and 1970's by Falconbridge and Asarco focused on base metal discovery with no significant anomalism detected. The exploration focus shifted back to gold in the late 1970's. Sampling and RAB drilling carried out by Pennzoil in 1981 delineated the Wallbrook and Redbrook mineralisation, with RC drilling carried out by Ivernia in 1987 further defining the resource. The project changed hands a number of

Section 2: Reporting of Exploration Results		
Criteria	**JORC Code Explanation**	**Commentary**
		times with Poseidon, Talon Resources, Croesus and Jackson Gold all carrying out various drilling and sampling campaigns and identifying further resources including Eleven Bells, Red Flag and Crusader before Saracen acquired the project.
Geology	*Deposit type, geological setting and style of mineralisation.*	Centred in the Wallbrook region is Wallbrook Hill area is described as a medium-grained leucocratic granitoid that crops out on two low hills which jointly cover an area of approximately 1200m (north south) by 200m (east west). The two hills appear to represent two narrowly separated granitoid bodies surrounded by greenstone. The greenstones are dominantly amygdaloidal basalt and chlorite-plagioclase-rich mafic schist, with minor intermediate to felsic schist. The margins of the granitoids are 'porphyritic and interleaved with greenstone. Competency contrast between the Wallbrook granitoids and adjacent rock types, is considered important in localising mineralised vein systems at the Wallbrook deposit. At Wallbrook a mineralised quartz vein stockwork has developed within and adjacent to a small syenogranitic intrusion within metabasalt. Locally however, the wall rocks at Wallbrook comprise relatively incompetent felsic schists. Quartz veins formed a conjugate set while the local principal stress axis was oriented northeast – southwest.
Drillhole 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:* • *easting and northing of the drill hole collar* • *elevation or RL (Reduced Level – elevation* • *above sea level in metres) of the drill hole collar* • *dip and azimuth of the hole* • *down hole length and interception depth* • *hole length.* • *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.*	All material data is periodically released on the ASX: 31/07/2012, 28/04/2010, 13/04/2010, 30/04/2008, 12/03/2008, 31/01/2008, 03/12/2007, 30/10/2007, 28/09/2007 Future drill hole data will be periodically released or when a results materially change the economic value of the project.
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 significant intercepts have been length weighted with a minimum Au grade of 1ppm. No high grade cut off has been applied.
	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 with minimum width of 1m and maximum width of 3m for internal dilution. Where stand out higher grade zone exist with in 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.	There are no metal equivalents reported in this release.

Section 2: Reporting of Exploration Results		
Criteria	**JORC Code Explanation**	**Commentary**
Relationship between mineralisation widths and intercept lengths	*These relationships are particularly important in the reporting of Exploration Results.* *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* *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').*	Previous announcements (mentioned above) included sufficient detail to clearly illustrate the geometry of the mineralisation and the recent drilling.
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.*	All significant exploration results released by Saracen are accompanied by the appropriate diagrams and maps at the time of the release.
Balanced Reporting	*Where comprehensive reporting of all Exploration Results are not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	All results from the recent campaign have been reported, irrespective of success or not.
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.*	A number of studies were carried out in 2010 including a hydrological assessment and dewatering investigation that determined no impact on surrounding area, a waste characterisation and acid mine drainage management study that reported no issues and a geotechnical study that concluded geological structures will greatly influence wall stability.
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).* *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive*	Wallbrook is a prospective area and is well defined. Open Pit optimisation is ongoing. Further work in the future will be focused more on extensional exploration.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	**JORC Code Explanation**	**Commentary**
Database Integrity	*Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors,*	Saracen utilises AcQuire software on an SQL server database to securely store and manage all drillhole and sample information. Data integrity protocols are built into the system to ensure data validity and minimise errors are built into the data entry and import processes.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	**JORC Code Explanation**	**Commentary**
	between its initial collection and its use for Mineral Resource estimation purposes.	
	Data validation procedures used.	Data that is captured in the field is entered into Excel templates which are checked on import into the 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.
Site Visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.*	The Competent Person visited the geological area at the time of review and exploration to assess geological competency and ensure integrity across all exploration 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.*	Included in the Wallbrook Project area are two deposits. Redbrook and Eleven Bells, historically mined at a small scale, are well defined by exploration drilling and grade control drilling in the upper levels. Mineralisation at Redbrook is well understood and the resource categories applied to its estimation reflect the geological confidence. Eleven Bells mineralisation is far more complex and historic drilling at various orientations reflects the intricacies in geology. A bulk mining methodology was proposed for this deposit and with that confidence in metal recovery is high. The resource categories consider both geological understanding from drill results and the bulk mining metal recovery.
	Nature of the data used and any assumptions made.	The geological interpretation of Wallbrook 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 and RC Chips were all used to help define the mineralised domains, regolith boundaries and granite intrusion contacts. Historic in pit mapping further constrained the domaining.
	The affect, if any, of alternative interpretations on Mineral Resource estimation.	The geological wireframes defining the mineralised zones are considered to be robust. Whilst the Eleven Bells wireframes are well defined by geology, the ambiguity surrounding the gold bearing structures resulted in various model runs that included a bulk mining approach, and estimations looking at different composited lengths. Globally they all behaved in a similar manner.
	The use of geology in guiding and controlling the Mineral Resource estimation.	The wireframed domains are used as hard boundaries during the Mineral Resource Estimation. They are constructed using all available geological information (as stated above) and terminate along known structures and or granite contacts in the case of Eleven Bells and Redbrook. 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.
	The factors affecting continuity both of grade and geology.	Grade and geology continuity for each of the deposits at Wallbrook are influenced by various controls. Economic mineralisation at Redbrook is largely controlled by the proximity of the granitoid contact that acts as a conduit for au bearing fluids. A stockwork of quartz veining is strongly associated with healthy Au mineralisation. The along strike extents are possibly terminated by structures however further drilling would be required to verify this. The main Redbrook domains are open at depth and down plunge. Elevenbells mineralisation abuts the northern contact of the granite and subsequently terminates along it. Moving away from the granite the NW extent of the mineralisation naturally attenuates. Quartz veining in the metabasalt host is the only consistent marker for Au mineralisation; however geological relationships are ambiguous due to the orientation of the drilling.
Dimensions	*The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width,*	Redbrook and Eleven Bells deposits stretch from 6694800mN to 6695800mN and 433800mE to 434400mE to 300m below surface. The ore lodes have strike lengths from 25m to 260m and plunge extents and widths up to 330m.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC Code Explanation	Commentary
	and depth below surface to the upper and lower limits of the Mineral Resource.	
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.*	The mineralised ore domains were wireframed based on geological homogeneity, grade populations, mineralisation styles and orientation of grade continuity. The domain wireframes were used as hard boundaries during the estimation process. Grade control holes assisted in the geological definition of the primary ore domains, though were omitted in the estimation of the resource. An unfolding process was carried out prior to variography and interpolation to remove the variable dip and strike typically associated with the mineralised domains. RAB, Aircore and grab samples were excluded from the estimation process for Redbrook and Eleven Bells due to the unreliability of results. Negative gold grades were replaced with a grade of 0.001 g/t and null gold grades were excluded from the estimation process. Drillhole assays were composited to 1m intervals with a minimum length of 0.3m that best conformed to the sample length of the majority of the RC data. High grades within each domain were identified and top cuts were applied where necessary. Variograms were produced to determine the directional influence of each sample during the estimation process. The Mineral Resource Estimate was interpolated using Ordinary Kriging in Micromine.
	The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.	An inverse distance cubed estimate was run simultaneously with the ordinary kriged resource estimate, with an insignificant variance between the global Au grade values. The Wallbrook resource model was compared to the previously run Widenbar OK model of 2009 and changes including increased tonnages were the result of more available mineralised drill intersections, in pit mapping and geophysics data. The current resource model was reconciled with production data on a monthly basis. This information for Redbrook and Eleven Bells was fed back into the resource modelling process and used to refine the model.
	The assumptions made regarding recovery of by-products.	No assumptions have been made regarding the recovery of by-products for this Mineral Resource Estimation.
	Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulfur for acid mine drainage characterisation).	No estimation of deleterious elements or non-grade variables is required
	In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.	Average drill hole data spacing and mining selectivity were among the primary considerations for block size. In the case of Red Brook and Eleven Bells, larger bulk mining practices and broader ore zones resulted in the more appropriate parent cell size of 20m X 20m X 10 m. Sub celling resolutions to 2m x 2m x 2m was applied. The search strategy was set up such that the first search pass would fill blocks informed by the closest spaced drilling, whilst the second search would inform blocks in area of more typical drill spacing. The second search used search ellipse multiplied by a factor of 2, while the third search increased the dimensions by a factor of 5 to ensure filling of all blocks. Initial search distances are done on a domain by domain basis.
	Any assumptions behind modelling of selective mining units.	No selective mining units have been assumed.
	Any assumptions about correlation between variables.	No assumptions have been made regarding correlation between variables.
	Description of how the geological interpretation was used to control the resource estimates.	Mineralised domains were wireframed within the context of the known local and structural geology. The interpretation was influenced by historical information, geological mapping within the pit (Redbrook only) and geology logging of drillholes. Correlations between rock type, texture, and alteration, veining and gold mineralisation were investigated for each deposit.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC Code Explanation	Commentary
	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 domains are top cut to reduce the influence high grade outliers. The geostatistics to determine top cuts includes log probability plots and the coefficient of variation.
	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. The mean grade of the block model is compared to the mean grade of composites by domain. These are then further investigated by appropriate northing, easting and bench intervals in the form of swathe plots. The volume variance between the wireframed domains and block model domains are assessed. Kriging efficiency, and slope results give an indication of the quality of the estimate. A visual inspection of the drillhole assay results are compared to the estimated block model in section.
Moisture	*Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	All 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 determined by the current mining cut-off grades. For Wallbrook these were set at 0.5 Au g/t.
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.*	Open cut mining has been successful at the Redbrook and Eleven Bells deposit. It is therefore assumed that there are reasonable grounds to mine the remaining resource at these deposits by conventional open pit methods given the close proximity to surface and the mean average grade of the mineralisation. To best capture “reasonable prospects for eventual economic of extraction”, the mineral resource was reported within an optimised pit shell at $2250 at a 0.5g/t cut off for the open pit resources.
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 process 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.*	Metallurgical testing (and processing operations at CDO) identified Wallbrook ores as being free milling sizes with leach recoveries in excess of 90% with a moderate gravity gold component (30% - 40%).
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*	Wallbrook Waste characterisation indicated that seepage from waste rock stockpiles at Wallbrook are slightly alkaline, non-saline to slightly brackish and contain very low concentrations of metals and metalloids. Waste materials have been classed as NAF, small percentage of low risk acid forming materials will be encapsulated in Waste Rock Dump through dump strategy. No processing or benefication of ore expected on these tenements, as ore is hauled to Carosue Dam Mine site for Processing.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC Code Explanation	Commentary
	potential environmental impacts, particularly for a greenfields 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.	
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 in the current model has been assigned based on oxidation state, using both recent density determinations carried out by Saracen on its drill samples and historical data. 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.
	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 non porous material, so additional measures to reduce moisture intake during the water displacement method is unnecessary at this stage. Coating more friable oxides and sediments (to reduce moisture loss or moisture gain during the process) is considered on a deposit by deposit basis.
	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.*	Drill hole location plots have been used to ensure that local drill spacing conforms to the minimum expected for the resource classification. Measured material has been defined where there is detailed grade control and resource definition drilling where confidence in lode volume and continuity is very high. Indicated material is generally confined to areas where resource definition drilling is typically defined by 25m x 25m spaced drilling or closer, and there is still high confidence in lode location and continuity. Inferred material lies beyond the Indicated boundaries and meets the criteria expressed in the JORC Code for Inferred Resource. Based on the above criteria a series of strings were constructed and linked together to form solid wireframes that defined the measured (RESCAT = 1) and indicated (RESCAT = 2) categories. The block model outside the Indicated wireframe was given the default Inferred value of RESCAT = 3. Additionally estimation properties, such as search passes, number of samples, and kriging efficiencies, were considered in the definition of the resource boundaries and were visually compared to the RESCATS previously defined by the drill spacing and geological continuity.
	Whether appropriate account has been taken of all the 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 thorough QAQC of the drill hole database and geological knowledge and interpretation of the Wallbrook deposit. 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 geological model and the mineral resource estimate reflect the competent person’s view of the deposit.
Audits or reviews	*The results of any audits or reviews of Mineral Resource estimates.*	At the completion of resource estimation Saracen Gold Mines undertake an extensive review of the model that covers model inventory and comparisons to previous and budget models. Geological interpretation, wireframing, domain selection, statistics by domain, assay evaluation, parent cell sizes, data compositing, variography, search strategy, estimation and KNA and finally model validation and resource categorisation are all discussed and scrutinized by the geological and mine planning teams.

Section 3: Estimation and Reporting of Mineral Resources		
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. Saracen Gold Mine uses a standard approach to resource estimation and the procedure requires the systematic completion of the Saracen Resource Estimation Document that is thoroughly investigated and assessed in the Model review process, as stated above. It was identified that with improved software, validation and additional KNA measures would help improve the optimisation of the block model.
	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 statements relate to a global estimate of tonnes and grade.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	Compared to production data, Redbrook resource estimation reconciled well, reporting 98% accuracy in ounces. This equates to a 97% tonnes and 102% grade reconciliation. This is indicative of the broad and consistent ore zone mined at Redbrook. Geology and mineralisation is less well understood at Eleven Bells and variability (10% - 35% less ounces) in historic production figures with resource estimates is indicative of this complex setting. The current bulk resource estimation takes this complexity into account, reducing the potential for ore misallocation. This setup produces far more favourable and minable set of parameters.

Section 4: Estimation and Reporting of Ore Reserves		
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 estimate for the Wallbrook gold deposit is a robust global estimate that considers the intricacies of the geology for each deposit within the geological region. Accordingly Eleven Bells adopted a bulk modelling and estimation approach and the Redbrook estimation honoured the greater geological understanding and definition. These "reduced risk" estimations were used as a basis for conversion to the Ore Reserve estimation. Resource estimate was compiled by Saracen using exploration, resource definition, and grade control drilling and assay data, geological mapping and historical mining records to validate the model against and solid interpretation wireframes of the geology. This information was used to construct a model estimated by various kriging methods. The block model was depleted with end of June 2020 survey pickup for Reserve Estimation.
	Clear statement as to whether the Mineral Resources are reported additional to. Or inclusive of, the Ore Reserves.	The Mineral Resource reported is inclusive of the Ore Reserve.
Site Visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.*	A Competent Person and independent external geotech consultant have conducted several site visits to the Wallbrook mining region since the inclusion in the Saracen life of mine plan. The purpose of these visits is to collect information for optimisation work, validating input parameters, visual pit inspection, discussion and feedback for life of mine planning. The information also includes the discussion around current mining performance, wall conditions and overall stability, and groundwater condition.

Section 4: Estimation and Reporting of Ore Reserves		
Criteria	JORC Code Explanation	Commentary
	If no site visits have been undertaken indicate why this is the case.	N/A
Study status	*The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves*	The Wallbrook deposit was mined as open pit in the past between 2011-2012 under Saracen ownership. Since then a revised feasibility level study was undertaken with the view to recommence open pit operation include the project in the Carosue Dam life of mine plan. The 2020 Ore Reserve has been subject to validating all aspects of operational inputs such as production parameters, operating costs of mining, processing, general administration and environment management related costs.
	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.	Modifying factors have been applied to the optimisation study and resultant Reserve pit design work to ensure the rigor of the financial analysis. Operational costs and production parameters have been estimated from actual mining and processing performance. Saracen has completed all appropriate supporting mining studies required for Ore Reserve estimate.
Cut-off parameters	*The basis of the cut-off grade(s) or quality parameters applied*	The Ore Reserve is estimated at a cut-off grade of 0.50g/t, an assumed gold price of AUD$1,750/oz and operating costs of mining, processing, haulage and general administration. A top cut has already been applied to the Mineral Resource Estimate eliminating the necessity for any further adjustment to the Ore Reserve Estimate.
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).*	The resource model used in the Mineral Resource Estimation was the basis for the generation of a range of Whittle 4X pit optimisation shells. The generation of these shells was reliant upon costs and inputs derived from current operational data, contractors and independent consultant recommendations. An appropriate shell was then selected as the basis for an iterative process of pit design work, culminating in the finalisation of a detailed pit design for the Wallbrook Reserve.
	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 mining method to be employed at Wallbrook will be conventional open pit with hydraulic excavator and dump truck fleet, and drill and blast activity. The class of excavator employed is similar to other mining operations, providing a good operating dataset for production and productivity rate measurement and financial modelling. The Reserve pit includes two deposits namely "Eleven Bells" and "Redbrook". The Reserve pits include successive cutbacks to achieve life of mine such that it meets operational efficiency, safety and production rates. An appropriate mine schedule has been considered to allow campaign mining operations to switch between the two deposits.
	The assumptions made regarding geotechnical parameters (e.g. pit slopes, stope sizes, etc.), grade control, and pre-production drilling.	Geotechnical recommendations were made by independent external consultant following site visits, inspection of drill core, and a review of the geotechnical data gathered during earlier operations. The geotechnical consultant was engaged by Saracen to oversee the geotechnical aspect of the technical study and ongoing support. It is expected that once the pits are in operation there may be some need for additional geotechnical input and reflected changes to the life of mine pit design. The Grade control method to be employed at Wallbrook will utilise an RC drilling and sampling method. The method and practice has been utilised successfully at all current and past mining operations at Saracen.
	The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).	The Ore Reserve Estimate is based on detailed life of mine pit design work by using a geology approved resource model, and making appropriate dilution and recovery factor allowance for mining fleet and method utilised.
	The mining dilution factors used.	A mining dilution factor of 5% is applied on the Ore Reserve estimation and reflects the expected mining performance for the given ore body characteristics, selected mining method and equipment.
	The mining recovery factors used.	A mining ore loss factor of 5% is applied on the Ore Reserve estimation and reflects the expected mining performance for the given ore body characteristics, selected mining method and equipment.

Section 4: Estimation and Reporting of Ore Reserves		
Criteria	JORC Code Explanation	Commentary
	Any minimum mining widths used	A minimum mining width of 25m has been adopted for the primary excavation fleet. Where 'pinch-points' occur or "Good Bye" cuts are considered at the base of the pit, it is assumed that a smaller or more versatile excavator will be employed. The practice is very consistent across both Saracen operations and reflects the suitability and efficiency of the mining performance.
	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 does not generate any revenue. Therefore the final pit reserve inventory has excluded any inferred mineral resources.
	The infrastructure requirements of the selected mining methods.	The selected mining method and location of the pit is close to the Carosue Dam mining operations, which consists of underground mines, 3.3mt processing plant, modern camp site and all other required infrastructure to support current and future mine plan.
Metallurgical factors or assumptions	*The metallurgical process proposed and the appropriateness of that process to the style of mineralisation*	The Ore Reserve will be treated at the established Carosue Dam processing facility. The facility is a conventional crushing, gravity circuit, grind, and CIL (carbon in leach) plant and is appropriate for the extraction of gold from free milling mineralisation.
	Whether the metallurgical process is well-tested technology or novel in nature.	The current processing plant and method applied utilises well tried and proven technology since being in operation with average gold recovery typically between 92 to 94% for all different sourced material around Carosue Dam operations.
	The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.	An average gold recovery for Wallbrook deposit is estimated at 94.0%. The recovery estimation is based on met test work and past actual average recovery data collected at the Carosue Plant. The plant performance is consistent between 92 to 94% while processing similar types of ore material blended with range of other ore sources without any issue. Approximately one year of processing the Wallbrook ore through this plant have resulted in a solid understanding of the metallurgical parameters of the ore.
	Any assumptions or allowances made for deleterious elements.	There are no known deleterious elements present in Wallbrook ore that can impact on ore recoveries at Carosue Plant.
	The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the ore body as a whole.	When in operation the Wallbrook ore was processed through the Carosue Dam plant, that representing a sizeable bulk sample/pilot test.
	For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications.	N/A
Environmental factors or assumptions	*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 pit is currently on 'care and maintenance'. All required Environmental studies have been completed and Statutory Government Approvals including works approvals, dewatering and discharge licence have been granted. A Mining Approval has been granted for previous submission although the current application will require to be revised for new reserve pit. The existing Carosue Dam processing facility where ore will be processed and the accommodation village all lay on granted mining leases. The road haulage network footprint is underpinned by a combination of miscellaneous licences and granted mining leases. A waste rock characterisation study has been carried out and it is expected to be representative of waste rock. An appropriate landform design criteria has been considered based on rock characteristic to mitigate current and any future pit expansion plan.

Section 4: Estimation and Reporting of Ore Reserves		
Criteria	JORC Code Explanation	Commentary
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.*	The Reserve pit will require minimum infrastructure and hence provide the ability to recommence operation in short timeframe. The Wallbrook pit is ~40km from the CDO Processing Plant via internal private haul road. Carosue Dam Operation is well established, with mining activities being conducted by Saracen since 2009. The operation extends from the south (CDO plant, administration, Whirling Dervish & Karari mines) to the North (Deep South mine) and is connected via a private haulage road. The CDO operation now comprises at 3.3mtpa CIL ore processing facility, aerodrome with sealed runway, associated tailings storage facilities, several power stations, water supply, workshops, and administration offices. A modern accommodation camp is located within a few kilometres of the Enterprise mining area. A 70km gravel access road links Carosue Dam Operations to the gravel section of Yarri Road. Both the Saracen and Shire of Kalgoorlie gravel roads are well maintained.
Costs	*The derivation of, or assumptions made, regarding projected capital costs in the study.*	Capital costs relating to the start-up establishment and pre striping of the operation are included in the financial modelling. Other capital costs around camp and accommodation are minimal given close proximity to existing Carosue Dam Operations.
	The methodology used to estimate operating costs.	Operating costs for open pit mining have been derived from a combination of actual costs from SGM's Carosue Dam/Thunderbox Operations and costs supplied by various contract mining companies and independent consultants. Operating costs for ore processing, haulage and administration have been derived from known parameters at Carosue Dam operations.
	Allowances made for the content of deleterious elements	Previous operational experience at Wallbrook did not reveal any deleterious elements within the ore or waste that required any additional cost allowances.
	The derivation of assumptions made of metal or commodity price(s), for the principal minerals and co-products	An assumed gold price of AUD$1,750/oz has been adopted for the financial modelling. No allowance is made for silver by-products.
	The source of exchange rates used in study	All revenue and cost calculations have been made in AUD, so no exchange rate usage or assumptions have been necessary.
	Derivation of transportation charges	Costs associated with bullion transportation have been derived from existing contractual arrangements at Carouse Dam.
	The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.	Costs associated with refining have been derived from existing contractual arrangements at Carouse Dam.
	The allowances made for royalties payable, both Government and private.	Royalty costs are a 2.5% royalty payable to the Western Australian state government, and a 1.5% royalty payable to IRC.
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.*	For the purposes of the Ore Reserve Estimation it has been assumed that there is no gold hedging. All gold production will be sold at spot price to the Perth Mint.
	The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products	Assumed gold price of AUD$1,750/oz has been adopted for financial modelling. No allowance is made for silver by-products.

Section 4: Estimation and Reporting of Ore Reserves		
Criteria	JORC Code Explanation	Commentary
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.	There is a transparent quoted market for the sale of gold.
	For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.	N/A
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.*	The Ore Reserve Estimation is based on detailed life of mine pit design and reflects positive economic outcomes. All relevant capital and operating costs as well as revenue and royalty factors have been included with appropriate discount factor for cash flow analysis.
	NPV ranges and sensitivity to variations in the significant assumptions and inputs.	A full financial model is 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*	Carosue Dam is in operation and Saracen has good relationships with neighbouring stakeholders, including engagement with the local pastoralists and the traditional owners. The mine is located on leasehold pastoral land with compensation agreements in place with the local pastoralist. Granted mining leases cover all of the proposed mining and processing assets.
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	Water inrush is identified as a naturally occurring risk with in the operation and has been addressed by the construction of appropriate water diversion bunds to provide safe and risk free work environment. The sufficient bund wall constructed when Wallbrook pit was in operation and currently still in place.
	The status of material legal agreements and marketing arrangements	Contracts are in place for all critical goods and services to operate Carosue Dam Operations.
	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.	A Mining Approval has been granted for a previous submission although the current application will be revised for the new reserve pit. All other Statutory Government permits including vegetation clearing, dewatering and discharge licences are in place and valid.
Classification	*The basis for the classification of the Ore Reserve into varying confidence categories*	The Ore Reserve estimate classification has been made in accordance with the JORC code 2012. The Ore Reserve estimate classified as being Proved and Probable has been derived from the Mineral Resource classified as Indicated and Measured only.

Section 4: Estimation and Reporting of Ore Reserves		
Criteria	JORC Code Explanation	Commentary
	Whether the result appropriately reflects the Competent Person's view of the deposit.	Cost assumptions and modifying factors applied to the pit optimisation and subsequent designs were derived from current operational data relating to Saracen's Carosue Dam and Thunderbox operations, and supplied from contract mining companies and independent consultants. Results of these optimisations and the resultant analysis reflect the Competent Person's view regarding the Wallbrook deposit.
	The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any)	100% of Probable ore from Ore Reserve estimate has been derived from Measured and Indicated ore of the Mineral Resource.
Audits or reviews	*The results of any audits or reviews of Ore Reserve estimates*	The Ore Reserve Estimation process is in line with the Saracen Ore Reserve Policy and has undergone internal review.
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 geo-statistical 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 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.* *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.* *It is recognised that this may not be possible or appropriate in all circumstances. These statements or relative accuracy and confidence of the estimate should be compared with production data, where available.*	The Ore Reserve estimate has been prepared within the guidelines of the 2012 JORC Code. The relative confidence of the estimate complies with the criteria of Probable Ore Reserves. Based upon; • Resource estimate • significant operating history, • application of current industry practices, • appropriate operating and capital costs, The range of the modifying factors and mining parameters applied are reasonable and confidence in the resulting reserve estimate is reasonable. The reserve mine design has adopted all reasonable modifying factors and financial analysis used in the estimated Ore Reserve have been the subject to peer review internally, and the Competent Person is confident that it is an accurate estimation of the reserve. The Wallbrook pit will utilise the same grade control methods that are widely utilised at current Saracen open pit operations.

Margaret's

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
Sampling Techniques	*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.*	Sampling methods undertaken by Saracen at Margaret's have included reverse circulation (RC and RC grade control drilling within the pit. Historic methods conducted since 1984 have included diamond drilling (DD), rotary air blast (RAB) and reverse circulation drilling.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used	Sampling for RC exploration and grade control drilling is carried out as specified within Saracen sampling and QAQC procedures as per industry standard. RC chips provide high quality representative samples for analysis. DD, RC and RAB drilling was completed by previous holders to industry standard at that time (1984- 2002).
	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 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information	RC chips are cone split and sampled into 1m intervals with total sample weights under 3kg to ensure total sample inclusion at the pulverisation stage. Saracen chip samples are crushed, dried and pulverised to a nominal 90% passing 75µm to produce a 50 g sub sample for analysis by FA/AAS. Some grade control RC chips were analysed in the Saracen on site laboratory using a PAL (pulverise and leach) method. Historical DD, RAB and RC sampling was carried out to industry standard at that time. Analysis methods include fire assay, atomic absorption spectroscopy, aqua regia and unknown methods.
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 deposit was initially sampled by 76 RAB holes and 190 RC holes (assumed standard 5 ¼ ''bit size) and 19 NQ diameter diamond drill holes. Saracen has completed 30 RC holes from surface and 770 grade control RC holes within the pit. It is unknown if historic diamond drill core was oriented.
Drill Sample Recovery	*Method of recording and assessing core and chip sample recoveries and results assessed*	Exploration RC sampling recoveries are recorded as a percentage based on a visual weight estimate; no historic recoveries have been recorded.
	Measures taken to maximise sample recovery and ensure representative nature of the samples	During RC drilling daily rig inspections are carried out to check splitter condition, general site and address general issues. During GC campaigns the sample bags weight versus bulk reject weight is compared to ensure adequate and even sample recovery. Historical RAB, RC and diamond drilling to industry standard at that time.
	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.	There is no known relationship between sample recovery and grade for RC drilling. Any historical relationship is not known.
Logging	*Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support*	Logging of RC chips records lithology, mineralogy, texture, mineralisation, weathering, alteration, veining and other features.

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
	appropriate Mineral Resource estimation, mining studies and metallurgical studies. *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.*	Chips from all RC holes (exploration and GC) are stored in chip trays for future reference. Qualitative and quantitative logging of historic data varies in its completeness.
	The total length and percentage of the relevant intersections logged	All exploration RC holes are logged in full. Every second drill line is logged in grade control programs with infill logging carried out as necessary. Historical logging is complete.
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.*	Historic drill core has been half core sampled.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	All exploration and GC RC samples are cone split. Occasional wet samples are encountered; increased air capacity is routinely used to aid in keeping the sample dry when water is encountered. Historic RAB and RC drilling was sampled using grab, riffle and unknown methods.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	The sample preparation of RC chips adheres to industry best practice. It is conducted by a commercial or onsite laboratory and involves oven drying, coarse crushing then total grinding to a size of 90% passing 75 microns. Best practice is assumed at the time of historic sampling.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	All subsampling activities are carried out by commercial or onsite laboratory and are considered to be satisfactory. Sampling by previous holders assumed to be industry standard at the time.
	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.	Duplicate sampling is carried out at a rate of 1:10 for exploration drilling and 1:20 for GC drilling and is sampled directly from the on-board splitter on the rig. These are submitted for the same assay process as the original samples and the laboratory are unaware of such submissions. Sampling by previous holders assumed to be industry standard at the time.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Sample sizes of 3kg were considered to be appropriate given the grain size (90% passing 75 microns) of the material sampled.
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.*	RC chip samples and grade control chip are analysed by external laboratories using a 50g fire assay with AAS finish. This method is considered suitable for determining gold concentrations in rock and is a total digest method. Some GC samples were analysed in the Saracen onsite laboratory using a pulverise and leach method. This method is a partial digest. Historic sampling methods include fire assay and aqua regia.
	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 have been utilised for reporting gold mineralisation.
	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.	Certified reference material (standards and blanks) with a wide range of values are inserted into every drillhole at a rate of 1:25 for exploration RC and 1:40 for GC drilling. These are not identifiable to the laboratory. QAQC data returned are checked against pass/fail limits with the SQL database and are passed or failed on import. A report is generated and reviewed by the geologist as necessary upon failure to determine further action. QAQC data is reported monthly. Sample preparation checks for fineness are carried out to ensure a grindsize of 90% passing 75 microns. The laboratory performs a number of internal processes including standards, blanks, repeats and checks. QAQC data analysis demonstrates sufficient accuracy and precision.

Section 1: Sampling Techniques and Data		
Criteria	JORC Code Explanation	Commentary
		Industry best practice is assumed for previous holders.
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.*	Significant intercepts are verified by the Geology Manager and corporate personnel.
	The use of twinned holes.	No specific twinned holes have been drilled at Margaret's but grade control drilling has confirmed the width and grade of previous exploration drilling.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols	Primary data is collated in a set of excel templates utilising lookup codes. This data is forwarded to the Database Administrator for entry into a secure acQuire database with inbuilt validation functions. Data from previous owners was taken from a database compilation and validated as much as practicable before entry into the Saracen acQuire database.
	Discuss any adjustment to assay data.	No adjustments have been made to assay data. First gold assay is utilised for resource estimation.
Location of data points	*Accuracy and quality of surveys used to locate drillholes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.*	Exploration drillholes are located using a Leica 1200 GPS with an accuracy of +/- 10mm. Drillhole collars within the pit and immediate surrounds are picked up by company surveyors using a Trimble R8 GNSS (GPS) with an expected accuracy of +/-8mm. Downhole surveys are carried out using an Eastman single shot camera at regular intervals (usually 30m). A number of drillholes have also been gyroscopically surveyed. Previous holders' survey accuracy and quality is unknown.
	Specification of the grid system used.	A local grid system (Margaret) is used at Margaret's The two point conversion to MGA_GDA94 zone 51 is: MAREast MARNorth RL MGAEast MGANorth RL Point 1 10000 10500 0 433411.082 6705652.245 0 Point 2 10000 9800 0 433414.203 6704952.493 0 Historic data is converted to the Margaret's local grid upon export from the database
	Quality and adequacy of topographic control.	Topographic control originally used site based survey pickups in addition to Kevron aerial photogrammetric surveys with +/- 5m resolution. Pre mining, new and more detailed topography has since been captured and will be used in future updates and for subsequent planning purposes.
Data spacing and distribution	*Data spacing for reporting of Exploration Results.*	The nominal spacing for exploration drilling is 25m x 20m to 12.5m x 20m.
	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.	Data spacing and distribution are sufficient to establish the degree of geological and grade continuity appropriate for JORC classifications applied.
	Whether sample compositing has been applied.	Sample compositing is not applied until the estimation stage. Some historic RAB sampling was composited into 3-4m samples.
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 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.	No significant sampling bias is thought to occur due to orientation of drilling in regards to mineralised structures.

Section 1: Sampling Techniques and Data		
Criteria	JORC Code Explanation	Commentary
Sample security	*The measures taken to ensure sample security.*	Samples are prepared on site under supervision of Saracen geological staff. Samples are selected, bagged into tied numbered calico bags then grouped into secured cages and collected by the laboratory personnel. Sample submissions are documented via laboratory tracking systems and assays are returned via email
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	An internal review of companywide sampling methodologies was conducted to create the current sampling and QAQC procedures.

Section 2: Reporting of Exploration Results		
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 Margaret's pit and near mine exploration is located on M31/30. The tenement is held 100% by Saracen Gold Mines Pty Ltd, a wholly owned subsidiary of Saracen Mineral Holdings Limited. Mining Lease M31/30 has a 21 year life (held until 2028) and is renewable for a further 21 years on a continuing basis. Mining Lease M31/30 is subject to one caveat (58H/067) and a bank mortgage (415495). All production is subject to a Western Australian state government NSR royalty of 2.5%. Mining Lease M31/30 is subject to the Edjudina Pastoral Compensation Agreement. The tenement is affected by the Maduwongga (WC2017/001) and the Nyalpa Pirniku (WC2019/002) registered native title claims. There are no registered Aboriginal Heritage sites within the mining tenement. The Mining Rehabilitation Fund applies to the tenement.
	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.	The tenement is in good standing and the licence to operate already exists.
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	Minor gold mining activities took place in the vicinity of Margaret's in the 1930's. In the early 1980s Amoco Resources carried out percussion drilling and an IP survey at the Margaret prospect before Cyprus acquired the ground and completed diamond tails on a number of the holes. Various drilling programs were completed by in the area companies including Southern Ventures, Enterprise Gold and Consolidated Resources and an open-pittable resource was delineated at Margaret's. Consolidated were taken over by Mount Edon who completed further RAB and RC programs and were then taken over by Pacmin. Sons Of Gwalia acquired the project and completed resource definition RC drilling before their collapse and takeover of the project by St Barbara. Saracen acquired the project and carried out further resource definition RC drilling before mining part of the deposit as a two stage open pit in 2012
Geology	*Deposit type, geological setting and style of mineralisation.*	Margaret's is a structurally controlled deposit hosted within deformed andesites. Gold mineralisation is considered to be associated with haematitic alteration and intensity and quartz veining. The best mineralisation is postulated to occur at the intersection of strongly deformed andesites occurring within N-S trending shear/fault zones which dip steeply to the east and a series of quartz stockwork vein arrays trending NNW (325 to 340 deg) which dip steeply to the west. This mineralised system forms pipe-like bodies, which plunge gently to the south. Mineralisation also occurs within the steeply dipping quartz stockwork vein arrays that trend NNW.
Drillhole information	*A summary of all information material to the*	All material data in relation to this deposit was periodically released on the ASX.

Section 2: Reporting of Exploration Results		
Criteria	JORC Code Explanation	Commentary
	understanding of the exploration results including a tabulation of the following information for all Material drill holes: • *easting and northing of the drill hole collar* • *elevation or RL (Reduced Level – elevation* • *above sea level in metres) of the drill hole collar* • *dip and azimuth of the hole* • *down hole length and interception depth* • *hole length.* • *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.*	Future drill hole data will be periodically released or when a results materially change the economic value of the project. Exclusion of the drilling information will not detract from the reader's view 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 significant intercepts have been length weighted with a minimum Au grade of 1ppm. No high grade cut off has been applied.
	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 with minimum width of 1m and maximum width of 3m for internal dilution. Where stand out higher grade zone exist with in 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.	Metal equivalent values are not reported
Relationship between mineralisation widths and intercept lengths	*These relationships are particularly important in the reporting of Exploration Results.* *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* *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').*	Previous announcement included sufficient detail to clearly illustrate the geometry of the mineralisation and the drilling. All results are reported as downhole lengths
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.*	All significant exploration results released by Saracen are accompanied by the appropriate diagrams and maps at the time of the release.
Balanced Reporting	*Where comprehensive reporting of all Exploration Results are not practicable, representative reporting of both low and high grades and/or widths should be*	All results from the recent campaign have been reported, irrespective of success or not.

Section 2: Reporting of Exploration Results		
Criteria	**JORC Code Explanation**	**Commentary**
	practiced to avoid misleading reporting of Exploration Results.	
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 substantive data acquisition has been completed in recent times.
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).* *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive*	At this time the Margaret Deposit is under review.

Section 3: Estimation and Reporting of Mineral Resources		
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.*	Saracen utilises AcQuire software on an SQL server database to securely store and manage all drillhole and sample information. Data integrity protocols are built into the system to ensure data validity and minimise errors.
	Data validation procedures used.	Data that is captured in the field is entered into Excel templates which are checked on import into the 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.
Site Visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.*	At the time of mining activities in 2011/2012 the Competent Persons visited the geological area frequently to assess geological competency and 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.*	A combination of exploration mapping, geophysical surveys, both exploration and grade control drill hole information and geological data, including mapping, collected during production at Margaret's has resulted in a confident geological interpretation.
	Nature of the data used and any assumptions made.	The interpretations have been constructed using all available geological logging descriptions including but not limited to, stratigraphy, lithology, texture, and alteration. It is identified that hematite and strong quartz veining is related to Au mineralisation and it is a structurally controlled environment.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC Code Explanation	Commentary
		All the available exploration and grade control data with results returned by the end of May 2012 were used in the delineation of the Margaret domains, however due the variable drill spacing only the exploration data (RC and Diamond holes) were used in the estimation of the Margaret 2012 Resource. The most current and ore defining exploration drilling was all drilled and orientated according to the known geological environment. These were consistently at -60 degrees toward the west which for the majority of the primary structures is perpendicular (or close to) to actual width and strike of the ore (N-S dipping east). The west dipping vein sets that intersect the main shear were, however, poorly defined by this drilling. All grade control drilling followed suit, dipping -60 degrees to the west. Overall sampling achieved reasonably unbiased results.
	The affect, if any, of alternative interpretations on Mineral Resource estimation.	A comparative MP3 model was available and it highlighted the potential issues of unconstrained high grades within the Mp3 estimation and issues with density allocation. Hence the preferred modelling technique was Ordinary Kriged utilising hard wireframes to clearly define mineralisation and high grade zones.
	The use of geology in guiding and controlling the Mineral Resource estimation.	The geology has heavily influenced the extent of the domains controlling the mineral resource estimation. Gold mineralisation is considered to be associated with haematitic alteration and intensity and quartz veining. The best mineralisation is postulated to occur at the intersection of strongly deformed andesites occurring within N-S trending shear/fault zones which dip steeply to the east and a series of quartz stockwork vein arrays trending NNW (325 to 340 deg) which dip steeply to the west. This mineralised system forms pipe-like bodies, which plunge gently to the south. Mineralisation also occurs within the steeply dipping quartz stockwork vein arrays that trend NNW. All mineralised domain, including the internal high grade shoots were wireframed with hard boundaries.
	The factors affecting continuity both of grade and geology.	The continuity of the Margaret's Deposit down plunge is open at depth. Within the economic deposit itself high grade shoots are restricted by the influence of intersecting shears; the steeply east dipping N-S trending shear and the conjugate steeply west dipping (striking NNW) veining.
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 mineral resource extends an 800m area to 100m below surface, with local coordinates 9600mE – 10200mE, 9700mN – 10500mN and 397.5mRL - 222.5mRL. Within that area the main ore lodes have strike lengths in the order of 350m and the high grade shoots plunge 40m through to 80m.
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.*	Ordinary Kriged Block estimation has been completed using Datamine software. All compositing, wireframes, surfaces, rock and domain models were constructed in Micromine. All estimation uses these wireframes as hard boundaries. Estimation of parent blocks are interpolated, and assigned to sub-cells. The maximum distance of extrapolation is less than 30m. Univariate statistical analysis of length weighted, (1m), domain and regolith coded downhole composites have been completed for all domains. 83% of the sample data used in the estimation was 1m in length with the average for the entire sample set at 1.28m. Composites were broken where there was a change of mineralisation domain code or regolith code. Clusters of higher grade outliers that could bias the mean were identified by domain. Where bimodal populations were evident within a domain, internal high grade zones were flagged by hard boundary wireframes and estimated separately. High grade outliers were used to determine specific top-cut values for each domain. Estimations used only RC and Diamond Drill results, negative Au grades were replaced with a value of 0.001g/t, and null assays were excluded from the sample data.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	**JORC Code Explanation**	**Commentary**
		Unfolding was carried out prior to variography and estimation to remove the local variances in dip and strike observed in the domains. Variogram modelling was completed with GeoAccess Professional software. This defined the sample continuity and nugget value for each domain. The parameters determined from this analysis were used in the interpolation process.
	The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.	To validate the resource integrity a rerun of the estimation using the grade control data was also completed. The inclusion of the GC Data changed the overall estimate by 2% more ounces. The current model reconciled within 6%of the ounces from the previous 2010 OK Model. This is the result of tighter geological control and identification of high grade zones that were evident in the log histogram plots.
	The assumptions made regarding recovery of by-products.	No assumptions have been made with respect to the recovery of by-products.
	Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulfur for acid mine drainage characterisation).	There has been no estimate at this point of deleterious elements. Saracen is unaware if any elements other than gold have been assayed.
	In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.	The parent block sizes for the resource model are X (5m) by Y (10m) by Z (5m). These were deemed appropriate for the majority of the resource, where drill spacing is in the order of 25m x 20m to 12.5m x 20m. Parent blocks have been sub-celled to X (1.0m) by Y (1.0m) by Z (1.0m) to ensure that the wireframe boundaries were honoured and preserved the location and shape of the mineralisation. Search ranges have been informed by variogram modelling and knowledge of the drill spacing and the known mineralisation geometry including direction of maximum continuity. Three search estimation runs are used with the aim to satisfy the minimum sample criteria in the first search range where possible.
	Any assumptions behind modelling of selective mining units.	No selective mining units have been assumed.
	Any assumptions about correlation between variables.	No assumptions have been made regarding correlation between variables.
	Description of how the geological interpretation was used to control the resource estimates.	The geological interpretation is defined by the mineralised domains and clearly delineates the structurally controlled high grade shoots. Definition of these shoots with hard wireframes helped to confine the spread of high grades in the estimation. Previous estimates had not considered this. Hard wireframes were used to define all the mineralised domains.
	Discussion of basis for using or not using grade cutting or capping.	Linear interpolation methods such as Ordinary Kriging are sensitive to the presence of high-grade outliers that positively skew the data and bias the mean. Domain histogram and Log probability plots were used to determine appropriate 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.	Several key model validation steps have been taken to validate the resource estimate. The mineral resource model has been stepped through visually in sectional and plan view to appreciate the composite grades used in the estimate and the resultant block grades. Easting, Northing and Elevation swathe plots have been constructed to evaluate the composited assay means versus the mean block estimates. The mineral resource model has been constructed to include kriging efficiency and the slope of regression values. These values are used to measure the quality of the estimate. Natural deterioration of the quality is observed in areas where data density is lower. This model was reconciled against the previous OK model, Mp3 model used in production and another run of the model was completed including the gc data to test its validity. The results of these were discussed in the "*The*

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	**JORC Code Explanation**	**Commentary**
		availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data" section above.
Moisture	*Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	All tonnages are estimated on a dry basis.
Cut-off parameters	*The basis of the adopted cut-off grade(s) or quality parameters applied.*	Based on Saracen's current economic status the natural grade distinction above background for the Margaret's deposit was at a grade of 0.5g/t.
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 Margaret's deposit was mined by open pit in 2011/2012. Underground methods have not been considered for this deposit at this stage. There are reasonable grounds to assume that in the future the remaining resource at this deposit will be mined by conventional open pit methods given the close proximity to surface and the mean average grade of the mineralisation. To best capture "reasonable prospects for eventual economic of extraction", the mineral resource was reported within an optimised pit shell at $2250 at a 0.5g/t cut-off for the open pit resources.
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 process 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.*	Given Margaret's close proximity and similar geology to Enterprise, the same metallurgical characteristics were assumed. Metallurgical testing (and processing operations at CDO) identified the ores as being free milling at coarse grind sizes with leach recoveries in excess of 90% with a high gravity gold component.
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 greenfields 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.*	No processing or beneficiation of ore expected on these tenements, as ore is hauled to Carosue Dam Mine site for Processing. Closure Plan is in place covering the Margaret Mining area and infrastructure. Margaret waste rock can be considered geochemically benign. All rock types are classified as NAF and the quality of seepage from waste rock stockpiles of these materials are alkaline, non-saline and have very low concentrations of metals and metalloids

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	**JORC Code Explanation**	**Commentary**
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 density values applied to the Margaret's Deposit estimation are largely based on historic density measures from drilling and production at Margaret's in Stage 1 and Stage 2. The bulk density data was imported into the AcQuire database with the Density method unknown for the historic data.
	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.	Saracens Metals have standardised procedures for bulk density testing. Most ore zones predominantly exist in transitional to fresh non porous material, however additional measures are taken to reduce moisture intake during the water displacement process if the coating is made of more friable oxides and sediments. This latter method aims to reduce moisture loss or moisture gain during the process and is considered on a deposit by deposit basis.
	Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	Where bulk density measures are taken an average mean of densities collected for each lithological type is 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 mineral resource has been classified into Indicated and Inferred categories based on drill hole spacing, geological confidence, and grade continuity and estimation quality. The combination of these factors together guided the hard boundary wireframe used to define the Indicated and Inferred zones. The measured material relates directly to the mined material up until the end of month of April 2012. Outside the Inferred boundary the estimated blocks were flagged with rescat value of 4.
	Whether appropriate account has been taken of all the 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 care has been taken to account for relevant factors influencing the mineral resource estimate. The diligent Saracen Metals Resource review process ensures that data reliability and geological and metal confidence and continuity are reflected in the resource classification.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The geological model and the mineral resource estimate reflect the competent person's view of the deposit.
Audits or reviews	*The results of any audits or reviews of Mineral Resource estimates.*	Saracen has adopted a process for geological modelling, estimation and reporting of mineral resources that meets high industry standards. At the completion of resource estimation Saracen Metals 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*	The mineral resource has been reported in accordance with the guidelines established in the 2012 edition of the JORC code. Saracen Gold Mine uses a standard approach to resource estimation and the procedure requires the systematic completion of the Saracen Resource Estimation Document that is thoroughly investigated and assessed in the Model review process, as stated above. It was identified that; Further work on KNA for block size, minimum and maximum number of samples, search ellipses and declustering of the composite data would help to further improve and validate the current optimisation of the block model.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC Code Explanation	Commentary
	qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.	
	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 statements relate to a global estimate of tonnes and grade.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	The confidence in the model is reflected by the designation of Resource categories. Given the thorough geological analysis of this area and adequate drilling definition, it is a good estimation of the resource at Margaret's Deposit. Reconciled numbers between the resource and the production figures indicated the variance was within 10%.

Enterprise

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
Sampling Techniques	*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.*	Sampling methods undertaken by Saracen at Enterprise have included reverse circulation (RC), diamond drillholes (DD) and RC grade control drilling within the pit. Historic methods conducted since 1984 have included rotary air blast (RAB), reverse circulation and diamond drillholes.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used	Sampling for diamond and RC drilling is carried out as specified within Saracen sampling and QAQC procedures as per industry standard. RC chips and diamond core provide high quality representative samples for analysis. RC, RAB and DD core drilling was completed by previous holders to industry standard at that time (1984- 2004).
	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 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information	Diamond core is NQ sized, sampled to 1m intervals and geological boundaries where necessary and cut into half core to give sample weights under 3 kg. Samples are selected to weigh less than 3 kg to ensure total sample inclusion at the pulverisation stage. RC chips are cone split and sampled into 1m intervals with total sample weights under 3kg Saracen core and chip samples are crushed, dried and pulverised to a nominal 90% passing 75µm to produce a 50 g sub sample for analysis by FA/AAS. Historical RAB, RC and diamond sampling was carried out to industry standard at that time. Analysis methods include fire assay and aqua regia.
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 deposit was initially sampled by 43 RAB holes, 412 RC holes (assumed standard 5 ¼ ''bit size) and 12 surface diamond HQ and unknown diameter holes. Saracen has completed 2 NQ diameter diamond drill holes, 26 RC holes from surface and 1381 grade control RC holes within the pit. Diamond drillholes were oriented using an Ezy-mark tool. It is unknown if historic diamond drill core was oriented.
Drill Sample Recovery	*Method of recording and assessing core and chip sample recoveries and results assessed*	RC sampling recoveries are recorded as a percentage based on a visual weight estimate; no historic recoveries have been recorded. Diamond core recovery was not calculated but no intervals of core loss were recorded. No historic recoveries have been recorded.
	Measures taken to maximise sample recovery and ensure representative nature of the samples	During RC drilling daily rig inspections are carried out to check splitter condition, general site and address general issues. Diamond core is reconstructed into continuous runs on an angle iron cradle for orientation marking. Depths are checked against depth given on the core blocks. During GC campaigns the sample bags weight versus bulk reject weight is compared to ensure adequate and even sample recovery. Historical RAB, RC and diamond drilling to industry standard at that time.

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
	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.	Diamond drilling has high recoveries meaning loss of material is minimal. There is no known relationship between sample recovery and grade for RC drilling. Any historical relationship is not known.
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.* *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.*	Logging of diamond drill core and RC chips records lithology, mineralogy, texture, mineralisation, weathering, alteration, veining and other features. Structural logging was carried out on all diamond holes to record defect number, type, fill material, shape and roughness and alpha and beta angles. Chips from all RC holes (exploration and GC) are stored in chip trays for future reference. Core is photographed in both dry and wet state. Qualitative and quantitative logging of historic data varies in its completeness.
	The total length and percentage of the relevant intersections logged	All diamond drillholes and exploration RC holes are logged in full. Every second drill line is logged in grade control programs with infill logging carried out as necessary. Historical logging is complete.
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.*	All drill core is cut in half onsite using an automatic core saw. Samples are always collected from the same side. Historic drill core has been half or quarter core sampled.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	All exploration and GC RC samples are cone split. Occasional wet samples are encountered; increased air capacity is routinely used to aid in keeping the sample dry when water is encountered. Historic RAB and RC drilling was sampled using grab, riffle and unknown methods.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	The sample preparation of diamond core and RC chips adhere to industry best practice. It is conducted by a commercial laboratory and involves oven drying, coarse crushing then total grinding to a size of 90% passing 75 microns. Best practice is assumed at the time of historic sampling.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	All subsampling activities are carried out by commercial laboratory and are considered to be satisfactory. Sampling by previous holders assumed to be industry standard at the time.
	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.	Duplicate sampling is carried out at a rate of 1:10 for exploration drilling and 1:20 for GC drilling and is sampled directly from the on-board splitter on the rig. These are submitted for the same assay process as the original samples and the laboratory are unaware of such submissions. Sampling by previous holders assumed to be industry standard at the time.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Sample sizes are considered to be appropriate.
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.*	RC chip samples, grade control chip samples and diamond core are analysed by external laboratories using a 50g fire assay with AAS finish. This method is considered suitable for determining gold concentrations in rock and is a total digest method. Historic sampling methods include fire assay and aqua regia.
	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 have been utilised for reporting gold mineralisation.
	Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks)	Certified reference material (standards and blanks) with a wide range of values are inserted into every drillhole at a rate of 1:25 for exploration RC and DD, and 1:40 for GC drilling. These are not identifiable to the laboratory.

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
	and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.	QAQC data returned are checked against pass/fail limits with the SQL database and are passed or failed on import. A report is generated and reviewed by the geologist as necessary upon failure to determine further action. QAQC data is reported monthly. Sample preparation checks for fineness are carried out to ensure a grindsize of 90% passing 75 microns. The laboratory performs a number of internal processes including standards, blanks, repeats and checks. QAQC data analysis demonstrates sufficient accuracy and precision. Industry best practice is assumed for previous holders.
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.*	Significant intercepts are verified by the Geology Manager and corporate personnel.
	The use of twinned holes.	No specific twinned holes have been drilled at Enterprise but grade control drilling has confirmed the width and grade of previous exploration drilling.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols	Primary data is collated in a set of excel templates utilising lookup codes. This data is forwarded to the Database Administrator for entry into a secure acQuire database with inbuilt validation functions. Data from previous owners was taken from a database compilation and validated as much as practicable before entry into the Saracen acQuire database.
	Discuss any adjustment to assay data.	No adjustments have been made to assay data. First gold assay is utilised for resource estimation.
Location of data points	*Accuracy and quality of surveys used to locate drillholes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.*	Exploration drillholes are located using a Leica 1200 GPS with an accuracy of +/- 10mm. Drillhole collars within the pit and immediate surrounds are picked up by company surveyors using a Trimble R8 GNSS (GPS) with an expected accuracy of +/-8mm. Downhole surveys are carried out using an Eastman single shot camera at regular intervals (usually 30m). A number of drillholes have also been gyroscopically surveyed. Previous holders' survey accuracy and quality is unknown.
	Specification of the grid system used.	A local grid system (Enterprise) is used at Enterprise The two point conversion to MGA_GDA94 zone 51 is: ENTEast ENTNorth RL MGAEast MGANorth RL Point 1 1000 6500 0 433626.73 6706103.13 0 Point 2 1000 5400 0 433820.92 6705020.86 0 Historic data is converted to the Enterprise local grid upon export from the database
	Quality and adequacy of topographic control.	Topographic control originally used site based survey pickups in addition to Kevron aerial photogrammetric surveys with +/- 5m resolution. Pre mining, new and more detailed topography has since been captured and will be used in future updates and for subsequent planning purposes.
Data spacing and distribution	*Data spacing for reporting of Exploration Results.*	The nominal spacing for exploration drilling is 25m x 20m to 12.5m x 20m.
	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.	Data spacing and distribution are sufficient to establish the degree of geological and grade continuity appropriate for JORC classifications applied.
	Whether sample compositing has been applied.	Sample compositing is not applied until the estimation stage. Some historic RAB sampling was composited into 3-4m samples.

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
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 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.	No significant sampling bias is thought to occur due to orientation of drilling in regards to mineralised structures.
Sample security	*The measures taken to ensure sample security.*	Samples are prepared on site under supervision of Saracen geological staff. Samples are selected, bagged into tied numbered calico bags then grouped into secured cages and collected by the laboratory personnel. Sample submissions are documented via laboratory tracking systems and assays are returned via email
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	An internal review of companywide sampling methodologies was conducted to create the current sampling and QAQC procedures.

Section 2: Reporting of Exploration Results		
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 Enterprise pit and near mine exploration are located on M31/380, M31/381 and M31/30. The tenements are held 100% by Saracen Gold Mines Pty Ltd, a wholly owned subsidiary of Saracen Mineral Holdings Limited. Mining Leases M31/380, M31/381 and M31/30 have a 21 year life (held until 2028) and are renewable for a further 21 years on a continuing basis. Mining Lease M31/380, M31/381 and M31/30 are each subject to two royalty agreements and one caveat (303500, 303501 and 58H/067, respectively). All are subject to a bank mortgage (415495). All production is subject to a Western Australian state government NSR royalty of 2.5%. Mining Leases M31/380, M31/381 and M31/30 are subject to the Edjudina Pastoral Compensation Agreement. The tenements are affected by the Maduwongga (WC2017/001) and Nyalpa Pirniku (WC2019/002) registered claims. There are no registered Aboriginal Heritage sites within the mining tenements.
	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.	The tenements are in good standing and the licence to operate already exists.
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	Minor gold mining activities took place in the vicinity of Enterprise in the 1930's. Edjudina Gold Mines undertook an exploration program in the area in 1985 following the reopening of the nearby Porphyry mine and development of Million Dollar, including geochemistry, magnetic surveys and RC drilling to calculate a small resource. Enterprise Gold carried out RC drilling in the area before entering into a joint venture with Consolidated Resources. A RAB, RC and DD campaign carried out in 1994 and 1995 delineated the resource. Consolidated were taken over by Mount Edon who completed further RAB and RC programs, and were then taken over by Pacmin. Sons Of Gwalia acquired the project and completed resource definition RC drilling before their collapse and takeover of the project by St Barbara.

Section 2: Reporting of Exploration Results		
Criteria	**JORC Code Explanation**	**Commentary**
Geology	*Deposit type, geological setting and style of mineralisation.*	The Enterprise mineralisation lies within a synformal, south plunging (25 degree) zone that is postulated to occur at the intersection of strongly deformed andesites occurring within N-S trending shear/fault zones. These structures dip steeply to the east and a series of quartz stockwork vein arrays trending NNW (330 to 340 deg) dip steeply to the west. This mineralised system forms pipe-like bodies, which plunge gently to the south. Based on this geological understanding the initial stages of interpretation assumed positions of repetitious structures that structurally displaced the lodes.
Drillhole 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:* • *easting and northing of the drill hole collar* • *elevation or RL (Reduced Level – elevation* • *above sea level in metres) of the drill hole collar* • *dip and azimuth of the hole* • *down hole length and interception depth* • *hole length.* • *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.*	A total of 185 exploration holes have been used in the mineral resource and are deemed to be material. The results of this data have been reported in prior ASX releases. Future drill hole data will be periodically released or when a results materially change the economic value of the project. Exclusion of the drilling information will not detract from the reader's view 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 significant intercepts have been length weighted with a minimum Au grade of 1ppm. No high grade cut off has been applied.
	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 with minimum width of 1m and maximum width of 3m for internal dilution. Where stand out higher grade zone exist with in 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.	Metal equivalent values are not reported
Relationship between mineralisation widths and intercept lengths	*These relationships are particularly important in the reporting of Exploration Results.* *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* *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').*	Previous announcements include sufficient detail to clearly illustrate the geometry of the mineralisation and the drilling. All results are reported as downhole lengths.

Section 2: Reporting of Exploration Results		
Criteria	**JORC Code Explanation**	**Commentary**
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.*	All significant exploration results released by Saracen are accompanied by the appropriate diagrams and maps at the time of the release.
Balanced Reporting	*Where comprehensive reporting of all Exploration Results are not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	All results from the recent campaign have been reported, irrespective of success or not.
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 substantive data acquisition has been completed in recent times
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).* *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive*	Further exploration work at Enterprise is currently under review. Economic constraints determine the priority given to this area.

Section 3: Estimation and Reporting of Mineral Resources		
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.*	Saracen utilises AcQuire software on an SQL server database to securely store and manage all drillhole and sample information. Data integrity protocols are built into the system to ensure data validity and minimise errors.
	Data validation procedures used.	Data that is captured in the field is entered into Excel templates which are checked on import into the 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.
Site Visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.*	At the time of mining activities in 2011/2012 the Competent Persons visited the geological area frequently to assess geological competency and ensure integrity across all geological disciplines.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC Code Explanation	Commentary
	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.*	A combination of both exploration and grade control drill hole information and geological data, including mapping, collected during production at Enterprise has resulted in a confident geological interpretation, in particular the structures that control the extent of lodes within broader domains.
	Nature of the data used and any assumptions made.	The interpretations have been constructed using all available geological logging descriptions including but not limited to, stratigraphy, lithology, texture, and alteration. It is identified that haematitic alteration and intensity along with strong quartz veining relates well to gold grade. The best mineralisation is postulated to occur at the intersection of strongly deformed andesites occurring within N-S trending shear/fault zones which dip steeply to the east and a series of quartz stockwork vein arrays trending NNW (330 to 340 deg) which dip steeply to the west. This mineralised system forms pipe-like bodies, which plunge gently to the south. Based on this geological understanding the initial stages of interpretation assumed positions of repetitious N-s trending structures that structurally displaced the lodes. In some parts this interpretation was supported by drill hole information, primarily alteration assemblages. In pit mapping later confirmed the actual number and position of these structures.
	The affect, if any, of alternative interpretations on Mineral Resource estimation.	An earlier interpretation of the Enterprise deposit had similar but more simplified plunging domains that were not as structurally controlled as the current interpretation. In pit mapping during production identified the repetition of structures that characterised this interpretation.
	The use of geology in guiding and controlling the Mineral Resource estimation.	The geology has heavily influenced the extent of the domains controlling the mineral resource estimation. Gold mineralisation is considered to be associated with haematitic alteration and intensity and quartz veining. The Enterprise mineralisation lies within a synformal, south plunging (25 degree) zone of haematite-carbonate-quartz-pyrite alteration superimposed on variably foliated andesitic volcanics. Steep north south repetitious shears chop up the mineralisation and thus confining their lateral extents. This is defined by hard wireframes.
	The factors affecting continuity both of grade and geology.	The continuity of the Enterprise Deposit down plunge is open at depth. Steep north south repetitious shears chop up the mineralisation and thus confining their lateral extents. To the east a major steeply east dipping shear restricts the down dip extents.
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 mineral resource extends a 900m area to 200m below surface, with local coordinates 800mE – 1200mE, 4700mN – 6200mN and 380mRL – 242.5mRL. Within that area the main ore lodes commonly dip moderately to the west with a steeper east dipping lode on the eastern margins.
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.*	Ordinary Kriged Block estimation has been completed using Datamine software. All compositing, wireframes, surfaces, rock and domain models were constructed in Micromine. All estimation uses these wireframes as hard boundaries. Estimation of parent blocks are interpolated, and assigned to sub-cells. The maximum distance of extrapolation is less than 20m as individual lodes do not have long strike or dip lengths. Analysis of sample data lengths show that while the majority of samples are 1m, there are a significant number of non-regular sample data. A composite interval of 1m was chosen to maintain the differentiation of internal high grade and waste zones within the mineralised domains. Composites were broken where there was a change of mineralisation domain code or regolith code.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC Code Explanation	Commentary
		Clusters of higher-grade outliers that could bias the mean were identified by domain. Where bimodal populations were evident within a domain, internal high-grade zones were flagged by hard boundary wireframes and estimated separately. High grade outliers were used to determine specific top-cut values for each domain. Estimations used only RC and Diamond Drill results, negative Au grades were replaced with a value of 0.001g/t, and null assays were excluded from the sample data. Unfolding was carried out prior to variography and estimation to remove the local variances in dip and strike observed in the domains. Variogram modelling was completed with GeoAccess Professional software. This defined the sample continuity and nugget value for each domain. The parameters determined from this analysis were used in the interpolation process.
	The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.	An OK estimation was checked successfully against an alternative MIK model. The latter gave better local estimates for the mineable area and was used in conjunction with an Mp3 estimates at the grade control level. Globally the OK estimate reconciled within 6% of the total produced ounces.
	The assumptions made regarding recovery of by-products.	No assumptions have been made with respect to the recovery of by-products.
	Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulfur for acid mine drainage characterisation).	There has been no estimate at this point of deleterious elements. Saracen is unaware if any elements other than gold have been assayed.
	In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.	The parent block sizes for the resource model are X (5m) by Y (10m) by Z (5m). These were deemed appropriate for the majority of the resource, where drill spacing is in the order from 25m x 20m to 12.5m x 20m. Parent blocks have been sub-celled to X (1.0m) by Y (1.0m) by Z (1.0m) to ensure that the wireframe boundaries were honoured and preserved the location and shape of the mineralisation. Search ranges have been informed by variogram modelling and knowledge of the drill spacing and the known mineralisation geometry including direction of maximum continuity. Three search estimation runs are used with the aim to satisfy the minimum sample criteria in the first search range where possible.
	Any assumptions behind modelling of selective mining units.	No selective mining units have been assumed.
	Any assumptions about correlation between variables.	No assumptions have been made regarding correlation between variables.
	Description of how the geological interpretation was used to control the resource estimates.	The geological interpretation is defined by the structurally controlled mineralised domains that are consistently south plunging. Definition of these lodes with hard wireframes honoured both the location of the mineralisation and the extent of the estimation.
	Discussion of basis for using or not using grade cutting or capping.	Linear interpolation methods such as Ordinary Kriging are sensitive to the presence of high-grade outliers that positively skew the data and bias the mean. Domain histogram and Log probability plots were used to determine appropriate 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.	Several key model validation steps have been taken to validate the resource estimate. The mineral resource model has been stepped through visually in sectional and plan view to appreciate the composite grades used in the estimate and the resultant block grades. Northing and Elevation swathe plots were constructed to evaluate the composited assay means versus the mean block estimates.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC Code Explanation	Commentary
		The mineral resource model has been constructed to include kriging efficiency and the slope of regression values. These values are used to measure the quality of the estimate. Natural deterioration of the quality is observed in areas where data density is lower.
Moisture	*Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	All tonnages are estimated on a dry basis.
Cut-off parameters	*The basis of the adopted cut-off grade(s) or quality parameters applied.*	Based on Saracen's current economic status the natural grade distinction above background for the Enterprise deposit was at a grade of 0.5g/t.
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 Enterprise deposit was mined by open pit in 2011/2012 by Saracen Gold Mines. There are reasonable grounds to assume that in the future the remaining resource at this deposit will be mined by conventional open pit methods given the close proximity to surface and the mean average grade of the mineralisation. Underground methods have not been considered for this deposit at this stage. To best capture "reasonable prospects for eventual economic of extraction", the mineral resource was reported within an optimised pit shell at $2250 at a 0.5g/t cut off for the open pit resources.
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 process 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.*	Metallurgical testing (and processing operations at CDO) identified Enterprise ores as being free milling at coarse grind sizes with leach recoveries in excess of 90% with a high gravity gold component.
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 greenfields 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*	No processing or benefication of ore expected on these tenements, as ore is hauled to Carosue Dam Mine site for Processing. Closure Plan is in place covering the Enterprise Mining area and infrastructure. Enterprise waste rock can be considered geochemically benign. All rock types are classified as NAF and the quality of seepage from waste rock stockpiles of these materials are alkaline, non-saline and have very low concentrations of metals and metalloids

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	**JORC Code Explanation**	**Commentary**
	with an explanation of the environmental assumptions made.	
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 in the current model has been assigned based on oxidation state, using both recent density determinations carried out by Saracen on its drill samples and historical data. A detailed set of density data (522 values) were available for Enterprise; these had been compiled by Speijers for the 1995 resource estimation and rigorously validated.
	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.	Most ore zones predominantly exist in transitional to fresh non porous material, however additional measures are taken to reduce moisture intake during the water displacement process if the coating is made of more friable oxides and sediments. This latter method aims to reduce moisture loss or moisture gain during the process and is considered on a deposit by deposit basis.
	Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	Where bulk density measures are taken an average mean of densities collected for each lithological type is 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 mineral resource has been classified into Measured, Indicated and Inferred categories based on drill density, geological confidence, and grade continuity. The combination of these factors together guided the hard boundary wireframe or dtm's used to define the Measured, Indicated and Inferred zones. Outside the Inferred boundary the estimated blocks were flagged as unclassified.
	Whether appropriate account has been taken of all the 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 care has been taken to account for relevant factors influencing the mineral resource estimate. The review process ensures that data reliability and geological and metal confidence and continuity are reflected in the resource classification.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The geological model and the mineral resource estimate reflect the competent person's view of the deposit.
Audits or reviews	*The results of any audits or reviews of Mineral Resource estimates.*	Saracen has adopted a process for geological modelling, estimation and reporting of mineral resources that meets high industry standards. The geological interpretation of the Enterprise model was reviewed thoroughly, along with the estimate that was validated and compared to previous estimations. Results indicated a more robust model that honoured geology, structures and mean composited grades. The OK estimation was reviewed externally and from that an MIK model was generated for the optimised resource that was mined during 2011/2012. The OK model was deemed a robust global estimate for the remaining resource.
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 established in the 2004 edition of the JORC code. Through the review process it was identified that; Further KNA could improve the local estimate; however it is not entirely necessary at this stage.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC Code Explanation	Commentary
	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 statements relate to a global estimate of tonnes and grade.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	The confidence in the model is reflected by the designation of Resource categories. Given the thorough geological analysis of this area and adequate drilling definition, it is a good estimation of the resource at Enterprise Deposit. Compared to reconciled production, the Enterprise deposit delivered within 6% of the total ounces defined in the resource estimate.

Section 4: Estimation and Reporting of Ore Reserves		
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 for the Enterprise gold deposit is a robust global estimate that was used as a basis for conversion to the Ore Reserve estimate. The Resource estimate was compiled by Saracen using exploration, resource definition, and grade control drilling and assay data, geological mapping and historical mining records to validate the model against, and solid interpretation wireframes of the geology. This information was used to construct a model estimated by various kriging methods. The block model was depleted with the end of June 2020 survey pickup for Reserve Estimation.
	Clear statement as to whether the Mineral Resources are reported additional to. Or inclusive of, the Ore Reserves.	The Mineral Resource reported is inclusive of the Ore Reserve.
Site Visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.*	The Competent Person along with a geotechnical consultant has conducted several site visits to the Enterprise open pit since the inclusion in Carosue Dam operation's life of mine plan. The purpose of these visits is to collect information for optimisation work, validating input parameters, visual pit inspection, discussion and feedback for life of mine planning. The information also includes the discussion around current mining performance, wall conditions and overall stability, and groundwater condition.
	If no site visits have been undertaken indicate why this is the case.	N/A
Study status	*The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves*	The Enterprise deposit was mined as an open pit for a period of 15 months between 2011-2012 under Saracen ownership. Since then a revised feasibility level study was undertaken with the view to recommence open pit operations and the pit has been included in the Carosue Dam life of mine plan. The 2020 Ore Reserve has been subject to validating all aspects of operational inputs such as production parameters, operating costs of mining, processing, general administration and environment management related costs.
	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.	Modifying factors have been applied to the optimisation study and resultant Reserve pit design work to ensure the rigor of the financial analysis. Operational costs and production parameters have been estimated from actual mining and processing performance. Saracen has completed all appropriate supporting mining studies required for Ore Reserve estimate.

Section 4: Estimation and Reporting of Ore Reserves		
Criteria	JORC Code Explanation	Commentary
Cut-off parameters	*The basis of the cut-off grade(s) or quality parameters applied*	The Ore Reserve is estimated at a cut-off grade of 0.50g/t, and an assumed gold price of AUD$1,750/oz plus operating costs of mining, processing, haulage and general administration. A top cut has already been applied to the Mineral Resource Estimate eliminating the necessity for any further adjustment to the Ore Reserve Estimate.
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).*	The resource model used in the Mineral Resource Estimation was the basis for the generation of a range of Whittle 4X pit optimisation shells. The generation of these shells was reliant upon costs and inputs derived from current operational data, contractors and independent consultant recommendations. An appropriate shell was then selected as the basis for an iterative process of pit design work, culminating in the finalisation of a detailed pit design for the Enterprise Reserve.
	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 mining method to be employed at Enterprise will be conventional open pit with hydraulic excavator and dump truck fleet, and drill and blast activity. The class of excavator employed is similar to other mining operations, providing a good operating dataset for production and productivity rate measurement and financial modelling. The Reserve pit is designed as a cutback to the existing mined pit in an appropriate manner to meet operational efficiency, safety and production rates.
	The assumptions made regarding geotechnical parameters (e.g. pit slopes, stope sizes, etc.), grade control, and pre-production drilling.	Geotechnical recommendations were made by an independent external consultant following site visits, inspection of drill core, and a review of the geotechnical data gathered during earlier operations. The geotechnical consultant was engaged by Saracen to oversee the geotechnical aspects of the technical study and ongoing support. It is expected that once the pits are in operation there may be some need for additional geotechnical input and any reflected changes to the life of mine pit design. The Grade control method to be employed at Enterprise will utilise an RC drilling and sampling method. The method and practice has been utilised successfully at all current and past mining operations at Saracen.
	The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).	The Ore Reserve Estimate is based on detailed life of mine pit design work by using a geology approved resource model, and making appropriate dilution and recovery factor allowances for the mining fleet and method utilised.
	The mining dilution factors used.	A mining dilution factor of 15% is applied in the Ore Reserve estimation and reflects the expected mining performance for the given ore body characteristics, selected mining method and equipment.
	The mining recovery factors used.	A mining ore loss factor of 5% is applied in the Ore Reserve estimation and reflects the expected mining performance for the given ore body characteristics, selected mining method and equipment
	Any minimum mining widths used	A minimum mining width of 25m has been adopted for the primary excavation fleet. Where 'pinch-points' occur or "Good Bye" cuts are considered at the base of the pit, it is assumed that a smaller or more versatile excavator will be employed. The practice is very consistent across both Saracen operations and reflects the suitability and efficiency of the mining performance.
	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 does not generate any revenue. Therefore the final pit reserve inventory has excluded any inferred mineral resources.
	The infrastructure requirements of the selected mining methods.	The selected mining method and location of the pit is close to existing Carosue Dam mining operations, which consists of underground mines, 3.3mt processing plant, modern camp site and all other required infrastructure to support the current and future mine plan.
Metallurgical factors or assumptions	*The metallurgical process proposed and the appropriateness of that process to the style of mineralisation*	The Ore Reserve will be treated at the established Carosue Dam processing facility. The Carosue Dam Process Plant is a CIL cyanide leach plant incorporating a gravity circuit which is appropriate for the extraction of gold from free milling gold ores.

Section 4: Estimation and Reporting of Ore Reserves		
Criteria	JORC Code Explanation	Commentary
	Whether the metallurgical process is well-tested technology or novel in nature.	The current processing plant and method applied utilises well tried and proven technology, and since being in operation gold recoveries typically average 92 to 94% for all different sourced material around Carosue Dam operations.
	The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.	An average gold recovery for Enterprise deposit is estimated at 94.0%. The recovery estimation is based on met test work and past actual average recovery data collected at the Carosue Plant. The plant performance is consistent between 92 to 94% while processing similar types of ore material blended with range of other ore sources without any issue. Approximately two years of processing the Enterprise ore through this plant have resulted in a solid understanding of the metallurgical parameters of the ore.
	Any assumptions or allowances made for deleterious elements.	There are no known deleterious elements present in Enterprise ore that can impact on ore recoveries at Carosue Plant.
	The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the ore body as a whole.	When in operation the Enterprise ore was processed through the Carosue Dam plant, in itself representing a sizeable bulk sample/pilot test.
	For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications.	N/A
Environmental factors or assumptions	*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 pit is currently on 'care and maintenance'. All required Environmental studies have been completed and Statutory Government Approvals including works approval, dewatering and discharge licences have been granted. A Mining Proposal has previously been granted, however will be resubmitted to accommodate the updated ore reserve. The existing Carosue Dam processing facility at which ore will be processed and the accommodation village all lay on granted mining leases. The road haulage network footprint is underpinned by a combination of miscellaneous licences and granted mining leases. A waste rock characterisation study has been carried out and it is expected to be representative of the waste rock. An appropriate landform design criteria has been considered based on rock characteristics to mitigate the current and any future pit expansion plan.
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.*	The Enterprise deposit will require minimum infrastructure and hence provide the ability to recommence operation in a short timeframe. The Enterprise pit is ~50km from the CDO Processing Plant and ~120km northeast of Kalgoorlie, adjacent to Yarri Road. The Carosue Dam Operation is well established, with mining activities being conducted by Saracen since 2009. The operation extends from the south (CDO plant, administration, Whirling Dervish & Karari mines) to the North (Deep South mine) and is connected via a private haulage road. The CDO operation comprises at 3.3mtpa CIL ore processing facility, aerodrome with sealed runway, associated tailings storage facilities, several power stations, water supply, workshops, and administration offices. A modern accommodation camp is located within a few kilometres of the Enterprise mining area. A 70km gravel access road links Carosue Dam Operations to the gravel section of Yarri Road. Both the Saracen and Shire of Kalgoorlie gravel roads are well maintained.
Costs	*The derivation of, or assumptions made, regarding projected capital costs in the study.*	The majority of capital work relating to infrastructure setup has been completed. Further allowance has been made in the financial modelling for the pre striping of the pit.

Section 4: Estimation and Reporting of Ore Reserves		
Criteria	JORC Code Explanation	Commentary
	The methodology used to estimate operating costs.	Operating costs for open pit mining have been derived from a combination of actual costs from SGM's Carosue Dam/Thunderbox Operations and costs supplied by various contract mining companies and independent consultants. Operating costs for ore processing, haulage and administration have been derived from known parameters at Carosue Dam operations.
	Allowances made for the content of deleterious elements	Previous operational experience at Enterprise did not reveal any deleterious elements within the ore or waste that required any additional cost allowances.
	The derivation of assumptions made of metal or commodity price(s), for the principal minerals and co-products	An assumed gold price of AUD$1,750/oz has been adopted for financial modelling. No allowance is made for silver by-products.
	The source of exchange rates used in study	All revenue and cost calculations have been made in AUD, so no exchange rate usage or assumptions have been necessary.
	Derivation of transportation charges	Costs associated with bullion transportation have been derived from existing contractual arrangements at Carouse Dam.
	The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.	Costs associated with refining have been derived from existing contractual arrangements at Carouse Dam.
	The allowances made for royalties payable, both Government and private.	Royalty costs are a 2.5% royalty payable to the Western Australian state government, and a 1.5% royalty payable to IRC.
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.*	For the purposes of the Ore Reserve Estimation it has been assumed that there is no gold hedging. All gold production will be sold at spot price to the Perth Mint.
	The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products	Assumed gold price of AUD$1,750/oz has been adopted for financial modelling. No allowance is made for silver by-products.
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.	There is a transparent quoted market for the sale of gold.
	For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.	N/A
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.*	The Ore Reserve Estimation is based on a detailed life of mine pit design and reflects positive economic outcomes. All relevant capital and operating costs as well as revenue and royalty factors have been included with appropriate discount factor for cash flow analysis.

Section 4: Estimation and Reporting of Ore Reserves		
Criteria	JORC Code Explanation	Commentary
	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*	Carosue Dam is in operation and Saracen has good relations with neighbouring stakeholders, including engagement with the local pastoralists and the traditional owners and those relationships have been maintained and strengthened over the time. The mine is located on leasehold pastoral land with compensation agreements in place with the local pastoralist. Aboriginal heritage surveys have been recently conducted in the project area. Granted mining leases cover all of the proposed mining and processing assets.
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	Water inrush is identified as naturally occurring risk with in the operation and has been addressed by the construction of appropriate water diversion bunds to provide a safe and risk free work environment. The sufficient bund wall constructed when Enterprise pit was in operation is still in place.
	The status of material legal agreements and marketing arrangements	Contracts are in place for all critical goods and services to operate Carosue Dam Operations.
	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.	A Mining Proposal has previously been granted, however will be resubmitted to accommodate updated ore reserve. Other Statutory Government Approvals including dewatering and discharge licences have been granted.
Classification	*The basis for the classification of the Ore Reserve into varying confidence categories*	The Ore Reserve Estimate classification for Enterprise has been made in accordance with the JORC code 2012. The Ore Reserve Estimate classified as being Proved and Probable has been derived from the Mineral Resource classified as Indicated and Measured only.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	Cost assumptions and modifying factors applied to the pit optimisation and subsequent designs were derived from current operational data relating to Saracen's Carosue Dam and Thunderbox operations, and supplied from contract mining companies and independent consultants. Results of these optimisations and the resultant analysis reflect the Competent Person's view regarding the Enterprise deposit.
	The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any)	100% of Probable ore from the Ore Reserve estimate has been derived from the Indicated Mineral Resource category. 100% of Proved ore from the Ore Reserve estimate has been derived from the Measured ore of the Mineral Resource category.
Audits or reviews	*The results of any audits or reviews of Ore Reserve estimates*	The Ore Reserve Estimation process is in line with the Saracen Ore Reserve Policy and has undergone internal review.
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*	The Ore Reserve estimate has been prepared within the guidelines of the 2012 JORC Code. The relative confidence of the estimate complies with the criteria of Probable Ore Reserves and is based upon; • Resource estimate

Section 4: Estimation and Reporting of Ore Reserves		
Criteria	JORC Code Explanation	Commentary
	Competent Person. For example, the application of statistical or geo-statistical 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 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.* *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.* *It is recognised that this may not be possible or appropriate in all circumstances. These statements or relative accuracy and confidence of the estimate should be compared with production data, where available.*	• significant operating history, • application of current industry practices, • appropriate operating and capital costs, The range of the modifying factors and mining parameters applied are reasonable and confidence in the resulting reserve estimate is reasonable. The reserve mine design has adopted all reasonable modifying factors and financial analysis used in the estimated Ore Reserve have been the subject to peer review internally, and the Competent Person is confident that it is an accurate estimation of the reserve. The Enterprise operation will utilise the same grade control methods that are widely utilised at current Saracen open pit operations.

Safari Bore

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
Sampling Techniques	*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.*	Saracen has undertaken reverse circulation drilling (RC) and diamond drilling (DD) at Safari Bore. Historic methods conducted since 1968 have included aircore (AC), rotary air blast (RAB), reverse circulation and diamond drillholes.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used	Sampling for RC and DD drilling is carried out as specified within Saracen sampling and QAQC procedures as per industry standard. RC chips and DD core provide high quality representative samples for analysis. RC, RAB, AC and DD core drilling was completed by previous holders to industry standard at that time (1968- 2004).
	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 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information	RC chips are cone split and sampled into 1m intervals with total sample weights less than 3 kg. Diamond core is HQ sized, sampled to 1m intervals or geological boundaries where necessary and cut into half core. Samples are selected to weigh less than 3 kg to ensure total sample inclusion at the pulverisation stage. Saracen chip and core samples are crushed, dried and pulverised to a nominal 90% passing 75µm to produce a 50g sub sample for analysis by FA/AAS. Historical AC, RAB, RC and diamond sampling was carried out to industry standard at that time. Analysis methods include fire assay, aqua regia, atomic absorption spectroscopy and unspecified methods.
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 deposit was initially sampled by 161 AC holes, 452 RAB holes, 690 RC holes (assumed standard 5 ¼ ''bit size) and 66 surface diamond HQ core and unknown diameter holes. Saracen has completed 57 RC drillholes and 5 HQ diameter diamond holes Diamond holes were oriented using an ACT 111 tool It is unknown if historic diamond drill core was oriented.
Drill Sample Recovery	*Method of recording and assessing core and chip sample recoveries and results assessed*	RC sampling recoveries are recorded as a percentage based on a visual weight estimate. Diamond core recovery percentages calculated from measured core versus drilled intervals are logged and recorded in the database Limited historic recoveries have been recorded.
	Measures taken to maximise sample recovery and ensure representative nature of the samples	During RC campaigns daily rig inspections are carried out to check splitter condition, general site and address general issues. Diamond core is reconstructed into continuous runs on an angle iron cradle for orientation marking. Depths are checked against depth given on the core blocks. Historic AC, RAB, RC and diamond drilling to industry standard at that time.
	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.	There is no known relationship between sample recovery and grade for RC drilling. Diamond drilling has high recoveries due to the competent nature of the ground meaning loss of material is minimal. Any historical relationship is not known.

Section 1: Sampling Techniques and Data		
Criteria	JORC Code Explanation	Commentary
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.* *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.*	Logging of RC chips and diamond core records lithology, mineralogy, texture, mineralisation, weathering, alteration, veining and other features. Geotechnical and structural logging is carried out on all diamond holes to record recovery, RQD, defect number, type, fill material, shape and roughness and alpha and beta angles. Chips from all RC holes are stored in chip trays for future reference. Core is photographed in both dry and wet state. Qualitative and quantitative logging of historic data varies in its completeness.
	The total length and percentage of the relevant intersections logged	All RC and DD drillholes holes are logged in full. Historical logging is complete.
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.*	All drill core is cut in half onsite using an automatic core saw. Samples are always collected from the same side. Historic diamond drilling has been half core sampled or sampled via unknown methods.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	All RC samples are cone split. Occasional wet samples are encountered; increased air capacity is routinely used to aid in keeping the sample dry when water is encountered. Historic AC, RAB and RC drilling was sampled using cone, riffle and unknown methods.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	The sample preparation of RC chips and DD core adheres to industry best practice. It is conducted by a commercial laboratory and involves oven drying, coarse crushing then total grinding to a size of 90% passing 75 microns. Best practice is assumed at the time of historic sampling.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	All subsampling activities are carried out by commercial laboratory and are considered to be satisfactory. Sampling by previous holders assumed to be industry standard at the time.
	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.	Duplicate sampling is carried out at a rate of 1:10 for exploration drilling, with the duplicate being sampled directly from the on-board splitter on the rig. These are submitted for the same assay process as the original samples and the laboratory are unaware of such submissions. Sampling by previous holders assumed to be industry standard at the time.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Sample sizes are considered to be appropriate given the grainsize (90% passing 75 microns) of the material being sampled.
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.*	All samples are analysed by external laboratories using a 50g fire assay with AAS finish. This method is considered suitable for determining gold concentrations in rock and is a total digest method. Historic sampling includes fire assay, aqua regia, atomic absorption spectroscopy and unknown methods.
	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 have been utilised for reporting gold mineralisation at Whirling Dervish.
	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.	Certified reference material (standards and blanks) with a wide range of values are inserted into every drillhole at a rate of 1:25 for DD and RC drilling. These are not identifiable to the laboratory. QAQC data returned are checked against pass/fail limits with the SQL database and are passed or failed on import. A report is generated and reviewed by the geologist as necessary upon failure to determine further action. QAQC data is reported monthly. Sample preparation checks for fineness are carried out to ensure a grindsize of 90% passing 75 microns. The laboratory performs a number of internal processes including standards, blanks, repeats and checks. QAQC data analysis demonstrates sufficient accuracy and precision. Industry best practice is assumed for previous holders.

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.*	Significant intercepts are verified by the Geology Manager and corporate personnel.
	The use of twinned holes.	No specific twinned holes have been drilled at Safari Bore.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols	Primary data is collated in a set of excel templates utilising lookup codes. This data is forwarded to the Database Administrator for entry into a secure acQuire database with inbuilt validation functions. Data from previous owners was taken from a database compilation and validated as much as practicable before entry into the Saracen acQuire database.
	Discuss any adjustment to assay data.	No adjustments have been made to assay data. First gold assay is utilised for resource estimation.
Location of data points	*Accuracy and quality of surveys used to locate drillholes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.*	Exploration drillholes are located using a Leica 1200 GPS with an accuracy of +/- 10mm. Downhole surveys are carried out using an Eastman single shot camera at regular intervals (usually 30m). Previous holders' survey accuracy and quality is unknown
	Specification of the grid system used.	A local grid system (Safari Bore) is used. The two point conversion to MGA_GDA94 zone 51 is SBEast SBNorth RL MGAEast MGANorth RL Point 1 51000 34000 0 451137.753 6734157.921 0 Point 2 51000 30000 0 451137.890 6730157.896 0 Historic data is converted to the Safari Bore local grid upon export from the database.
	Quality and adequacy of topographic control.	Topographic control originally used site based survey pickups in addition to Kevron aerial photogrammetric surveys with +/- 5m resolution. Pre mining, new and more detailed topography has since been captured and will be used in future updates and for subsequent planning purposes.
Data spacing and distribution	*Data spacing for reporting of Exploration Results.*	The nominal spacing for exploration drilling ranges from 20 m x 20 m
	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.	Data spacing and distribution are sufficient to establish the degree of geological and grade continuity appropriate for JORC classifications applied.
Orientation of data in relation to geological structure	*Whether sample compositing has been applied.*	Sample compositing is not applied until the estimation stage. Some historic RAB and RC sampling was composited into 3-4m samples with areas of interest re-sampled to 1m intervals. It is unknown at what threshold this occurred.
	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 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.	No significant sampling bias is thought to occur due to orientation of drilling in regards to mineralised structures.
Sample security	*The measures taken to ensure sample security.*	Samples are prepared on site under supervision of Saracen geological staff. Samples are selected, bagged into tied numbered calico bags then grouped into secured cages and collected by the laboratory personnel. Sample submissions are documented via laboratory tracking systems and assays are returned via email

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	An internal review of companywide sampling methodologies was conducted to create the current sampling and QAQC procedures.

Section 2: Reporting of Exploration Results		
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 Safari Bore resource is located on M39/307. Near mine exploration extends onto M39/639. The tenements are held 100% by Saracen Gold Mines Pty Ltd, a wholly owned subsidiary of Saracen Mineral Holdings Limited. Mining Leases M39/307 have a 21 year life (held until 2036 and 2024, respectively). The tenements are renewable for a further 21 years on a continuing basis. Mining Leases M39/307 and M39/639 are each subject to a caveat (144H/067 and 150H/067, respectively). The tenements are the subject to a royalty of 1.5 % of Sale Proceeds or otherwise Mineral Value of all minerals extracted (excluding Operating Expenses) payable to Resource Capital Fund III L.P. All production is subject to a Western Australian state government NSR royalty of 2.5%. Mining Leases M39/307 and M39/639 are subject to the Edjudina Pastoral Compensation Agreement. M39/307 is subject to the Yundamindera Pastoral Compensation Agreement. The tenements are affected by the Nyalpa Pirniku (WC2019/002) native title claim. There are no registered Aboriginal Heritage sites within M39/307 and M39/639. The Mining Rehabilitation Fund applies to the tenements.
	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.	The tenements are in good standing and there are no known impediments to obtaining a licence to operate.
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	Unsuccessful nickel exploration was carried out in the Mount Celia project area in which Safari Bore is located in the 1960's and 1970's. Pancontinental Mining pegged the ground in 1988 and began gold exploration beginning with a soil geochemistry survey (deemed ineffective due to depth of cover) followed by regional RAB then targeted RC drilling of anomalous areas. Further RC and diamond drilling was carried out to define the Safari Bore resource. PanCon entered into a joint venture with Goldfields in 1995. Extensive regional RAB and RC drilling were carried out along with RC and diamond resource infill drilling. Sons of Gwalia purchased the project from Goldfields in 2001 and completed further regional RAB and RC drilling along with resource definition RC and diamond drilling before mining commenced in 2003. St Barbara acquired the project following the collapse of Sons of Gwalia. No further exploration activities took place and mining operations were suspended in 2005.
Geology	*Deposit type, geological setting and style of mineralisation.*	The Safari Bore deposit is located within the eastern part of the Norseman-Wiluna greenstone belt in the Eastern Goldfields province of the Archaean Yilgarn Craton. The deposit sits within the Pinjin fault, a major NNW trending regional lineament and comprises a sub vertically WSW dipping NNW striking package of intensely deformed and altered intermediate to mafic intrusive and extrusive rocks and sediments intruded by felsic porphyry. Mineralisation within this sequence occurs in multiple structural and

Section 2: Reporting of Exploration Results		
Criteria	**JORC Code Explanation**	**Commentary**
		lithological settings, in four discreet lodes (red, green, purple and Serengeti), all associated with quartz-carbonate-albite hydraulic breccia veins. Serengeti and red lodes lie within the margins of gently southerly plunging felsic porphyry. Green and purple lodes are sub vertical sheets oriented sub-parallel to foliation.
Drillhole 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:* • *easting and northing of the drill hole collar* • *elevation or RL (Reduced Level – elevation* • *above sea level in metres) of the drill hole collar* • *dip and azimuth of the hole* • *down hole length and interception depth* • *hole length.* • *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.*	All significant exploration results released by Saracen are documented in ASX statements, notably 18/02/2020
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 significant intercepts have been length weighted with a minimum Au grade of 1ppm. No high grade cut off has been applied.
	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 with minimum width of 1m and maximum width of 3m for internal dilution. Where stand out higher grade zone exist with in 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.	Metal equivalent values are not reported
Relationship between mineralisation widths and intercept lengths	*These relationships are particularly important in the reporting of Exploration Results.* *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* *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').*	There are no exploration results to report with this document.
Diagrams	*Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should*	All significant exploration results released by Saracen are accompanied by the appropriate diagrams and maps at the time of the release.

Section 2: Reporting of Exploration Results		
Criteria	**JORC Code Explanation**	**Commentary**
	include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	
Balanced Reporting	*Where comprehensive reporting of all Exploration Results are not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	All results from the recent campaign have been reported, irrespective of success or not
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 substantive data acquisition has been completed in recent times.
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).* *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive*	Safari Bore is currently under review and exploration targeting will focus on areas with economic gain.

Section 3: Estimation and Reporting of Mineral Resources		
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.*	The database used for the estimate an extract from an acquire SQL database. The primary database is regulated by a locked framework called the acquire data model which fixes the relationships between tables. The data model minimises the potential for data collection and data usage errors through pre-determined look up tables, storage and export functions. User defined permissions also regulate the ability to add, edit or extract data. Primary data is recorded using typical manual translation of logging and data capture from written logs and direct import of csv tables through a data import scheme where data is validated upon import or direct data entry options into the database using predefined look up values.
	Data validation procedures used.	The rigid structure of the acquire data model is such that predefined rules and look up tables are applied to all data entry. Data that does not meet the criteria are highlighted and moved to a buffer area until the data is rectified to meet the passing rules.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC Code Explanation	Commentary
Site Visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.*	The competent person together with other Saracen's geology personnel have carried out site visits to the Safari Bore deposit on numerous occasions. The competent has inspected the deposit and has built a sound understanding of the deposit geology. All geological processes undertaken by Saracen concerning Safari Bore Resource have been done using Saracen's standard operating procedures.
	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.*	The confidence in the geological interpretation of the Safari Bore deposit considered good. The interpretation has been based on the detailed geological work completed by Saracen previous owners of the project. This knowledge is based on extensive geological logging of drill core, RC chips, detailed open pit mapping and assay data. The Safari Bore deposit sits within the Pinjin Fault, a major NNW-trending regional lineament dividing the western low-metamorphic-grade Edjudina Domain from the eastern low- to high-metamorphic grade Linden Domain, although within the area of the Safari Bore Deposit both domains display green schist facies assemblages. Mineralisation occurs in four discrete lodes, from west to east Serengeti, Red, Green and Purple Lodes. All lodes are associated with quartz-carbonate-albite hydraulic breccia veins. Red Lode and Serengeti Mineralisation lies within and at the margins of a gently southerly plunging felsic porphyry. The Serengeti porphyry and associated mineralisation may be either a southern structural repetition of the Red Lode Porphyry and mineralisation, or separate sub-parallel primary shoots. In contrast to Red Lode and the Serengeti mineralisation, Green and Purple Lodes are sub vertical sheets lying sub-parallel to foliation. Wider and higher grade shoots within Green and Purple Lodes plunge gently south, mirroring the plunge of the Red and Serengeti zones. As for the other lodes higher grade Mineralisation is associated with zones of hydraulic quartz-carbonate-albite brecciation.
	Nature of the data used and any assumptions made.	The interpretations have been constructed using all available geological logging descriptions including but not limited to, stratigraphy, lithology, texture, structure and alteration. Interpreted cross cutting faults have been observed and have been use to guide disruptions in the position of the key mineralised domains.
	The affect, if any, of alternative interpretations on Mineral Resource estimation.	The Safari Bore deposit is generally sub vertical in geometry, with clear well defined zones that show the tenor of the mineralisation. Saracen considers the current interpretation to be robust based on all the examined geological data. The current resource has been interpreted from 71 diamond holes, and 869 RC holes.
	The use of geology in guiding and controlling the Mineral Resource estimation.	Geological controls and relationships were used to define mineralised domains. Mineralisation occurs in four discrete lodes, from west to east Serengeti, Red, Green and Purple Lodes. All lodes are associated with quartz-carbonate-albite hydraulic breccia veins. Red Lode and Serengeti Mineralisation lies within and at the margins of a gently southerly plunging felsic porphyry. The Serengeti porphyry and associated mineralisation may be either a southern structural repetition of the Red Lode Porphyry and mineralisation, or separate sub-parallel primary shoots. In contrast to Red Lode and the Serengeti mineralisation, Green and Purple Lodes are sub vertical sheets lying sub-parallel to foliation. Wider and higher grade shoots within Green and Purple Lodes plunge gently south, mirroring the plunge of the Red and Serengeti zones. As for the other lodes higher grade mineralisation is associated with zones of hydraulic quartz-carbonate-albite brecciation.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC Code Explanation	Commentary
	The factors affecting continuity both of grade and geology.	Gold mineralisation at Safari Bore is transgressive to lithology and occurs within multiple structural and alteration settings. Although the setting of mineralisation is variable, the distribution of gold Mineralisation may be explained by a single mechanism. In plan view the broad distribution of gold at Safari Bore is consistent with mineralisation within a sinistral oblique strike-slip regime. If the central felsic porphyry and the dioritic sheets are considered to lie sub-parallel to the local D (foliation) orientation then gold mineralisation lies within the R, T and P orientations of a sinistral strike slip regime. The variability in the style of gold mineralisation throughout Safari Bore may be attributed to variations in the orientation of the host lithology, and variable physical and chemical properties.
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 gold mineralisation at Safari Bore strikes about 1.3 km in length spanning over an area with 300m in width. The mineralisation extends to below 280m below surface.
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.*	Mineralisation is domained based on geological continuity. 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 are topcut proximal to population disintegration. Extreme grades are not common in the data set and all domains are analysed individually to determine specific top-cut values. Due to the lack of extreme grades the top-cut process affects only 1-2% of the data. Many of the principal lodes exhibit bi/multi-model grade populations. These internal populations are controlled by grade indicators based on inflexion points derived from 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 1x2x1m 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. 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 maximum distance of extrapolation from last known data points for the inferred material is dependent on the geological continuity and confidence across the lode, but less than 40m for the deposit.
	The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.	No comparison have been done with previous estimates
	The assumptions made regarding recovery of by-products.	No assumptions have been made with respect to the recovery of by-products.
	Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).	There has been no estimate at this point of deleterious elements. Saracen is unaware if any elements other than gold have been assayed. Arsenic may have been assayed; however this data has not been made available.

Section 3: Estimation and Reporting of Mineral Resources		
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.	A single block model for Safari Bore was constructed using a 5 mE by 10 mN by 5 mRL parent block size with sub-celling to 1 mE by 2 mN by 1 mRL for domain volume resolution. All estimation was completed at the parent cell size scale. Search ellipses and passes and minimum and maximum search number parameters are detailed below. The search strategy was set up such that the first search pass would fill blocks informed by the typical drill spacing. The second search used search ellipse multiplied by a factor of 2, while the third search increased the dimensions by a factor of 5 to ensure filling of all blocks. With the very limited across structure variogram range, a limit of 4 composites per drill hole was set. The first search pass used a maximum of 16 and a minimum of 16 samples. The second search pass used a maximum of 16 with a minimum of 8 samples while the third search pass used a maximum of 16 with a minimum of 1 sample.
	Any assumptions behind modelling of selective mining units.	No selective mining units have been assumed.
	Any assumptions about correlation between variables.	No assumptions have been made regarding correlation between variables.
	Description of how the geological interpretation was used to control the resource estimates.	Geological controls and relationships were used to define mineralised domains. Mineralisation occurs in four discrete lodes, from west to east Serengeti, Red, Green and Purple Lodes. All lodes are associated with quartz-carbonate-albite hydraulic breccia veins. Red Lode and Serengeti Mineralisation lies within and at the margins of a gently southerly plunging felsic porphyry. The Serengeti porphyry and associated mineralisation may be either a southern structural repetition of the Red Lode porphyry and mineralisation, or separate sub-parallel primary shoots. In contrast to Red Lode and the Serengeti mineralisation, Green and Purple Lodes are sub vertical sheets lying sub-parallel to foliation. Wider and higher grade shoots within Green and Purple Lodes plunge gently south, mirroring the plunge of the Red and Serengeti zones. As for the other lodes higher grade Mineralisation is associated with zones of hydraulic quartz-carbonate-albite brecciation.
	Discussion of basis for using or not using grade cutting or capping.	A top cut was used in each sub-zone both within the main domains and according to regolith, based on a review of the histogram, log probability plot, and a summary graph of the effects of top-cutting for each domain combination. A top cut was selected to minimise the effects of isolated high grade outliers, without cutting a large proportion of the data or contained metal within the domain.
	The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.	Validation of the block model carried out a volumetric comparison of the resource wireframes to the block model volumes. Validating the estimate compared block model grades to the input data using tables of values, and swath plots showing northing, easting and elevation comparisons. Visual validation of grade trends and metal distributions was carried out. Reconciliation studies for Safari Bore show that the model is conservative in its upper levels and this can be corroborated from the grade control data where there appears to be a different orientation to the resource interpretation.
Moisture	*Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	All tonnages are estimated on a dry basis.
Cut-off parameters	*The basis of the adopted cut-off grade(s) or quality parameters applied.*	Samples with extreme high grades that bias the mean and positively skew the grade population within each domain are top cut to reduce the influence of high grade outliers. Log probability plots and the coefficient of variation statistic are used to determine top-cuts. Topcuts are typically set proximal to population disintegration.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC Code Explanation	Commentary
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.*	Mining of the Safari Bore at this stage deposit will be by Open pit mining methods involving mechanised mining techniques. Open pit mining will most likely by a cut-back on the existing Safari Bore Pit. Some of the factor used in consideration of the mining method include, proximity of the mineralisation to surface, geotechnical and hydrogeological factors, prevailing gold price, planned mining dilution and mining recoveries and the average plant processing recoveries. To best capture "reasonable prospects for eventual economic of extraction", the mineral resource was reported within an optimised pit shell at $2250 at a 0.5g/t cut off for the open pit resources.
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 process 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.*	Metallurgical test work was conducted on composite samples from Safari Bore. The test-work was aimed at further defining the metallurgical characteristics of the Safari deposit including gravity gold content, gold recovery, viscosity, oxygen demand, comminution characteristics, and mineralogy. The conclusions from the test work are as follows: • Red Lode oxide and fresh material generally produced consistent results throughout the test work programs, with moderate to high gravity recoveries and overall 24 hour recoveries ranging from 87% to 97%. The lower Red Lode recoveries were due to low head grades, and therefore analysis of the data at appropriate ore deposit grades produces a recovery of approximately 95% for both oxide and fresh material. • Purple Lode (transitional) material contained a high gravity recoverable component with a 24 hour recovery of 97% (head grade of 3.0 g/t). Limited tests have been conducted on this lode, and therefore further confirmatory test work will be completed. • Conflicting results were obtained for the Green Lode composites tested. Two of the three test work programs for the Green Lode material generally yielded moderate gravity recoverable components, and lower overall 24 hour recoveries compared to the Red Lode material at approximately 92%. Some results also suggested that this material may be sensitive to grind size with additional gold locked in the coarser size fractions. • Gold recovery was shown to be independent of grind size for the Red Lode material tested. Further analysis of this relationship is warranted, especially for the Green Lode material which tended to exhibit sensitivity to grind size. • Oxygen demand test work conducted on the Red Lode material showed minimal oxygen uptake after one hour of sparging, indicating plant oxygen demand should not be significant. • Pulp viscosity test work conducted on both oxide and fresh Red Lode samples indicated that no pumping or screening issues should be observed with this material. • Abrasion indices for the Red Lode Oxide material were 0.17 increasing to 0.35 for the Red Lode Fresh material. Bond ball mill work indices for the Red Lode Oxide and Fresh composites were 14.3 kWh/t and 17.8 kWh/t respectively. • Further confirmatory test work is planned to be conducted on Safari Bore to further validate the metallurgical recoveries obtained, and to generate additional information for areas with limited results.
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*	There have been previous mining activities at Safari Bore and a number of environmental factors have been considered. These factors include: • *Ground water management*- Dewatering of an estimated 360 kl/day will be required.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC Code Explanation	Commentary
	environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields 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.	• This water will be pumped from one or two bores around the pit and from sumps within the pit to a turkey nest dam. • The dam will be used to hold water for dust suppression and as a supply for the proposed Reverse Osmosis plant. • This usage, together with losses from evaporation, is expected to account for the total volumes pumped. No off-site discharge of mine water is expected to be required. • *Waste Rock Disposal and Characterisation*- A waste rock control strategy was put in place to minimise the impact ARD (Acid Rain Drainage). • *Flora and Fauna*- Minimise disturbance of flora and Fauna and rehabilitation programs to be implemented to ensure regeneration of the flora fauna. • *Aboriginal Heritage Protection*- Identified archaeological sites should be avoided at all costs. Saracen will consider the above factors and others to meet the requirements of the current legislation.
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.*	Previous owners have taken routine density measurements when drilling diamond core, and have been validated with measurements taken by Saracen during the most recent drill campaign. The method of calculation is the water displacement technique. Density in the current model has been assigned based on oxidation state. An analysis of both logged density and density as assigned by regolith surfaces was carried out.
	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.	The frequency and distribution is unknown at this point in time. It has assumed from the good reconciliation performance from mine to mill that the determined density assignments from the mine are accurate.
	Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	Average mean of densities collected for each lithological and weathering profile 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 mineral resource has been classified into Measured, Indicated and Inferred categories based on drill hole spacing, geological confidence, and grade continuity and estimation quality. The combination of these factors together guides the construction of wireframes which select and codes the appropriate blocks with the nominated resource classification category.
	Whether appropriate account has been taken of all the 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).	The input data is comprehensive in its coverage of the mineralisation and does not favour or misrepresent in-situ mineralisation. Mineralisation occurs in four discrete lodes, from west to east Serengeti, Red, Green and Purple Lodes. The definition of mineralised zones is based on a high level of geological understanding producing a robust model of mineralised domains. The validation of the block model shows good correlation of the input data to the estimated grades.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The geological model and the mineral resource estimate reflect the competent person's view of the deposit.
Audits or reviews	*The results of any audits or reviews of Mineral Resource estimates.*	Saracen has adopted a process for geological modelling, estimation and reporting of mineral resources that meets high industry standards. The Safari Bore Resource model was completed by an external consultant under guidance from Saracen geology personnel. Saracen has reviewed the resource estimates and is satisfied that they are a true reflection of the global insitu resources for Safari Bore.
Discussion of relative accuracy/confidence	*Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate*	The relative accuracy of the Mineral Resource estimate is reflected in the reporting of the Mineral Resource as per the guidelines of the 2012 JORC Code. The resource estimates have undergone a robust validation process, and as

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC Code Explanation	Commentary
	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.	such, the competent person is satisfied that the resources estimated in the block model are a true representation of the global insitu resources.
	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 statements relate to a global estimate of tonnes and grade.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	The Safari Bore resource model was completed by Saracen geology personnel. The model has been validated thoroughly and the competent person is satisfied that the estimated gold grades give a true reflection of the global insitu resources. Reconciliation studies for Safari Bore show that the model is conservative in its upper levels and this can be corroborated from the grade control data where there appears to be a different orientation to the resource interpretation.

Section 4: Estimation and Reporting of Ore Reserves		
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 for the Safari Bore gold deposit is a robust global estimate that was used as a basis for conversion to the Ore Reserve estimate. The resource estimate was compiled by Saracen using exploration, resource definition, and grade control drilling and assay data, geological mapping and historical mining records to validate the model against, and solid interpretation wireframes of the geology. This information was used to construct a model estimated by various kriging methods. The block model was depleted with end of June 2020 survey pickup for Reserve Estimation.
	Clear statement as to whether the Mineral Resources are reported additional to. Or inclusive of, the Ore Reserves.	The Mineral Resource reported is inclusive of the Ore Reserve.
Site Visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.*	A Competent Person along with a geotechnical consultant has conducted several site visits to the Safari Bore open pit since the inclusion in the Carosue Dam operations life of mine plan. The purpose of these visits is to collect information for optimisation work, validating input parameters, visual pit inspection, discussion and feedback for life of mine planning. The information also includes the discussion around current mining performance, wall conditions and overall stability, and groundwater condition.
	If no site visits have been undertaken indicate why this is the case.	N/A
Study status	*The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves*	The Safari Bore deposit has been mined previously as an open pit mine. More recently Saracen has conducted a revised feasibility level study with the view to recommence open pit operations and add the operation into the Carosue Dam life of mine plan. The 2020 Ore Reserve has been subject to validating all aspects of operational

Section 4: Estimation and Reporting of Ore Reserves		
Criteria	JORC Code Explanation	Commentary
		inputs such as production parameters, operating costs of mining, processing, general administration and environment management related costs.
	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.	Modifying factors have been applied to the optimisation study and resultant Reserve pit design work to ensure the rigor of the financial analysis. Operational costs and production parameters have been estimated from actual mining and processing performance. Saracen has completed all appropriate supporting mining studies required for Ore Reserve estimate.
Cut-off parameters	*The basis of the cut-off grade(s) or quality parameters applied*	The Ore Reserve is estimated at a cut-off grade of 0.50g/t, an assumed gold price of AUD$1,750/oz and operating costs of mining, processing, haulage and general administration. A top cut has already been applied to the Mineral Resource Estimate eliminating the necessity for any further adjustment to the Ore Reserve Estimate.
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).*	The resource model used in the Mineral Resource Estimation was the basis for the generation of a range of Whittle 4X pit optimisation shells. The generation of these shells was reliant upon costs and input parameters derived from current operational data, contractors and independent consultant recommendations. An appropriate shell was then selected as the basis for an iterative process of pit design work, culminating in the finalisation of a detailed pit design for the Safari Bore Reserve.
	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 mining method to be employed at Safari Bore will be conventional open pit with hydraulic excavator and dump truck fleet, and drill and blast activity. The class of excavator employed is similar to other open pit mining operations, providing a good operating dataset for production and productivity rate measurement and financial modelling. The Safari Bore Reserve pit is designed to be mined in a series of cutbacks to achieve the life of mine Reserve such that it meets the operational efficiency, safety aspects and production rates. Appropriate mine schedules and lead times have been considered to maintain efficient mining operations between the stages.
	The assumptions made regarding geotechnical parameters (e.g. pit slopes, stope sizes, etc.), grade control, and pre-production drilling.	Life of Mine geotechnical recommendations were made by an independent external consultant following site visits, inspection of drill core, and a review of the geotechnical data gathered during earlier operations. The geotechnical consultant was engaged by Saracen to assist in geotechnical aspects of technical studies. It is expected that once the pit is in operation there may be some need for additional geotechnical input and reflected changes in the life of mine pit design. The Grade control method to be employed at Safari Bore will utilise an RC drilling and sampling method. The method and practice has been utilised successfully at all current and past mining operations at Saracen.
	The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).	The Ore Reserve Estimate is based on detailed life of mine pit design work by using geology approved resource model, and making appropriate dilution and recovery factor allowances for the mining fleet and method utilised.
	The mining dilution factors used.	A mining dilution factor of 15% is applied on the Ore Reserve estimation and reflects the mining performance based on ore body characteristics, mining method and equipment utilised.
	The mining recovery factors used.	A mining ore loss factor of 5% is applied on the Ore Reserve estimation and reflects the mining performance based on ore body characteristics, mining method and equipment utilised.
	Any minimum mining widths used	A minimum mining width of 25m has been adopted for the primary excavation fleet. Where 'pinch-points' occur or "Good Bye" cuts are considered at the base of the pit, it is assumed that a smaller or more versatile excavator will be employed. The practice is very consistent across both Saracen operations and reflects the suitability and efficiency of the mining performance.

Section 4: Estimation and Reporting of Ore Reserves

Criteria	JORC Code Explanation	Commentary
	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 does not generate any revenue. Therefore the final pit reserve inventory has excluded any inferred mineral resources.
	The infrastructure requirements of the selected mining methods.	The selected mining method and location of the pit is close to the Carosue Dam mining operations, which consists of underground mines and a 3.3mt processing plant to support the current and future mine plan. All other necessary infrastructure like office, workshop and camp is already in place at the nearby Deep South underground mine which is in operation.
Metallurgical factors or assumptions	*The metallurgical process proposed and the appropriateness of that process to the style of mineralisation*	The Ore Reserve will be treated at the established Carosue Dam processing facility. The facility is a conventional crushing, gravity circuit, grind, and CIL (carbon in leach) plant and is appropriate for the extraction of gold from free milling mineralisation.
	Whether the metallurgical process is well-tested technology or novel in nature.	The current processing plant and method applied utilises well tried and proven technology and since being in operation displays gold recovery typically between 92 to 94% for all available material types near Carosue Dam operations.
	The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.	An average gold recovery for Safari Bore deposit is estimated to be 94.0%. The recovery estimation is based on met test work and ongoing actual average recovery data collected at the Carosue Plant. The plant performance is consistent with recoveries between 92 to 94% while processing similar types of ore material blends with a range of other ore sources without any issue. Metallurgical testwork has been carried out on samples from the Safari Bore deposit by a test lab.
	Any assumptions or allowances made for deleterious elements.	There are no known deleterious elements present in Safari Bore ore that can impact on ore recoveries at Carosue Dam Plant.
	The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the ore body as a whole.	A number of samples of each expected rock type and grade bin have been sampled through the Carosue Dam processing plant for trial test work. These bulk samples/pilot test work are considered to be sufficient to represent the Safari Bore ore body as a whole.
	For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications.	N/A
Environmental factors or assumptions	*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 pit is currently on 'care and maintenance'. All required Environment studies have been completed and Statutory Government Approvals including works approvals, dewatering and discharge licences have been granted. A Mining Proposal will be submitted for the reserve pit. The existing Carosue Dam processing facility at which the ore will be processed and the accommodation village all lay on granted mining leases. The road haulage network footprint is underpinned by a combination of miscellaneous licences and granted mining leases. A waste rock characterisation study has been carried out and it is expected to be representative of waste rock. An appropriate landform design criterion has been applied based on rock characteristics to mitigate the current and any future pit expansion plan.
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.*	The required infrastructure for Safari Bore mining namely workshops, offices, accommodation camp, and fuel and water storage facilities will utilise existing well maintained facilities at the nearby Deep South underground operations. The Safari Bore mine site is ~70km from the CDO Processing Plant and ~200km northeast of Kalgoorlie, adjacent to Yarri Road.

Section 4: Estimation and Reporting of Ore Reserves		
Criteria	JORC Code Explanation	Commentary
		Carosue Dam Operations are well established, with mining activities being conducted by Saracen since 2009. The operation extends from the south (CDO plant, administration, Whirling Dervish & Karari mines) to the North (Deep South mine) and is connected via a private haulage road. The CDO operation comprises at 3.3mtpa CIL ore processing facility, aerodrome with sealed runway, associated tailings storage facilities, several power stations, water supply, workshops, and administration offices. A 70km gravel access road links Carosue Dam Operations to the gravel section of Yarri Road. Both the Saracen and Shire of Kalgoorlie gravel roads are well maintained.
Costs	*The derivation of, or assumptions made, regarding projected capital costs in the study.*	There will be minimum capital costs relating to infrastructure setup as a majority of the facilities are already in place. Further allowance has been made in financial modelling for pre striping of the pit.
	The methodology used to estimate operating costs.	Operating costs for open pit mining have been derived from a combination of actual costs from SGM's Carosue Dam/Thunderbox Operations and costs supplied by various contract mining companies, and consultants. Operating costs for ore processing, haulage and administration have been derived from known parameters at Carosue Dam operations.
	Allowances made for the content of deleterious elements	There is no evidence of any deleterious elements within the ore or waste that required any additional cost allowances.
	The derivation of assumptions made of metal or commodity price(s), for the principal minerals and co-products	Assumed gold price of AUD$1,750/oz has been adopted for the financial modelling. No allowance is made for silver by-products.
	The source of exchange rates used in study	All revenue and cost calculations have been made in AUD, so no exchange rate usage or assumptions have been necessary.
	Derivation of transportation charges	Costs associated with bullion transportation have been derived from existing contractual arrangements at Carouse Dam.
	The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.	Costs associated with refining have been derived from existing contractual arrangements at Carouse Dam.
	The allowances made for royalties payable, both Government and private.	Royalty costs are the WA state government royalty of 2.5%, and a third party royalty of 1.5% is payable.
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.*	For the purposes of Ore Reserve estimation it has been assumed that there is no gold hedging. All gold production will be sold at spot price to the Perth Mint.
	The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products	Assumed gold price of AUD$1,750/oz has been adopted for the financial modelling. No allowance is made for silver by-products.
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.	There is a transparent quoted market for the sale of gold.
	For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.	N/A

Section 4: Estimation and Reporting of Ore Reserves		
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.*	The Ore Reserve Estimation is based on a detailed life of mine pit design and reflects positive economic outcomes. All relevant capital and operating costs as well as revenue and royalty factors have been included with appropriate discount factor for cash flow analysis.
	NPV ranges and sensitivity to variations in the significant assumptions and inputs.	A full financial model is 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*	Carosue Dam is in operation and Saracen has good relationships with neighbouring stakeholders, including engagement with the local pastoralists and the traditional owners. The mine is located on leasehold pastoral land and all appropriate compensation agreements are in place. Granted mining leases cover all of the proposed mining and processing assets.
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	Water inrush is identified as a naturally occurring risk with in the operation and has been addressed appropriately. Adequate water diversion bunds constructed at the existing mined pit and will be adequately reconstructed during the project commencement of the operation to provide a safe and risk free work environment.
	The status of material legal agreements and marketing arrangements	Contracts are in place for all critical goods and services to operate Carosue Dam Operations.
	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.	A Mining Proposal will be submitted for the updated mine reserve pit in a timely manner. Environmental studies have been completed and other Statutory Government Approvals including vegetation clearing, dewatering and discharge licences have been granted.
Classification	*The basis for the classification of the Ore Reserve into varying confidence categories*	The Ore Reserve Estimate classification has been made in accordance with the JORC code 2012. The Ore Reserve Estimate classified as being Probable has been derived from Mineral Resource classified as Indicated and Measured only.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	Cost assumptions and modifying factors applied to the pit optimisation and subsequent designs were derived from current operational data relating to Saracen's Carosue Dam and Thunderbox operations, and supplied from contract mining companies and consultants. Results of these optimisations and the resultant analysis reflect the Competent Person's view regarding the Safari Bore deposit.
	The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any)	100% of Probable ore from the Ore Reserve estimate has been derived from the Indicated category of the Mineral Resource.
Audits or reviews	*The results of any audits or reviews of Ore Reserve estimates*	The Ore Reserve estimation process is in line with the Saracen Ore Reserve Policy and has undergone internal review.
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*	The Ore Reserve estimate has been prepared in accordance with the guideline of the 2012 JORC Code. The relative confidence of the estimate complies with the criteria of Probable Ore Reserves. Based upon; - Resource estimate

Section 4: Estimation and Reporting of Ore Reserves		
Criteria	JORC Code Explanation	Commentary
	Person. For example, the application of statistical or geo-statistical 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 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.* *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 ay the current study stage.* *It is recognised that this may not be possible or appropriate in all circumstances. These statements or relative accuracy and confidence of the estimate should be compared with production data, where available.*	- significant operating history, - application of current industry practices, - appropriate operating and capital costs, The range of the modifying factors and mining parameters applied are reasonable and confidence in the resulting reserve estimate is reasonable. The reserve mine design has adopted all reasonable modifying factors and financial analysis used in the estimated Ore Reserve have been the subject to peer review internally, and the Competent Person is confident that it is an accurate estimation of the reserve. The Safari Bore pit mining will utilise the same grade control methods that are widely utilised at current Carosue Dam operations.

Deep South

Section 1: Sampling Techniques and Data		
Criteria	JORC Code Explanation	Commentary
Sampling Techniques	*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.*	Sampling methods undertaken by Saracen at Deep South have included reverse circulation drillholes (RC), aircore drilling (AC), surface and underground diamond drillholes (DD), underground face chip sampling and RC grade control drilling within the pit. Historic sampling methods conducted since 1983 have included rotary air blast (RAB), reverse circulation and diamond drillholes.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used	Sampling for diamond, face chip and RC drilling is carried out as specified within Saracen sampling and QAQC procedures as per industry standard. RC and UG face chips and diamond core provide high quality representative samples for analysis. RC, RAB and DD core drilling was completed by previous holders to industry standard at that time (1983- 2004).
	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 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information	RC chips are cone or riffle split and sampled into 1m intervals with total sample weights under 3kg Diamond core is NQ sized, sampled to 1m intervals or geological boundaries where necessary and cut into half core to give sample weights under 3 kg. UG faces are chip sampled to geological intervals (0.2 to 1m). Samples are selected to weigh less than 3 kg to ensure total sample inclusion at the pulverisation stage. Saracen core and chip samples are crushed, dried and pulverised to a nominal 90% passing 75µm to produce a 40g or 50 g sub sample for analysis by FA/AAS. Some grade control RC chips were analysed in the Saracen on site laboratory using a PAL (pulverise and leach) method. Historical RAB, RC and diamond sampling was carried out to industry standard at that time. Analysis methods include fire assay, aqua regia, atomic absorption spectroscopy and unspecified methods.
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 deposit was initially sampled by 114 RAB holes, 211 RC holes (assumed standard 5 ¼ ''bit size) and 29 surface HQ and unknown diameter diamond core holes. Saracen has completed 17 surface RC precollars with NQ diamond tail drill holes (precollars averaging 185m, diamond tails averaging 360m) , 3 geotechnical surface diamond NQ drillholes, 57 RC holes from surface and 107 grade control RC holes within the pit. Underground sampling activities have included 717 NQ diamond drillholes and 1818 faces. Exploration of the broader Deep South area has included 312AC holes. Diamond tails were oriented using an Ezi-mark tool. A limited amount of historic surface diamond drill core appears to have been oriented by unknown methods.
Drill Sample Recovery	*Method of recording and assessing core and chip sample recoveries and results assessed*	RC sampling recoveries are recorded in the database as a percentage based on a visual weight estimate; limited historic recoveries have been recorded. Diamond core recovery percentages calculated from measured core versus drilled intervals are logged and recorded in the database. Recoveries average >98%. Limited historic diamond recoveries have been recorded.
	Measures taken to maximise sample recovery and ensure representative nature of the samples	During AC and RC drilling daily rig inspections are carried out to check splitter condition, general site and address general issues. Diamond core is reconstructed into continuous runs on an angle iron cradle for orientation marking. Depths are checked against depth given on the core blocks.

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
		UG faces are sampled left to right across the face allowing a representative sample to be taken due to the vertical nature of the orebody. During GC campaigns the sample bags weight versus bulk reject weight are compared to ensure adequate and even sample recovery. Historical RAB, RC and diamond drilling to industry standard at that time.
	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.	There is no known relationship between sample recovery and grade for RC or AC drilling. Diamond drilling has high recoveries meaning loss of material is minimal. Any historical relationship is not known.
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.* *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.*	Logging of RC and AC chips and diamond drill core records lithology, mineralogy, texture, mineralisation, weathering, alteration and veining. Geotechnical and structural logging is carried out on all diamond holes to record recovery, RQD, defect number, type, fill material, shape and roughness and alpha and beta angles. Chips from all RC holes (exploration and GC) are stored in chip trays for future reference while remaining core is stored in core trays and archived on site. All faces are photographed and mapped. Core is photographed in both dry and wet state. Qualitative and quantitative logging of historic data varies in its completeness.
	The total length and percentage of the relevant intersections logged	All AC, RC and diamond drillholes and grade control holes are logged in full. Historical logging is complete.
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.*	All drill core is cut in half onsite using an automatic core saw. Some grade control diamond holes have been full core sampled. Samples are always collected from the same side. Some historic drill core was half core sampled, or sampled via unknown methods.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	All exploration and grade control RC samples are cone or riffle split. AC drillholes are spear sampled. Occasional wet samples are encountered; increased air capacity is routinely used to aid in keeping the sample dry when water is encountered. UG faces are chip sampled using a hammer. Historic RAB and RC drilling was sampled using riffle and unknown methods.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	The sample preparation of diamond core, UG face chips and RC chips adhere to industry best practice. It is conducted by a commercial laboratory or onsite laboratory and involves oven drying, coarse crushing then total grinding to a size of 90% passing 75 microns. Best practice is assumed at the time of historic sampling.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	All subsampling activities are carried out by commercial laboratory or onsite laboratory and are considered to be satisfactory. Sampling by previous holders assumed to be industry standard at the time.
	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.	RC field duplicate samples are carried out at a rate of 1:20 and are sampled directly from the on-board splitter on the rig. These are submitted for the same assay process as the original samples and the laboratory are unaware of such submissions. Sampling by previous holders assumed to be industry standard at the time.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Sample sizes of 3kg are considered to be appropriate given the grain size (90% passing 75 microns) of the material sampled.

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
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.*	RC and UG chip samples and diamond core are analysed by external laboratories using a 50g fire assay with AAS finish. AC samples are analysed using a 25g aqua regia digest. These methods are considered suitable for determining gold concentrations in rock and are total digest methods. GC samples were analysed in the Saracen onsite laboratory using a pulverise and leach method. This method is a partial digest. Historic sampling includes fire assay, aqua regia, atomic absorption spectroscopy and unspecified methods.
	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 have been utilised for reporting gold mineralisation.
	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.	Certified reference material (standards and blanks) with a wide range of values are inserted into every drillhole at a rate of 1:25 for exploration AC, RC and DD, and 1:40 for GC drilling. These are not identifiable to the laboratory. QAQC data returned are checked against pass/fail limits with the SQL database and are passed or failed on import. A report is generated and reviewed by the geologist as necessary upon failure to determine further action. QAQC data is reported monthly. Sample preparation checks for fineness are carried out to ensure a grindsize of 90% passing 75 microns. The laboratory performs a number of internal processes including standards, blanks, repeats and checks. QAQC data analysis demonstrates sufficient accuracy and precision. Industry best practice is assumed for previous holders.
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.*	Significant intercepts are verified by the Geology Manager and corporate personnel.
	The use of twinned holes.	No specific twinned holes have been drilled at Deep South but grade control drilling has confirmed the width and grade of previous exploration drilling.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols	Primary data is collated in a set of excel templates utilising lookup codes. This data is forwarded to the Database Administrator for entry into a secure acQuire database with inbuilt validation functions. Data from previous owners was taken from a database compilation and validated as much as practicable before entry into the Saracen acQuire database.
	Discuss any adjustment to assay data.	No adjustments have been made to assay data. First gold assay is utilised for resource estimation.
Location of data points	*Accuracy and quality of surveys used to locate drillholes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.*	Exploration drillholes are located using a Leica 1200 GPS with an accuracy of +/- 10mm. Drillhole collars within the pit and immediate surrounds are picked up by company surveyors using a Trimble R8 GNSS (GPS) with an expected accuracy of +/-8mm. All underground drillhole collars are picked up by company surveyors using a Leica TS15i (total station) with an expected accuracy of +/-2mm. Underground faces are located using a Leica D5 disto with and accuracy of +/- 1mm from a known survey point. Downhole surveys are carried out using the DeviFlex RAPID continuous inrod survey instrument taking readings every 5 seconds, In and Out runs and reported in 3m intervals, survey accuracy +-3:1000. A number of drillholes have also been gyroscopically surveyed. Previous holders' survey accuracy and quality is unknown
	Specification of the grid system used.	A local grid system (Safari Bore) is used at Deep South. The two point conversion to MGA_GDA94 zone 51 is:

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
		SBEast SBNorth RL MGAEast MGANorth RL Point 1 51000 34000 0 451137.753 6734157.921 0 Point 2 51000 30000 0 451137.896 6730157.896 0 Historic data is converted to the Safari Bore local grid upon export from the database.
	Quality and adequacy of topographic control.	Topographic control originally used site based survey pickups in addition to Kevron aerial photogrammetric surveys with +/- 5m resolution. Pre mining, new and more detailed topography has since been captured and will be used in future updates and for subsequent planning purposes.
Data spacing and distribution	*Data spacing for reporting of Exploration Results.*	The nominal spacing for drilling is 20m x 40m and 40m x 40m
	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.	Data spacing and distribution are sufficient to establish the degree of geological and grade continuity appropriate for JORC classifications applied.
Orientation of data in relation to geological structure	*Whether sample compositing has been applied.*	AC drilling is sampled in 4m composites, no other sample compositing has been utilised Some historic RAB and RC sampling was composited into 3-4m samples with areas of interest re-sampled to 1m intervals. It is unknown at what threshold this occurred.
	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 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.	No significant sampling bias has been recognised due to orientation of drilling in regards to mineralised structures.
Sample security	*The measures taken to ensure sample security.*	Samples are prepared on site under supervision of Saracen geological staff. Samples are selected, bagged into tied numbered calico bags then grouped into secured cages and collected by the laboratory personnel. Sample submissions are documented via laboratory tracking systems and assays are returned via email
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	An internal review of companywide sampling methodologies was conducted to create the current sampling and QAQC procedures. No external audits or reviews have been conducted.

Section 2: Reporting of Exploration Results		
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 Deep South pit is located on M39/740. The tenement is held 100% by Saracen Gold Mines Pty Ltd, a wholly owned subsidiary of Saracen Mineral Holdings Limited. Mining Lease M39/740 has a 21 year life (held until 2024) and is renewable for a further 21 years on a continuing basis. Mining Lease M39/740 is subject to one royalty agreement, one caveat (151H/067) and a bank mortgage (499142). All production is subject to a Western Australian state government NSR royalty of 2.5%. Mining Lease M39/740 is subject to the Edjudina Pastoral Compensation Agreement. The tenement is affected by the Nyalpa Pirniku (WC2019/002) registered claim. There are no registered Aboriginal Heritage sites within Mining Lease M39/740.

Section 2: Reporting of Exploration Results		
Criteria	**JORC Code Explanation**	**Commentary**
		The Mining Rehabilitation Fund applies to the tenement.
	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.	The tenement is in good standing and the licence to operate already exists
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	Exploration in the vicinity of Deep South commenced in the 1980's with drilling around the historic Deep Well workings 500m north of Deep South, as well as regional RC drilling carried out by Western Mining Corporation. Initial auger sampling carried out over Deep South by Pancontinental Mining in 1994 failed to detect mineralisation due to the transported material overlying the deposit. Wide spaced east angled RAB drilling carried out by Goldfields in 1999 intersected mineralisation, but results were not repeated in further drilling and the project area was sold to Sons of Gwalia. Sons of Gwalia completed extensive RC and diamond drilling to define the Deep South resource, with mining operations undertaken in 2004 before their collapse and takeover by St Barbara.
Geology	*Deposit type, geological setting and style of mineralisation.*	Deep South lies on the eastern margin of the Norseman – Wiluna greenstone belt. This belt is differentiated into numerous structural-stratigraphic domains separated by major regional structures, with Deep South located within the narrow NNW trending Linden Domain. The lithology comprises metasedimentary and felsic volcaniclastic rocks with an ultramafic and high magnesium basalt layer. Mineralisation occurs in two loads concordant to geology, the Butler and Scarlett lodes, and is confined between layered metasedimentary and felsic volcaniclastic units on both the hangingwall and footwall. The two lodes are separated by a high magnesium basalt and an ultramafic unit. The Butler lode is located in the hangingwall and is strongly silica and pyrrhotite-pyrite altered, and well laminated (appearing like a BIF within the oxidise portion). The contrasting physical properties of this unit to the surrounding unit have created fluid pathways and traps, as well as the high iron content of the unit providing a chemical trap, for gold deposition The Scarlett lode is strongly weathered in the upper oxide portion to a gossanous material comprising hematite, goethite and quartz fragments. Weathering at Deep South has been preferential along Scarlett lode due to its high carbonate content. Where fresh, the lode is a fine grained banded carbonate unit with variable pyrrhotite, pyrite and magnetite. It is weakly foliated in line with the regional foliation.
Drillhole 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:* • *easting and northing of the drill hole collar* • *elevation or RL (Reduced Level – elevation* • *above sea level in metres) of the drill hole collar* • *dip and azimuth of the hole* • *down hole length and interception depth* • *hole length.* • *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*	All material data is periodically released on the ASX: 30/07/2019, 18/02/2019, 27/11/2018, 15/02/2018, 27/11/2017, 26/09/2017, 01/05/2017, 21/02/2017, 17/12/2016, 07/09/2016, 11/05/2016, 23/02/2016, 23/07/2013, 10/10/2012, 31/07/2012, 03/06/2011, 29/07/2010 Future drill hole data will be periodically released or when a results materially change the economic value of the project. Exclusion of the drilling information will not detract from the reader's view of the report.

Section 2: Reporting of Exploration Results		
Criteria	**JORC Code Explanation**	**Commentary**
	of the report, the Competent Person should clearly explain why this is the case.	
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 significant intercepts have been length weighted with a minimum Au grade of 1ppm, or 20ppb for AC drilling No high grade cut off has been applied.
	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 with minimum width of 1m and maximum width of 3m for internal dilution. Where stand out higher grade zone exist with in 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.	There are no metal equivalents reported in this release.
Relationship between mineralisation widths and intercept lengths	*These relationships are particularly important in the reporting of Exploration Results.* *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* *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').*	Previous announcement included sufficient detail to clearly illustrate the geometry of the mineralisation and the recent drilling. All results are reported as downhole lengths. This remains consistent with other announcements.
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.*	All significant exploration results released by Saracen are accompanied by the appropriate diagrams and maps at the time of the release.
Balanced Reporting	*Where comprehensive reporting of all Exploration Results are not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	All results from the recent campaign have been reported, irrespective of success or not.
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.*	A small geochemical program was undertaken in 2013 to determine the key features associated with mineralisation. The program gave some insight into the local characteristics of the Scarlett and Butler lodes. More work is needed to fully appreciate the geochemical signature associated with the mineralisation. A detailed gravity survey was recently completed at Deep South on a 400m x 100m grid to assist in the interpretation of the basement geology. The data is currently being processed and interpreted. Saracen has recently completed a biogeochemical sampling program at Deep South involving the sampling of new leaf growth on established *Acacia* trees on a 100m x 800m spacing. Samples were collected from trees of a consistent species and height. The biogeochemical program was an orientation survey only and results will not be

Section 2: Reporting of Exploration Results		
Criteria	**JORC Code Explanation**	**Commentary**
		used in any calculation of mineralisation. The leaves were washed, dried and pulverised followed by an aqua regia digest for multielement determination.
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).* *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive*	The initial results from the biogeochemical sampling were encouraging and further expansion of the survey area is currently being planned. The exploration effort continues at Deep South. The focus remains in the near mine scale areas to extend and build the resource base.

Section 3: Estimation and Reporting of Mineral Resources		
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.*	Saracen utilises AcQuire software on an SQL server database to securely store and manage all drillhole and sample information. Data integrity protocols are built into the system to ensure data validity and minimise errors during data entry and import processes.
	Data validation procedures used.	Data that is captured in the field is entered into Excel templates which are checked on import into the 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.
Site Visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.*	The Competent Person has visited the site during drilling and mining operations. Robust systems and procedures have been established to track and monitor progress.
	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.*	The interpretation has been based on historical data captured by previous owners and refined by new information generated by Saracen following project acquisition. This knowledge is built on extensive geological logging of drill core, RC chips, underground development face chips, detailed open pit and underground mapping and assay data. The gross architecture of the deposit is relatively simple and the interpretation robust.
	Nature of the data used and any assumptions made.	The interpretations have been constructed using all available geological logging descriptions including but not limited to, stratigraphy, lithology, texture, and alteration. Open pit mapping has been included in the interpretation however only affects the location of the domain boundaries inside the previously mined open pit. Cross sectional interpretations of the mineralisation have been created and form the basic framework through which the 3D wireframe solids are built.
	The affect, if any, of alternative interpretations on Mineral Resource estimation.	Due to the simplistic nature of the mineralisation no alternative interpretations have been considered. Over the life of the project several different sources have interpreted the mineralisation and all agree on the same basic geological constraints. The mineralisation is typically discrete and bound to specific lithological units.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	**JORC Code Explanation**	**Commentary**
	The use of geology in guiding and controlling the Mineral Resource estimation.	The geology has heavily influenced the domains controlling the mineral resource estimation. The main mineralised Scarlett Lode has been confined to the geologically logged carbonate unit. Similarly the Butler lode has been defined by a highly siliceous BIF horizon. In order to deal with multiple populations within the carbonate unit in the grade control areas (areas drilled to a spacing 25m x 20m) sub-domaining was done using the Categorical Indicator technique which uses grade thresholds to segregate the different populations within the unit. Three subdomains include the , low grade (<1 g/t Au), medium grade (1<x=<9 g/t Au) and the high grade > 9 g/t Au
	The factors affecting continuity both of grade and geology.	Mineralisation and lithology are both highly continuous. The stratigraphic horizons that host the mineralisation extend over a length of 15km. Grade is affected by the presence of sulphides and quartz carbonate veining. A northerly plunge in both lodes is thought to be controlled by subtle changes in strike or continuity of mineralisation at boudin neck margins. A conjugate mineralised shoot plunging to the south appears to be evident in the Scarlett lode and has been interpreted as the intersection of deposit scale shearing and lithology contacts.
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.*	Both mineralised lodes at Deep South have continuity over 500m along strike and 400m down dip. The Scarlett lode averages 5m in width and the Butler lode averages 2m in width. Both lodes strike North north-west and dip steeply at 75 degrees to the west. The higher grade plunge direction is to the north, pitching 70 degrees in the Scarlett but more steeply at 80 degrees in the Butler. The south plunging shoot in the Scarlett pitches at approximately 65 degrees.
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.*	Block estimation has been completed in Datamine software using ordinary kriging methodology. All mineralised interval has been flagged using the interval selection tool in Leapfrog software, which were subsequently used to generate 3D mineralisation wireframes. The estimation uses these wireframes as hard boundaries except for the high grade sub-domain defined in the carbonate unit which is estimated using a soft boundary. Estimation of parent blocks are interpolated, and assigned to sub-cells. The maximum distance of extrapolation is less than 50m. Univariate statistical analysis of length weighted, (1m), domain coded downhole composites have been completed for all domains and top-cuts applied where applicable. Extreme grades are not common in the data set and all domains have been analysed individually to determine specific top-cut values. Variogram modelling was completed using Snowden's Supervisor software defining the spatial continuity within the domains. The parameters determined from this analysis were used in the interpolation process.
	The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.	Underground production has provided mill reconciled data to assess the predictive capacity of the current model with good comparative metrics recorded over the long term Saracen has been mining at Deep South.
	The assumptions made regarding recovery of by-products.	No assumptions have been made with respect to the recovery of by-products.
	Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulfur for acid mine drainage characterisation).	There has been no estimate at this point of deleterious elements. Saracen is unaware if any elements other than gold have been historically assayed on a routine basis. There are no future plans to assay for non-grade variables.
	In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.	Two block sizes have been used in the resource model; a grade control (GC) block size at 5m(X) by 10m(Y) by 5m(Z) and resource block size at 10m(X) by 20m(Y) by 5m(Z). The Grade Control block size has been utilised in areas of drill density less than 20m by 20m and typically proximal to the open pit and/or underground development. The Resource block size has been used for all other areas. In both cases kriging neighbourhood analysis (KNA) has been conducted to ensure the appropriate block size has been used relative to available data spacing.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	**JORC Code Explanation**	**Commentary**
		Parent blocks have been sub-celled to X (1m) by Y (1m) by Z (1m) to ensure that wireframe boundaries are honoured and preserve the location and geometry of the mineralisation. Search ranges have been informed by variogram modelling heavily influence by drill spacing, geological observations and high grade shoot geometry. Three search passes are used in the estimation to ensure that all the blocks are estimated within the respective estimation domains.
	Any assumptions behind modelling of selective mining units.	No selective mining units have been assumed.
	Any assumptions about correlation between variables.	No assumptions have been made regarding correlation between variables.
	Description of how the geological interpretation was used to control the resource estimates.	The geological interpretation strongly correlates with the mineralised domains. In all wireframes, including those where lithology and mineralisation correspond, hard boundaries are enforced.
	Discussion of basis for using or not using grade cutting or capping.	Statistical analysis of all domains highlight that there are very few grades in the domain populations that require top-cutting. Top-cuts have been employed to eliminate the risk of overestimating in the local areas where a few high grade samples exist. A sensitivity analysis was carried out on the data, by relaxing the top-cut values. This demonstrated that the grade would appreciate by 1.0g/t on average with higher topcuts.
	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 key model validation steps have been taken to support the resource estimate. The mineral resource model has been stepped through visually in sectional and plan view to correlate the composite grades used in the estimate and the resultant block grades. This has also been carried out in 3D with the composite grades and a point cloud of the model grades. Easting, Northing and Elevation swathe plots have been constructed to evaluate the composited assay means verses the mean block estimates. The mineral resource model has been constructed to include kriging efficiency and slope of regression values. These values are used to measure the quality of the estimate. Natural deterioration of the quality is observed at the perimeter of the modelled areas or where data density is lower. The estimate was checked against reconciled production with all comparative metrics within desired thresholds limits.
Moisture	*Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	All tonnages are estimated on a dry basis.
Cut-off parameters	*The basis of the adopted cut-off grade(s) or quality parameters applied.*	Based on Saracen's current economic operations at Carosue Dam, and the natural grade distinction above background, a grade of 0.5g/t has been chosen.
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 Deep South deposit is amenable to mining by both open pit and underground methods. The deposit was successfully mined by open pit during 2012/2013. Underground mining extracting the mineralised positions via long hole open stoping commenced in December 2015. To best capture "reasonable prospects for eventual economic of extraction", the mineral resource was reported within an optimised pit shell at $2250 at a 0.5g/t cut off for the open pit resources, and for the underground resource within MSO underground shells generated at 1.2 g/t cut-off.

Section 3: Estimation and Reporting of Mineral Resources		
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 process 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.*	Deep South is currently being treated through the Carosue Dam treatment plant. Historical recovery has been around 85% reflecting the oxide component of the ore. Fresh material hauled from the active underground has a recovery of approximately 92%. The ore is relatively soft and the majority of the gold is free milling. The ore also has a predictable grind dependency / leach recovery relationship. Completed test work highlights that the ore is not chemically refractory and contains no preg robbing properties.
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 greenfields 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. Tailings from the deposit are stored in an appropriate licensed tailings facility and a closure plan is 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.*	Bulk densities for Deep South were determined via testing of representative intervals from diamond drill holes and regular grab samples from the pit and 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.	Bulk density values from point samples have been calibrated against haulage figures and mill weightometer data and are appropriate for the material being mined.
	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 mineral resource has been classified into Measured, Indicated and Inferred categories based on drill hole spacing, geological confidence, grade continuity and estimation quality. The combination of these factors together guide the digitising of a “cookie cutter” string in long section view which selects and codes the appropriate blocks with the nominated resource classification category.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC Code Explanation	Commentary
	Whether appropriate account has been taken of all the 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 care has been taken to account for relevant factors influencing the mineral resource estimate. Confidence in the predicted tonnes and grade estimated in the model is high and previous mining performance suggests that the input data and geological continuity are such that a robust resource estimate can be achieved.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The geological model and the mineral resource estimate reflect the competent person's view of the deposit.
Audits or reviews	*The results of any audits or reviews of Mineral Resource estimates.*	At the completion of a resource estimation Saracen Gold Mines undertake an extensive review of the model that covers model inventory and comparisons to previous models, geological interpretation, wireframing, domain selection, statistics by domain, assay evaluation, parent cell sizes, data compositing, variography, search strategy, estimation and kriging neighbourhood analysis (KNA) and finally model validation and resource categorisation are all discussed and scrutinized by the geological and mine planning teams. Recommendations from previous resource reviews have been discussed and implemented where appropriate.
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 JORC 2012 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Saracen Gold Mine uses a standard approach to resource estimation and the procedure requires the systematic completion of the Saracen 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 statements relate to a global estimate of tonnes and grade.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	The resource estimation is checked against reconciled production data on a monthly basis. Comparative metrics continue to be within acceptable threshold limits. The Mine Call Factor at Deep South on tonnes has been 99% and 100% on grade since underground mining commenced in 2015.

Section 4: Estimation and Reporting of Ore Reserves		
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 estimate for the Deep South gold deposit used as a basis for conversion to the Ore Reserve estimate was compiled by Saracen. The data included drilling and assay data, geological mapping and historical mining records to validate the model against and solid interpretation wireframes of the geology. This information was used to construct a model estimated by ordinary kriging (ok) with categorical indicator kriging (CIK) sub domains. The model was depleted with the final pit and underground survey's completed in June 2020.

Section 4: Estimation and Reporting of Ore Reserves		
Criteria	JORC Code Explanation	Commentary
	Clear statement as to whether the Mineral Resources are reported additional to. Or inclusive of, the Ore Reserves.	The Mineral Resource reported is inclusive of the Ore Reserve.
Site Visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.*	The competent person is conducting frequent ongoing site visits to the Carosue Dam Operations (CDO) mine site. Deep South is located 90kms north of the CDO Processing Plant and regularly visits the mine. Saracen and consultant geotechnical engineers regularly visit Deep South to inspect the mine and gather data used in the preparation of geotechnical reports to define parameters for underground mining. Hydrogeology consultants have visited Carosue Dam to gather data and inspect the inflow of groundwater into the open pit, used in the preparation of reports used to determine water management strategies.
	If no site visits have been undertaken indicate why this is the case.	N/A
Study status	*The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves*	Saracen commenced underground operations at Deep South in October 2015. Deep South is an active underground operation with a detailed mine design and an economic analysis, to define the ore reserve. The Deep South deposit was originally mined by Sons of Gwalia commencing in 2004. Saracen completed a pit cutback during 20012/2013. The Stage 2 open pit was completed in April 2013. Ore from Deep South open pit was treated at the CDO Processing Plant.
	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.	Modifying factors have been applied to the project to ensure the rigor of the financial analysis. All of the parameters assumed and adopted, as well as the financial analysis completed, are based upon current active mine inputs and have been the subject to peer review.
Cut-off parameters	*The basis of the cut-off grade(s) or quality parameters applied*	For the purpose of Ore Reserve Estimate a planning cut-off grade of 1.8g/t was calculated based upon an assumed gold price of AUD$1,750/Oz and applicable processing, haulage and administration costs. A top cut has already been applied to the Mineral Resource Estimate eliminating the necessity for any further adjustment to the Ore Reserve estimate.
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).*	The Deep South underground ore reserve has been estimated using detailed mine development and stope designs. Modifying factors for dilution and recovery have been applied to the economic analysis of the design to generate the ore reserve.
	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.	Underground mechanised mining for development, ground support, and production stoping is used at Deep South. Mining and geotechnical studies determined two mining methods; 1) open stoping with remnant pillars, and 2) Modified Avoca with rock-fill to be appropriate for the deposit. Open Stoping with remnant pillars has been successfully applied at Deep South, while Modified Avoca (using rock-fill) will be implemented within a localised area to increase the resource extraction ratio. A bottom up approach incorporating production down-holes has been designed. Similar methods are currently utilised at other underground mines at Carosue Dam Operations, and used throughout the Western Australian Goldfields and Australia.

Section 4: Estimation and Reporting of Ore Reserves		
Criteria	JORC Code Explanation	Commentary
	The assumptions made regarding geotechnical parameters (e.g. pit slopes, stope sizes, etc.), grade control, and pre-production drilling.	Assumptions are based upon actual mining conditions. A review of the previous analysis and assessment of the designed stopes were performed by Saracen's Geotechnical team. Several external consultants have also reviewed the deposit and previous production results. Recommendations regarding mine design and production mining methods have been incorporated within the mine design. A grade control program with associated development for drilling platforms, grade control drilling designs, and sampling costs have been include in the mine design, mine schedule and economic analysis.
	The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).	The resource model used for the ore reserve calculations was 200224_ds_mine.dm.
	The mining dilution factors used.	An allowance for mining dilution was incorporated into the mine design. An additional unplanned dilution factor of 20% has been assumed for all stopes, including both production methods.
	The mining recovery factors used.	A mining recovery factor of 95% has been assumed for all stopes.
	Any minimum mining widths used	A minimum stope width of 2.5m was adopted in the design process.
	The manner in which inferred Mineral resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.	No inferred resource metal has been reported. All inferred and unclassified material has been excluded from the stope optimisation process and subsequent block model interrogation. As such, all dilution material beyond the orebody boundary carries zero grade. The dilution material is mineralised, but grade was zeroed to avoid reporting inferred material in the Ore Reserves inventory.
	The infrastructure requirements of the selected mining methods.	Standard underground infrastructure has been developed and will be provided, including a decline for access and truck haulage, ventilation fans, escape-way ladders, electrical reticulation, mine services (air and water), and mine dewatering infrastructure. No specialised infrastructure is required to accommodate these methods of mining.
Metallurgical factors or assumptions	*The metallurgical process proposed and the appropriateness of that process to the style of mineralisation*	The ore reserve will be treated at the established Carosue Dam processing facility. The Carosue Dam Process Plant is a CIL cyanide leach plant incorporating a gravity circuit which is appropriate for the extraction of gold from free milling gold ores. An average plant processing recovery of 93% has been assumed in the Ore Reserve Estimate which is consistent with current and historical plant recoveries for Deep South ore.
	Whether the metallurgical process is well-tested technology or novel in nature.	The method of ore processing and extraction proposed utilises well tried and proven technology dating back to the 1960's and practiced extensively around the world.
	The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.	In September 2014 a review of the Deep South open pit ore processing performance was conducted and metallurgical test work was carried out determine the continuity of processing performance from underground ore. No evidence was found to indicate any changes in the processing performance from underground ore to the historical performance from open pit ore.
	Any assumptions or allowances made for deleterious elements.	No deleterious elements have been identified during the processing of Deep South ores.
	The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the ore body as a whole.	Ore from the Deep South open pit and underground has been treated at the CDO Processing Plant since 2004. Current underground ore is considered representative of the ongoing ore expected from underground.
	For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications.	N/A

Section 4: Estimation and Reporting of Ore Reserves		
Criteria	JORC Code Explanation	Commentary
Environmental factors or assumptions	*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.*	Deep South is currently compliant with all legal and regulatory requirements. All approvals (clearing permit, works approval and Mining Proposals) have been granted for ongoing mining and processing at Carosue Dam. The site currently holds and Environmental Protection Act licence L8666/2012/2 for mine dewatering. The existing Carosue Dam mine, including the area of Deep South underground mine, and the accommodation village all lay on granted mining leases. The following studies have been completed and provided to support for the required statutory approvals: Flora surveys of areas to be cleared, waste rock characterisation studies, surface water studies and tailings storage facility documentation.
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.*	Carosue Dam Operations are well established, with mining activities being conducted by Saracen since 2009. The operation extends from the south (CDO plant, administration, Whirling Dervish & Karari mines) to the North (Deep South mine) and is connected via a private haulage road. The CDO operation comprises at 2.4mtpa CIL ore processing facility, aerodrome with sealed runway, associated tailings storage facilities, several power stations, water supply, workshops, and administration offices. The Deep South accommodation camp is a modern facility situated ~5kms to the west of the Deep South mine site. A 70km gravel access road links Carosue Dam Operations to the gravel section of Yarri Road. Both the Saracen and Shire of Kalgoorlie gravel roads are well maintained. The Deep South mine site is ~70km of the CDO Processing Plant and ~200km northeast of Kalgoorlie, ~1km off Yarri Road.
Costs	*The derivation of, or assumptions made, regarding projected capital costs in the study.*	Capital costs relate to establishment of capital infra-structure and continuing expansion of capital works for Deep South underground. The cost estimates are based on historical costs for similar work undertaken at Carosue Dam for the establishment and operation of the Deep South, Karari and Whirling Dervish underground mines.
	The methodology used to estimate operating costs.	Operating costs for underground mining have been derived from a combination of actual costs from Carosue Dam Operations and tendered contract costs supplied by independent mining contractors. Operating costs for ore processing have been derived from known parameters at Carosue Dam, with additional costs such as labour sourced from current operational data.
	Allowances made for the content of deleterious elements	Previous operational experience on the Deep South deposit at Carouse Dam did not reveal any deleterious elements within the ore or waste that required any additional cost allowances.
	The derivation of assumptions made of metal or commodity price(s), for the principal minerals and co-products	An assumed gold price of AUD$1,750/oz. has been adopted for financial modelling.
	The source of exchange rates used in study	All revenue and cost calculations have been made in AUD, so no exchange rate usage or assumptions have been necessary.
	Derivation of transportation charges	Costs associated with bullion transportation have been derived from existing contractual arrangements at Carouse Dam Operations.
	The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.	Costs associated with refining have been derived from existing contractual arrangements at Carouse Dam Operations.
	The allowances made for royalties payable, both Government and private.	Royalty costs are a 2.5% royalty payable to the Western Australian state government, and a 1.5% royalty payable to IRC.

Section 4: Estimation and Reporting of Ore Reserves		
Criteria	JORC Code Explanation	Commentary
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.*	N/A
	The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products	An assumed gold price of AUD$1,750/oz. has been adopted for financial modelling.
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.	There is a transparent quoted market for the sale of gold.
	For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.	N/A
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.*	Cost assumptions have been made using a combination of historical performance at Carosue Dam and contract mining costs from an experienced mining contractor. The economic analysis is viewed as representative of the current market conditions.
	NPV ranges and sensitivity to variations in the significant assumptions and inputs.	Sensitivities were not assessed.
Social	*The status of agreements with key stakeholders and matters leading to social licence to operate*	Carosue Dam is currently operating and has good relationships with neighbouring stakeholders, including engagement with the local pastoralists and the traditional owners. The mine is located on leasehold pastoral land with compensation agreements in place with the local pastoralist. Granted mining leases cover all of the proposed mining and processing assets and there are no Native title claims pending.
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	Water inrush is the only naturally occurring risk identified. Inrush from regional surface water flows has been addressed by the construction of appropriate water diversion bunds as part of previous open pit mining operations. A containment pond and dewatering infrastructure has provided for in the mine design and capital costs to mitigate water inrush from rainfall captured within the existing open pit.
	The status of material legal agreements and marketing arrangements	Contracts are in place for all critical goods and services to operate Carosue Dam Operations. A mining contract will be tendered for Deep South underground prior to the commencement of mining.
	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	Carosue Dam Operations is in production with all required government statutory permits and approvals in place for the operating mines and processing plant. The required statutory approvals for Deep South have been submitted and approved (August 2015) by the DMP.

Section 4: Estimation and Reporting of Ore Reserves		
Criteria	JORC Code Explanation	Commentary
	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.	
Classification	*The basis for the classification of the Ore Reserve into varying confidence categories*	The Ore Reserve Estimate classification for Deep South underground has been in accordance with the JORC code 2012. The estimated Ore Reserve is classified as Probable (100%) with the majority of the reserve being derived from that portion of the Mineral Resource classified as indicated.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	Cost assumptions and inputs factors applied to the underground project were derived from a combination of historical site data, current operational data relating to Carouse Dam Operations, mining costs supplied by independent mining contractors, and recommendations from industry consultants. Results of the detailed design and analysis reflect the views of Competent Person regarding the Deep South deposit.
	The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any)	There were 1% (by ounce) Measured Mineral Resources within the underground mine design that formed the physical extent of the estimated Ore Reserve.
Audits or reviews	*The results of any audits or reviews of Ore Reserve estimates*	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 geo-statistical 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 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.* *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.* *It is recognised that this may not be possible or appropriate in all circumstances. These statements or relative accuracy and confidence of the estimate should be compared with production data, where available.*	The Ore Reserve estimate has been prepared within the guidelines of the 2012 JORC Code. The relative confidence of the estimate complies with the criteria of Probable Ore Reserves. Based upon; - Resource estimate - significant operating history, - application of current industry practices, - appropriate operating and capital costs, The range of the modifying factors is reasonable and confidence in the resulting reserve estimate is reasonable. Estimates are global but will be reasonably accurate on a local scale. The complete mine design with all of the modifying factors assumed and adopted, and financial analysis used in the estimated Ore Reserve have been the subject to peer review internally, and the Competent Person is confident that it is an accurate estimation of the current Deep South reserve. Reconciliation results from past mining at Deep South and suitable factors from currently active underground operations at CDO have been considered and factored into the reserve assumptions where appropriate.

Deep Well

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
Sampling Techniques	*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.*	Sampling methods undertaken by Saracen at Deep Well have included reverse circulation drillholes (RC) and RC grade control drilling from surface. Historic sampling methods conducted since 1984 have included rotary air blast (RAB) and RC drillholes.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used	Sampling for diamond and RC drilling is carried out as specified within Saracen sampling and QAQC procedures as per industry standard. RC chips provide high quality representative samples for analysis. RC, RAB and DD core drilling was completed by previous holders to industry standard at that time (1980- 2004).
	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 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information	RC chips are cone split and sampled into 1m intervals with total sample weights under 3kg Samples are selected to weigh less than 3 kg to ensure total sample inclusion at the pulverisation stage. Saracen exploration chip samples are crushed, dried and pulverised to a nominal 90% passing 75µm to produce a 50 g sub sample for analysis by FA/AAS. Grade control RC chips were analysed in the Saracen on site laboratory using a PAL (pulverise and leach) method. Historical RAB and RC sampling was carried out to industry standard at that time. Analysis methods include fire assay, atomic absorption spectroscopy and unspecified methods.
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 deposit was initially sampled by 15 RAB holes and 103 RC holes (assumed standard 5 ¼ ''bit size). Saracen has completed 53 surface RC drill holes and 52 grade control RC holes from surface utilising a standard 5 ¼ ''bit with a face sampling hammer.
Drill Sample Recovery	*Method of recording and assessing core and chip sample recoveries and results assessed*	RC sampling recoveries are recorded in the database as a percentage based on a visual weight estimate; no historic recoveries have been recorded.
	Measures taken to maximise sample recovery and ensure representative nature of the samples	During RC drilling daily rig inspections are carried out to check splitter condition, general site and address general issues. During GC campaigns the sample bags weight versus bulk reject weight are compared to ensure adequate and even sample recovery. Historical RAB and RC drilling to industry standard at that time.
	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.	There is no known relationship between sample recovery and grade for RC drilling. Any historical relationship is not known.
Logging	*Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support*	Logging of RC chips records lithology, mineralogy, texture, mineralisation, weathering, alteration and veining.

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
	appropriate Mineral Resource estimation, mining studies and metallurgical studies. *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.*	Chips from all RC holes (exploration and GC) are stored on site in chip trays for future reference. Qualitative and quantitative logging of historic data varies in its completeness.
	The total length and percentage of the relevant intersections logged	All RC and grade control holes are logged in full. Historical logging is complete.
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.*	No diamond drilling has been completed at Deep Well
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	All exploration and grade control RC samples are cone split. Occasional wet samples are encountered; increased air capacity is routinely used to aid in keeping the sample dry when water is encountered. Historic RAB and RC drilling was sampled using riffle and unknown methods.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	The sample preparation of RC chips adheres to industry best practice. It is conducted by a commercial laboratory or onsite laboratory and involves oven drying, coarse crushing then total grinding to a size of 90% passing 75 microns. Best practice is assumed at the time of historic sampling.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	All subsampling activities are carried out by commercial laboratory or onsite laboratory and are considered to be satisfactory. Sampling by previous holders assumed to be industry standard at the time.
	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.	RC field duplicate samples are carried out at a rate of 1:20 and are sampled directly from the on-board splitter on the rig. These are submitted for the same assay process as the original samples and the laboratory are unaware of such submissions. Sampling by previous holders assumed to be industry standard at the time.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Sample sizes of 3kg are considered to be appropriate given the grain size (90% passing 75 microns) of the material sampled.
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.*	RC chip samples are analysed by external laboratories using a 50g fire assay with AAS finish. This method is considered suitable for determining gold concentrations in rock and is a total digest method. GC samples were analysed in the Saracen onsite laboratory using a pulverise and leach method. This method is a partial digest. Historic sampling includes fire assay, atomic absorption spectroscopy and unspecified methods.
	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 have been utilised for reporting gold mineralisation.
	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.	Certified reference material (standards and blanks) with a wide range of values are inserted into every drillhole at a rate of 1:25 for exploration RC and 1:40 for GC drilling. These are not identifiable to the laboratory. QAQC data returned are checked against pass/fail limits with the SQL database and are passed or failed on import. A report is generated and reviewed by the geologist as necessary upon failure to determine further action. QAQC data is reported monthly. Sample preparation checks for fineness are carried out to ensure a grindsize of 90% passing 75 microns. The laboratory performs a number of internal processes including standards, blanks, repeats and checks. QAQC data analysis demonstrates sufficient accuracy and precision.

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
		Industry best practice is assumed for previous holders.
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.*	Significant intercepts are verified by the Geology Manager and corporate personnel.
	The use of twinned holes.	No specific twinned holes have been drilled at Deep Well but grade control drilling has confirmed the width and grade of previous exploration drilling.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols	Primary data is collated in a set of excel templates utilising lookup codes. This data is forwarded to the Database Administrator for entry into a secure acQuire database with inbuilt validation functions. Data from previous owners was taken from a database compilation and validated as much as practicable before entry into the Saracen acQuire database.
	Discuss any adjustment to assay data.	No adjustments have been made to assay data. First gold assay is utilised for resource estimation.
Location of data points	*Accuracy and quality of surveys used to locate drillholes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.*	Exploration drillholes are located using a Leica 1200 GPS with an accuracy of +/- 10mm. Drillhole collars within the pit footprint and immediate surrounds are picked up by company surveyors using a Trimble R8 GNSS (GPS) with an expected accuracy of +/-8mm. Downhole surveys were carried out on RC drillholes using an electronic multishot at 5m intervals. Grade control drilling was not downhole surveyed due to short hole lengths. Previous holders' survey accuracy and quality is unknown
	Specification of the grid system used.	A local grid system (Deep Well) is used at Deep Well. The two point conversion to MGA_GDA94 zone 51 is: DWEast DWNorth RL MGAEast MGANorth RL Point 1 1507.00 5865.00 0 455804.62 6733624.61 0 Point 2 617.00 4439.00 0 455516.65 6731971.50 0 Historic data is converted to the Deep Well local grid upon export from the database.
	Quality and adequacy of topographic control.	Topographic control originally used site based survey pickups in addition to Kevron aerial photogrammetric surveys with +/- 5m resolution. Pre mining, new and more detailed topography has since been captured and will be used in future updates and for subsequent planning purposes.
Data spacing and distribution	*Data spacing for reporting of Exploration Results.*	The nominal spacing for drilling is 40m x 40m or better.
	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.	Data spacing and distribution are sufficient to establish the degree of geological and grade continuity appropriate for JORC classifications applied.
Orientation of data in relation to geological structure	*Whether sample compositing has been applied.*	Sample compositing is not applied until the estimation stage.
	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 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.	No significant sampling bias has been recognised due to orientation of drilling in regards to mineralised structures.

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
Sample security	*The measures taken to ensure sample security.*	Samples are prepared on site under supervision of Saracen geological staff. Samples are selected, bagged into tied numbered calico bags then grouped into secured cages and collected by the laboratory personnel. Sample submissions are documented via laboratory tracking systems and assays are returned via email
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	An internal review of companywide sampling methodologies was conducted to create the current sampling and QAQC procedures. No external audits or reviews have been conducted.

Section 2: Reporting of Exploration Results		
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 Deep Well resource is located on M39/129. The tenement is held 100% by Saracen Gold Mines Pty Ltd, a wholly owned subsidiary of Saracen Mineral Holdings Limited. Mining Lease M39/129 has a 21 year life (held until 2030) and is renewable for a further 21 years on a continuing basis. Mining Lease M39/129 is subject to one royalty agreement. All production is subject to a Western Australian state government NSR royalty of 2.5%. Mining Lease M39/129 is subject to the Edjudina Pastoral Compensation Agreement. There are no registered Aboriginal Heritage sites within Mining Lease M39/129.
	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.	The tenement is in good standing and there are no known impediments to obtaining a licence to operate.
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	Gold exploration began in the vicinity of Deep Well in the 1980's by Pennzoil. Rock chip sampling, mapping and ground magnetics were carried out before a series of RAB holes intersected variable gold mineralisation within an auriferous banded iron formation (BIF). Pennzoil believed the deposit did not have any potential for bulk tonnage and carried out no further work. Picon acquired the ground in 1985 and carried out detailed ground magnetics, geochemical surveying and exploration and infill RC drilling to define an ore reserve. They too deemed the deposit to be sub-economic. Redback Mining drilled a series of RC holes in 1997 and 1998 aimed at extending the mineralisation and targeting an anomaly to the west of the main BIF, returning anomalous and sub-economic gold values. Redback Mining sold the project to Yilgarn Mining in 2003, who then conducted aeromagnetics and RC drilling targeting the footwall, central and hangingwall BIF units, and the western anomaly. Results from the western anomaly were encouraging while the footwall and hangingwall BIF units returned no anomalous results.
Geology	*Deposit type, geological setting and style of mineralisation.*	The Deep Well Project lies on the eastern margin of the Norseman-Wiluna greenstone belt within the narrow NNW-trending, low to high metamorphic grade Linden Domain. The domain is characterised by basalt, meta-sedimentary and felsic volcaniclastic rocks, ultramafics and minor banded iron formations (BIF). Bedrock geology within the project area is poorly exposed but comprises three distinct BIF horizons within a sequence of felsic volcaniclastic rocks intruded by gabbro and dacitic porphyry. Mineralisation appears to be mostly confined to the oxidised sulphidic central BIF. The immediate hangingwall to the central BIF is metamorphosed high-Mg basalt, while the footwall varies between basalt, ultramafic, biotite schist, dolerite and dacitic porphyry. The eastern BIF is predominantly a silicified pyritic black shale/chert unit with extensive massive quartz veining. The western BIF a magnetite rich unit within felsic schists.

Section 2: Reporting of Exploration Results		
Criteria	**JORC Code Explanation**	**Commentary**
Drillhole 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:* • *easting and northing of the drill hole collar* • *elevation or RL (Reduced Level – elevation* • *above sea level in metres) of the drill hole collar* • *dip and azimuth of the hole* • *down hole length and interception depth* • *hole length.* • *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.*	A total of 146 holes have been used in the mineral resource and are deemed to be material. This material was reported in prior ASX releases. Future drill hole data will be periodically released or when a results materially change the economic value of the project. Exclusion of the drilling information will not detract from the reader's view 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 significant intercepts have been length weighted with a minimum Au grade of 1ppm. No high grade cut off has been applied.
	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 with minimum width of 1m and maximum width of 3m for internal dilution. Where stand out higher grade zone exist with in 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.	Metal equivalent values are not reported
Relationship between mineralisation widths and intercept lengths	*These relationships are particularly important in the reporting of Exploration Results.* *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* *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').*	Previous announcements included sufficient detail to clearly illustrate the geometry of the mineralisation and the drilling. All results were reported as downhole lengths.
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.*	All significant exploration results released by Saracen are accompanied by the appropriate diagrams and maps at the time of the release.
Balanced Reporting	*Where comprehensive reporting of all Exploration*	All results from the recent campaign have been reported, irrespective of success or not.

Section 2: Reporting of Exploration Results		
Criteria	JORC Code Explanation	Commentary
	Results are not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	
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 substantive data acquisition has been completed in recent times
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).* *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive*	No further drilling is currently planned. Open pit evaluation work is ongoing.

Section 3: Estimation and Reporting of Mineral Resources		
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.*	Saracen utilises AcQuire software on an SQL server database to securely store and manage all drillhole and sample information. Data integrity protocols are built into the system to ensure data validity and minimise errors are built into the data entry and import processes.
	Data validation procedures used.	Data that is captured in the field is entered into Excel templates which are checked on import into the 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.
Site Visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.*	The Competent Person has visited the site during drilling operations. All operations were to a high standard and processes have been established to track and monitor progress.
	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.*	The interpretation has been based on the detailed geological work completed by a series of previous owners of the project. This knowledge is based on geological logging of RC chips from both historical drilling carried out by previous owners and more recent drilling completed by Saracen.
	Nature of the data used and any assumptions made.	The interpretations have been constructed using all available geological logging descriptions including but not limited to, stratigraphy, lithology, texture, and alteration.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC Code Explanation	Commentary
		Cross sectional interpretations of the mineralisation have been created and from the basic framework through which the 3D wireframe solid is built.
	The affect, if any, of alternative interpretations on Mineral Resource estimation.	Due to the simplistic nature of the mineralisation no alternative interpretations have been considered. Over the life of the project several different sources have interpreted the mineralisation and all agree on the same basic interpretation. The mineralisation is very discrete and bound to a specific geological unit.
	The use of geology in guiding and controlling the Mineral Resource estimation.	The geology has heavily influenced the domains controlling the mineral resource estimation. The main mineralised lode is the northern continuation of the Butler Lode from Deep South. The main controlling unit is a strongly silicified BIF horizon.
	The factors affecting continuity both of grade and geology.	Mineralisation and lithology are both highly continuous. The stratigraphic horizon that host the mineralisation extend over a length of 15km. Grade is affected by the presence of sulphides and quartz carbonate veining. There is no discernible plunge orientation evident in the data.
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 mineralised lode at Deep Well has continuity over 350m along strike, and 100m down dip. The lode averages 3m in width, but can be as wide as 7m. The lode strikes North north-west and dip steeply at 75 degrees to the west.
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.*	Block estimation has been completed in Datamine software. All wireframes have been constructed in Datamine. The estimation uses these wireframes as hard boundaries. Estimation of parent blocks are interpolated, and assigned to sub-cells. The maximum distance of extrapolation is less than 50m. Univariate statistical analysis of length weighted, (1m), domain coded downhole composites have been completed for all domains and top-cuts applied where applicable. Extreme grades are not common in the data set and all domains have been analysed individually to determine specific top-cut values. Variogram modelling was completed with GeoAccess Professional software. This defined the spatial continuity with in the domains. The parameters determined from this analysis were used in the interpolation process.
	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 ordinary kriged resource estimate has been cross checked with an inverse distance squared estimate. The variance between the two estimates was less than 3%. Historical mine production and mill reconciliation records suggest that the estimation method and parameters used result in a conservative estimate of the resource. The resource has been mined twice through open pit methods and reconciliation of the mined material suggests that the modelling was conservative with more ounces produced than estimated in the model.
	The assumptions made regarding recovery of by-products.	No assumptions have been made with respect to the recovery of by-products.
	Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulfur for acid mine drainage characterisation).	There has been no estimate at this point of deleterious elements. Saracen is unaware if any elements other than gold have been assayed on a routine basis. Nor is this planned for future sampling.
	In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.	The parent block sizes for the resource model are X (10m) by Y (20m) by Z (5m). These are deemed appropriate for the majority of the resource, where drill spacing is in the order of 40m x 40m or better. Parent blocks have been sub-celled to X (0.5m) by Y (0.5m) by Z (0.5m) to ensure that the wireframe boundaries are honoured and preserve the location and shape of the mineralisation.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC Code Explanation	Commentary
		Search ranges have been informed by variogram modelling and knowledge of the drill spacing and the known mineralisation geometry including direction of maximum continuity. Three search estimation runs are used with the aim to satisfy the minimum sample criteria in the first search range where possible.
	Any assumptions behind modelling of selective mining units.	No selective mining units have been assumed.
	Any assumptions about correlation between variables.	No assumptions have been made regarding correlation between variables.
	Description of how the geological interpretation was used to control the resource estimates.	The geological interpretation strongly correlates with the mineralised domains. All wireframe boundaries including those where lithology and mineralisation correspond, hard boundaries are enforced.
	Discussion of basis for using or not using grade cutting or capping.	Statistical analysis of all domains highlight that there are very few grades in the domain populations that require top-cutting. Top-cut have been employed to eliminate the risk of overestimating in the local areas where a few high grade sample exist. A sensitivity analysis was carried out on the data, by relaxing the top-cut values. This did not have a material effect on the resultant grades in the model.
	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 key model validation steps have been taken to validate the resource estimate. The mineral resource model has been stepped through visually in sectional and plan view to appreciate the composite grades used in the estimate and the resultant block grades. This has also been carried out in 3D with the composite grades and a point cloud of the model grades. Easting, Northing and Elevation swathe plots have been constructed to evaluate the composited assay means verses the mean block estimates. The mineral resource model has been constructed to include kriging efficiency and the slope of regression values. These values are used to measure the quality of the estimate. Natural deterioration of the quality is observed at the perimeter of the modelled areas where data density is lower. The estimate was checked against previously reconciled production records with tonnes being even with production but grade being lower than actual production.
Moisture	*Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	All tonnages are estimated on a dry basis.
Cut-off parameters	*The basis of the adopted cut-off grade(s) or quality parameters applied.*	Based on Saracen’s current economic operations at Carosue Dam, and the natural grade distinction above background, a grade of 0.5g/t has been chosen.
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 Deep Well deposit is amenable to mining by open pit methods. Currently the definition of the resource does not highlight any potential future for underground mining operations. To best capture “reasonable prospects for eventual economic of extraction”, the mineral resource was reported within an optimised pit shell at $2250 at a 0.5g/t cut off for the open pit resources.

Section 3: Estimation and Reporting of Mineral Resources		
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 process 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.*	Deep Well has not previously been treated through the Carosue Dam treatment plant. Given the geological similarities between Deep South and Deep Well it has been assumed that metallurgical properties are also similar. Recent test work of Deep South ore demonstrates that recoveries between 82% and 88% are achievable. The ore is relatively soft and the majority of the gold is free milling. The ore also has a predictable grind dependency / leach recovery relationship. The test work also highlights that the ore is not chemically refractory and contains no preg robbing properties.
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 greenfields 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.*	No specific waste rock characterisation has been conducted at Deep Well. This test work will be completed if the resource is converted into a reserve. Waste rock characterisation carried out at Deep South (similar geology to Deep Well) identified no environmental issues. Tailings from the deposit would be stored in an appropriate licensed tailings facility and closure plan in place if mined and processed in the future.
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 Deep Well were determined via testing of transitional rock samples from the limited outcrop, with most densities being assumed from the nearby Deep South deposit. 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.	Data spacing is well distributed and in some locations, infill "grade control" patterns have been drilled to confirm continuity and grade. In these areas confidence is very good.
	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. These samples are from the nearby Deep South deposit as there is no diamond core available for Deep Well at this point. It has been determined that the two mineralised systems are similar enough to draw this assumption.
Classification	*The basis for the classification of the Mineral Resources into varying confidence categories.*	The mineral resource has been classified into Indicated and Inferred categories based on drill hole spacing, geological confidence, and grade continuity and estimation quality. The combination of these factors together guide the digitising of a "cookie cutter" string in long section view which selects and codes the appropriate blocks with the nominated resource classification category. Within the $2250 optimised open pit shell at a 0.5g/t cut off, only indicated material was available for reporting.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	**JORC Code Explanation**	**Commentary**
	Whether appropriate account has been taken of all the 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 care has been taken to account for relevant factors influencing the mineral resource estimate. Confidence in the predicted tonnes and grade estimated in the model is high given the density of data controlling the mineralised domains and the relative simplicity of the geology.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The geological model and the mineral resource estimate reflect the competent person's view of the deposit.
Audits or reviews	*The results of any audits or reviews of Mineral Resource estimates.*	At the completion of a resource estimation Saracen Gold Mines undertake an extensive review of the model that covers model inventory and comparisons to previous models, geological interpretation, wireframing, domain selection, statistics by domain, assay evaluation, parent cell sizes, data compositing, variography, search strategy, estimation and QKNA and finally model validation 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 JORC 2012 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Saracen Gold Mine uses a standard approach to resource estimation and the procedure requires the systematic completion of the Saracen Resource Estimation Document that is thoroughly investigated and assessed in the Model review process, as stated above. It was identified that further work on QKNA for block size and search ellipses would help to further improve the optimisation of the block model.
	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 statements relate to a global estimate of tonnes and grade.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	There is one small shaft at Deep Well, which from probe drilling has very limited extents. No production data is available at this time.

Moody's Reward

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
Sampling Techniques	*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.*	Saracen has complete reverse circulation (RC) drilling at Moody's Reward Sampling methods undertaken at Moody's Reward by previous owners have included aircore (AC) rotary air blast (RAB) reverse circulation (RC) and diamond (DD) drilling along with auger and soil sampling. Limited historical data has been provided by previous owners.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used	Sampling was guided by Saracen Sampling and QAQC procedures as per industry standard Historic RC, RAB, and DD core drilling is assumed to have been completed by previous holders to industry standard at that time.
	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 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information	Saracen RC and aircore samples are crushed, dried and pulverised to a nominal 90% passing 75µm to produce a 40 g sub sample for analysis by FA/AAS. Historic AC and RAB drilling was spear sampled. Sampling methods for DD drilling are unknown. Sampling was generally analysed via 30g or 50g fire assay No information has been found or supplied for older drilling assumed all RAB, RC and DD and sampling was carried out to industry standard at that time. Most assay methods are unknown
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.).*	Historic drilling activities at Moody's Reward initially included a number of RAB, RC and AC holes. The resource was further defined with 110 RC holes and 3 DD holes (unknown diameter). It is unknown if core was oriented. Saracen have completed 29 RC drillholes
Drill Sample Recovery	*Method of recording and assessing core and chip sample recoveries and results assessed*	Sampling recoveries of Saracen RC holes were recorded as a percentage based on a visual weight estimate. No other recoveries have been provided, it is unknown if they were recorded.
	Measures taken to maximise sample recovery and ensure representative nature of the samples	At the RC rig, sampling systems are routinely cleaned to minimise contamination and drilling methods are focused on sample quality. Previous AC and RC drilling were carried out according to industry standard at that time
	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 sample recovery issues have impacted on potential sample bias. Any historical relationship is not known.
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.* *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.*	Logging of RC chips record lithology, mineralogy, texture, mineralisation, weathering, alteration and veining. It is unknown if all diamond core was photographed. All chips have been retained in chip trays

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
	The total length and percentage of the relevant intersections logged	All Saracen RC drilling has been logged in full Most historical drillholes appear to have been logged in full
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.*	The sampling method for drill core is unknown
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	Saracen RC samples were cone split , historic RAB drilling was spear sampled, RC samples were riffle split, most samples were dry Some sampling methods remain unknown.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	The sample preparation of RC chips adhere to industry best practice. It is conducted by a commercial laboratory and involves oven drying, coarse crushing then total grinding using an LM5 to a grind size of 90% passing 75 microns. Best practice is assumed at the time of historic sampling.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	All subsampling activities are carried out by commercial laboratory and are considered to be satisfactory. Sampling by previous holders assumed to be industry standard at the time.
	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.	RC field duplicate samples are carried out at a rate of 1:20 and are sampled directly from the on-board splitter on the rig. These are submitted for the same assay process as the original samples and the laboratory are unaware of such submissions. Sampling by previous holders assumed to be industry standard at the time.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Sample sizes of 3kg are considered to be appropriate given the grain size (90% passing 75 microns) of the material sampled.
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.*	RC chip samples are analysed by external laboratories using a 40g or 50g fire assay with AAS finish. This method is considered suitable for determining gold concentrations in rock and is a total digest method. Historic sampling includes fire assay and unknown methods
	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, spectrometer, handheld XRF have been utilised for reporting gold mineralisation.
	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.	Certified reference material (standards and blanks) with a wide range of values are inserted into every drillhole at a rate of 1:25 for exploration RC drilling. These are not identifiable to the laboratory. QAQC data returned are checked against pass/fail limits with the SQL database and are passed or failed on import. A report is generated and reviewed by the geologist as necessary upon failure to determine further action. QAQC data is reported monthly. Sample preparation checks for fineness are carried out to ensure a grindsize of 90% passing 75 microns. The laboratory performs a number of internal processes including standards, blanks, repeats and checks. QAQC data analysis demonstrates sufficient accuracy and precision. Industry best practice is assumed for previous holders.
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.*	Historic intercepts are noted as being verified by the Exploration Manager
	The use of twinned holes.	DD drilling was planned to twin and verify existing RC drilling
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols	Primary data is collated in a set of Excel templates utilising lookup codes. This data is forwarded to the Database Administrator for entry into a secure acQuire database with inbuilt validation functions.

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
		Data from previous owners was taken from a database compilation and validated as much as practicable before entry into the Saracen acQuire database.
	Discuss any adjustment to assay data.	No adjustments have been made to assay data. First gold assay is utilised for resource estimation.
Location of data points	*Accuracy and quality of surveys used to locate drillholes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.*	Exploration drillholes are located using a Leica 1200 GPS with an accuracy of +/- 10mm some historic collar locations were surveyed using hand help GPS with all holes assigned a generic estimated RL. Downhole surveys are carried out using a gyroscopic camera at regular intervals (usually 5-10m). It is unknown how downhole surveying was carried out
	Specification of the grid system used.	GDA94 Zone 51 grid coordinate system is used
	Quality and adequacy of topographic control.	No detail of topographic control was supplied or found
Data spacing and distribution	*Data spacing for reporting of Exploration Results.*	The nominal spacing for drilling is 40x40m
	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 drilling is distributed and spaced such that geological and grade continuity can be established to estimate the mineral resource and ore reserve appropriately. The mineralisation is continuous over a 1.5 km strike length, therefore the 40m x 40m exploration drill spacing effectively defines the continuity.
Orientation of data in relation to geological structure	*Whether sample compositing has been applied.*	Some RC drilling was composited into 4m samples, with anomalous or geologically significant areas reassayed on 1m intervals
	Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.	The bulk of the drilling has been oriented to the west in order to provide the best intersection angles possible for the steeply east dipping orebody. This ensures that minimal bias is introduced when sampling.
	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.	All drilling from surface has been drilled as close to perpendicular as possible. This has reduced the risk of introducing a sampling bias as far as possible.
Sample security	*The measures taken to ensure sample security.*	Samples are prepared on site under supervision of Saracen geological staff. Samples are selected, bagged into tied numbered calico bags then grouped into secured cages and collected by the laboratory personnel. Sample submissions are documented via laboratory tracking systems and assays are returned via email
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	An internal review of companywide sampling methodologies was conducted to create the current sampling and QAQC procedures. No external audits or reviews have been conducted.

Section 2: Reporting of Exploration Results		
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 Moody's Reward resources are located on M39/1112 which is held 100% by Saracen Gold Mines Pty Ltd, a wholly owned subsidiary of Saracen Mineral Holdings Limited. Mining Lease 39/1112 has a 21 year life and is held until 2038. The tenement is renewable for a further 21 years on a continuing basis. All production is subject to a Western Australian State Government NSR royalty of 2.5%. The tenement is affected by the Nyalpa Pirniku (WC2019/002) native title claim.

Section 2: Reporting of Exploration Results		
Criteria	JORC Code Explanation	Commentary
		There are no registered Aboriginal Heritage sites on the tenement. The Mining Rehabilitation Fund applies to the tenement.
	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.	The tenements are in good standing and the license to operate already exists.
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	The Moody's Reward area was soil sampled by Anglogold Australia, WMC and Delta gold between 1986 -2000. No further work was carried out until Hawthorn acquired the tenements and carried out soil and auger sampling, and RAB, RC and DD drilling
Geology	*Deposit type, geological setting and style of mineralisation.*	Locally the geology of the Moody's Reward area consists of intermediate schists and igneous intrusives adjacent to sediments. Basaltic andesite, felsic volcanics and volcaniclastics trend in a north west- south east direction. The northern tenements are dominated by interbedded undifferentiated sediments and andesite. Differentiated doleritic sills intrude into conglomeritic and polymictic sands stones towards the east of the tenements. Interbedded ultramafic, peridotite-bearing intrusives and dolerite form a distinctive north-west trend in along the west of the tenements. These lithologies can be overlain by Cenozoic ferruginous clay, colluvium and silts. Several significant drainage systems in the licence are associated with alluvium, clay, silt and sand
Drillhole 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:* • *easting and northing of the drill hole collar* • *elevation or RL (Reduced Level – elevation* • *above sea level in metres) of the drill hole collar* • *dip and azimuth of the hole* • *down hole length and interception depth* • *hole length.* • *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.*	A total of 121 holes have been used in the mineral resource and are deemed to be material. It is not practical to summarise all of the holes here in this release. Future drill hole data will be periodically released or when a results materially change the economic value of the project. Exclusion of the drilling information will not detract from the reader's view 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 significant intercepts have been length-weighted with a minimum Au grade of 1ppm.
	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.	No interval below 1m was sampled.

Section 2: Reporting of Exploration Results		
Criteria	JORC Code Explanation	Commentary
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	There are no metal equivalents reported in this release.
Relationship between mineralisation widths and intercept lengths	*These relationships are particularly important in the reporting of Exploration Results.* *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* *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').*	All results are reported as downhole lengths Drilling has been orientated to intersect the various orebodies at most optimum angle where possible. This has not always been achieved. On average drilling intersects the mineralisation perpendicular.
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.*	All significant exploration results released by Saracen are accompanied by the appropriate diagrams and maps at the time of the release.
Balanced Reporting	*Where comprehensive reporting of all Exploration Results are not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	All results from the recent campaign have been reported, irrespective of success or not..
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.*	Detailed SAM (sub-audio magnetics) and aeromagnetic surveys were carried out over Moody's Reward and surrounding tenements by previous owners in order to define targets for drilling
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).* *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive*	Saracen is currently working on establishing an exploration program which will identify areas of opportunity to extend or enhance the Moody's Reward mineral resource.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC 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.*	The database provide to Saracen was stored in a number of excel spreadsheets and text files. The primary database is regulated by a locked framework called the acquire data model which fixes the relationships between tables. The data model minimises the potential for data collection and data usage errors through pre-determined look up tables, storage and export functions. User defined permissions also regulate the ability to add, edit or extract data. It is unknown at this stage how the process used to record the primary data. Typical methods are manual translation of logging and data capture from written logs, direct import of csv tables through a data import scheme where data is validated upon import or direct data entry options into the database using predefined look up values.
	Data validation procedures used.	The rigid structure of the acquire data model is such that predefined rules and look up tables are applied to all data entry. Data that does not meet the criteria are highlighted and moved to a buffer area until the data is rectified to meet the passing rules. It is unknown at this stage how the database was managed and who was responsible for its maintenance. It is also unknown if there was any built in functionality around pass/fail checks on assay importing.
Site Visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.*	The competent person regularly visited site and directed work in his role as Exploration Manager.
	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.* *Nature of the data used and any assumptions made.* *The affect, if any, of alternative interpretations on Mineral Resource estimation.* *The use of geology in guiding and controlling the Mineral Resource estimation.* *The factors affecting continuity both of grade and geology.*	At the Moody's Reward Prospect a strongly gold mineralised, silicified shear zone has been discovered within a broader, gold mineralised, altered stockwork quartz veined package of felsic volcanics and volcaniclastic sediments. Despite an extensive history of modern exploration in the prospect area this newly identified mineralised unit had not previously been identified or drilled, prior to Hawthorn's (Previous owner) exploration discovery. The gold mineralised zones dip consistently at 40 and 65 degrees to the east or north east. The mineralised widths vary between 3 – >30 metres true width. The generally thick and consistent nature of the mineralisation intersected to date indicates that limited dilution may be occur should an open pit mining operation be developed. Drilling to date has not indicated that the gold mineralisation develops a plunge orientation, however this remains a possibility. All available geological data including RC and DDH drilling has been used in the interpretation. It is understood that there are no known factors which would affect the geological continuity and grade.
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 zone of mineralization extends for approximately 1500 m along strike, 3 to 30 m across strike and from near surface (1-2 m BSL) up to 180 m vertically. Limited drilling has occurred between 100 metres and 180 metres vertical depth. The 100 m BSL (287 m RL) was used as a vertical constraint for Indicated material based on both a lack of drillholes beneath this depth and an estimate of the realistic notional mining depth of an open cut pit
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.* *The availability of check estimates, previous estimates and/or mine production records and whether the Mineral*	There are no by-products currently known. At this time there has been no estimation for deleterious elements as the data collection is ongoing. There is no correlation between gold grades and any other element known at this time. There is no relationship between grade and structure or depth. A potential correlation between mineralisation and brecciation of a fine grained silicified felsic tuff and or lava unit is considered possible. Datamine software was used for the estimation. JORC Code 2012.Block model cell sizes of 5 mE x 10 mN x 5 mZ were used. Variogram modelling completed using Snowdens Supervisor software. Models were generated on normal scores variograms and back transformed for use in Datamine. Mineralisation is domained based on geological continuity. All domain

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC Explanation	Commentary
	Resource estimate takes appropriate account of such data. *The assumptions made regarding recovery of by-products.* *Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulfur for acid mine drainage characterisation).* *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.* *Any assumptions behind modelling of selective mining units.* *Any assumptions about correlation between variables.* *Description of how the geological interpretation was used to control the resource estimates.* *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.*	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 principal lodes exhibit bi/multi-model grade populations. These internal populations are controlled by grade indicators based on inflexion points derived from 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 1x2x1m 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. 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.
Moisture	*Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	Tonnage has been calculation on a dry bulk density. No allowance for moisture has been made.
Cut-off parameters	*The basis of the adopted cut-off grade(s) or quality parameters applied.*	A range of cut-off grade models have been produced – with 0.5, 1.0 & 1.5 g/t Au reported.
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.*	Open pit mining is proposed once the extent of the resource is fully understood. Minimal mining dilution is expected due to the broad nature of the ore lodes at Moody's Reward. To best capture "reasonable prospects for eventual economic of extraction", the mineral resource was reported within an optimised pit shell at $2250 at a 0.5g/t cut off for the open pit resources.
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 process and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported*	No detailed metallurgical recovery work has been undertaken at this time at Moody's Reward. Further work is ongoing to confirm that there are no deleterious properties at Moody's Reward

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC Explanation	Commentary
	with an explanation of the basis of the metallurgical assumptions made.	
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 greenfields 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.*	Work is required to confirm that there will be no impact from acid rock drainage (ARD) from waste material at the Moody's Reward prospect. Any tailings placement to be stored on site will require detailed environmental assessment.
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 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.* *The basis for the classification of the Mineral Resources into varying confidence categories.*	A total of 290 core samples were assessed for Specific Gravity by wax immersion at Bureau Veritas Kalgoorlie 17 Holes at Moody's Reward were surveyed by a Geovista Dual gamma probe operated by ABIMS Pty Ltd Density data from the diamond core was used as a benchmark for calibration of the downhole survey density data
Classification	*The basis for the classification of the Mineral Resources into varying confidence categories.* *Whether appropriate account has been taken of all the 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).* *Whether the result appropriately reflects the Competent Person's view of the deposit.*	The Moody's Reward Resources was classified as either Indicated or Inferred based on a number of factors, such as • Distance to nearest sample • Number of samples used for estimation and • Estimation pass • Drill spacing
Audits or reviews	*The results of any audits or reviews of Mineral Resource estimates.*	No audits have been done at this time.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC 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 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.* *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	At this time the Indicated Mineral resources are being considered for further technical evaluation. The statements relate to global estimate of tonnes and grade. Following metallurgical / hydrological / geotechnical assessments to be carried out in the upcoming quarters a Scoping study may be produced that assesses the economic viability of each resources.

Belize

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
Sampling Techniques	*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.*	Sampling methods undertaken at Belize by previous owners have included aircore (AC) rotary air blast (RAB) reverse circulation (RC) and diamond (DD) drilling along with auger and soil sampling. Limited historical data has been provided by previous owners. Saracen has not carried out any sampling activities at the Belize deposit due to only recently acquiring the deposit.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used	RC, RAB, and DD core drilling is assumed to have been completed by previous holders to industry standard at that time.
	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 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information	RC chips were riffle split and sampled to 1m intervals with samples selected to weigh between 2.5 - 3.5 kg. Aircore and RAB drilling was spear sampled. Sampling methods for DD drilling are unknown. Sampling was generally analysed via 30g or 50g fire assay No information has been found or supplied for older drilling assumed all RAB, RC and DD and sampling was carried out to industry standard at that time. Most assay methods are unknown
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.).*	Drilling activities at Belize initially included a number of RAB, RC and AC holes. The resource was further defined with 107 RC holes and 2 DD holes (unknown diameter). It is unknown if core was oriented.
Drill Sample Recovery	*Method of recording and assessing core and chip sample recoveries and results assessed*	Recoveries for some more recent RC drilling have been recorded based on a visual weight estimate. No other recoveries have been provided, it is unknown if they were recorded.
	Measures taken to maximise sample recovery and ensure representative nature of the samples	RC drilling utilised a compressor to ensure sample recovery and representivity, methods for other drilling are unknown.
	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.	Any historical relationship is not known.
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. Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.*	Logging of diamond drill core, AC, RAB, and RC chips record lithology, mineralogy, texture, mineralisation, weathering, alteration and veining. It is unknown if all diamond core was photographed. All chips have been retained in chip trays

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
	The total length and percentage of the relevant intersections logged	All drillholes appear to have been logged in full, with AC, RC and RAB drilling logged by the metre
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.*	The sampling method for drill core is unknown
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	RAB drilling was spear sampled, RC samples were riffle split, most samples were dry Some sampling methods remain unknown.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	The sample preparation techniques for much of the historic AC, RAB, RC and DD drilling are unknown, best practice is assumed.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	Best practice is assumed at the time of historic RAB, DD and RC sampling.
	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.	It is unknown if duplicate sampling was performed on all exploration drilling. Some field duplicates were carried out on some more recent RC drilling
	Whether sample sizes are appropriate to the grain size of the material being sampled.	It is assumed sample sizes were appropriate for the grain size of material being sampled.
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.*	A 30 or 50 gram fire assay with AAS finish was used to determine the gold concentration much of the recent drilling. This method is considered suitable for determining gold concentrations in rock and is a total digest method.
	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.	It is unknown if any instruments of this nature have been used at Belize. Saracen has not had full access to all the data during the acquisition process.
	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.	QAQC samples were submitted with all drill sampling activities at a rate of 6/100 for standards and 1/100 for blank material. All QAQC sample are noted to have performed well within expected limits
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.*	Historic intercepts are noted as being verified by the Exploration Manager
	The use of twinned holes.	DD drilling was planned to twin and verify existing RC drilling
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols	Limited documentation of this nature has been provided. Data has been stored in an acQuire database with limited drilling data for review supplied in an Access database as well as excel and text files.
	Discuss any adjustment to assay data.	No adjustment to assay data appears to have been made
Location of data points	*Accuracy and quality of surveys used to locate drillholes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.*	Collar locations were surveyed using hand help GPS with all holes assigned a generic estimated RL. It is unknown how downhole surveying was carried out
	Specification of the grid system used.	GDA94 Zone 51 grid coordinate system is used
	Quality and adequacy of topographic control.	No detail of topographic control was supplied or found
	Data spacing for reporting of Exploration Results.	No exploration results reported in this release

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
Data spacing and distribution	*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 drilling is distributed and spaced such that geological and grade continuity can be established to estimate the mineral resource and ore reserve appropriately. The mineralisation is continuous over a 1.3 km strike length, therefore the 30m x 40m exploration drill spacing effectively defines the continuity.
Orientation of data in relation to geological structure	*Whether sample compositing has been applied.*	Some RC and RAB drilling was composited into 4m samples, with anomalous or geologically significant areas reassayed on 1m intervals
	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 drilling at South is at -60 ° drilled towards 085 -090°. Orientations are at or within 10 degrees to the interpreted right angle of the strike of mineralisation. Dip of mineralisation is believed to be at 75-80° to the W. Drill hole traces deviate remarkably in several holes with 10-15° deviations towards the south common. Downhole surveys are taken at a minimum of 30 metre intervals. It is understood that there is no bias introduced by the drilling direction however.
	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.	All drilling from surface has been drilled as close to perpendicular as possible. This has reduced the risk of introducing a sampling bias as far as possible.
Sample security	*The measures taken to ensure sample security.*	Recent historical samples were noted as being collected in the presence of staff members and delivered to the laboratory by company staff.
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	No evidence of external reviews has been supplied. Saracen has not had access to this information during the acquisition process.

Section 2: Reporting of Exploration Results		
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 Belize resources are located on M39/1109 and M39/1110 which is held 100% by Saracen Gold Mines Pty Ltd, a wholly owned subsidiary of Saracen Mineral Holdings Limited. The Mining Leases have a 21 year life and is held until 2038. Each tenement is renewable for a further 21 years on a continuing basis. All production is subject to a Western Australian State Government NSR royalty of 2.5%.
	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.	The tenements are in good standing and the license to operate already exists.
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	The Belize tenements have a limited exploration history with Gut nick Resources carrying out tenement wide RA drilling on 200 -800 metre fences and 40 – 80 metre drill spacing between 1999 - 2003. No further work was carried out on the tenements until Hawthorn obtained the tenements. Targets at were RC drilled by Hawthorn in 2010-2012. Follow-up RC programs were drilled in 2014, with extra holes drilled in 2016 in order to obtain the current resource estimation.
Geology	*Deposit type, geological setting and style of mineralisation.*	The Belize Project tenements are interpreted to consist of a west to east sequence of shales, cherty felsic metasediments, mafic and ultramafic rocks, and diorite to granodiorite dykes that abut against a strongly foliated monzogranite. The contact between the highly foliated silicified quartzo-feldspathic sediments and the fine grained

Section 2: Reporting of Exploration Results		
Criteria	**JORC Code Explanation**	**Commentary**
		basalt is strongly deformed and interpreted to be associated with the Safari Fault system. Rare pegmatoid dyke are observed in the Paradise Well area of the Project Area. The ultramafic rocks consist of fine grained peridotites to talc carbonate schists whilst the mafic rocks are fine grained tholeiitic to high-Mg spinifex textured basalt. Little outcrop is observed in the tenements, with a few sparse outcrops of sheared psammite and ultramafics occasionally identified. A significant 5-10m thick transported colluvial layer is observed in most of the non-outcropping areas and would seem to limit the effectiveness of conventional soil geochemistry. Weathering beneath this transported soil later is generally very shallow with only 2-5 metres of weathered saprock occurring above fresh rock base.
Drillhole 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:* • *easting and northing of the drill hole collar* • *elevation or RL (Reduced Level – elevation* • *above sea level in metres) of the drill hole collar* • *dip and azimuth of the hole* • *down hole length and interception depth* • *hole length.* *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.*	A total of 109 holes have been used in the mineral resource and are deemed to be material. It is not practical to summarise all of the holes here in this release. Future drill hole data will be periodically released or when a results materially change the economic value of the project. Exclusion of the drilling information will not detract from the reader's view 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.*	No exploration results are reported in this release.
	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.	No exploration results are reported in this release.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	No exploration results are reported in this release.
Relationship between mineralisation widths and intercept lengths	*These relationships are particularly important in the reporting of Exploration Results.* *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* *If it is not known and only the down hole lengths are*	Saracen has not previously reported exploration results nor are any included in this release. Drilling has been orientated to intersect the various orebodies at most optimum angle where possible. This has not always been achieved. On average drilling intersects the mineralisation perpendicular.

Section 2: Reporting of Exploration Results		
Criteria	JORC Code Explanation	Commentary
	reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').	
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.*	No diagrams are referenced in this release.
Balanced Reporting	*Where comprehensive reporting of all Exploration Results are not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	Saracen has not previously reported exploration results nor are any included in this release.
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.*	Detailed SAM (sub-audio magnetics) and aeromagnetic surveys were carried out over Belize and surrounding tenements by previous owners in order to define targets for drilling
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).* *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive*	Saracen is currently working on establishing an exploration program which will identify areas of opportunity to extend or enhance the Belize mineral resource.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC 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.*	The database provide to Saracen was stored in a number of excel spreadsheets and text files. The primary database is regulated by a locked framework called the acquire data model which fixes the relationships between tables. The data model minimises the potential for data collection and data usage errors through pre-determined look up tables, storage and export functions. User defined permissions also regulate the ability to add, edit or extract data. It is unknown at this stage how the process used to record the primary data. Typical methods are manual translation of logging and data capture from written logs, direct import of csv tables through a data import scheme where data is validated upon import or direct data entry options into the database using predefined look up values.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	**JORC Explanation**	**Commentary**
	Data validation procedures used.	The rigid structure of the acquire data model is such that predefined rules and look up tables are applied to all data entry. Data that does not meet the criteria are highlighted and moved to a buffer area until the data is rectified to meet the passing rules. It is unknown at this stage how the database was managed and who was responsible for its maintenance. It is also unknown if there was any built in functionality around pass/fail checks on assay importing.
Site Visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.*	The competent person regularly visited site and directed work in his role as Exploration Manager.
	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.* *Nature of the data used and any assumptions made.* *The affect, if any, of alternative interpretations on Mineral Resource estimation.* *The use of geology in guiding and controlling the Mineral Resource estimation.* *The factors affecting continuity both of grade and geology.*	Gold mineralisation at Belize area is hosted by steep west dipping, quartz-carbonate-pyrrhotite-magnetite veins within quartz rich metasediments and adjacent to lenticular ultramafic units. The mineralisation is analogous to that currently mined in the Saracen's – Deep South Mine. The gold mineralised zone dips consistently at 70 and 80 degrees. to the west. The mineralised widths vary between 3 – 12 metres true width. All available geological data including RC and DDH drilling has been used in the interpretation. It is understood that there are no known factors which would affect the geological continuity and grade.
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 zone of mineralization extends 2000 m along strike, 3 to 12 m across strike and from near surface (3-8 m BSL) up to 290 m vertically. Limited drilling has occurred between 140 metres and 290 metres vertical depth The 100 m BSL (303 m RL) was used as a vertical constraint for Indicated material based on both a lack of drillholes beneath this depth and an estimate of the realistic notional mining depth of an open cut pit
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.* *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 assumptions made regarding recovery of by-products.* *Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulfur for acid mine drainage characterisation).* *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.* *Any assumptions behind modelling of selective mining units.*	There are no by-products currently known. At this time there has been no estimation for deleterious elements as the data collection is ongoing. There is no correlation between gold grades and any other element known at this time. There is no relationship between grade and structure or depth. However high grade shoots of mineralisation are known within the mineralised envelope. These shoots appear to plunge steeply to the north. Some potential may exist for shoots that are essentially blind to surface. Mineralisation is domained based on geological continuity. 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 and RC 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. Extreme grades are not common in the data set and all domains are analysed individually to determine specific top-cut values. Due to the lack of extreme grades the top-cut process affects only 1-2% of the data. Many of the principal lodes exhibit bimodal grade populations. These internal populations are controlled by grade indicators derived from 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 1x2x1m 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. Variography is created for all domains

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC Explanation	Commentary
	Any assumptions about correlation between variables. *Description of how the geological interpretation was used to control the resource estimates.* *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.*	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. Hard boundaries are maintained across sub-domains. The maximum distance of extrapolation from last known data points for the inferred material is dependent on the geological continuity and confidence across the lode, but less than 40m for the deposit.
Moisture	*Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	Tonnage has been calculation on a dry bulk density. No allowance for moisture has been made.
Cut-off parameters	*The basis of the adopted cut-off grade(s) or quality parameters applied.*	A range of cut-off grade models have been produced – with 0.5, 1.0 & 1.5 g/t Au reported.
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.*	Open pit mining is proposed once the extent of the resource is fully understood. Some mining dilution is expected, but not as yet quantified, due to the thin to moderate width of the ore lodes. To best capture “reasonable expectation of extraction”, the mineral resource was cut to an optimised pit shell at $2250 at a 0.5g/t cut off.
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 process 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.*	No detailed metallurgical recovery work has been undertaken at this time at Belize. Further work is ongoing to confirm that there are no deleterious properties at Belize
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 greenfields project, may not always be well advanced, the status of early consideration of these potential*	Work is required to confirm that there will be no impact from acid rock drainage (ARD) from waste material at the Belize project. Any tailings placement to be stored on site will require detailed environmental assessment.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC Explanation	Commentary
	environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	
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 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.* *The basis for the classification of the Mineral Resources into varying confidence categories.*	A total of 70 core samples were assessed for Specific Gravity by wax immersion at Bureau Veritas Kalgoorlie 16 Holes at Belize were surveyed by a Geovista Dual gamma probe operated by ABIMS Pty Ltd Density data from the diamond core was used as a benchmark for calibration of the downhole survey density data
Classification	*The basis for the classification of the Mineral Resources into varying confidence categories.* *Whether appropriate account has been taken of all the 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).* *Whether the result appropriately reflects the Competent Person's view of the deposit.*	The Belize Resources was classified as either Indicated or Inferred based on a number of factors, such as • Distance to nearest sample • Number of samples used for estimation and • Estimation pass In addition, an elevation boundary 100 m below surface (303 mRL) was used as a vertical constraint for Indicated material, based upon on both a lack of drillhole intercepts beyond this depth and achievable mining parameters - with open cut pits typically not exceeding 100 vertical metres
Audits or reviews	*The results of any audits or reviews of Mineral Resource estimates.*	No audits have been done at this time.
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 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.*	At this time the Indicated Mineral resources are being considered for further technical evaluation. The statements relate to global estimate of tonnes and grade. Following metallurgical / hydrological / geotechnical assessments to be carried out in the upcoming quarters a scoping study may be produced that assesses the economic viability of each resources Further drilling both along strike and at depth has been recommended by the previous owners.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC Explanation	Commentary
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	

Thin Lizzie

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
Sampling Techniques	*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.*	Saracen has not completed any sampling activities at Thin Lizzie. Historic sampling methods conducted by previous owners since 1984 have included aircore (AC), rotary air blast (RAB), and reverse circulation (RC) drillholes.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used	RC, RAB and AC drilling was completed by previous holders to industry standard at that time (1984- 2002).
	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 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information	Historical AC, RAB, and RC sampling was carried out to industry standard at that time. Sampling methods for RC drilling included cone and riffle splitting. Methods for RAB and AC remain unknown. Analysis methods include fire assay, aqua regia and unspecified methods.
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 deposit has been sampled by 8 AC holes, 61 RAB holes and 149 RC holes (assumed standard 5 ¼ ''bit size).
Drill Sample Recovery	*Method of recording and assessing core and chip sample recoveries and results assessed*	No historic sampling recoveries have been recorded.
	Measures taken to maximise sample recovery and ensure representative nature of the samples	It is unknown what, if any, measures were taken to ensure sample recovery and representivity.
	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.	Any historical relationship is not known.
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. Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.*	Historical logging of RC, RAB and AC has recorded lithology, mineralogy, texture, mineralisation, weathering, alteration and veining. Qualitative and quantitative logging of historic data varies in its completeness.

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
	The total length and percentage of the relevant intersections logged	All drillholes appear to have been logged in full.
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.*	No diamond drilling has been completed at Thin Lizzie.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	Historic RC samples were cone or riffle split. The sampling methods for AC and RAB are unknown. It is unknown if wet samples were encountered.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	The sampling techniques for historic drilling are unknown, best practice is assumed.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	Sampling by previous holders assumed to be industry standard at the time.
	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.	It is unknown if historic duplicate sampling was performed.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	It is assumed historic sample sizes were appropriate to the grainsize of material being sampled.
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.*	RC, RAB and AC samples were analysed using fire assay and aqua regia methods. These methods are considered suitable for determining gold concentrations in rock and are total digest methods. Some samples were analysed using unknown methods
	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 have been utilised for reporting gold mineralisation.
	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.	Historic RAB, AC and RC drilling is assumed to have been carried out to industry standard regarding QAQC procedures.
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.*	It is unknown if historic intercepts were verified by alternative company personnel.
	The use of twinned holes.	No specific twinned holes have been drilled at Thin Lizzie
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols	Data from previous owners was taken from a database compilation and validated as much as practicable before entry into the Saracen acQuire database.
	Discuss any adjustment to assay data.	No adjustments have been made to assay data. First gold assay is utilised for resource estimation.
Location of data points	*Accuracy and quality of surveys used to locate drillholes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.*	Previous holders' survey accuracy and quality is unknown.
	Specification of the grid system used.	MGA Zone 51 grid system is used in the Thin Lizzie area.
	Quality and adequacy of topographic control.	Kevron Geomatic Services flew and processed aerial photography and provided orthoimages at 1:5000 scale over the Thunderbox deposit and environs.

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
Data spacing and distribution	*Data spacing for reporting of Exploration Results.*	No exploration results reported in this release
	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.	Data spacing and distribution are sufficient to establish the degree of geological and grade continuity appropriate for JORC classifications applied.
Orientation of data in relation to geological structure	*Whether sample compositing has been applied.*	Some historic RAB, AC and RC sampling was composited into 3-4m samples with areas of interest re-sampled to 1m intervals. It is unknown at what threshold this occurred.
	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 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.	No significant sampling bias has been recognised due to orientation of drilling in regards to mineralised structures.
Sample security	*The measures taken to ensure sample security.*	It is unknown what measures were taken to ensure sample security, best practice is assumed.
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	It is unknown if any audits or reviews were completed.

Section 2: Reporting of Exploration Results		
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 Thin Lizzie resource is located on M39/120. The tenement is held 100% by Saracen Gold Mines Pty Ltd, a wholly owned subsidiary of Saracen Mineral Holdings Limited. Mining Lease M39/120 has a 21 year life (held until 2030) and is renewable for a further 21 years on a continuing basis. Mining Lease M39/120 is subject to three royalty agreements and two associated caveats (138H/067 and 323785). All production is subject to a Western Australian state government NSR royalty of 2.5%. Mining Lease M39/120 is subject to the Yundamindera Pastoral Compensation Agreement. There are no registered Aboriginal Heritage sites within the tenement.
	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.	The tenement is in good standing and there are no known impediments to obtaining a licence to operate.
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	Exploration began in the Camelback area near the Thin Lizzie deposit in the 1980's, with WMC carrying out surface geochemical and drilling activities. Further drilling and sampling was completed by Newmont, Newcrest and Consex before the Thin Lizzie resource was delineated by Sons of Gwalia in 1995. They carried out further near deposit drilling and surface sampling until their collapse and takeover by St Barbara in 2004.
Geology	*Deposit type, geological setting and style of mineralisation.*	Gold mineralisation occurs within the Thin Lizzie deposit as a wide variety of vein and veinlet types within BIF chert zone. The main mineralisation is characterised by NS strike and 70° – 80° easterly dip.

Section 2: Reporting of Exploration Results		
Criteria	**JORC Code Explanation**	**Commentary**
Drillhole 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:* • *easting and northing of the drill hole collar* • *elevation or RL (Reduced Level – elevation* • *above sea level in metres) of the drill hole collar* • *dip and azimuth of the hole* • *down hole length and interception depth* • *hole length.* • *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.*	It is not practical to summarise all of the holes deemed material in this release. Exclusion of the drilling information will not detract from the reader's view 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.*	No exploration results are reported in this release.
	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.	No exploration results are reported in this release.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	There are no metal equivalents reported in this release.
Relationship between mineralisation widths and intercept lengths	*These relationships are particularly important in the reporting of Exploration Results.* *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* *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').*	Saracen has not previously reported any exploration results for Thin Lizzie, nor are any included in this release.
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.*	No exploration results are reported in this release.
Balanced Reporting	*Where comprehensive reporting of all Exploration*	Saracen has not previously reported exploration results at Thin Lizzie, nor are any included in this release.

Section 2: Reporting of Exploration Results		
Criteria	**JORC Code Explanation**	**Commentary**
	Results are not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	
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 substantive data acquisition has been completed in recent times.
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).* *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive*	Further work at Thin Lizzie is currently under review. Economic factors play an important role in the priority given to this deposit.

Section 3: Estimation and Reporting of Mineral Resources		
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.*	Saracen utilises AcQuire software on an SQL server database to securely store and manage all drillhole and sample information. Data integrity protocols are built into the system to ensure data validity and minimise errors.
	Data validation procedures used.	Data that is captured in the field is entered into Excel templates which are checked on import into the 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.
Site Visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.*	At the time of exploration and review (2010) of the deposit the Competent Persons visited the geological area frequently to assess geological competency and 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.*	A combination of exploration mapping, geophysical surveys, both exploration and grade control drill hole information and geological data, including mapping, has resulted in a reasonable geological interpretation.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC Code Explanation	Commentary
	Nature of the data used and any assumptions made.	The interpretations have been constructed using all available geological logging descriptions including but not limited to, stratigraphy, lithology, texture, and alteration. Most information was obtained from drill hole results and some historic mapping from Sons of Gwalia production.
	The affect, if any, of alternative interpretations on Mineral Resource estimation.	Due to the simplicity of the model, there are no alternative models at this stage.
	The use of geology in guiding and controlling the Mineral Resource estimation.	The geology has heavily influenced the extent of the domains controlling the mineral resource estimation. Gold mineralisation occurs within the Thin Lizzie deposit as a wide variety of vein and veinlet types within BIF chert zone. The main mineralisation is characterised by NS strike and 70° – 80° easterly dip. All mineralised domains were wireframed with hard boundaries. The wireframes for the current model were generated in Micromine based on a cut-off of 0.25 g/t of gold in individual sections of drill holes.
	The factors affecting continuity both of grade and geology.	The continuity of this inferred, thin and low grade deposit is considered open in all directions however it is relatively unexplored due to its lower economic viability.
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.*	At Thin Lizzie deposit, a total of 14 sections at 50m spacing were interpreted from 6,400N to 7,050N. The interpretation and wireframes were generated based on a 50m × 20m exploration drilling patterns.
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.*	A conventional 3D Ordinary Kriging modelling technique has been used, with an unfolding methodology applied to provide a dynamic element to the allocation of search ellipses. The modelling technique is suitable to the domains being estimated allowing reasonable expectation of mining selectivity across the mineralised domain. OK Block estimation has been completed using Datamine software. All compositing, wireframes, surfaces, rock and domain models were constructed in Micromine. All estimation uses these wireframes as hard boundaries. Estimation of parent blocks are interpolated, and assigned to sub-cells. The maximum distance of extrapolation is less than 50m. Univariate statistical analysis of length weighted, (1m), domain and regolith coded downhole composites have been completed for all domains. More than 80% of the sample data used in the estimation was 1m in length with the average for the entire sample set at 1.40m. Composites were broken where there was a change of mineralisation domain code or regolith code. Clusters of higher grade outliers that could bias the mean were identified by domain by the use of log probability plots. High grade outliers were used to determine specific top-cut values for each domain. Estimations used only used RC and Diamond Drill results, negative Au grades were replaced with a value of 0.001g/t, and null assays were excluded from the sample data. Unfolding was carried out prior to variography and estimation to remove the local variances in dip and strike observed in the domains. Variogram modelling was completed with GeoAccess Professional software. This defined the sample continuity and nugget value for each domain. Nugget effect in the major domains is typically 25% to 35%, which is moderate for a gold deposit and illustrates the robustness of the unfolded coordinate system as used for variogram calculation. The parameters determined from this analysis were used in the interpolation process.
	The availability of check estimates, previous estimates and/or mine production records and whether the Mineral	Comparatively this estimate remains unchanged in the tonnage value as the mineralised domains were left unadjusted from the previous interpretation done by SGW in 2000. However the current estimate places the global

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC Code Explanation	Commentary
	Resource estimate takes appropriate account of such data.	grade 0.40g/t lower the previous 2000 estimate. Unfortunately the numbers from the 2000 estimate seem erroneous with a mismatch between the grade and the ounces calculation.
	The assumptions made regarding recovery of by-products.	No assumptions have been made with respect to the recovery of by-products.
	Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulfur for acid mine drainage characterisation).	There has been no estimate at this point of deleterious elements. Saracen is unaware if any elements other than gold have been assayed.
	In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.	The parent block sizes for the resource model are X (5m) by Y (5m) by Z (1m). Drillhole data spacing, mining selectivity and mineralised lode geometry are among the primary considerations for the determination of the estimation block size. Drilling data at Thin Lizzie is primarily on a 50 x 25 metre drilling pattern, grading to a 60 x 30 to 80 x 50 metre patterns at depth. Parent blocks have been sub-celled to X (1.0m) by Y (1.0m) by Z (1.0m) to ensure that the wireframe boundaries were honoured and preserved the location and shape of the mineralisation. Search ranges have been informed by variogram modelling and knowledge of the drill spacing and the known mineralisation geometry including direction of maximum continuity. Three search estimation runs are used with the aim to satisfy the minimum sample criteria in the first search range where possible. Major ranges varied from 60m to 100m, with a limited range across the mineralisation of typically 15 to 30m. Down plunge ranges can be limited to 5m to 10m in some cases. The majority of the mineralised domains have data spacing that is well within the variogram ranges.
	Any assumptions behind modelling of selective mining units.	No selective mining units have been assumed.
	Any assumptions about correlation between variables.	No assumptions have been made regarding correlation between variables.
	Description of how the geological interpretation was used to control the resource estimates.	The geological interpretation strongly correlates with the mineralised domains. Hard wireframes were used to define all the mineralised domains.
	Discussion of basis for using or not using grade cutting or capping.	Linear interpolation methods such as Ordinary Kriging are sensitive to the presence of high-grade outliers that positively skew the data and bias the mean. Domain histogram and Log probability plots were used to determine appropriate top cuts for each domain. Not all domains required top cutting.
	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 key model validation steps have been taken to validate the resource estimate. The mineral resource model has been stepped through visually in sectional and plan view to appreciate the composite grades used in the estimate and the resultant block grades. The mean average composite grade and block model grade by deposit and domain were compared. QQ and scatter plots for the averaged sample data vs. block model results were also plotted. Easting, Northing and Elevation swathe plots have been constructed to evaluate the declustered composited assay means versus the mean block estimates.
Moisture	*Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	All tonnages are estimated on a dry basis.
Cut-off parameters	*The basis of the adopted cut-off grade(s) or quality parameters applied.*	Based on Saracen’s current economic status the natural grade distinction above background for the Thin Lizzie deposit was at a grade of 0.8g/t.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	**JORC Code Explanation**	**Commentary**
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.*	If the Thin Lizzie deposit is deemed economical it would be amenable to mining by open pit methods. There has not been any serious mining at Thin Lizzie. There are reasonable grounds to assume that in the future this deposit will be mined by conventional open pit methods given the close proximity to surface of the mineralisation.
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 process 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.*	There is limited information with regards to metallurgical factors for the Thin Lizzie deposit. It is assumed that this deposit would have very similar results to that of Crimson Belle given they are hosted and exist in the same geological regime. Metallurgical testing of a transition/fresh composite shows gravity recovery of 73% and total recovery of 79%.
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 greenfields 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.*	Environmental considerations are captured by Program of Work (PoW) requirements. Operations on these tenements are purely exploratory in nature to date.
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 density values applied to the Thin Lizzie Deposit estimation are largely based on historic density measures from similar rock types known to the geological area.
	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.	It is unknown how the historic bulk densities were measured. Any future bulk density measurements follow the Saracens Metals standardised procedures. Most ore zones predominantly exist in transitional to fresh non porous material, however additional measures are taken to reduce moisture intake during the water displacement process if the coating is made of more friable oxides and sediments.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC Code Explanation	Commentary
		This latter method aims to reduce moisture loss or moisture gain during the process and is considered on a deposit by deposit basis.
	Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	Density values are allocated uniformly to each lithological and regolith type. 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.*	Information from the estimation process, including search pass, number of composites used in the search ellipse and Kriging variance are all used in conjunction with drill spacing to finalise classification domains. Thin Lizzie blocks are all classified as Inferred category according to the 2004 JORC Code.
	Whether appropriate account has been taken of all the 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 care has been taken to account for relevant factors influencing the mineral resource estimate. The diligent Saracen Metals Resource review process ensures that data reliability and geological and metal confidence and continuity are reflected in the resource classification.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The geological model and the mineral resource estimate reflect the competent person's view of the deposit.
Audits or reviews	*The results of any audits or reviews of Mineral Resource estimates.*	This model was reviewed at the time of completion to the JORC 2004 standards. At the time the quality of the estimate was deemed appropriate and robust as a global estimate. Saracen Metals 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. Due to its simple geological geometry, external audits were deemed unnecessary at the time.
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 established in the 2004 edition of the JORC code. A standardised approach has been implemented for this estimation and the result is a robust model with appropriately defined resource categories. The validation process is also thorough suggesting the estimate has a reasonable level of confidence. The resource estimate is a good global estimate however locally there is room for improvement particularly in the selection of optimal block size. The review of the estimate identified that; Further testing on the bulk density values would be invaluable, and The use of KNA for optimal block size, minimum and maximum number of samples, search ellipse dimension, and discretisation would help to further improve the optimisation of the block model on a local scale.
	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 statements relate to a global estimate of tonnes and grade.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC Code Explanation	Commentary
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	An historic pit exits over Thin Lizzie, however there is no link to historic production.

Tin Dog

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
Sampling Techniques	*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.*	Saracen has undertaken reverse circulation (RC) drilling at Tin Dog. Historic methods conducted since 1986 have included aircore (AC), rotary air blast (RAB) and reverse circulation drilling.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used	Sampling of RC drilling was carried out as specified within Saracen sampling and QAQC procedures as per industry standard. RC chips provide high quality representative samples for analysis. RC, RAB and, AC drilling was completed by previous holders to industry standard at that time (1986- 2002).
	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 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information	RC chips were cone split and sampled into 1m intervals with total sample weights under 3kg Samples were selected to weigh less than 3 kg to ensure total sample inclusion at the pulverisation stage. A select number of samples were composited into 4m lengths and sampled in the Saracen onsite laboratory using a PAL (pulverise and leach) method as a first pass indicator. Any samples exceeding 0.2ppm Au were then resampled into 1m intervals and assayed via commercial laboratory where they were crushed, dried and pulverised to a nominal 90% passing 75µm to produce a 50 g sub sample for analysis by FA/AAS. Historical AC, RAB, and RC sampling was carried out to industry standard at that time. Analysis methods include fire assay, aqua regia and unspecified methods.
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 deposit was initially sampled by 4 AC holes, 551 RAB holes and 43 RC holes (assumed standard 5 ¼'' bit size). Saracen has completed 16 RC drillholes utilising a 5 ¼'' diameter bit with face sampling hammer.
Drill Sample Recovery	*Method of recording and assessing core and chip sample recoveries and results assessed*	RC sampling recoveries are recorded as a percentage based on a visual weight estimate; no historic recoveries have been recorded.
	Measures taken to maximise sample recovery and ensure representative nature of the samples	During RC campaigns daily rig inspections are carried out to check splitter condition, general site and address general issues. Historical AC, RAB and RC to industry standard at that time.
	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.	There is no known relationship between sample recovery and grade for RC drilling. Any historical relationship is not known.
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.*	Logging of RC chips records lithology, mineralogy, texture, mineralisation, weathering, alteration, veining and other features. Chips from all RC holes are stored in chip trays for future reference. Qualitative and quantitative logging of historic data varies in its completeness.

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	
	The total length and percentage of the relevant intersections logged	All Saracen RC drill holes are logged in full. Historical logging is approximately 95% complete.
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.*	No diamond drilling has been completed at Tin Dog
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	All RC samples were cone split. Occasional wet samples were encountered; increased air capacity was routinely used to aid in keeping the sample dry when water was encountered. Historic AC, RAB and RC drilling was sampled using spear, riffle and unknown methods.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	The sample preparation of RC chips adheres to industry best practice. It was conducted by a commercial or onsite laboratory and involved oven drying, coarse crushing then total grinding to a size of 90% passing 75 microns. Best practice is assumed at the time of historic sampling.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	All subsampling activities were carried out by commercial or onsite laboratory and are considered to be satisfactory. Sampling by previous holders assumed to be industry standard at the time.
	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.	Duplicate sampling was carried out at a rate of 1:10 for exploration drilling and was sampled directly from the on-board splitter on the rig. These were submitted for the same assay process as the original samples and the laboratory were unaware of such submissions. Sampling by previous holders assumed to be industry standard at the time.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Sample sizes are considered to be appropriate given the grainsize (90% passing 75um) of the material sampled.
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.*	RC chip samples were analysed by an external laboratory using a 50g fire assay with AAS finish. This method is considered suitable for determining gold concentration in rock and is a total digest method. Some RC samples were analysed in the Saracen onsite laboratory using a pulverise and leach method. This method is a partial digest. Historic sampling includes fire assay, aqua regia and unknown methods.
	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 have been utilised for reporting gold mineralisation at Tin Dog.
	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.	Certified reference material (standards and blanks) with a wide range of values were inserted into every drillhole at a rate of 1:25 for exploration RC drilling. These were not identifiable to the laboratory. QAQC data returned were checked against pass/fail limits with the SQL database and were passed or failed on import. A report was generated and reviewed by the geologist as necessary upon failure to determine further action. QAQC data was reported monthly. Sample preparation checks for fineness were carried out to ensure a grindsize of 90% passing 75 microns. The laboratory performed a number of internal processes including standards, blanks, repeats and checks. QAQC data analysis demonstrates sufficient accuracy and precision. Industry best practice is assumed for previous holders.
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.*	Significant intercepts are verified by the Geology Manager and corporate personnel.

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
	The use of twinned holes.	No specific twinned holes have been drilled at Tin Dog.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols	Primary data was collated in a set of excel templates utilising lookup codes. This data was forwarded to the Database Administrator for entry into a secure acQuire database with inbuilt validation functions. Data from previous owners was taken from a database compilation and validated as much as practicable before entry into the Saracen acQuire database.
	Discuss any adjustment to assay data.	No adjustments have been made to assay data. First gold assay is utilised for resource estimation.
Location of data points	*Accuracy and quality of surveys used to locate drillholes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.*	Exploration drillholes were located using a Leica 1200 GPS with an accuracy of +/- 10mm. Downhole surveys were carried out using an Eastman multi shot camera at regular intervals (usually 30m). Previous holders' survey accuracy and quality is unknown.
	Specification of the grid system used.	A local grid system (Tin Dog Local Grid) is used. The one point conversion to MGA_GDA94 zone 51 is TDLGEast TDLGNorth RL MGAEast MGANorth RL Point 1 10000 50000 0 438291.149 6748659.094 0 Historic data is converted to Tin Dog local grid upon export from the database.
	Quality and adequacy of topographic control.	Topographic control originally used site based survey pickups in addition to Kevron aerial photogrammetric surveys with +/- 5m resolution.
Data spacing and distribution	*Data spacing for reporting of Exploration Results.*	The nominal spacing for exploration drilling is 50mN x 25mE to 100mN x 25mE
	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.	Data spacing and distribution are sufficient to establish the degree of geological and grade continuity appropriate for JORC classifications applied.
Orientation of data in relation to geological structure	*Whether sample compositing has been applied.*	A select number of samples were composited into 4m lengths and sampled in the Saracen onsite laboratory as a first pass indicator. Any samples exceeding 0.2ppm Au were then resampled into 1m intervals and assayed via commercial laboratory. Some historic RAB and RC sampling was composited into 3-4m samples with areas of interest re-sampled to 1m intervals. It is unknown at what threshold this occurred.
	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 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.	No significant sampling bias is thought to occur due to orientation of drilling in regards to mineralised structures.
Sample security	*The measures taken to ensure sample security.*	Samples are prepared on site under supervision of Saracen geological staff. Samples are selected, bagged into tied numbered calico bags then grouped into secured cages and collected by the laboratory personnel. Sample submissions are documented via laboratory tracking systems and assays are returned via email
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	An internal review of companywide sampling methodologies was conducted to create the current sampling and QAQC procedures.

Section 2: Reporting of Exploration Results		
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 Tin Dog project is located on M39/588 with near mine exploration extending onto M39/589. The tenement is held 100% by Saracen Gold Mines Pty Ltd, a wholly owned subsidiary of Saracen Mineral Holdings Limited.
	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.	The tenements are in good standing and the licence to operate already exists
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	Pennzoil carried out limited exploration in the Tin Dog project area in the early 1980's consisting of mapping, rock chip sampling and RAB drilling. Results were not encouraging and the project was relinquished. Billiton acquired the ground and carried out soil sampling and RAB drilling and identified broad zones of low grade mineralisation before entering into a JV with Newmont. RAB, RC and diamond drilling along with geophysics and surface sampling were completed. Goldfields Exploration entered into the Keith-Kilkenny JV and carried out RAB and RC drilling to confirm the continuity of mineralisation associated with the shearing and synenites in the area. They found the results to be disappointing and sold the project area to Sons of Gwalia. Further drilling and geophysics were carried out before St Barbara acquired the ground upon the collapse of Sons of Gwalia.
Geology	*Deposit type, geological setting and style of mineralisation.*	Mineralisation occurs in close proximity to the felsic/intermediate volcanic and syenite contact that are intercalated with carbonaceous shales, along with minor BIF and chert. A wide variety of quartz dominated vein and veinlet types are associated with gold mineralisation
Drillhole 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:* • *easting and northing of the drill hole collar* • *elevation or RL (Reduced Level – elevation* • *above sea level in metres) of the drill hole collar* • *dip and azimuth of the hole* • *down hole length and interception depth* • *hole length.* • *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.*	It is not practical to summarise all of the holes deemed material in this release. Exclusion of the drilling information will not detract from the reader's view of the report. Future drill hole data will be periodically released or when a results materially change the economic value of the project.
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 significant intercepts have been length weighted with a minimum Au grade of 1ppm. No high grade cut off has been applied.

Section 2: Reporting of Exploration Results		
Criteria	JORC Code Explanation	Commentary
	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 with minimum width of 1m and maximum width of 3m for internal dilution. Where stand out higher grade zone exist with in 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.	There are no metal equivalents reported in this release.
Relationship between mineralisation widths and intercept lengths	*These relationships are particularly important in the reporting of Exploration Results.* *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* *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').*	Previous announcements included sufficient detail to clearly illustrate the geometry of the mineralisation and the recent drilling. All results were reported as downhole lengths.
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.*	All significant exploration results released by Saracen are accompanied by the appropriate diagrams and maps at the time of the release.
Balanced Reporting	*Where comprehensive reporting of all Exploration Results are not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	All results from the drilling campaigns have been reported, irrespective of success or not
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 substantive data acquisition has been completed in recent times.
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).* *Diagrams clearly highlighting the areas of possible extensions, including the main geological*	In the current economic climate, exploration activities at Tin Dog have been given a lower priority.

Section 2: Reporting of Exploration Results		
Criteria	JORC Code Explanation	Commentary
	interpretations and future drilling areas, provided this information is not commercially sensitive	

Section 3: Estimation and Reporting of Mineral Resources		
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.*	Saracen utilises AcQuire software on an SQL server database to securely store and manage all drillhole and sample information. Data integrity protocols are built into the system to ensure data validity and minimise errors.
	Data validation procedures used.	95% Data for this deposit was inherited from SOG's database during the acquisition in 2006. This data was imported into the Saracen AcQuire Database and in the process was validated by internal processes and systems. The process was overseen by the Database Administrator. Data collected by Saracen personnel that is captured in the field is entered into Excel templates which are checked on import into the 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.
Site Visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.*	There have been no recent visits to the Tin Dog deposit by the competent person. Exploration personnel and geological managers have covered the ground since its acquisition from SOG's in 2006, and the resource was updated in 2010 to reflect their findings.
	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.*	The resource category of Inferred was assigned to the whole model as it directly reflects the confidence in the geological interpretation that is built using mineral, and alteration geology obtained from mapping, logging, (50mN x 25mE to 100mN x 25mE drill spacing), drill results and geophysics.
	Nature of the data used and any assumptions made.	The geological interpretation and delineation of the mineralisation was predominantly constructed by grade and where possible alteration type, alteration intensity and veining. A cut-off grade of 0.25g/t was used to delineate the ore zones. Magnetic geophysical surveys and mapping also assisted in the interpretation of Tin Dog Cross sectional interpretations of the mineralisation have been created and from this basic framework a 3D wireframe solid is built.
	The affect, if any, of alternative interpretations on Mineral Resource estimation.	Over the life of the project several different sources have interpreted the mineralisation and all agree on the same basic interpretation.
	The use of geology in guiding and controlling the Mineral Resource estimation.	Mineralisation occurs in close proximity to the felsic/intermediate volcanic and syenite contact that are intercalated with carbonaceous shales, along with minor BIF and chert. A wide variety of quartz dominated vein and veinlet types are associated with gold mineralisation. Such geological details influence the domaining that controls the mineral resource estimation.
	The factors affecting continuity both of grade and geology.	On the lease M3900588, a lack of drilling affects confidence in geological and grade continuity.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	**JORC Code Explanation**	**Commentary**
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.*	Tin Dog mineralisation extends from 49800mN to 51000mN, 49400mE to 50800mE and to 300 meters below surface; however Saracen has only reported the metal located on the lease M3900588. This is the northern extent of the deposit. The lodes in lease M3900588 vary in orientation from a North – South to NW-SE strike, dipping steeply to moderately to the west or gently to the east following structural and lithological controls.
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.*	The estimation of Tin Dog was completed using all data available including that information from the JV lease. Block estimation has been completed in Datamine software. All wireframes have been constructed in Micromine and were used as hard boundaries for the estimation. Estimation of parent blocks are interpolated with block discretisation points set to 5 x 5 x 5. The maximum distance of extrapolation is less than 150m. Univariate statistical analysis of length weighted, (1m), domain coded downhole composites have been completed for all domains and top-cuts applied where applicable. Minor clusters of high grades were apparent in the data set and the lodes were analysed individually to determine specific top-cut values. Only RC data was used, negative Au grades replaced with a value of 0.001g/t, null assays were excluded from the sample data. Unfolding was carried out prior to variography and interpolation to remove the variable dip and strike typically associated with the mineralised domains. Variogram modelling was completed with GeoAccess Professional software. This defined the sample continuity with in the domains. The parameters determined from this analysis were used in the interpolation process.
	The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.	As an inferred resource there has been no production reported for the Tin Dog deposit on the lease M3900588.
	The assumptions made regarding recovery of by-products.	No assumptions have been made with respect to the recovery of by-products.
	Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulfur for acid mine drainage characterisation).	There has been no estimate at this point of deleterious elements. Saracen is unaware if any elements other than gold have been assayed.
	In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.	The parent block sizes for the resource model are X (5m) by Y (10m) by Z (5m). Globally these are reasonable for this Inferred only resource, where drill spacing is in the order of 50mN x 25mE to 100mN x 25mE. Mining selectivity and mineralised lode geometry also influenced the estimation block size. Parent blocks have been sub-celled to X (1m) by Y (1m) by Z (1m) to ensure that the wireframe boundaries are honoured and preserve the location and shape of the mineralisation. Search ranges have been informed by variogram modelling and knowledge of the drill spacing and the known mineralisation geometry including direction of maximum continuity. Three search estimation runs were used with the aim to satisfy the minimum sample criteria in the first search range where possible.
	Any assumptions behind modelling of selective mining units.	No selective mining units have been assumed.
	Any assumptions about correlation between variables.	No assumptions have been made regarding correlation between variables.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	**JORC Code Explanation**	**Commentary**
	Description of how the geological interpretation was used to control the resource estimates.	The geological interpretation correlates with the mineralised domains. All wireframe boundaries including those where lithology and mineralisation correspond, hard boundaries are enforced. There were no internal geological features identified that could help shape the estimation.
	Discussion of basis for using or not using grade cutting or capping.	Individual analysis of the domains indicates small clusters of high grade outliers for 5 out of Tin Dog's 16 domains. Top-cuts have been employed to eliminate the risk of overestimating in the local areas and bring those outliers in line with the majority of the population.
	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 key model validation steps have been taken to validate the resource estimate. The mineral resource model has been stepped through visually in sectional and plan view to appreciate the composite grades used in the estimate and the resultant block grades. Easting, Northing and Elevation swathe plots have been constructed to evaluate the composited assay means and declustered mean versus the mean block estimates. These showed good agreement. QQ and scatter plots for the averaged sample data vs. block model results were completed and showed a slight yet expected deviation from the 45° line. Moving from sample size data to a much bigger volume resulted in a slight overstatement of the low grades and an understatement of high grades.
Moisture	*Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	All tonnages are estimated on a dry basis.
Cut-off parameters	*The basis of the adopted cut-off grade(s) or quality parameters applied.*	Based on Saracen's current economic profile, and the natural grade distinction above background, a grade of 0.8/t has been chosen
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.*	At this stage there have been no mining assumptions or factors for the Tin Dog deposit on lease M3900588. There are reasonable grounds to assume that in the future this deposit will be mined by conventional open pit methods given the close proximity to surface of the mineralisation. To best capture "reasonable prospects for eventual economic of extraction", the mineral resource was reported within an optimised pit shell at $2250 at a 0.5g/t cut off for the open pit resources.
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 process 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.*	At this stage of the project there has been no metallurgical testing.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	**JORC Code Explanation**	**Commentary**
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 greenfields 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.*	Environmental considerations are captured by Program of Work (PoW) requirements. Operations on these tenements are purely exploratory in nature to date.
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 density values applied to the Tin Dog estimation were based on historic density measures for similar lithological units in the same geological zones. At this stage there is no new Bulk Density data collected and measured by Saracen.
	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.	It is unknown how the historic bulk densities were measured. Any future bulk density measurements will follow the Saracens Metals standardised procedures.
	Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	Density values are allocated uniformly to each lithological and regolith type. 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 mineral resource has been classified as an Inferred category only, based on the variable drill spacing and the lower confidence in geological continuity.
	Whether appropriate account has been taken of all the 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 care has been taken to account of all available relevant information that could influence the mineral resource estimate.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The geological model and the mineral resource estimate reflect the competent person's view of the deposit.
Audits or reviews	*The results of any audits or reviews of Mineral Resource estimates.*	There has been no new information or updates of the 2010 Tin Dog mineral resource which was reported according to the 2004 JORC standards. Due to the simplicity of the deposit, no external audits have been conducted at this stage.
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*	Saracen Gold Mine uses a standard approach to resource estimation and the procedure requires the systematic completion of the Saracen Resource Estimation Document that is thoroughly investigated and assessed. It was identified that; Further work on KNA for block size, minimum and maximum number of samples, search ellipses would help to further improve the optimisation of the block model.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC Code Explanation	Commentary
	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.	It is recommended to use optimised pit shells or designs as a guide to create drilling programmes that maximise the conversion from inferred to indicated category. And it is recommended to initiate a bulk density programme with sufficient samples from the oxide and transitional layer to test the assumed values used in the estimate.
	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 statements relate to a global estimate of tonnes and grade.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	Mining production has not ensued at the Tin Dog Deposit on lease M3900588.

Crimson Belle

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
Sampling Techniques	*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.*	Saracen has undertaken reverse circulation drilling (RC) at Crimson Belle. Historic methods conducted since 1984 have included aircore (AC), rotary air blast (RAB), reverse circulation and diamond drillholes.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used	Sampling for RC drilling was carried out as specified within Saracen sampling and QAQC procedures as per industry standard. RC chips provide high quality representative samples for analysis. RC, RAB, AC and DD core drilling was completed by previous holders to industry standard at that time (1984- 2000).
	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 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information	RC chips were cone split and sampled into 1m intervals with total sample weights less than 3 kg. Samples were selected to weigh less than 3 kg to ensure total sample inclusion at the pulverisation stage. Saracen chip samples were crushed, dried and pulverised to a nominal 90% passing 75 microns to produce a 50g sub sample for analysis by FA/AAS. Historical AC, RAB, RC and diamond sampling was carried out to industry standard at that time. Analysis methods include fire assay, aqua regia and unspecified methods.
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 deposit was initially sampled by 9 AC holes, 19 RAB holes, 232 RC holes (assumed standard 5 ¼ ''bit size) and 3 surface diamond unknown diameter holes. Saracen has completed 28 RC drillholes utilising a 5 ¼ '' face sampling hammer. It is unknown if historic diamond drill core was oriented.
Drill Sample Recovery	*Method of recording and assessing core and chip sample recoveries and results assessed*	RC sampling recoveries were recorded as a percentage based on a visual weight estimate; no historic recoveries have been recorded.
	Measures taken to maximise sample recovery and ensure representative nature of the samples	During RC campaigns daily rig inspections are carried out to check splitter condition, general site and address general issues. Historic AC, RAB, RC and diamond drilling to industry standard at that time.
	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.	There is no known relationship between sample recovery and grade for RC drilling. Any historical relationship is not known.
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.*	Logging of RC chips recorded lithology, mineralogy, texture, mineralisation, weathering, alteration, veining and other features. Chips from all RC holes were stored in chip trays for future reference. Qualitative and quantitative logging of historic data varies in its completeness.

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	
	The total length and percentage of the relevant intersections logged	All exploration RC holes were logged in full. Historical logging is complete.
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.*	Saracen has not carried out diamond drilling at Crimson Belle. Historic diamond drilling has been sampled via unknown methods.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	All exploration RC samples were cone split. Occasional wet samples were encountered; increased air capacity was routinely used to aid in keeping the sample dry when water was encountered. Historic AC, RAB and RC drilling was sampled using spear, riffle and unknown methods.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	The sample preparation of RC chips adhered to industry best practice. It was conducted by a commercial laboratory and involved oven drying, coarse crushing then total grinding to a size of 90% passing 75 microns. Best practice is assumed at the time of historic sampling.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	All subsampling activities were carried out by commercial laboratory and are considered to be satisfactory. Sampling by previous holders assumed to be industry standard at the time.
	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.	Duplicate sampling was carried out at a rate of 1:10 for exploration drilling, with the duplicate being sampled directly from the on-board splitter on the rig. These were submitted for the same assay process as the original samples and the laboratory were unaware of such submissions. Sampling by previous holders assumed to be industry standard at the time.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Sample sizes are considered to be appropriate given the grainsize (90% passing 75 microns) of the material sampled.
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.*	RC chip samples were analysed by external laboratories using a 50g fire assay with AAS finish. This method is considered suitable for determining gold concentrations in rock and is a total digest method. Historic sampling includes fire assay, aqua regia and unknown methods.
	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 have been utilised for reporting gold mineralisation at Crimson Belle.
	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.	Certified reference material (standards and blanks) with a wide range of values were inserted into every drillhole at a rate of 1:25 for exploration RC drilling. These were not identifiable to the laboratory. QAQC data returned were checked against pass/fail limits within the SQL database and were passed or failed on import. A report was generated and reviewed by the geologist as necessary upon failure to determine further action. QAQC data was reported monthly. Sample preparation checks for fineness are carried out to ensure a grindsize of 90% passing 75 microns. The laboratory performed a number of internal processes including standards, blanks, repeats and checks. QAQC data analysis demonstrates sufficient accuracy and precision. Industry best practice is assumed for previous holders.
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.*	Significant intercepts are verified by the Geology Manager and corporate personnel.
	The use of twinned holes.	No specific twinned holes have been drilled at Crimson Belle.

Section 1: Sampling Techniques and Data		
Criteria	JORC Code Explanation	Commentary
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols	Primary data was collated in a set of excel templates utilising lookup codes. This data was forwarded to the Database Administrator for entry into a secure acQuire database with inbuilt validation functions. Data from previous owners was taken from a database compilation and validated as much as practicable before entry into the Saracen acQuire database.
	Discuss any adjustment to assay data.	No adjustments have been made to assay data. First gold assay is utilised for resource estimation.
Location of data points	*Accuracy and quality of surveys used to locate drillholes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.*	Exploration drillholes were located using a Leica 1200 GPS with an accuracy of +/- 10mm. Downhole surveys were carried out using an electronic multishot tool at 5m intervals. Previous holders' survey accuracy and quality is unknown
	Specification of the grid system used.	A local grid system (CamelBack) is used. The two point conversion to MGA_GDA94 zone 51 is CBEast CBNorth RL MGAEast MGANorth RL Point 1 8000 5775 0 433743.35 6764980.48 0 Point 2 8000 6249.75 0 433633.80 6765442.59 0 Historic data is converted to the CamelBack local grid upon export from the database.
	Quality and adequacy of topographic control.	Topographic control originally used site based survey pickups in addition to Kevron aerial photogrammetric surveys with +/- 5m resolution.
Data spacing and distribution	*Data spacing for reporting of Exploration Results.*	The nominal spacing for exploration drilling is 40m x 20m drilling pattern, grading to a 50m x 30m to 50m x 50m patterns at depth.
	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.	Data spacing and distribution are sufficient to establish the degree of geological and grade continuity appropriate for JORC classifications applied.
Orientation of data in relation to geological structure	*Whether sample compositing has been applied.*	Sample compositing is not applied until the estimation stage. Some historic RAB and RC sampling was composited into 3-4m samples.
	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 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.	No significant sampling bias is thought to occur due to orientation of drilling in regards to mineralised structures.
Sample security	*The measures taken to ensure sample security.*	Samples were prepared on site under supervision of Saracen geological staff. Samples were selected, bagged into tied numbered calico bags then grouped into secured cages and collected by the laboratory personnel. Sample submissions are documented via laboratory tracking systems and assays are returned via email
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	An internal review of companywide sampling methodologies was conducted to create the current sampling and QAQC procedures.

Section 2: Reporting of Exploration Results		
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 Crimson Belle resource is located on M39/120. Near mine exploration has been carried out on M39/118 and E39/1410. The tenements are held 100% by Saracen Gold Mines Pty Ltd, a wholly owned subsidiary of Saracen Mineral Holdings Limited. Mining Leases M39/118 and M39/120 have a 21 year life (held until 2030) and are renewable for a further 21 years on a continuing basis. Exploration Licence 39/1410 expires in 2019 with further yearly extensions of term permissible on a continuing basis. Mining Lease M39/118 is subject to three royalty agreements and three associated caveats (1154H/967, 136H/067 and 323783). Mining Lease M39/120 is subject to three royalty agreements and two associated caveats (138H/067 and 323785). Exploration Licence E39/1410 is subject to one royalty and one associated caveat (410509). All production is subject to a Western Australian state government NSR royalty of 2.5%. Mining Leases M39/118 and M39/120, and Exploration Licence E39/1410 are subject to the Yundamindera Pastoral Compensation Agreement. Mining Lease 39/120 contains four Aboriginal Heritage sites (Place ID 21755, 21756, 21903, 21904). Mining Lease 39/118 contains three Aboriginal Heritage sites (Place ID 21753, 21902, 21903)
	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.	The tenements are in good standing and there are no known impediments to obtaining a licence to operate.
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	The Camelback prospect, in near vicinity to Crimson Belle, was discovered by WMC in the 1970's through a rock chip campaign. Drilling was initially carried out in 1984 and intersected variable gold grades. Further drilling and geochemical activities were continued through the 1980's and 1990's by WMC, Windarra Nickel, Consex, Newmont, Dominion, Plutonic and Mount Burgess. Drilling carried out by Sons of Gwalia in 1995 following their JV with Mount Burgess delineated the Crimson Belle resource.
Geology	*Deposit type, geological setting and style of mineralisation.*	Gold mineralisation at Crimson Belle is hosted within a 15-30m wide shear zone dipping 50-80 degrees to the east, within a sedimentary sequence containing abundant chert. Mineralisation occurs in five lodes associated with quartz-sulphide veining hosted within the silicified gossanous chert and extends for approximately 700m along a north-south strike.
Drillhole 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:* • *easting and northing of the drill hole collar* • *elevation or RL (Reduced Level – elevation* • *above sea level in metres) of the drill hole collar* • *dip and azimuth of the hole* • *down hole length and interception depth* • *hole length.* • *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*	All material data is periodically released on the ASX: 25/01/2013. Future drill hole data will be periodically released or when a results materially change the economic value of the project. Exclusion of the drilling information will not detract from the reader's view of the report.

Section 2: Reporting of Exploration Results		
Criteria	**JORC Code Explanation**	**Commentary**
	the report, the Competent Person should clearly explain why this is the case.	
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 significant intercepts have been length weighted with a minimum Au grade of 1ppm. No high grade cut off has been applied.
	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 with minimum width of 1m and maximum width of 3m for internal dilution. Where stand out higher grade zone exist with in 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.	There are no metal equivalents reported in this release.
Relationship between mineralisation widths and intercept lengths	*These relationships are particularly important in the reporting of Exploration Results.* *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* *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').*	This announcement includes sufficient detail to clearly illustrate the geometry of the mineralisation and the recent drilling. All results are reported as downhole lengths. This remains consistent with previous announcements.
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.*	All significant exploration results released by Saracen are accompanied by the appropriate diagrams and maps at the time of the release.
Balanced Reporting	*Where comprehensive reporting of all Exploration Results are not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	All results from the last campaign have been reported, irrespective of success or not.
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 substantive data acquisition has been completed in recent times.

Section 2: Reporting of Exploration Results		
Criteria	**JORC Code Explanation**	**Commentary**
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).* *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive*	Crimson Belle is a prospective resource with exploration potential. Further Exploration activity for this deposit is currently under review.

Section 3: Estimation and Reporting of Mineral Resources		
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.*	Saracen utilises AcQuire software on an SQL server database to securely store and manage all drillhole and sample information. Data integrity protocols are built into the system to ensure data validity and minimise errors.
	Data validation procedures used.	Data that is captured in the field is entered into Excel templates which are checked on import into the 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.
Site Visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.*	At the time of exploration and review (2010) of the deposit, the Competent Persons visited the geological area frequently to assess geological competency and 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.*	A combination of exploration mapping, geophysical surveys, both exploration and grade control drill hole information and geological data, including mapping, has resulted in a reasonable geological interpretation.
	Nature of the data used and any assumptions made.	The interpretations have been constructed using all available geological logging descriptions including but not limited to, stratigraphy, lithology, texture, and alteration. Most information was obtained from drill hole results and some historic mapping. There is strong correlation between mineralisation and the BIF unit. This was used as the main driver for the interpretation.
	The affect, if any, of alternative interpretations on Mineral Resource estimation.	Due to the simplicity of the model, there are no alternative models at this stage.
	The use of geology in guiding and controlling the Mineral Resource estimation.	The geology has heavily influenced the extent of the domains controlling the mineral resource estimation. Gold mineralisation occurs within the Crimson Belle deposit as a wide variety of vein and veinlet types within a NNW-striking and west-dipping sequence of sandstone, siltstone, shale and cherty banded iron formation (BIF), (although basalt and ultramafic schist have been intersected in some drillholes). The main mineralisation is confined to the BIF unit and is characterised by NNW strike and 50° – 80° easterly dip. All mineralised domains were wireframed with hard boundaries. The wireframes for the current model were generated in Leapfrog utilising interval selection based on a cut-off of 0.25 g/t of gold the drillholes. The continuity of

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	**JORC Code Explanation**	**Commentary**
		grade is largely related to the occurrence of BIF, and AU mineralisation is found within it and close to other rock type contacts. Internal waste was domained out where possible. The geological interpretation indicates mineralisation is continuous and still open at depth and along strike.
	The factors affecting continuity both of grade and geology.	
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.*	A total of 21 sections at 40m spacing were interpreted from 10,150N to 10,920N, 4500mE to 5100mE, covering the extent of the mineralisation in Crimson Belle deposit area. The interpretation and wireframes were generated based on a 40m × 15m and 40m × 20m exploration drilling patterns.
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.*	A conventional 3D Ordinary Kriging (OK) modelling technique has been used. The modelling technique is suitable to the domains being estimated allowing reasonable expectation of mining selectivity across the mineralised domain. All compositing, wireframes, surfaces, rock/domain models and OK estimation were completed in Micromine. All estimation uses these wireframes as hard boundaries. Estimation of parent blocks are interpolated, and assigned to sub-cells. The maximum distance of extrapolation is less than 50m. Univariate statistical analysis of length weighted, (1m), domain and regolith coded downhole composites have been completed for all domains. Over 95% of the sample data used in the estimation was 1m in length with the average for the entire sample set at 1.00m. Composites were broken where there was a change of mineralisation domain code or regolith code. For each domain, log probability plots identified clusters of higher grade outliers that could bias the mean. High grade outliers were used to determine specific top-cut values for each domain. Estimations used only RC and Diamond Drill results; negative Au grades were replaced with a value of 0.001g/t, and null assays were excluded from the sample data. Variogram modelling was completed with Snowden Supervisor software. This defined the sample continuity and nugget value for each domain. Nugget effect in the major domains is typically 33% to 43%. Major ranges varied from 50 to 60m's, with a limited range across the mineralisation of typically 7 to 10m. Down plunge ranges can be limited to 22 to 30m's in some cases. The majority of the mineralised domains have data spacing that is well within the variogram ranges. The parameters determined from this analysis were used in the interpolation process.
	The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.	A comparative OK estimate was completed in Datamine. No significant variance between estimations was observed. The concerted effort to domain out internal waste zones relative to the current geological interpretation resulted in a 6% reduction in ore tonnes reciprocal 6% increase in the grade. Overall metal remained the same.
	The assumptions made regarding recovery of by-products.	No assumptions have been made with respect to the recovery of by-products.
	Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulfur for acid mine drainage characterisation).	There has been no estimate at this point of deleterious elements. Saracen is unaware if any elements other than gold have been assayed.
	In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.	The parent block sizes for the resource model are X (10m) by Y (20m) by Z (10m). Drillhole data spacing, mining selectivity and mineralised lode geometry are among the primary considerations for the determination of an appropriate estimation block size confirmed by kriging neighbourhood analysis (KNA) completed in Snowden Supervisor. Drilling data at Crimson Belle is primarily on a 40 x 20 metre drilling pattern, grading to a 50 x 30 to 50 x 50 metre patterns at depth.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC Code Explanation	Commentary
		Parent blocks have been sub-celled to X (1.0m) by Y (2.0m) by Z (1.0m) to ensure that wireframe boundaries were honoured and mineralisation geometry and contacts preserved. Search ranges have been informed by variogram modelling and knowledge of the drill spacing and the known mineralisation geometry including direction of maximum continuity Three search estimation runs are used with the aim to satisfy the minimum sample criteria in the first search range where possible. First pass searches in all domains were set to 80% of the range expanding out to the full range on the second pass. A third search at three times the range was completed to estimate all residual material however this was taken into account during resource classification. Full ranges for all domains in the major direction were between 50 to 60m's, semi major 22 to 30m's, and 7 to 10m's in the minor direction.
	Any assumptions behind modelling of selective mining units.	No selective mining units have been assumed.
	Any assumptions about correlation between variables.	No assumptions have been made regarding correlation between variables.
	Description of how the geological interpretation was used to control the resource estimates.	The geological interpretation strongly correlates with the mineralised domains. Hard wireframes were used to define all the mineralised domains.
	Discussion of basis for using or not using grade cutting or capping.	Linear interpolation methods such as Ordinary Kriging are sensitive to the presence of high-grade outliers that positively skew the data and bias the mean. Domain histogram and Log probability plots were used to determine appropriate top cuts for each domain. Not all domains required top cutting.
	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 key model validation steps have been taken to validate the resource estimate. The mineral resource model has been stepped through visually in sectional and plan view to appreciate the composite grades used in the estimate and the resultant block grades. The mean average composite grade and block model grade by deposit and domain were compared. QQ and scatter plots for the averaged sample data vs. block model results were also plotted. Easting, Northing and Elevation swathe plots have been constructed to evaluate the declustered composited assay means versus the mean block estimates. Global change of support graphs were completed for domains containing sufficient samples.
Moisture	*Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	All tonnages are estimated on a dry basis.
Cut-off parameters	*The basis of the adopted cut-off grade(s) or quality parameters applied.*	Based on Saracen's current economic status the natural grade distinction above background for the Crimson Belle deposit was at a grade of 0.8g/t.
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 Crimson Belle deposit is amenable to mining by open pit methods. There has not been any serious mining at Crimson Belle. There are reasonable grounds to assume that in the future this deposit will be mined by conventional open pit methods given the close proximity of the mineralisation to surface.

Section 3: Estimation and Reporting of Mineral Resources		
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 process 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.*	Limited metallurgical information is available for Crimson Belle. Metallurgical testing of a transition/fresh composite shows gravity recovery of 73% and total recovery of 79%.
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 greenfields 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.*	Environmental considerations are captured by Program of Work (PoW) requirements. Operations on these tenements are purely exploratory in nature to date.
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 density values applied to the Crimson Belle Deposit estimation are largely based on historic density measures from similar rock types known to the geological area.
	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.	It is unknown how the historic bulk densities were measured. Any future bulk density measurements will follow the Saracen's standardised procedures.
	Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	Density values are allocated uniformly to each lithological and regolith type. 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.*	Information from the estimation process, including search pass, number of composites used in the search ellipse, Kriging variance and Kriging efficiency are all used in conjunction with drill spacing to finalise classification domains. Crimson Belle was classified into Indicated, Inferred and unclassified categories according to the 2012 JORC Code.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC Code Explanation	Commentary
	Whether appropriate account has been taken of all the 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 care has been taken to account for relevant factors influencing the mineral resource estimate. The diligent Saracen Metals Resource review process ensures that data reliability and geological and metal confidence and continuity are reflected in the resource classification.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The geological model and the mineral resource estimate reflect the competent person's view of the deposit.
Audits or reviews	*The results of any audits or reviews of Mineral Resource estimates.*	This model was reviewed at the time of completion to the JORC 2012 standards. At the time the quality of the estimate was deemed appropriate and robust as a global estimate. Saracen Metals 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 and global change of support comparisons. Due to its simple geological geometry, external audits were deemed unnecessary at the time.
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 established in the 2012 edition of the JORC code. A standardised approach has been implemented for this estimation and the result is a robust model with appropriately defined resource categories. The validation process is also thorough suggesting the estimate has a reasonable level of confidence. The resource estimate is good global estimate however locally there is room for improvement particularly in the selection of optimal block size. The review of the estimate identified that further testing on the bulk density values and additional field mapping to confirm shoot trends is required in conjunction with an infill drill program to increase confidence in local estimates and model quality.
	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 statements relate to a global estimate of tonnes and grade.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	An historic pit (quarry) exits over Crimson Belle, however there is no link to historic production.

Butcher Well

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
Sampling Techniques	*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.*	Sampling methods undertaken by Saracen in the Butcher Well project area have included reverse circulation (RC) and RC grade control drilling within two pits. Historic methods conducted since 1988 have included aircore (AC), rotary air blast (RAB), reverse circulation and diamond drillholes.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used	Sampling for RC exploration and grade control drilling was carried out as specified within Saracen sampling and QAQC procedures as per industry standard. RC chips provide high quality representative samples for analysis. RC, RAB, AC and DD core drilling was completed by previous holders to industry standard at that time (1988- 2004).
	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 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information	RC chips were riffle or cone split and sampled into 1m intervals with total sample weights less than 3kg. Samples were selected to weigh less than 3 kg to ensure total sample inclusion at the pulverisation stage. Saracen chip samples were crushed, dried and pulverised to a nominal 90% passing 75µm to produce a 40g or 50 g sub sample for analysis by FA/AAS. Historical AC, RAB, RC and diamond sampling was carried out to industry standard at that time. Analysis methods include fire assay, aqua regia, atomic absorption spectroscopy and unspecified methods.
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 project area was initially sampled by 130 AC holes, 800 RAB holes, 1404 RC holes (assumed standard 5 ¼ ''bit size) and 49 surface diamond core HQ, NQ, PQ and unknown diameter holes. Saracen has completed 172 surface RC holes and 159 grade control RC holes within the Sizzler and Old Camp pits. It is unknown if historic diamond drill core was oriented.
Drill Sample Recovery	*Method of recording and assessing core and chip sample recoveries and results assessed*	RC sampling recoveries were recorded as a percentage based on a visual weight estimate; no historic recoveries have been recorded.
	Measures taken to maximise sample recovery and ensure representative nature of the samples	During RC exploration and grade control campaigns daily rig inspections were carried out to check splitter condition, general site and address general issues. The sample bag's weight versus bulk reject weight was compared to ensure adequate and even sample recovery. Historical AC, RAB, RC and diamond drilling to industry standard at that time.
	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.	There is no known relationship between sample recovery and grade for RC drilling. Any historical relationship is not known.
Logging	*Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support*	Logging of RC chips records lithology, mineralogy, texture, mineralisation, weathering, alteration, veining and other features. Chips from all RC holes (exploration and GC) are stored in chip trays for future reference.

Section 1: Sampling Techniques and Data		
Criteria	JORC Code Explanation	Commentary
	appropriate Mineral Resource estimation, mining studies and metallurgical studies. *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.*	Qualitative and quantitative logging of historic data varies in its completeness.
	The total length and percentage of the relevant intersections logged	All exploration RC holes were logged in full. Every second drill line was logged in grade control programs with infill logging carried out as necessary. Historical logging is approximately 95% complete.
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.*	Saracen has not completed any diamond drilling at Butcher Well. Historic diamond drilling was quarter core sampled or sampled via unknown methods.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	All exploration and grade control RC samples were cone or riffle split. Occasional wet samples were encountered; increased air capacity was routinely used to aid in keeping the sample dry when water was encountered. Historic AC, RAB and RC drilling was sampled using spear, grab, riffle and unknown methods.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	The sample preparation of RC chips adhered to industry best practice. It was conducted by a commercial laboratory and involved oven drying, coarse crushing then total grinding to a size of 90% passing 75 microns. Best practice is assumed at the time of historic sampling
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	All subsampling activities were carried out by commercial laboratory and are considered to be satisfactory. Sampling by previous holders assumed to be industry standard at the time.
	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.	Duplicate sampling was carried out at a rate of 1:10 for exploration drilling and 1:20 for GC drilling and was sampled directly from the on-board splitter on the rig. These were submitted for the same assay process as the original samples and the laboratory were unaware of such submissions. Sampling by previous holders assumed to be industry standard at the time.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Sample sizes are considered to be appropriate give n the grainsize (90% passing 75 microns) of the material sampled.
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.*	RC chip samples and grade control chip samples were analysed by external laboratories using a 40g or 50g fire assay with AAS finish. These methods are considered suitable for determining gold concentrations in rock and are total digest methods. Historic sampling includes fire assay, aqua regia, atomic absorption spectroscopy and unspecified methods
	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 have been utilised for reporting gold mineralisation at Butcher Well.
	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.	Certified reference material (standards and blanks) with a wide range of values were inserted into every drillhole at a rate of 1:25 for exploration RC and 1:40 for GC drilling. These were not identifiable to the laboratory. QAQC data returned were checked against pass/fail limits with the SQL database and were passed or failed on import. A report was generated and reviewed by the geologist as necessary upon failure to determine further action. QAQC data was reported monthly. Sample preparation checks for fineness were carried out to ensure a grind size of 90% passing 75 microns. The laboratory performed a number of internal processes including standards, blanks, repeats and checks. QAQC data analysis demonstrates sufficient accuracy and precision. Industry best practice is assumed for previous holders.

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.*	Significant intercepts were verified by the Geology Manager and corporate personnel.
	The use of twinned holes.	Saracen has not drilled any specific twinned holes at Butcher Well but grade control drilling has confirmed the width and grade of previous exploration drilling. Mount Burgess carried out a twinning program to confirm previous (Billiton) results, and test ore zone repeatability.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols	Primary data was collated in a set of excel templates utilising lookup codes. This data was forwarded to the Database Administrator for entry into a secure acQuire database with inbuilt validation functions. Data from previous owners was taken from a database compilation and validated as much as practicable before entry into the Saracen acQuire database
	Discuss any adjustment to assay data.	No adjustments have been made to assay data. First gold assay is utilised for resource estimation.
Location of data points	*Accuracy and quality of surveys used to locate drillholes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.*	Exploration drillholes were located using a Leica 1200 GPS with an accuracy of +/- 10mm. Drillhole collars within the pits and immediate surrounds were picked up by company surveyors using a Trimble R8 GNSS (GPS) with an expected accuracy of +/-8mm. Downhole surveys were carried out using an Eastman single shot or multishot camera at regular intervals (usually 30m). A number of drillholes were also gyroscopically surveyed. Previous holders' survey accuracy and quality is unknown
	Specification of the grid system used.	A local grid system (Butcher Well) is used. The two point conversion to MGA_GDA94 zone 51 is BWEast BWNorth RL MGAEast MGANorth RL Point 1 18877.20 10507.60 0 434331.81 6764334.45 0 Point 2 18698.30 10552.30 0 434147.44 6764339.35 0 Historic data is converted to the Butcher Well local grid upon export from the database.
	Quality and adequacy of topographic control.	Topographic control originally used site based survey pickups in addition to Kevron aerial photogrammetric surveys with +/- 5m resolution.
Data spacing and distribution	*Data spacing for reporting of Exploration Results.*	The nominal spacing for exploration drilling are sufficient to establish the degree of geological and grade continuity
	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.	Data spacing and distribution are sufficient to establish the degree of geological and grade continuity appropriate for JORC classifications applied.
Orientation of data in relation to geological structure	*Whether sample compositing has been applied.*	Sample compositing is not applied until the estimation stage. Some historic aircore, RAB and RC sampling was composited into 3-4m samples with areas of interest re-sampled to 1m intervals. It is unknown at what threshold this occurred.
	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 drillholes were positioned to achieve optimum intersection angles to the ore zone as was 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.	No significant sampling bias was thought to occur due to orientation of drilling in regards to mineralised structures.

Section 1: Sampling Techniques and Data		
Criteria	JORC Code Explanation	Commentary
Sample security	*The measures taken to ensure sample security.*	Samples were prepared on site under supervision of Saracen geological staff. Samples were selected, bagged into tied numbered calico bags then grouped into secured cages and collected by the laboratory personnel. Sample submissions were documented via laboratory tracking systems and assays were returned via email
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	An internal review of companywide sampling methodologies was conducted to create the current sampling and QAQC procedures

Section 2: Reporting of Exploration Results		
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 Butcher Well resources are located on M39/165, M39/166 and M39/230. These tenements are held 100% by Saracen Gold Mines Pty Ltd, a wholly owned subsidiary of Saracen Mineral Holdings Limited. Saracen entered a farm-in agreement with AngloGold Ashanti during 2016 that covers these tenements. Mining Leases M39/165 and M39/166 have a 21 year life and are held until 2030. Mining Lease M39/230 has a 21 year life and is held until 2032. All are renewable for a further 21 years on a continuing basis. Mining Leases M39/165, M39/166 and M39/230 are each subject to two royalty agreements and one associated caveat (139H/067, 140H/067 and 141H/067, respectively). All are subject to a mortgage. All production is subject to a Western Australian state government NSR royalty of 2.5%. Mining Leases M39/165, M39/166 and M39/230 are subject to the Yundamindera Pastoral Compensation Agreement. There are no registered Aboriginal Heritage sites within any of the tenements.
	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.	The tenements are in good standing and the license to operate already exists.
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	Gold exploration over the Butcher Well project area began in 1988 with Billiton embarking on an extensive exploration program including geophysics, costeaning, and RAB, RC and diamond drilling, delineating the Enigmatic, Hronsky and Butcher Well prospects. Mount Burgess purchased the project in 1990 carrying out further diamond and RC drilling, including a twinning program to confirm Billiton results and repeatability of ore zones, and geochemical sampling. Infill drilling resulted in resources being calculated at the Enigmatic, Butcher Well and Hronsky deposits. Mining at the three resources commenced in 1993. Drilling in the vicinity of these deposits led to the delineation of the Old Camp, Marchelayo and Sizzler prospects. Mount Burgess entered into a joint venture with Sons of Gwalia in 1994. Exploration continued in the project area including geochemical sampling, geophysics, RAB, diamond and RC drilling. Sons of Gwalia purchased Mount Burgess' share to wholly control the project in 1999. Reconnaissance RAB and aircore drilling to the north of Butcher well resulted in the discovery of the Jericho prospect, which was confirmed with RC drilling. Exploration activities in the project area continued until Son of Gwalia's collapse and takeover by St Barbara
Geology	*Deposit type, geological setting and style of mineralisation.*	Gold mineralisation at the Butcher Well group of deposits occurs as a wide variety of vein and veinlet types (that are identified in mapping and logging) within the Mount Hornet shear zone. The Butcher Well South deposits (Enigmatic, Hronsky, Sizzler and Old Camp) are controlled by deformed, altered "blocky" basalt on the margins of sheared syenite stocks and dykes and at the contact with mafic schist. The alteration assemblage is carbonate-silica-sericite-

Section 2: Reporting of Exploration Results		
Criteria	JORC Code Explanation	Commentary
		pyrite arsenopyrite. A short distance along strike at Butcher Well North, gold mineralisation occurs with a similar alteration assemblage but is hosted by silicified, commonly brecciated intermediate volcaniclastics.
Drillhole 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:* • *easting and northing of the drill hole collar* • *elevation or RL (Reduced Level – elevation* • *above sea level in metres) of the drill hole collar* • *dip and azimuth of the hole* • *down hole length and interception depth* • *hole length.* • *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.*	All material data is periodically released on the ASX: 27/01/2012, 06/01/2012, 28/07/2011. Future drill hole data will be periodically released or when a results materially change the economic value of the project. Exclusion of the drilling information will not detract from the reader's view 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 significant intercepts have been length weighted with a minimum Au grade of 1ppm. No high grade cut off has been applied.
	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 with minimum width of 1m and maximum width of 3m for internal dilution. Where stand out higher grade zone exist with in 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	There are no metal equivalents reported in this release.
Relationship between mineralisation widths and intercept lengths	*These relationships are particularly important in the reporting of Exploration Results.* *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* *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').*	This announcement includes sufficient detail to clearly illustrate the geometry of the mineralisation and the recent drilling. All results are reported as downhole lengths. This remains consistent with previous announcements
Diagrams	*Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any*	This release illustrates in long section and in cross section views the nature of the drilling and its relationship to the mineralisation.

Section 2: Reporting of Exploration Results		
Criteria	JORC Code Explanation	Commentary
	significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	
Balanced Reporting	*Where comprehensive reporting of all Exploration Results are not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	All results from the recent campaign have been reported, irrespective of success or not
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 substantive data acquisition has been completed in recent times.
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).* *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive*	In the current economic climate, exploration activities at Butcher Well are under review to highlight areas of greatest potential.

Section 3: Estimation and Reporting of Mineral Resources		
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.*	Saracen utilises AcQuire software on an SQL server database to securely store and manage all drillhole and sample information. Data integrity protocols are built into the system to ensure data validity and minimise errors.
	Data validation procedures used.	Data that is captured in the field is entered into Excel templates which are checked on import into the 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.
Site Visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.*	At the time of renewed exploration and mining activities in 2011 & 2012 the Competent Persons visited the geological area to assess geological competency and ensure integrity across all exploration geological disciplines.
	If no site visits have been undertaken indicate why this is the case.	

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	**JORC Code Explanation**	**Commentary**
Geological Interpretation	*Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.*	A combination of well documented historic geology and structural information, exploration mapping, geophysical surveys, sufficient drill hole information and geological data collected during historic production at Butcher Well North, Enigmatic and Old Camp has resulted in a confident geological interpretation.
	Nature of the data used and any assumptions made.	Geological interpretation was centred around historic and where possible in pit mapping that corresponds to grade mineralisation. This helped to define the domains for each deposit. Lithology and where possible alteration type, alteration intensity and veining from drill logs were also utilised. The wireframes for the current model were generated in Micromine based on a cut-off of 0.40 g/t of gold in individual sections of drill holes. The cut-off level reduced internal dilution within domains and also allowed for clearer ore definition from one section to the next creating ore zones of greater continuity. For the purpose of the estimation the data was rotated into the Butcher well local grid to ensure the holes (now east-west) intersected mineralisation at right angles to remove sampling bias.
	The affect, if any, of alternative interpretations on Mineral Resource estimation.	Over time the model for the Butcher well deposit has improved with the gathering of more geological information. The latest iteration is a culmination of all available geological data and this is considered a robust interpretation. Thus alternative interpretations have not been considered at this stage.
	The use of geology in guiding and controlling the Mineral Resource estimation.	The geology has heavily influenced the geometry of the domains controlling the mineral resource estimation. In particular known geological mapping was incorporated into the ore definition process, at Butcher Well, Butcher Well North and Enigmatic (inc North) and helped to define the major cross cutting structures, that displace or truncate the ore. Gold mineralisation at the Butcher Well group of deposits occurs as a wide variety of vein and veinlet types (that are identified in mapping and logging) within the Mount Hornet shear zone. The Butcher Well South deposits (Enigmatic, Hronsky, Sizzler and Old Camp) are controlled by deformed, altered “blocky” basalt on the margins of sheared syenite stocks and dykes and at the contact with mafic schist. The alteration assemblage is carbonate-silica-sericite-pyrite arsenopyrite. A short distance along strike at Butcher Well North, gold mineralisation occurs with a similar alteration assemblage but is hosted by silicified, commonly brecciated intermediate volcaniclastics. All geological information, from historic and current resources was considered and incorporated into the modelling. All mineralised domains were wireframed with hard boundaries.
	The factors affecting continuity both of grade and geology.	Continuity of mineralisation and geology varies by deposit. Butcher well North – NW trending shears terminate the strike extent of the main lodes of this deposit, however Au is remobilised along these NW shears to form less significant domains. Au is also anomalous adjacent to a cross cutting porphyry. Drilling indicates a hiatus of Au mineralisation at 300mRL. Machelayo and Jericho – the strike extents of these deposits could be terminated by similar NW trending shears however the hypothesis are inconclusive due to a lack of drilling. Old camp, Engimatic. Hronsky and Sizzler –these deposits are intricately linked by offsetting shear zones and syenite intrusions, both of which cause anomalous Au near these geological features, but also terminate their strike extents. In all deposits, down dip extents are largely open and untested.
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 Butcher Well gold project hosts a group of gold deposits, including Old Camp, Enigmatic, Hronsky, Enigmatic North, Sizzler, Butcher Well North, Marchelayo and Jericho, all of which are situated within a 4.5Km strike in north-south direction. A total of 185 sections at 25m spacing were interpreted from 8,400mN to 13,350mN.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	**JORC Code Explanation**	**Commentary**
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.*	Block estimation has been completed using Datamine software. All compositing, wireframes, surfaces, rock and domain models were constructed in Micromine. All estimation uses these wireframes as hard boundaries. Estimation of parent blocks are interpolated, and assigned to sub-cells. The maximum distance of extrapolation varies between deposits based on geological confidence and drill density. Where extrapolation was greater than 50m the resource category of Potential (4) came into play and highlighted areas for exploration. Univariate statistical analysis of length weighted, (1m, minimum of 0.3m), domain and regolith coded downhole composites have been completed for all domains. 95% of the sample data used in the estimation is 1m in length. A composite interval of 1m also allowed the differentiation of both the lodes and the high grade zones within the individual lodes. Clusters of higher grade outliers that could bias the mean were identified by domain by the use of log probability plots and/or normal histogram plots. These were used to determine specific top-cut values for each domain. Butcher well North & Machelayo - Estimations used only used RC and Diamond Drill results, with at least 91% of the data being RC. Jericho - Estimations used Diamond, RC and AC drill results, where AC made up 30% of the dataset. As a result this deposit was categorised as Inferred to Potential. Old Camp, Enigmatic, Hronsky & Sizzler – Estimations used combinations of RC, Diamond, and RAB drill results, where RAB made up less than 18% of the dataset for each deposit. Negative assays which were determined to be below detection were replaced with a positive value of 0.001 g/t; Missing assays which were due to incomplete samples, or missing core/chips were left as null samples. These will have no impact on interpolation, and the assumption is that the grade of these missing values is similar to that of neighbouring samples, and that local block interpolation will generate representative estimates based on neighbouring data contained in the search ellipse; Zero grade values were replaced with nulls if determined to be true missing data, or a below detection positive value (0.001) otherwise. Unfolding was carried out prior to variography and estimation to remove the local variances in dip and strike observed in the domains. Variogram modelling was completed with GeoAccess Professional software. This defined the sample continuity and nugget value for each domain. The parameters determined from this analysis were used in the interpolation process.
	The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.	Previous estimates from 2009 were deemed too liberal and unconstrained based upon a simplified geological interpretation and loose resource category boundaries. The current model that utilises all geological information is far more constrained and results are indicative of these changes. 33% of the Indicated tonnes were reallocated to the Inferred category with the recognition that more drilling would be required to improve confidence. On the upside this model highlights great exploration potential.
	The assumptions made regarding recovery of by-products.	No assumptions have been made with respect to the recovery of by-products.
	Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulfur for acid mine drainage characterisation).	There has been no estimate at this point of deleterious elements. Saracen is unaware if any elements other than gold have been assayed.
	In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.	The parent block sizes for the resource model are 10mE × 12.5mN × 5mRL. These are deemed appropriate for the majority of the resource, where drill spacing is in the order of 25m × 12.5m and 25m × 25m and to a 30m x 30m up to 50m x 50m patterns at depth.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	**JORC Code Explanation**	**Commentary**
		Parent blocks have been sub-celled to X (1.0m) by Y (1.25m) by Z (1.0m) to ensure that the wireframe boundaries are honoured and preserve the location and shape of the mineralisation. Search ranges have been informed by variogram modelling and knowledge of the drill spacing and the known mineralisation geometry including direction of maximum continuity. Three search estimation runs are used with the aim to satisfy the minimum sample criteria in the first search range where possible. Minimum number of samples, numbers of drill holes, and search distances were determined by drill pattern spacing, and the geometry of the mineralised lodes. In the southern deposits major mineralisation occurs in relatively thick tabular lodes, often 10 - 20 meters in width, so a minimum of 12 samples per drill hole, in 4 drill holes was selected for the first search pass. The subsequent passes are set to lower minimums while increasing the search distances to find sufficient samples where drilling density decreases. A similar approach to the northern deposits was taken, however due the thin undulating nature of the ore zones the maximum number of samples was increased to 32 and the minimum for the first search pass was dropped to 10. This improved the number of samples obtained in the first pass without a significant increase in negative weights.
	Any assumptions behind modelling of selective mining units.	Subcelling to X (1.0m) by Y (1.25m) by Z (1.0m) allows for the 5m and 10m selective mining units explored as options by Saracens.
	Any assumptions about correlation between variables.	No assumptions have been made regarding correlation between variables.
	Description of how the geological interpretation was used to control the resource estimates.	The geological interpretation strongly correlates with the mineralised domains. Hard wireframes were used to define all the mineralised domains.
	Discussion of basis for using or not using grade cutting or capping.	Linear interpolation methods such as Ordinary Kriging are sensitive to the presence of high-grade outliers that positively skew the data and bias the mean. Domain histogram and Log probability plots were used to determine appropriate top cuts, (if necessary) for every single domain for each deposit.
	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 key model validation steps have been taken to validate the resource estimate. The mineral resource model has been stepped through visually in sectional and plan view to appreciate the composite grades used in the estimate and the resultant block grades. The mean average composite grade and block model grade by deposit and domain were compared. Easting, Northing and Elevation swathe plots have been constructed to evaluate the composited assay means versus the mean block estimates. The mineral resource model has been constructed to include kriging efficiency and the slope of regression values. These values are used to measure the quality of the estimate. Natural deterioration of the quality is observed in areas where data density is lower.
Moisture	*Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	All tonnages are estimated on a dry basis.
Cut-off parameters	*The basis of the adopted cut-off grade(s) or quality parameters applied.*	Based on Saracen's current economic status the natural grade distinction above background for the suite of Butcher well deposits is set at a grade of 0.8g/t.
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*	Extensive Open Pit mining has occurred at the Butcher well deposits. There are reasonable grounds to assume that in the future the remaining resources from the Butcher well suite of deposits will be mined by conventional open pit methods given the close proximity to surface and the mean grade of the mineralisation.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC Code Explanation	Commentary
	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.	
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 process 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.*	Metallurgical investigations identified that high metallurgical recoveries are possible in the oxide & transition zones (>90%) with recovery reducing at depth. Metallurgical testing of primary ores shows the presence of refractory gold. Previous mining/processing of deeper ores by Mount Burgess Mining ceased due to low plant recoveries.
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 greenfields 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.*	No processing or beneficiation of ore expected on these tenements, as ore is hauled to Carosue Dam Mine site for Processing. Waste is characterised by highly dispersive and saline oxide materials, which have been addressed by Waste Dump design. Rehabilitation trials are currently underway to assess the redesign of batter slopes to lower gradients to prevent future erosion. Waste Rock Dump (WRD) monitoring is carried out annually on all WRD's.
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.*	No new Bulk Density data was collected and measured by Saracen at the time of the resource review in 2011. Densities used in the current model are based on data collected by Sons of Gwalia Exploration and Resource Development departments. Data consists of 35 samples collected by regolith zone. The bulk density data was imported into the AcQuire database.
	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.	It is unclear of the exact method used by Sons of Gwalia Exploration to determine bulk density values. Any future density measurements will adhere to Saracens Metals standardised procedures for bulk density testing.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	**JORC Code Explanation**	**Commentary**
	Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	Where bulk density measures are taken an average mean of densities collected for each lithological type is 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 mineral resource has been classified into Indicated, Inferred and Potential categories based on drill hole spacing, drill hole type and quality (in the case of Jericho), geological confidence, and grade continuity and estimation quality. The combination of these factors together guided the hard boundary wireframe used to define the Indicated and Inferred zones. Ore zones outside this wireframe were coded with the possible category of 4. Measured material was not defined for this estimation as QAQC data was lacking from the database.
	Whether appropriate account has been taken of all the 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 care has been taken to account for relevant factors influencing the mineral resource estimate. The diligent Saracen Metals Resource review process ensures that data reliability and geological and metal confidence and continuity are reflected in the resource classification.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The geological model and the mineral resource estimate reflect the competent person's view of the deposit.
Audits or reviews	*The results of any audits or reviews of Mineral Resource estimates.*	Saracen has adopted a process for geological modelling, estimation and reporting of mineral resources that meets high industry standards. At the completion of resource estimation Saracen Metals 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 established in the 2004 edition of the JORC code. Saracen Gold Mine uses a standard approach to resource estimation and the procedure requires the systematic completion of the Saracen Resource Estimation Document that is thoroughly investigated and assessed in the Model review process, as stated above. It was identified that; Comparative bulk density measurements are necessary to confirm SOG's density values. Further work on KNA for block size, minimum and maximum number of samples, search ellipses and declustering of the composite data would help to further improve the optimisation of the block model.
	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 statements relate to a global estimate of tonnes and grade.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC Code Explanation	Commentary
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	The confidence in the model is reflected by the designation of Resource categories. Given the thorough geological analysis of this area and adequate drilling definition, it is a good estimation of all the resources at Butcher well. Jericho, an Inferred resource, has far less drilling and a third of that is AC data. Actual Production from the Sizzler and Old Camp deposits reconciled well with the resource estimate. Sizzler reported a 12% increase in tonnes for a 12% loss in grade for no change in the total ounces. Old Camp reported a 7% increase in total ounces as a result of improved tonnages.

Thunderbox Operations

Thunderbox

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
Sampling Techniques	*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.*	Sampling methods undertaken by Saracen at Thunderbox include diamond drilling (DD), reverse circulation (RC) drilling and underground face chip sampling. Sampling methods undertaken by previous owners have included rotary air blast (RAB), DD and RC drilling and blast hole sampling within the pit. Limited historical data has been provided by previous owners.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used	Sampling for diamond and RC drilling is carried out as specified within Saracen sampling and QAQC procedures as per industry standard. RC chips and diamond core provide high quality representative samples for analysis Historic RC, RAB, and DD core drilling is assumed to have been completed by previous holders to industry standard at that time (1999- 2007).
	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 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information	RC chips are cone split and sampled into 4m or 1m intervals with total sample weights under 3kg Diamond core is NQ or HQ sized, sampled to 1m intervals or geological boundaries where necessary and cut into half core to give sample weights under 3 kg. Underground faces are chip sampled to geological boundaries (0.2-1m). Samples are selected to weigh less than 3 kg to ensure total sample inclusion at the pulverisation stage. Saracen core and chip samples are crushed, dried and pulverised to a nominal 90% passing 75µm to produce a 40g sub sample for analysis by FA/AAS. All historic RAB, RC and DD and sampling is assumed to have been carried out to industry standard at that time. RC grade control drilling was used to obtain 1m samples or 2m composite samples from which 3 kg was pulverised to create a 50g charge for fire assay, while blast hole samples were composited into 2.5m before a 3kg sample was obtained for pulverising to a final 50g charge for fire assay.
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 deposit was initially sampled by 470 RAB holes. Further drilling included 306 RC holes (assumed standard 5 ¼ ''bit size) , 216 HQ, NQ and PQ diamond drillholes , approximately 15,400 blast holes and 2,400 RC grade control holes. Some diamond drilling carried out for geotechnical studies was oriented (the method is unknown), it is unknown if other core was oriented. Saracen completed 119 RC drillholes, 10 diamond geotechnical holes, 65 RC precollar diamond tail drillholes (precollars averaging 122m, diamond tails averaging 351m), 288 underground DD holes, 894 underground faces and 2711 RC grade control holes. The RC drilling was completed with a 5.5 inch diameter bit with a face sampling hammer. The rig was equipped with an external auxiliary booster. Diamond drilling was HQ or NQ diameter. Drill core was oriented utilising an ACT II core orientation tool.
Drill Sample Recovery	*Method of recording and assessing core and chip sample recoveries and results assessed*	Recoveries for RC drillholes and precollars are recorded as a percentage based on a visual weight estimate. Recoveries for some grade control drilling and blast hole sampling have been recorded based on a visual weight estimate. No other recoveries have been provided, it is unknown if they were recorded

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
	Measures taken to maximise sample recovery and ensure representative nature of the samples	During RC drilling daily rig inspections are carried out to check splitter condition, general site and address general issues. Measures were taken to supress groundwater. UG faces are sampled from left to right across the face at the same height from the floor Diamond core is reconstructed into continuous runs on an angle iron cradle for orientation marking. Depths are checked against depth given on the core blocks. Historical drilling is assumed completed to industry standard at that time
	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.	There is no known relationship between sample recovery and grade for RC drilling. Diamond drilling has high recoveries meaning loss of material is minimal. Any historical relationship is not known.
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.* *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.*	Logging of RC chips and diamond drill core records lithology, mineralogy, texture, mineralisation, weathering, alteration and veining. Geotechnical and structural logging is carried out on all diamond holes to record recovery, RQD, defect number, type, fill material, shape and roughness and alpha and beta angles. Chips from all RC holes are stored in chip trays for future reference while remaining core is stored in core trays and archived on site. All faces are photographed and mapped. Core is photographed in both dry and wet state. Qualitative and quantitative logging of historic data varies in its completeness.
	The total length and percentage of the relevant intersections logged	All drillholes completed by Saracen have been logged in full and all faces are mapped.
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.*	All drill core is cut in half onsite using an automatic core saw. Duplicate core samples are quarter cored. Samples are always collected from the same side.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	All exploration RC samples are cone split. Occasional wet samples are encountered. UG faces are sampled using a hammer. The sampling method for historic RAB and RC drilling is unknown. Grade control RC drilling has been cone split while blast hole sampling has been riffle split. Wet drilling was rarely encountered, and extra care was taken to clean the splitter after encountering wet samples. Drillholes in puggy, wet clays were abandoned and redrilled once dewatering of the pit had commenced. Care was taken to adjust the splitter orifice for grade control drilling to ensure the sample weight did not exceed 3kg, meaning no subsampling was needed at the preparation stage.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	The sample preparation of diamond core and RC and face chips adhere to industry best practice. It is conducted by a commercial laboratory and involves oven drying, coarse crushing then total grinding to a size of 90% passing 75 microns. The sampling techniques for historic exploration RAB, RC and DD drilling are unknown, best practice is assumed. The sample preparation of RC grade control drilling and blast hole sampling involved oven drying, coarse crushing and total grinding in an LM5.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	All subsampling activities are carried out by commercial laboratory and are considered to be satisfactory. Best practice is assumed at the time of historic RAB, DD and RC sampling.

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
		Procedures adopted to ensure sample representivity for RC grade control and blast hole sampling included weight analysis to determine split ratio (at least 2 holes per program) and sizing analysis of every 25th sample, with an expected return of 90% passing 75um.
	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.	RC field duplicate samples are carried out at a rate of 1:20 and are sampled directly from the on-board splitter on the rig. These are submitted for the same assay process as the original samples and the laboratory are unaware of such submissions. It is unknown if duplicate sampling was performed on historic exploration RAB, RC and DD drilling. Field duplicates were carried out on RC grade control drilling at a rate of one per hole, collected from the second sample port on the cone splitter. Duplicates were carried out at a rate of 1 in 20 for blast hole sampling.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Analysis of data determined sample sizes were considered to be appropriate.
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.*	RC and UG face chip samples and diamond core are analysed by an external laboratory using a 40g fire assay with AAS finish. This method is considered suitable for determining gold concentrations in rock and is a total digest method. A 50 gram fire assay with AAS finish was used to determine the gold concentration for all grade control samples. This method is considered suitable for determining gold concentrations in rock and is a total digest method. Methods for exploration RC, RAB and DD drilling included fire assay with AAS finish, BAAS and unknown methods.
	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.	The clay mineralogy of the deposit was investigated using PIMA (Portable Infra-red Microscopic Analyser) analysis to assist with geological interpretation. This data was not used in the estimation process.
	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.	Certified reference material (standards and blanks) with a wide range of values are inserted into every drillhole at a rate of 1:25 for exploration RC and DD. These are not identifiable to the laboratory. QAQC data returned are checked against pass/fail limits with the SQL database and are passed or failed on import. A report is generated and reviewed by the geologist as necessary upon failure to determine further action. QAQC data is reported monthly. Sample preparation checks for fineness are carried out to ensure a grindsize of 90% passing 75 microns. The laboratory performs a number of internal processes including standards, blanks, repeats and checks. QAQC data analysis demonstrates sufficient accuracy and precision. Industry best practice is assumed for previous holders.
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.*	Significant intercepts are verified by the Geology Manager and corporate personnel
	The use of twinned holes.	A number of exploration RC holes were drilled to twin original RAB holes and verify results.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols	Primary data is collated in a set of excel templates utilising lookup codes. This data is forwarded to the Database Administrator for entry into a secure acQuire database with inbuilt validation functions. Data from previous owners was taken from a database compilation and validated as much as practicable before entry into the Saracen acQuire database
	Discuss any adjustment to assay data.	No adjustments have been made to assay data. First gold assay is utilised for resource estimation.

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
Location of data points	*Accuracy and quality of surveys used to locate drillholes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.*	Exploration drillholes are located using a Leica 1200 GPS with an accuracy of +/- 10mm. Downhole surveys are carried out using a hired Reflex EZ-gyro by the respective drilling companies on a regular basis, between 10-30m.
	Specification of the grid system used.	MGA Zone 51 grid coordinate system is used
	Quality and adequacy of topographic control.	Kevron Geomatic Services flew and processed aerial photography and provided ortho images at 1:5000 scale over the Thunderbox deposit and environs.
Data spacing and distribution	*Data spacing for reporting of Exploration Results.*	The nominal spacing for drilling is varied from 20mx20m to 40mx40m
	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 drilling is distributed and spaced such that geological and grade continuity can be established to estimate the mineral resource and ore reserve appropriately. The mineralisation is continuous over a 2km strike length, therefore the 80m x 80m exploration drill spacing effectively defines the continuity.
Orientation of data in relation to geological structure	*Whether sample compositing has been applied.*	RC precollar sampling was composted into 4m samples. Historic RAB drilling was sampled with 4m composite samples. Grade control RC drilling was carried out on 2m composite samples, while blast hole sampling was carried out on 2.5m composites.
	Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.	The bulk of the drilling has been oriented to the east in order to provide the best intersection angles possible for the steeply west dipping orebody.
	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.	All drilling from surface has been drilled as close to perpendicular as possible. This has reduced the risk of introducing a sampling bias as far as possible.
Sample security	*The measures taken to ensure sample security.*	Samples are prepared on site under supervision of Saracen geological staff. Samples are selected, bagged into tied numbered calico bags then grouped into secured cages and collected by the laboratory personnel. Sample submissions are documented via laboratory tracking systems and assays are returned via email
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	An internal review of companywide sampling methodologies was conducted to create the current sampling and QAQC procedures. No external audits or reviews have been conducted

Section 2: Reporting of Exploration Results		
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 Thunderbox resource is located on M36/504. There are no native title claims over the Thunderbox deposit. The tenement has a 21 year life (held until 2021), renewable for a further 21 years on a continuing basis. The tenement is held by Saracen Metals Pty Limited, a wholly owned subsidiary of Saracen Mineral Holdings Limited. Mining Lease 37/462 is subject to a Westpac Mortgage (499141). There are no caveats or third party royalties relating to the tenement. All production is subject to a Western Australian state government NSR royalty of 2.5%.

Section 2: Reporting of Exploration Results		
Criteria	**JORC Code Explanation**	**Commentary**
		There are no native title claims over the tenement. The Mining Rehabilitation Fund applies to the tenement.
	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.	The tenements are in good standing and the license to operate already exists.
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	Extensive nickel exploration was undertaken in the area during the 1960s and 1970s. Grassroots gold and PGE exploration was undertaken during and since the 1980s by BHP, Dominion, Dalrymple Resources and Forrestania Gold. Thunderbox was discovered in 1999.
Geology	*Deposit type, geological setting and style of mineralisation.*	Thunderbox is a mesothermal lode gold deposit located at the southern end of the Yandal greenstone belt in an area where several major shear zones converge and join with the Perseverance Fault. The shear zone dips at 30° to 60° WSW, with the exception in the vicinity of the mineralisation, where the shear is vertical to steeply dipping. Mineralisation is hosted by strongly deformed, silicified and carbonate altered albite-quartz porphyry in the hangingwall of the shear zone. The shear juxtaposes foliated basalts and intrusive porphyries in the hangingwall against sedimentary rocks in the footwall. The zone of shearing is over 200m wide. An ultramafic unit occurs within the shear, in the footwall of the deposit and is attenuated along the shear. The main gold related hydrothermal alteration assemblage comprises quartz-ankerite-arsenopyrite-pyrrhotite-galena and gold. This assemblage has been overprinted by a retrograde chlorite-epidote-white mica-biotite-quartz and pyrite assemblage. Syn-mineralisation veins have a continuum of vein textures ranging from laminated to pseudo-breccias. Throughout the Thunderbox Deposit, elevated grades occur within southerly plunging ore shoots that are more evident in the lateral extents of the orebody. Whilst the shoots persist centrally, the gold distribution is for more uniform and ubiquitous than in other areas.
Drillhole 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:* • *easting and northing of the drill hole collar* • *elevation or RL (Reduced Level – elevation* • *above sea level in metres) of the drill hole collar* • *dip and azimuth of the hole* • *down hole length and interception depth* • *hole length.* • *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.*	A total of 3401 holes have been used in the mineral resource and are deemed to be material. It is not practical to summarise all of the holes here in this release. Exclusion of the drilling information will not detract from the reader's view of the report. All material data is periodically released on the ASX: 11/11/2019, 30/7/2019, 30/04/2019, 18/02/2019, 27/11/2018, 31/07/2018, 01/05/2018, 13/07/2017, 21/02/2017, 07/12/2016, 25/11/2015, 29/04/2015, 23/03/2015
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 significant intercepts have been length weighted with a minimum Au grade of 0.5ppm. No high grade cut off has been applied.

Section 2: Reporting of Exploration Results		
Criteria	**JORC Code Explanation**	**Commentary**
	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 with minimum width of 1m and maximum width of 3m for internal dilution.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	There are no metal equivalents reported in this release.
Relationship between mineralisation widths and intercept lengths	*These relationships are particularly important in the reporting of Exploration Results.* *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* *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').*	This announcement includes sufficient detail to clearly illustrate the geometry of the mineralisation and the recent drilling. All results are reported as downhole lengths. The geometry of the mineralisation is well known and true thickness can be calculated. Drilling intersects the mineralisation perpendicular and at an average intersection angle of 45 degrees.
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.*	Included in this release is an appropriately orientated long section of the mineralisation, illustrating the centroids of the intercept point projected to a plane. Included also in this release are cross section views of the mineralisation which provides the visual perspective of the typical drilling angle.
Balanced Reporting	*Where comprehensive reporting of all Exploration Results are not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	All results from the recent campaign have been reported, irrespective of success or not.
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.*	Historic activities have included drilling to obtain samples for metallurgical test work, bulk density analyses and geotechnical analyses. A number of geophysical surveys including dipole-dipole IP, Gradient array IP and TEM were carried out over known mineralisation to determine effectiveness in delineating mineralisation/alteration. None were deemed effective. An environmental survey investigated the erosional characteristics of the soil, surface hydrology and groundwater and identified no issues. A partial leach soil sampling program carried out over the deposit was deemed effective in identifying anomalous gold values associated with the deposit. A detailed structural review of the mineralisation has been conducted by Model Earth
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).* *Diagrams clearly highlighting the areas of possible extensions, including the main geological*	Saracen is currently working on establishing exploration opportunities which will extend the known mineralisation at depth. This will primarily focus on understanding the key geological relationships and critical continuity directions to target depth extensions.

Section 2: Reporting of Exploration Results		
Criteria	JORC Code Explanation	Commentary
	interpretations and future drilling areas, provided this information is not commercially sensitive	

Section 3: Estimation and Reporting of Mineral Resources		
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.*	The historic database provided to Saracen was an extract from an acquire SQL database. For the majority of the historic database, the process used to record the primary data was unknown. All data collected and drilled by Saracen Metals is regulated by a locked framework called the acquire data model which fixes the relationships between tables. The data model minimises the potential for data collection and data usage errors through pre-determined look up tables, storage and export functions. User defined permissions also regulate the ability to add, edit or extract data. The rigour of the database is such that transcription or keying errors are identified and amended prior to loading and storage. Typical collection methods are manual capture and translation of logging and other data into tough books (digital format) and subsequent import of csv tables through an automated data import scheme where data is validated upon import into the database using predefined look up values.
	Data validation procedures used.	The rigid structure of the acquire data model is such that predefined rules and look up tables are applied to all data entry. Data that does not meet the criteria are highlighted and moved to a buffer area until the data is rectified to meet the passing rules. Validation of data includes visual checks of hole traces, analytical and geological data. IMAGO photogrammetry of drill hole logs and RC chips were also used to further validate the geological logging, whereby high-resolution photographs were compared to each other and to known geological codes to ensure consistency and accuracy. 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.
Site Visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.*	The competent person together with other Saracen geology personnel have carried out site visits to the Thunderbox deposit on numerous occasions. The competent person has inspected the deposit and has built a sound understanding of the deposit geology. All geological processes undertaken by Saracen concerning the Thunderbox Resource are done using Saracen's standard procedures.
	If no site visits have been undertaken indicate why this is the case.	n/a
Geological Interpretation	*Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.*	The interpretation has been based on the detailed geological work completed by a series of previous owners of the project and Saracen geological personnel. This knowledge is based on extensive geological logging of drill core, RC chips, detailed open pit mapping, XRF data and assay data. The gross architecture of the deposit is simple and the interpretation is robust. Saracen also engaged the services of an independent geological consultant to assist in creating a base geological model. The geological model is systematically updated to reflect the new drilling information and improved geological understanding of the deposit. The geology model was used to guide the estimation of resources.
	Nature of the data used and any assumptions made.	The interpretations are constructed using all available geological logging descriptions including but not limited to, stratigraphy, lithology, texture, veining, structure, mineral assemblages and alteration.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC Code Explanation	Commentary
		Interpreted cross cutting faults are observed and are used to guide disruptions in the position of the key mineralised domains. Open pit mapping was historically included in the interpretation. Cross sectional interpretations of the mineralisation are created from the geological framework through which the 3D wireframe solid is built.
	The affect, if any, of alternative interpretations on Mineral Resource estimation.	Due to the simplistic nature of the mineralisation no alternative interpretations are considered. Over the life of the project several different sources have interpreted the mineralisation and all agree on the same basic interpretation.
	The use of geology in guiding and controlling the Mineral Resource estimation.	Geological domains are constructed using all available geological information and terminate along known structures These are used as estimation domains and for each the mineralisation styles, geological homogeneity, and grade distributions are assessed to ensure effective domaining and estimation.
	The factors affecting continuity both of grade and geology.	At the deposit scale the gold distribution is largely ubiquitous. However elevated grades occur within southerly plunging ore shoots that are more clearly defined in the lateral pepperitic margins of the orebody. Centrally, the shoots persist however the gold distribution is far more consistent and uniform than in the margins. The mineralisation terminates abruptly at the lithological contacts of the intermediate (dacite) porphyry or the "hybrid" zone. Internal to the mineralised dacite are barren waste andesite lenses. In the lateral pepperite extents, mineralisation focuses along the contacts between the changing dacite and mafic lithologies. Gold mineralisation in these zones crosses both lithologies. The gold distribution is the result of the pervasive brittle fracturing of the porphyry and subsequent pervasive alteration. Infrequent higher grade zones are associated with either narrow laminated quartz veins or irregular zones of intense brecciation at the contacts of the porphyry host. Gold mineralisation appears to be related to the type and abundance of sulphides and carbonate alteration. Grades are generally higher in arsenopyrite and ankerite rich zones and lower in pyrite and dolomite rich zones. Pyrite is generally coarse, euhedral and late. The presence of pre-, syn-, and post deformational sulphides suggests multi-phase episodes of deformation and mineralisation.
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.*	Thunderbox mineralisation extends from 6879000mN to 6881000mN, 304000mE to 304400mE and 500 meters below surface (MGA-Zone51). The Thunderbox shear generally strike NNW and dips 60° towards the WSW. In the vicinity of the strongest gold mineralisation the shear is vertical to steeply west dipping. The shear and mineralisation is offset across a series of dextral, NE trending faults.
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.*	All domain wireframes are constructed in Leapfrog and used as hard boundaries for the estimations. Block estimation using a combination of ordinary kriging (OK) and categorical indicator kriging (CIK) has been completed in Datamine. CIK is utilised to define subdomains in all active mine areas and/or where the drill density (=<20m by 20m) supports the estimation method. Grade is estimated into parent blocks, meaning all the sub-cells within a parent cell assumed the grade of the parent cell. Univariate statistical analysis of length weighted (1m) domain coded downhole composites are completed for all domains and top-cuts applied where applicable. Extreme grades are not common in the data set and all domains are analysed individually to determine specific top-cut values. Due to the lack of extreme grades the top-cut process affects only 1-2% of the data. Variogram modelling is completed with Snowden's Supervisor software to determine the spatial variance of the gold grade within the domains that have sufficient data. Output variograms are utilised in kriging neighbourhood analysis (KNA) to generate optimum parent block sizes and estimation parameters. The parameters from this analysis are used in the interpolation process.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC Code Explanation	Commentary
		The maximum distance of extrapolation from last known data points for the inferred material is dependent on the geological continuity and confidence across the Thunderbox deposit. Extrapolation is 40m for D Zone, 60m for C Zone and <60m for A Zone.
	The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.	Historical mine production and mill reconciliation records suggest that the estimation method and parameters used result in a highly accurate estimate of the resource. Over the historic 6 year life, the resource reconciled at 98.5%. Over the 5 years Saracen has mined and processed ore at Thunderbox, the resource has reconciled at approximately 101%. There is no evidence in the geology to suggest this trend would not continue.
	The assumptions made regarding recovery of by-products.	No assumptions are made with respect to the recovery of by-products.
	Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulfur for acid mine drainage characterisation).	No estimation of deleterious elements or non-grade variables is required. Arsenic is identified in only a few samples.
	In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.	The parent block sizes for the resource model are 5m(X) by 20m(Y) by 5m (Z). These are deemed appropriate for the majority of the resource, where drill spacing is in the order of 40m x 40m. In active mining areas where drill spacing is on average 10m x 10m (but up to 20m x 20m in the underground), a block size of 5m(X) by 5m(Y) by 2.5m (Z) is utilised during the estimation process. Parent blocks are sub-celled to 1m(X) by 2m(Y) by 1m(Y) to ensure that the wireframe boundaries are honoured and preserve the location and shape of the mineralisation. Search ranges are derived from the variogram modelling and knowledge of the drill spacing and the known mineralisation geometry including direction of maximum continuity. Three search estimation runs are used with the aim to satisfy the minimum sample criteria in the first search range where possible. The 3rd pass aims to satisfy the complete estimation of all blocks within a domain. A kriging neighbourhood analysis study conducted ensured that the block sized and the search volume used in the resource estimate are optimal after considering all the relevant factors (i.e. drill spacing, geometry and dimensions of mineralisation). GC scaled estimation parameters are used in the grade control areas (active mining areas) during grade estimation.
	Any assumptions behind modelling of selective mining units.	A block size of 5 x 5 x 2.5 m is used in the estimation of grade in the active mining areas and is deemed appropriate as a Selective Mining Unit (SMU) which matches the current mining equipment. Current successful ongoing mining activities at Thunderbox support this as an appropriate SMU.
	Any assumptions about correlation between variables.	No assumptions have been made regarding correlation between variables. Gold is the only mineral of economic significance at Thunderbox at this stage.
	Description of how the geological interpretation was used to control the resource estimates.	Mineralisation is partitioned into estimation domains relative to the porphyry intrusion (dacite) and its contacts with other mafic to ultramafic units (& pepperite zones). The geological units are described in the block model. 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 is utilised to define sub-domains in lodes with mixed grade populations that correspond to the internal andesite waste zones. This controls the extents of high-grade mineralisation and waste zones. Boundary analysis indicates hard boundaries should be maintained across domain and sub-domain contacts.
	Discussion of basis for using or not using grade cutting or capping.	Statistical analysis of all domains highlight that there are very few grades within the domain populations that require top-cutting. If necessary, top-cuts are employed to reduce the risk of overestimating in the local areas.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	**JORC Code Explanation**	**Commentary**
	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 key model validation steps are taken to validate the resource estimate with results indicating a robust reconciliation between the data and estimate. These steps are: • Validation of the block model carried out by a volumetric comparison of the resource wireframes to the block model volumes. • A visual step through of the mineral resource model in sectional and plan view to compare the composite grades used in the estimate and the resultant block grades. This is also carried out in 3D with the composite grades and a point cloud of the model grades. • Across Strike, Northing and Elevation swathe plots are constructed to evaluate the composited assay means against the mean block estimates. • Comparison of the mean grade of the block model to the naïve and declustered mean grades of the composites by domain with any variance greater than 10% investigated. • Validating the estimate against the Reconciliation data The mineral resource model is constructed to include kriging efficiency and the slope of regression values. These values are used to measure the quality of the estimate. Natural deterioration of the quality is observed at the perimeter of the modelled areas where data density is lower.
Moisture	*Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	All tonnages are estimated on a dry basis.
Cut-off parameters	*The basis of the adopted cut-off grade(s) or quality parameters applied.*	Based on Saracen's current economic operations at Carosue Dam and Thunderbox, and the natural grade distinction above background, a grade of 0.5g/t has been chosen for Open Pits and 1.2g/t for underground operations.
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 Thunderbox deposit is amenable to mining by both open pit and underground methods. The deposit has successfully been mined by open pit in the past between 2002 and 2007. Saracen has successfully mined the C-Zone and D-Zone pit using Open pit methods, since 2015 and the A-Zone using underground methods. Beneath the mined C Zone pit is a portion of the mineral resource that will be extracted by a bulk underground method. It was discussed that wider potions of the resource may utilise an underground caving approach as an efficient means of economic extraction. It will be supplemented with traditional long hole stoping in areas with narrower widths. To best capture "reasonable prospects of eventual economic extraction", the mineral resource is reported within an optimised pit shell at $2250 at a 0.5g/t cut off for the open pit resources, and for the underground resource, within MSO underground shells generated at a 1.2g/t cut off.
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 process and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported*	The Thunderbox gold deposit consists of free milling gold which occurs as inclusions within, and at the rims of arsenopyrite crystals, and as free gold clusters within quartz-carbonate veins. The Thunderbox mine ore is processed at the onsite processing facility. The Thunderbox mill employs a conventional crushing, grinding and CIL leaching process to extract the gold. The mill operated successfully between 2002 and 2007, processing in excess of 9Mt of ore. The conventional plant displayed excellent performance with gold recoveries between 93.4 to 96.6 % over the life of the mine. It has since been upgraded to include a gravity recovery circuit facilitating continued high recoveries with increased throughput rates. Ongoing supply of Thunderbox ore to the processing facility will be sourced from a combination of open pit oxide and fresh rock from the

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC Code Explanation	Commentary
	with an explanation of the basis of the metallurgical assumptions made.	underground operations. Importantly it should be noted that no reduction in recoveries were observed when the ore changed from oxide-transitional into fresh rock.
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 greenfields 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.*	As arsenic is present in the mineralogy of the deposit, the processing plant has been designed to ensure effective management of potentially harmful arsenic contamination. A 20m diameter high rate thickener is used to thicken the tails to maximise water and cyanide recovery. Process water is added to the thickener feed to create one wash stage prior to detoxification. Arsenic precipitation is affected in a stirred closed tank with air sparging. Ferric sulphate solution is metered into the reactor on the basis of dissolved arsenic concentration. The fumes from the precipitation tank are passed through a packed bed caustic scrubber before venting to the atmosphere. The precipitation tank overflow is then passed to the tails hopper.
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.*	Previous owners took routine density measurements when drilling diamond core, along with a comprehensive grab sampling regime during the mining of the pit. 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. From the recent drilling done by Saracen early 2015, 237 fresh mafic samples, 196 fresh porphyry samples, 348 fresh sedimentary rock samples and 47 tectonite shear samples were measured for bulk density. In addition density sample are routinely taken in the active mining areas and are used to adjust the weathering profile surfaces. 10cm length NQ core samples were taken in one meter intervals in the ore zones and every 30m in waste zones.
	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.	The procedure the previous owners utilised, included the coating of dried samples in paraffin wax where the samples had some degree of weathering, were porous or clay rich. These coated samples were then tested using the water displacement technique as previously mentioned. Saracen applies the same procedure in its routine bulk density determinations.
	Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	An average mean of bulk densities collected for each lithology type in each regolith zone has been uniformly applied to the modelled geological/regolith zones. The regolith zones include 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 mineral resource has been classified into Measured, Indicated and Inferred categories based on drill hole spacing, geological confidence, and grade continuity and estimation quality. The combination of these factors together guide the digitising of a “cookie cutter” string in long section view which selects and codes the appropriate blocks with the nominated resource classification category.
	Whether appropriate account has been taken of all the 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 care has been taken to account for relevant factors influencing the mineral resource estimate. Confidence in the predicted tonnes and grade estimated in the model is high and previous mining performance suggests that the input data and geological continuity are such that a robust resource estimate can be achieved.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC Code Explanation	Commentary
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The geological model and the mineral resource estimate reflect the competent person's view of the deposit.
Audits or reviews	*The results of any audits or reviews of Mineral Resource estimates.*	Saracen has adopted a process for geological modelling, estimation and reporting of mineral resources that meets high industry standards. At the completion of resource estimation Saracen 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. An external review by Entech was completed in April 2020 on the entire Thunderbox resource estimate, with no fatal flaws identified.
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 established in the 2012 edition of the JORC code. The resource estimates have undergone a robust validation process, and as such, the competent person is satisfied that the resources estimated in the block model are a true representation of the in-situ resources.
	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 statements relate to a global estimate of tonnes and grade.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	Historical mining operation reports suggest that the estimated tonnes were within 0.4% and grade within -2.3%. Since Saracen started mining and processing ore at Thunderbox the Mine Call Factor (MCF) on tonnes has been 100% and grade 101%.

Section 4: Estimation and Reporting of Ore Reserves		
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 estimate for the Thunderbox deposit is a robust global estimate that was used as a basis for conversion to the Ore Reserve estimate. Resource estimate was compiled by Saracen using exploration, resource definition, and grade control drilling and assay data, geological mapping and historical mining records to validate the model against and solid interpretation wireframes of the geology. This information was used to construct a model

Section 4: Estimation and Reporting of Ore Reserves		
Criteria	JORC Code Explanation	Commentary
		estimated by various kriging methods. The model was depleted to end of June 2020 survey pickup for Ore Reserve Estimation.
	Clear statement as to whether the Mineral Resources are reported additional to. Or inclusive of, the Ore Reserves.	The Mineral Resource reported is inclusive of the Ore Reserve.
Site Visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.*	Open Pit Reserve A Competent Person is conducting frequent ongoing site visits to the Thunderbox operations. The purpose of these visits is to collect information for optimisation work, validating input parameters, visual pit inspection, discussion and feedback for life of mine planning. The information also includes the discussion around current mining performance, wall conditions and overall stability, and groundwater condition. Underground Reserve The Saracen competent person has visited site a number of times in the past year and works directly with the mining team onsite. Saracen has an onsite Senior Geotechnical Engineer.
	If no site visits have been undertaken indicate why this is the case.	N/A
Study status	*The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves*	Open Pit Reserve The Thunderbox Gold Mine operations has open pit, underground mine and a processing facility that treats material from Thunderbox deposit and the nearby Kailis deposit. A full scale feasibility study was conducted prior to commencement of the operation by Saracen and subsequently it came into full operation in 2015. The 2020 Ore Reserve has been subject to validating all aspects of operational inputs such as production parameters, modifying factors, operating costs of mining, processing, general administration and environment management related costs. Underground Reserve Under Saracens supervision, Entech conducted a Feasibility Study (FS) for the Thunderbox Underground (TBUG) mine in 2019. The 2020 Ore Reserve has included all aspects of operational inputs including actual production parameters, modifying factors, operating costs of mining, processing, general administration and environment management related costs. Updated costings obtained through an underground mining tender process were used for the current Life of Mine Plan.
	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.	Open Pit Reserve Modifying factors have been applied to the optimisation study and resultant Reserve pit design work to ensure the rigor of the financial analysis. Operational costs and production parameters have been used from actual and ongoing mining and processing performance. Saracen has completed all appropriate supporting mining studies required for Ore Reserve estimate. Underground Reserve Modifying factors were applied in the FS to ensure the rigor of the economic analysis. All the parameters assumed and adopted, as well as the financial analysis completed, have been the subject of internal peer review.
Cut-off parameters	*The basis of the cut-off grade(s) or quality parameters applied*	Open Pit Reserve The Ore Reserve estimated at cut-off grade of 0.50g/t, estimated using assumed gold price of AUD$1,750/oz and operating cost of mining, processing, haulage and general administration. A top cut has already been applied to the Mineral Resource Estimate eliminating the necessity for any further adjustment to the Ore Reserve Estimate. Underground Reserve

Section 4: Estimation and Reporting of Ore Reserves		
Criteria	JORC Code Explanation	Commentary
		For the TBUG Ore Reserve Estimate a cut-off grade of 1.5g/t was calculated based upon an assumed gold price of AUD$1750/oz. and applicable mining, processing, and administration costs. A development cut-off grade of 0.8 g/t is applied. A top cut has already been applied to the Mineral Resource Estimate eliminating the necessity for any further adjustment to the Ore Reserve estimate.
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).*	Open Pit Reserve The resource model used in the Mineral Resource Estimation was the basis for the generation of a range of Whittle 4X pit optimisation shells. The generation of these shells was reliant upon costs and inputs derived from current operational data, contractors and independent consultant recommendations. An appropriate shell was then selected as the basis for an iterative process of pit design work, culminating in the finalisation of a detailed pit design for the Thunderbox Reserve. Underground Reserve The TBUG Ore Reserve Estimate is based on a three-dimensional mine design, geotechnical numerical modelling, mine scheduling, and cost estimation.
	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.	Open Pit Reserve Mining method employed at Thunderbox Gold Mine is conventional open pit with hydraulic excavator and dump truck fleet, and drill and blast activity. The class of excavator employed is similar to other open pit mining operations. That way it provides good operating dataset for production and productivity rate measurement and financial modelling. Thunderbox Reserve pit is currently in operation and designed as successive cutbacks to achieve final life of mine Reserve such that it meets the operation efficiency, safety and production rate. Appropriate mine schedule, operating cost and lead time have been considered to maintain efficient mining operations. Underground Reserve The TBUG Ore Reserve is based on sub-level open stoping (SLOS) with paste fill, and long hole open stoping (LHOS) mining methods. SLOS is the predominate mining method, and accounts for 87% of the Ore Reserve estimate by tonnes. The SLOS zone, ranges in width from 3 m to 50 m, and dips at 75-80 degrees. Paste fill test work, analysis, and cost estimation, has been conducted by Outotec Pty Ltd. and GR Engineering Services.
	The assumptions made regarding geotechnical parameters (e.g. pit slopes, stope sizes, etc.), grade control, and pre-production drilling.	Open Pit Reserve Life of mine Reserve pit has been designed following appropriate geotechnical recommendation. The geotechnical guidelines were prepared by site geotechnical team using wall stability performance data and update or modify as required through continuous monitoring program. Analysis includes inspection of drill core, review of the geotechnical data, slope monitoring results and probability testing. The geotechnical team oversees all geotechnical aspect of technical study and provide ongoing site support. The Grade control method currently employed at Thunderbox is utilising RC drilling and sampling method. The method and practice has been utilised successfully at all current and past mining operations at Saracen. Underground Reserve Sub-level open stoping (SLOS) with paste fill has been selected as the preferred mining method. Geotechnical investigations for the project are based on detailed geotechnical logging of oriented core from >21,000m of core, and a comprehensive laboratory testing program. Geotechnical assessments based on rock mass characterisation, empirical methods and numerical modelling analysis have been undertaken to assess mining methods and sequencing, stope spans and dilution expectations, pillar stability

Section 4: Estimation and Reporting of Ore Reserves		
Criteria	JORC Code Explanation	Commentary
		in both uphole stoping and crown pillars and development ground support and reinforcement requirements, and stand-off distances for underground infrastructure.
	The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).	<u>Open Pit Reserve</u> The Ore Reserve Estimate is based on detailed life of mine pit design work by using geology approved resource model, and making appropriate dilution and recovery factor allowance for mining fleet and method utilised. <u>Underground Reserve</u> The resource model used for the ore reserve calculation was 200630_TBX_TOTAL.dm
	The mining dilution factors used.	<u>Open Pit Reserve</u> A mining dilution factor of 14% is applied in the Ore Reserve estimation and reflect the current mining performance based in ore body characteristic, mining method and equipment utilised. <u>Underground Reserve</u> Average mining dilution is 6%. Stope dilution has been applied as 0.5 m of dilution to the footwall and hangingwall at zero grade. Any wall exposed to paste also incurs 0.5 m of dilution at zero grade.
	The mining recovery factors used.	<u>Open Pit Reserve</u> A mining ore loss factor of 4% is applied in the Ore Reserve estimation and reflect the mining performance based in ore body characteristic, mining method and equipment utilised. <u>Underground Reserve</u> The average mining recovery is 93%.
	Any minimum mining widths used	<u>Open Pit Reserve</u> A minimum mining width of 25m has been adopted for the primary excavation fleet. Where 'pinch-points' occur or "Good Bye" cuts are considered at the base of the pit, it is assumed that a smaller or more versatile excavator will be employed. The practice is very consistent across all open pit operations and reflects the suitability and efficiency of the mining performance. <u>Underground Reserve</u> Minimum mining widths of 3 m, where sub levels are 25 m intervals, and 3.5 m where sub levels are 35 m, are applied.
	The manner in which inferred Mineral resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.	<u>Open Pit Reserve</u> 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. <u>Underground Reserve</u> Inferred material is excluded from the ore reserves. The Life of Mine Plan (LOMP) design includes Inferred Resources representing 10% of the mining inventory, contained within the stopes and development in the periphery of the indicated resource. This amount contributes to a minor amount of metal (<10% of ounces). Ongoing grade control drilling is also part of the LOMP.
	The infrastructure requirements of the selected mining methods.	<u>Open Pit Reserve</u> Thunderbox Gold Mine is in operation and operates both open pit, underground mines along with 2.9mt process plant. All adequate infrastructure is in place and available to support current and future mine plan. <u>Underground Reserve</u> The selected mining method requires the development of an access decline, ventilation raises, and associated electrical, paste fill plant and dewatering infrastructure. Some of the infrastructure is currently operational.

Section 4: Estimation and Reporting of Ore Reserves		
Criteria	JORC Code Explanation	Commentary
Metallurgical factors or assumptions	*The metallurgical process proposed and the appropriateness of that process to the style of mineralisation*	The Ore Reserve will be treated at the established Thunderbox processing facility. The facility is a conventional crushing, gravity circuit, grind, and CIL (carbon in leach) plant and is appropriate for the extraction of gold from free milling mineralisation.
	Whether the metallurgical process is well-tested technology or novel in nature.	The current processing plant and method applied utilises well tried and proven technology since being in operation with average gold recovery typically between 93 to 95% for all available material types near Thunderbox operations.
	The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.	An average gold recovery for Thunderbox deposit is estimated at 94.0%. The recovery estimation is based on actual average recovery data collected from ongoing test work at Thunderbox plant. The plant performance is consistent between 93 to 95% while processing similar type of ore material blend with range of other ore sources without any issue. <u>Underground Reserve</u> An average plant processing recovery of 94% has been assumed in the TBUG Ore Reserve Estimate.
	Any assumptions or allowances made for deleterious elements.	Arsenopyrite is present in the ore and minor levels of arsenic are solubilised in the plant solutions. The arsenic levels are monitored on a regular basis and infrastructure exists for the addition of ferric sulphate where the levels impact the environment/exceed the environmental limits. The ferric sulphate is added to precipitate the free arsenic as ferric arsenate thereby locking the arsenic in the plant tailings for storage.
	The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the ore body as a whole.	All Thunderbox ore mined by Saracen and previous operator has been processed through the current processing plant hence it represents Thunderbox mineralisation characteristics as a whole. Processing plant regularly carries out bulk sample/pilot test for continuous improvement and check balance.
	For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications.	N/A
Environmental factors or assumptions	*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.*	Thunderbox Gold Mine is in operation and all required Environmental studies have been completed prior to commencement. Mining Approvals for both open pit and underground operation has been granted. All other statutory government approvals including clearing permit, project management plan and operating licence and groundwater licences have been granted. The existing Thunderbox mine, the processing facility, waste rock landform, TSF, and the accommodation village are all lay on granted mining leases. The gas spur pipeline, the bore field and the airstrip are all on granted miscellaneous licences. Waste rock characteristic study has been carried out and is representative of Thunderbox waste rock. An appropriate landform design criteria has been considered based on rock characteristic to mitigate current and any future waste landform expansion.
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.*	The site is well established with all adequate infrastructure is in place and operational. These include well equipped offices, workshop, storage facilities and a CIL ore processing plant that has name plate capacity of 2.9mtpa situated adjacent to the Thunderbox pit. A modern accommodation camp is located within a few kilometres of the pit, and a well maintained gravel airstrip services the camp. The mine site is connected to Goldfields highway and the Gas Transmission Line, and runs on dual fuel (diesel/gas) power generator.
Costs	*The derivation of, or assumptions made, regarding projected capital costs in the study.*	<u>Open Pit Reserve</u> All major capital works relate to mine site infrastructure have been completed. The capital cost related to pre-stripping of the pit has been applied in the financial model.

Section 4: Estimation and Reporting of Ore Reserves		
Criteria	JORC Code Explanation	Commentary
		Underground Reserve Mining capital costs are estimated from first principles and submitted contractor costs based on equipment, labour and development requirements indicated in the mine schedule. Mining capital costs also consider paste plant and underground reticulation, ventilation, electrical and dewatering requirements.
	The methodology used to estimate operating costs.	Open Pit Reserve Operating costs for open pit mining have been derived from a combination of actual mining costs for Thunderbox Operations and costs supplied by various contract mining companies, and independent consultants. Underground Reserve Mining operating costs are estimated from first principles and tendered contract costs based on equipment, labour and development and stoping requirements indicated in the mine schedule. Operating costs for ore processing, haulage and administration have been derived from known parameters and budgeted cost.
	Allowances made for the content of deleterious elements	Appropriate allowance has been made in the processing cost to compensate the additional treatment required for the high presence of Arsenopyrite in the ore and arsenic in the plant solutions.
	The derivation of assumptions made of metal or commodity price(s), for the principal minerals and co-products	An assumed gold price of AUD$1,750/oz has been adopted for the financial modelling. No allowance is made for silver by-products.
	The source of exchange rates used in study	All revenue and cost calculations have been made in AUD, so no exchange rate usage or assumptions have been necessary.
	Derivation of transportation charges	Costs associated with bullion transportation have been derived from existing contractual arrangements at Thunderbox operation.
	The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.	Costs associated with refining have been derived from existing contractual arrangements at Thunderbox operations.
	The allowances made for royalties payable, both Government and private.	The WA state government royalty of 2.5% has been applied. No third party royalty exists.
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.*	For the purposes of the Ore Reserve Estimation it has been assumed that there is no gold hedging. All gold production will be sold at spot price to the Perth Mint.
	The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products	Assumed gold price of AUD$1,750/oz has been adopted for financial modelling. No allowance is made for silver by-products.
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.	There is a transparent quoted market for the sale of gold.

Section 4: Estimation and Reporting of Ore Reserves		
Criteria	JORC Code Explanation	Commentary
	For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.	N/A
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.*	<u>Open Pit Reserve</u> The Ore Reserve Estimation is based on detailed life of mine pit design and reflects positive economic outcomes. All relevant capital and operating costs as well as revenue and royalty factors have been included with appropriate discount factor for cash flow analysis. <u>Underground Reserve</u> The Ore Reserve Estimate is based on detailed underground design using $1,750/oz. gold price. A discount rate of annual 5% was assumed in all NPV calculations.
	NPV ranges and sensitivity to variations in the significant assumptions and inputs.	A full financial model is developed with sensitivities applied to all key inputs and assumptions (+/- 15%).
Social	*The status of agreements with key stakeholders and matters leading to social licence to operate*	Thunderbox mine is located on lease-hold pastoral land with regular community engagement and communication of the mining lease and operation. Compensation agreements are in place with the local pastoralist and Saracen is having a good relationship with neighbouring stakeholders, including local pastoralists and the traditional owners. Granted mining leases cover all of the proposed mining and processing assets.
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	Water inrush is identified as naturally occurring risk with in the operation and has been addressed by the construction of appropriate water diversion bunds to provide a safe and risk free work environment.
	The status of material legal agreements and marketing arrangements	Gold produced from Thunderbox Mine will be sold on the spot market. A royalty of 2.5% is payable to the WA. State government. No third party royalty is applicable.
	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.	Thunderbox Gold Mine is in operation and all required Statutory Approvals including Mining, Environment approvals have been granted.
Classification	*The basis for the classification of the Ore Reserve into varying confidence categories*	The Ore Reserve estimate classification for Thunderbox has been made in accordance with the JORC code 2012. The Ore Reserve estimate is classified as being Proved and Probable has been derived from the Mineral Resource classified as Indicated and Measured only.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	Cost assumptions and modifying factors applied to the pit optimisation, Underground Feasibility Study and subsequent designs were derived from current operational data relating to Thunderbox operations, and supplied by contract mining companies and independent consultants. Results of these optimisations, reserve designs and the resultant analysis reflect the Competent Person's view regarding the Thunderbox deposit.
	The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any)	<u>Open Pit Reserve</u> 100% of Probable ore from Ore Reserve Estimate has been derived from Indicated ore of the Mineral Resource.

Section 4: Estimation and Reporting of Ore Reserves		
Criteria	JORC Code Explanation	Commentary
		100% of Proved ore from Ore Reserve Estimate has been derived from Measured ore of the Mineral Resource. Underground Reserve 100% of Probable ore from Ore Reserve Estimate has been derived from Indicated ore of the Mineral Resource. 100% of Proved ore from Ore Reserve Estimate has been derived from Measured ore of the Mineral Resource
Audits or reviews	*The results of any audits or reviews of Ore Reserve estimates*	The Ore Reserve Estimation process is in line with the Saracen Ore Reserve Policy and has undergone internal review.
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 geo-statistical 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 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.* *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.* *It is recognised that this may not be possible or appropriate in all circumstances. These statements or relative accuracy and confidence of the estimate should be compared with production data, where available.*	The ore reserve estimate has been prepared in accordance with the guideline of the 2012 JORC Code, and was derived from the mineral resource estimate which in turn was reliant upon a resource block model whose estimation was derived from drill-hole data of sufficient continuity and spacing to satisfy the requirements for a measured and indicated resource. Open Pit Reserve All of the applied modifying factors and mining parameters have been validated and reconciled well with Thunderbox mineralisation and mining fleet being utilised at Thunderbox open pit operation. The estimated dilution and ore loss factors are justified by continuity of wide mineralisation of the ore body, selected mining practice and equipment. The current grade control method and estimation process is well understood for Thunderbox operations. All of the parameters assumed and adopted in the financial analysis have been based on current and past Thunderbox operations mining performance. Underground Reserve Stope dilution and recovery are based upon assumptions including: the stress regime (based on the numerous mines in the region), stress modelling, hanging wall and footwall failure, and paste fill dilution. Long term paste fill test work is ongoing at the time of reporting. Hydrogeological assessments have not been conducted for the project, though costs have been allowed in the cost estimate for reasonable levels of ground water inflow and underground operations to date have encountered minimal groundwater inflows. A first-year capital cost contingency of 14% has been allowed for. The project is sensitive to factors that affect revenue (gold price, dilution and recovery)

Otto Bore

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
Sampling Techniques	*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.*	Sampling methods undertaken by Saracen at Otto Bore include reverse circulation (RC) and diamond (DD) drillholes Sampling methods undertaken at Otto Bore by previous owners have included aircore (AC), rotary air blast (RAB), RC and diamond drillholes (DD).
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used	Sampling for diamond and RC drilling is carried out as specified within Saracen sampling and QAQC procedures as per industry standard. AC, RC, RAB, and DD core drilling is assumed to have been completed by previous holders to industry standard at that time (1988- 2012).
	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 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information	RC chips are cone split and sampled into 1m intervals with total sample weights under 3kg. Diamond core is HQ sized, sampled to 1m intervals or geological boundaries where necessary and cut into half core to give sample weights under 3 kg. Samples are selected to weigh less than 3 kg to ensure total sample inclusion at the pulverisation stage. Saracen core and chip samples are crushed, dried and pulverised to a nominal 90% passing 75µm to produce a 40g sub sample for analysis by FA/AAS. Limited information has been found for historic drilling so it is assumed all AC, RAB, RC and DD and sampling was carried out to industry standard at that time. More recent RAB and RC drilling has involved a total preparation sample protocol involving 4m composite or 1m samples from which a 50g charge is produced for aqua regia or fire assay digest and flame AAS 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.).*	Drilling activities at Otto Bore have included 31 AC holes, 748 RAB holes, 141 RC holes (assumed standard 5 ¼'' bit size) and 4 DD holes (HQ and unknown diameter). Limited historic diamond core hole was oriented by unknown methods. Saracen completed 257 RC holes and 6 geotechnical DD holes. The RC drilling was completed with a 5.5 inch diameter bit with a face sampling hammer. The rig was equipped with an external auxiliary booster. Diamond drilling was HQ sized and orientated using an ACT 11 core orientation tool. Historical drilling is assumed completed to industry standard at that time
Drill Sample Recovery	*Method of recording and assessing core and chip sample recoveries and results assessed*	Recoveries for RC drillholes and precollars are recorded as a percentage based on a visual weight estimate.
	Measures taken to maximise sample recovery and ensure representative nature of the samples	During RC drilling daily rig inspections are carried out to check splitter condition, general site and address general issues. Measures were taken to supress groundwater.
	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.	There is no known relationship between sample recovery and grade for RC drilling. Diamond drilling has high recoveries meaning loss of material is minimal. Any historical relationship is not known.
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.*	Logging of RC chips and DD core records lithology, mineralogy, texture, mineralisation, weathering, alteration and veining. Geotechnical and structural logging is carried out on all diamond holes to record recovery, RQD, defect number, type, fill material, shape and roughness and alpha and beta angles.

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	Chips from all RC holes are stored in chip trays for future reference while remaining core is stored in core trays and archived on site. Some historic diamond drilling has had limited geotechnical logging carried out. Core has been photographed in both dry and wet state. It is unknown if historic diamond core was photographed. It is unknown if any historic diamond core was photographed.
	The total length and percentage of the relevant intersections logged	All drillholes completed by Saracen have been logged in full.
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.*	All drill core is cut in half onsite using an automatic core saw. Samples are always collected from the same side. The sampling method for most historic drill core is unknown, a small amount is recorded as half core sampled.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	All exploration RC samples are cone split. Occasional wet samples are encountered. The sampling methods for much of the historic AC, RC and RAB drilling are unknown. More recent RC and RAB drilling has been riffle split or spear sampled. It is unknown if wet samples were encountered.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	The sample preparation of RC chips and DD core adhere to industry best practice. It is conducted by a commercial laboratory and involves oven drying, coarse crushing then total grinding to a size of 90% passing 75 microns. The sampling techniques for much of the historic AC, RAB, RC and DD drilling are unknown, best practice is assumed.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	All subsampling activities are carried out by commercial laboratory and are considered to be satisfactory Best practice is assumed at the time of historic AC, RAB, DD and RC sampling.
	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.	RC field duplicate samples are carried out at a rate of 1:20 and are sampled directly from the on-board splitter on the rig. These are submitted for the same assay process as the original samples and the laboratory are unaware of such submissions. It is unknown if duplicate sampling was performed on the majority of historic AC, RAB, RC and DD drilling. There is evidence of field duplicate sampling being conducted in more recent campaigns.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Analysis of data determined sample sizes were considered to be appropriate.
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.*	RC chip and DD core samples are analysed by an external laboratory using a 40g fire assay with AAS finish. This method is considered suitable for determining gold concentrations in rock and is a total digest method. Numerous assay techniques have been used in the history of the deposit, most commonly fire assay, fire assay with flame finish and aqua regia. These methods are considered suitable for determining gold concentrations in rock and are total digest methods. Other assay methods utilised for gold determination include BETA, atomic absorption spectrometry and unknown methods.
	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.	It is unknown if any instruments of this nature have been used at Otto Bore.
	Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks)	Certified reference material (standards and blanks) with a wide range of values are inserted into every drillhole at a rate of 1:25 for exploration RC and DD. These are not identifiable to the laboratory.

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
	and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.	QAQC data returned are checked against pass/fail limits with the SQL database and are passed or failed on import. A report is generated and reviewed by the geologist as necessary upon failure to determine further action. QAQC data is reported monthly. Sample preparation checks for fineness are carried out to ensure a grindsize of 90% passing 75 microns. The laboratory performs a number of internal processes including standards, blanks, repeats and checks. QAQC data analysis demonstrates sufficient accuracy and precision. Industry best practice is assumed for previous holders.
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.*	Significant intercepts are verified by the Geology Manager and corporate personnel
	The use of twinned holes.	Specific drilling programs consisting of twinned holes are not apparent.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols	Primary data is collated in a set of excel templates utilising lookup codes. This data is forwarded to the Database Administrator for entry into a secure acQuire database with inbuilt validation functions. Data from previous owners was taken from a database compilation and validated as much as practicable before entry into the Saracen acQuire database
	Discuss any adjustment to assay data.	No adjustment to assay data appears to have been made
Location of data points	*Accuracy and quality of surveys used to locate drillholes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.*	Exploration drillholes are located using a Leica 1200 GPS with an accuracy of +/- 10mm. Downhole surveys are carried out using a hired Reflex EZ-gyro by the respective drilling companies on a regular basis, between 10-30m. The survey quality and control is unknown for the majority of historic drilling. More recent drilling has collar locations surveyed by unspecified GPS and DGPS equipment. Downhole survey methods recorded include Eastman single and multishot, gyro, inferred and unknown methods.
	Specification of the grid system used.	MGA Zone 51 grid coordinate system is used. Some historic data drilled on local grid systems has been converted to this grid system
	Quality and adequacy of topographic control.	Digital ortho-imagery of the area from Kevron Aerial Surveys was used in the early 2000s to establish topographic control.
Data spacing and distribution	*Data spacing for reporting of Exploration Results.*	No exploration results reported in this release. The nominal drillhole spacing is 20 m (northing) by 20 m (easting) in the core of the deposit, and increases to the margins of the deposit.
	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 mineralised domains at Otto Bore have demonstrated sufficient continuity in both geological and grade continuity to support the definition of Mineral Resources, and the classifications applied under the 2012 JORC Code.
Orientation of data in relation to geological structure	*Whether sample compositing has been applied.*	Sample composting has been carried out in the most recent campaign with areas expected to be non-mineralised composited into 4m intervals with any anomalous results then resampled in 1m intervals. Historic 1990s RAB and RC drilling was generally sampled on 3 - 4m composites with significant gold results being resampled in 1m intervals Some more recent historic RAB and RC drilling was composited into 4m samples with any assay >250ppb, or >500ppb in resource definition programs, resampled to 1m.
	Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.	The deposit is drilled towards grid east at angles varying from -60^0 and -90^0 to intersect the mineralised zones at a close to perpendicular relationship for the bulk of the deposit.

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
	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.	All drilling from surface has been drilled as close to perpendicular as possible. This has reduced the risk of introducing a sampling bias as far as possible. No orientation based sampling bias has been identified at Otto Bore in the data at this point.
Sample security	*The measures taken to ensure sample security.*	Samples are prepared on site under supervision of Saracen geological staff. Samples are selected, bagged into tied numbered calico bags then grouped into secured cages and collected by the laboratory personnel. Sample submissions are documented via laboratory tracking systems and assays are returned via email
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	An internal review of companywide sampling methodologies was conducted to create the current sampling and QAQC procedures. No external audits or reviews have been conducted

Section 2: Reporting of Exploration Results		
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 Otto Bore resource is located on M36/421, M36/462, and M36/177. The mining leases have a 21 year life: M36/462 is held until 2022, M36/421 is held until 2023, and Mining Lease M36/177 is held until 2032. All are renewable for a further 21 years on a continuing basis. Mining Leases M36/421 and M36/462 are currently held by Saracen Metals Pty Limited, a wholly owned subsidiary of Saracen Mineral Holdings Limited. Mining Lease M36/177 is held by Saracen Metals Pty Limited (67.8%) and Agnew Gold Mining Company Pty Ltd (32.2%). The tenement is the subject of a purchase agreement between Norilsk Nickel Wildara Pty Ltd and Saracen Metals Pty Limited whereby Saracen has purchased the 67.8% share from Norilsk. Mining Lease M36/177 is the subject of a joint venture agreement (Agreement 163H/945 (104991)) between Plutonic Operations Ltd and Black Mountain Gold NL, as assigned to Saracen Metals Pty Limited at the time of purchase. There are no caveats relating to the tenements. M36/177 is subject to a royalty of 3% by weight of all gold produced payable to Black Mountain Gold NL. M36/421 and M36/462 are subject to a royalty of 2.5% of the net smelter return (NSR) from mined ore between 42,000 and 100,000 ounces of gold payable to Black Mountain Gold Limited. All production is subject to a Western Australian state government NSR royalty of 2.5%. Mining Lease 37/462 is subject to a Westpac Mortgage (499141). All tenements are subject to a pastoral compensation agreement between Saracen Metals Pty Ltd and Weebo Station. There are no native title claims over the tenements. There are newly identified Aboriginal Heritage sites on the tenements that are yet to be released on the DPLH register. The Mining Rehabilitation Fund applies to the tenements.
	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 impediment to obtaining a licence to operate exists and the remainder of the tenements are in good standing.

Section 2: Reporting of Exploration Results		
Criteria	JORC Code Explanation	Commentary
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	Gold exploration was conducted near Otto Bore in the 1950s following the discovery of the nearby Goanna Patch mineralisation. Nippon picked up the ground to the north of Otto Bore in the late 1980s and intersected anomalous zones at the Otto Bore prospect, but mineralisation was not deemed extensive enough. Otto Bore was discovered by Kismet in 1990 after they followed up regional RAB traverses at Goanna Patch and encountered mineralisation. It was deemed not large enough for consideration. Leader Resources picked up the area and completed RAB drilling before also deeming the area not worthy of follow up. They did however mine the nearby Double A open cut between March 1990 and May 1991 and concentrated much of the exploration in this area. Forrestania and LionOre entered into a JV on the area in the early 2000s. RAB drilling following up anomalous values from historic drilling intersected mineralisation and was followed up with RC and DD drilling and the Otto Bore resource was defined. Norilsk acquired the deposit but conducted no further exploration in the Otto Bore region.
Geology	*Deposit type, geological setting and style of mineralisation.*	Otto Bore is located within the Kurnalpi terrane to the east of the Ockerburry Fault, separating the Kalgoorlie and Kurnalpi terranes. The deposit is hosted within a greenstone package consisting of basalts, high-Mg basalts, dolerites and ultramafics with minor intermediate porphyries observed within the upper portion of the stratigraphy. Locally Otto Bore is situated within a NNW trending shear zone that dips moderately (50-60degrees) to the west. The mineralised zone largely hugs the rheological contact between the high-mg basalts and basalts. To the north mineralisation is also associated with a series of dolerites. Cross cutting NW trending faults are interpreted to disrupt the strike continuity of the main mineralisation and the southern extent of the Otto Bore deposit is terminated by a regional NNE trending shear. At depth high grade mineralisation is typically associated with pervasive quartz veining and form southerly plunging shoots.
Drillhole 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:* • *easting and northing of the drill hole collar* • *elevation or RL (Reduced Level – elevation* • *above sea level in metres) of the drill hole collar* • *dip and azimuth of the hole* • *down hole length and interception depth* • *hole length.* • *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.*	A total 253 holes have been used in the mineral resource and are deemed to be material. It is not practical to summarise all of the holes here in this release. All material data is periodically released on the ASX: 18/02/2020, 11/11/2019, 18/02/2019, 01/05/2018 Exclusion of the drilling information will not detract from the reader's view 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 significant intercepts have been length weighted with a minimum Au grade of 0.5ppm. No high grade cut off has been applied.

Section 2: Reporting of Exploration Results		
Criteria	**JORC Code Explanation**	**Commentary**
	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 with minimum width of 1m and maximum width of 3m for internal dilution.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	There are no metal equivalents reported in this release.
Relationship between mineralisation widths and intercept lengths	*These relationships are particularly important in the reporting of Exploration Results.* *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* *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').*	Previous announcements included sufficient detail to clearly illustrate the geometry of the mineralisation and the recent drilling. All results are reported as downhole lengths.
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.*	No diagrams are referenced in this release.
Balanced Reporting	*Where comprehensive reporting of all Exploration Results are not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	All results from the recent campaign have been reported, irrespective of success or not.
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.*	Geophysical surveys including aeromagnetics and gravity have been carried out by previous owners to highlight and interpret prospective structures in the project 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).* *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive*	Saracen is currently exploring proximal to the Otto Bore deposit and is working on an exploration program which will test the lateral and down dip extents of the Otto Bore mineral resource.

Section 3: Estimation and Reporting of Mineral Resources		
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.*	The historic database provided to Saracen was an extract from an acquire SQL database. For the majority of the historic database, the process used to record the primary data was unknown. All data collected and drilled by Saracen Metals is regulated by a locked framework called the acquire data model which fixes the relationships between tables. The data model minimises the potential for data collection and data usage errors through pre-determined look up tables, storage and export functions. User defined permissions also regulate the ability to add, edit or extract data. The rigour of the database is such that transcription or keying errors are identified and amended prior to loading and storage. Typical collection methods are manual capture and translation of logging and other data into tough books (digital format) and subsequent import of csv tables through an automated data import scheme where data is validated upon import into the database using predefined look up values.
	Data validation procedures used.	The rigid structure of the acQuire 4 SQL data model is such that predefined rules and look up tables are applied to all data entry. Data that does not meet the criteria are highlighted and moved to a buffer area until the data is rectified to meet the passing rules. Validation of data includes visual checks of hole traces, analytical and geological data. IMAGO photogrammetry of all drill hole logs and RC chips are also used to further validate the geological logging, whereby high resolution photographs of holes can be compared to each other and known geological codes to ensure consistency and accuracy. It is unknown at this stage how the predecessors' database was managed and who was responsible for its maintenance. It is also unknown if there was any built in functionality around pass/fail checks on assay importing.
Site Visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.*	The competent person has undertaken several site visits to Otto Bore since Saracen acquired the project in 2014. With no historic mining at this deposit, historical drill core as well as recent drill core was inspected and compared to geological maps during the visits. The competent person has a sound understanding of the geology and resource.
	If no site visits have been undertaken indicate why this is the case.	N/A
Geological Interpretation	*Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.*	The interpretation is based on the detailed geological work completed by previous owners combined with the data from the recent drilling programs by Saracen. This knowledge is based on extensive geological logging of drill core, XRF data, downhole structural data, RC chips, and assay data. The addition of diamond drill hole data and twinning of historic data has resulted in cross validation of the RC chips and the geology. With increasing amounts of drilling data the confidence in the geological interpretation has improved. At a local scale, local variations suggest a folding network within the sheared package. Whilst this adds local complexity, it is not unfamiliar and is typical of the mineralised systems in this region. The geology model is used to guide the estimation of resources
	Nature of the data used and any assumptions made.	The interpretations are constructed using all available geological logging descriptions including but not limited to, stratigraphy, lithology, texture, veining, structure, mineral assemblages and alteration. Cross sectional interpretations of the mineralisation are created from the geological framework through which the 3D wireframe solid is built.
	The affect, if any, of alternative interpretations on Mineral Resource estimation.	The Otto Bore deposit is generally sub-vertical in geometry with clear southerly plunging ore shoots in the main body of the deposit. Infill drilling done over the years supported the current interpretation. Over the life of the project several different sources have interpreted the mineralisation and all agree on the same basic interpretation.
	The use of geology in guiding and controlling the Mineral Resource estimation.	Geological controls and relationships are used to define mineralised domains with clear southerly plunging ore shoots. The Otto Bore deposit is hosted within a sequence of sheared basalts and felsic to volcaniclastics, bounded by a basaltic footwall and a dolerite hangingwall.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	**JORC Code Explanation**	**Commentary**
	The factors affecting continuity both of grade and geology.	At the deposit scale the mineralisation at Otto Bore is hosted in NNW striking sheared high mg basalts, with southerly plunging ore shoots. Mineralisation is typically associated with quartz veining and is more strongly developed at the rheological boundary between the sheared complex and the basalt hangingwall or ultramafic footwall. Mineralisation becomes weaker away from the plunging shoots and more erratic and discontinuous away from the shear zone itself. To the north a series of cross cutting NW striking faults appear to offset the mineralisation and in parts terminate smaller subsidiary hangingwall and footwall lodes. In these northern zones the geology varies, with mineralisation associated with dolerites and other lithological contacts. To the south a more regional NE trending shear terminates the mineralisation.
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.*	Otto Bore mineralisation extends from 6888600mN to 6889200mN, 304750mE to 305000mE and 170 meters below surface. The shear system controlling mineralisation at Otto Bore generally strikes North-South
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.*	Block estimation using a combination of ordinary kriging (OK) and categorical indicator kriging (CIK) is completed in Datamine. CIK is utilised to define internal subdomains (low grade, medium grade and high grade populations) in all areas where the drill density (=<40m by 40m, but mostly 20mx20m) supports the estimation method. All domain wireframes have been constructed in Leapfrog, which are used as hard boundaries for the estimations. Grade is estimated into parent blocks, meaning all the sub-cells within a parent cell assumed the grade of the parent cell. Univariate statistical analysis of length weighted (1m) domain coded downhole composites have been completed for all domains, (over 90% of the sample intervals are 1m) and top-cuts applied where applicable. The influence of extreme grades was assessed by domain using a combination of top-cut analysis tools. Variogram modelling was completed with Snowden's Supervisor software. This measures the spatial variance of the gold grade within the domains. The parameters determined from this analysis are used in the interpolation process. The maximum distance of extrapolation from data points was set to 40m for inferred material.
	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 OK/CIK resource estimate has been compared with previous resource estimate completed by Saracen. The current resource estimate was updated with all the recent drilling done by Saracen in 2019 and 2020. Check estimates, such as non-CIK approach, a 2 bin CIK and 3 bin CIK, were done with different estimation parameters to find the best estimate that represents the informing input data. Mining has not commenced at Otto Bore.
	The assumptions made regarding recovery of by-products.	No assumptions have been made with respect to the recovery of by-products.
	Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).	There has been no estimate at this point of deleterious elements. Other elements that have been assayed other than gold include Arsenic, Cobalt, Nickel, Chromium and Magnesium albeit in low levels not to warrant their estimation. Arsenic occurs in low levels and is not considered harmful.
	In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.	A single block model for Otto Bore is constructed using a 5mE by 10mN by 5mRL parent block size with sub-celling to 1mE by 1mN by 1mRL for domain volume resolution. The block size supports the overriding drill spacing of 20mX20m and up to 40mX40m in the inferred areas. All estimation is completed at the parent cell scale. Search ranges are derived from the variogram modelling, the drill spacing and the known mineralisation geometry including direction of maximum continuity. Three search estimation runs are used with the aim to satisfy the minimum sample criteria in the first search range where possible. Kriging neighbourhood analysis was carried out for Otto Bore in order to optimise the block size, search distances and sample numbers used. In the majority of domains, most blocks were estimated in the first pass (particularly for the major domains); however, some more sparsely-sampled

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	**JORC Code Explanation**	**Commentary**
		domains were predominantly estimated on the second or third pass. Hard boundaries were applied between all estimation domains.
	Any assumptions behind modelling of selective mining units.	No selective mining units have been assumed.
	Any assumptions about correlation between variables.	No assumptions have been made regarding correlation between variables. Gold is the only mineral of economic significance at Otto Bore at this stage.
	Description of how the geological interpretation was used to control the resource estimates.	The geological interpretation correlates with the mineralised and estimated domains. Specifically, the mineralised domains correspond with sheared basalts, quartz veining and rheological contacts with high mg basalts. The latter is more evident in the fresh material than it is in the oxide regolith profile. The southerly plunging ore shoots are well defined in the variography with the direction of maximum continuity and search ellipses aligned to that direction. The geological units are flagged in the block model. All wireframe boundaries including those where lithology and mineralisation correspond, hard boundaries are enforced.
	Discussion of basis for using or not using grade cutting or capping.	Statistical analysis showed the populations in some of the domains at Otto Bore to generally have outliers which would if left unchecked would compromise the quality of the estimation by the smearing of grade. Where applicable top-cuts where applied to remove the influence of the outliers.
	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 key model validation steps have been taken to validate the resource estimate with results indicating a robust reconciliation between the data and estimate. Validation of the block model carried out a volumetric comparison of the resource wireframes to the block model volumes. The mineral resource model has been stepped through visually in sectional and plan view to compare the composite grades used in the estimate and the resultant block grades. This has also been carried out in 3D with the composite grades and a point cloud of the model grades. Northing, Easting and Elevation swathe plots have been constructed to evaluate the composited assay means against the mean block estimates. The averaged means by domain were also compared for a global comparison. The mineral resource model has been constructed to include kriging efficiency and the slope of regression values. These values are used to measure the quality of the estimate. Natural deterioration of the quality is observed at the perimeter of the modelled areas where data density is lower.
Moisture	*Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	All tonnages are estimated on a dry basis.
Cut-off parameters	*The basis of the adopted cut-off grade(s) or quality parameters applied.*	Based on Saracen's current economic operations at Carosue Dam and Thunderbox, and the natural grade distinction above background, a grade of 0.5g/t has been chosen for Open Pits.
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*	To best capture "reasonable prospects of eventual economic extraction", the mineral resource is reported within an optimised pit shell at $2250 at a 0.5g/t cut off for the open pit resources. The mining method to be employed at the Otto Bore deposit is conventional open pit with hydraulic excavator and dump truck fleet, and drill and blast activity. The class of excavator employed is similar to other current open pit mining operation, providing a good operating dataset for production and productivity rate measurement and financial modelling. The Otto Bore Reserve pit is designed to include a series of successive cutbacks to achieve life of mine Reserve such that it meets the operation efficiency and production rate. Appropriate mine schedule and lead times have been applied to maintain efficient mining operations between the stages.

Section 3: Estimation and Reporting of Mineral Resources		
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 process 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.*	It is expected that any future mining of the Otto Bore deposit will be processed at the Thunderbox processing facility which is currently processing ore from the Thunderbox open pit and underground operations. The Thunderbox mill employs a conventional crushing, grinding and CIL leaching process to extract the gold. The mill operated successfully between 2002 and 2007, processing in excess of 9Mt of ore. The conventional plant displayed excellent performance with gold recoveries between 93.4 to 96.6 % over the life of the mine. Test work by Ammtec completed suggests Otto Bore mineralisation should achieve similar recoveries to the mineralisation previously processed at Thunderbox. The ore indicates a high amenability for gravity recovery, fast kinetics an indicative recoveries in the 94- 97% range for both oxide and fresh mineralogies.
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 greenfields 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.*	Arsenic is present in the mineralogy of the deposit albeit in low levels. The processing plant has been designed to ensure effective management of potentially harmful arsenic contamination. A 20m diameter high rate thickener is used to thicken the tails to maximise water and cyanide recovery. Process water is added to the thickener feed to create one wash stage prior to detoxification. Arsenic precipitation is effected in a stirred closed tank with air sparging. Ferric sulphate solution is metered into the reactor on the basis of dissolved arsenic concentration. The fumes from the precipitation tank are passed through a packed bed caustic scrubber before venting to the atmosphere. The precipitation tank overflow is then passed to the tails hopper.
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.*	Previous owners have taken routine density measurements when drilling diamond core. The method of calculation is the water displacement technique. Saracen has validated these historical values by taking its own bulk density samples from the more recent diamond drilling in 2019. The method of calculation is the water displacement technique. The bulk density will be monitored and further validated as more diamond data becomes available. Measurements have been recorded in the acquire database and extraction schemes pair this data with the major lithology code for statistical analysis. At this point Saracen does not have the available data to comment on the frequency and distribution of the historical density measurements. The size and nature of the samples is also unknown to Saracen at this time.
	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.	Whilst it is unknown how historic bulk density samples were managed, Saracen manages porous or clay which oxide samples by coating the dried samples in paraffin wax prior to the water displacement technique. Saracen has further assumed the density assignments at Otto Bore are good estimates based on the very good performance from mine to mill of other surrounding deposits of similar geology.
	Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	An average mean of bulk densities collected for each lithology type in each regolith zone has been uniformly applied to the modelled geological/regolith zones. The regolith zones include the primary fresh lithologies as well as the weathered oxide and transitional zones.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC Code Explanation	Commentary
Classification	*The basis for the classification of the Mineral Resources into varying confidence categories.*	The mineral resource has been classified into Indicated and Inferred categories based on drill hole spacing, geological confidence, and grade continuity and estimation quality. The combination of these factors together guide the digitising of a "cookie cutter" string in long section view which selects and codes the appropriate blocks with the nominated resource classification category.
	Whether appropriate account has been taken of all the 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).	The input data is comprehensive in its coverage of the mineralisation and does not favour or misrepresent in-situ mineralisation. Geological control at Otto Bore is predominantly confined to sheared basalts. The definition of mineralised zones is based on a good level of geological understanding producing a robust model of mineralised domains. Successive drilling campaigns by the previous owners and recently Saracen, have confirmed the current interpretation used in this resource model. The validation of the block model shows good correlation of the input data to the estimated grades.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The geological model and the mineral resource estimate reflect the competent person's view of the deposit.
Audits or reviews	*The results of any audits or reviews of Mineral Resource estimates.*	At the completion of every resource estimate Saracen Gold Mines undertake an extensive review of the model that covers model inventory and comparisons to previous and budget models. Geological interpretation, wire-framing, domain selection, statistics by domain, assay evaluation, parent cell sizes, data compositing, variography, search strategy, estimation and Kriging Neighbourhood Analysis and finally model validation and resource categorisation are all discussed and scrutinized by the geological and mine planning teams. It meets high industry standards. An external review by CSA Global was done in 2019 on the Otto Bore resource estimate, and no fatal flaws were identified.
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 relative accuracy of the Mineral Resource estimate is reflected in the reporting of the Mineral Resource as per the guidelines of the 2012 JORC Code. The resource estimates have undergone a robust validation process, and as such, the competent person is satisfied that the resources estimated in the block model are a true representation of the in-situ resources.
	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 statements relate to a global estimate of tonnes and grade.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	There have been no mining activities at Otto Bore.

Section 4: Estimation and Reporting of Ore Reserves		
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 estimate for the Otto Bore deposit is a robust global estimate that was used as a basis for conversion to the Ore Reserve estimate. Resource estimate was compiled by Saracen using exploration, resource definition, and grade control drilling and assay data, geological mapping and historical mining records to validate the model against and solid interpretation wireframes of the geology. This information was used to construct a model estimated by various kriging methods. The block model was depleted with end of June 2020 survey pickup for Reserve Estimation.
	Clear statement as to whether the Mineral Resources are reported additional to. Or inclusive of, the Ore Reserves.	The Mineral Resource reported is inclusive of the Ore Reserve.
Site Visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.*	A Competent Person has conducted several site visits to the Otto Bore open pit operation since the inclusion in Thunderbox operations' life of mine plan. The purpose of these visits is to collect information for optimisation work, validating input parameters, visual pit inspection, discussion and feedback for life of mine planning. The information also includes the discussion around current mining performance, wall conditions and overall stability, and groundwater condition.
	If no site visits have been undertaken indicate why this is the case.	N/A
Study status	*The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves*	The Otto Bore deposit is located in close proximity to Thunderbox operations, which includes open pit, underground mine and a 2.9mt processing facility. Saracen has completed a relevant feasibility study with a view to bring Otto Bore open pit in to operation and the project has positively passed through all economic and social risk management criteria. The 2020 Ore Reserve has been subject to validating all aspects of operational inputs such as production parameters, modifying factors, operating costs of mining, processing, general administration and environment management related costs.
	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.	Modifying factors have been applied to the optimisation study and resultant Reserve pit design work to ensure the rigor of the financial analysis. Operational costs and production parameters have been used from actual and ongoing mining and processing performance. Saracen has completed all appropriate supporting mining studies required for Ore Reserve estimate.
Cut-off parameters	*The basis of the cut-off grade(s) or quality parameters applied*	The Ore Reserve is estimated at a cut-off grade of 0.50g/t, an assumed gold price of AUD$1,750/oz and operating costs of mining, processing, haulage and general administration. A top cut has already been applied to the Mineral Resource Estimate eliminating the necessity for any further adjustment to the Ore Reserve Estimate.
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).*	The resource model used in the Mineral Resource Estimation was the basis for the generation of a range of Whittle 4X pit optimisation shells. The generation of these shells was reliant upon costs and inputs derived from current operational data, contractors and independent consultant recommendations. An appropriate shell was then selected as the basis for an iterative process of pit design work, culminating in the finalisation of a detailed pit design for the Otto Bore Reserve.
	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 mining method to be employed at the Otto Bore deposit is conventional open pit with hydraulic excavator and dump truck fleet, and drill and blast activity. The class of excavator employed is similar to other open pit mining operations, providing a good operating dataset for production and productivity rate measurement and financial modelling.

Section 4: Estimation and Reporting of Ore Reserves		
Criteria	JORC Code Explanation	Commentary
		Otto Bore Reserve pit is designed as single large pit to achieve life of mine Reserve such that it meets the operational efficiency, safety and production rates. Appropriate mine schedules and lead times have been considered to maintain efficient mining operation.
	The assumptions made regarding geotechnical parameters (e.g. pit slopes, stope sizes, etc.), grade control, and pre-production drilling.	The life of mine Reserve pit has been designed following appropriate geotechnical recommendations. The geotechnical guidelines were prepared by the site geotechnical team by reviewing geotechnical drill hole results and conducting further assessment on wall stability performance and long term stability aspects. It is expected that once the pit is in operation there may be some need for additional geotechnical input and any reflected changes to the life of mine pit design. The geotechnical team will oversee all geotechnical aspect of technical studies and provide ongoing site support. The Grade control method to be employed at Otto Bore will utilise an RC drilling and sampling method. The method and practice has been utilised successfully at all current and past mining operations at Saracen.
	The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).	The Ore Reserve Estimate is based on detailed life of mine pit design work by using a geology approved resource model, and making appropriate dilution and recovery factor allowance for mining fleet and method utilised.
	The mining dilution factors used.	A mining dilution factor of 15% is applied on the Ore Reserve estimation and reflects the current mining performance based on ore body characteristics, mining method and equipment utilised.
	The mining recovery factors used.	A mining ore loss factor of 5% is applied on the Ore Reserve estimation and reflects the mining performance based on ore body characteristics, mining method and equipment utilised.
	Any minimum mining widths used	A minimum mining width of 25m has been adopted for the primary excavation fleet. Where 'pinch-points' occur or "Good Bye" cuts are considered at the base of the pit, it is assumed that a smaller or more versatile excavator will be employed. The practice is very consistent across all open pit operations and reflects the suitability and efficiency of the mining performance.
	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 does not generate any revenue. Therefore the final pit reserve inventory has excluded any inferred mineral resources.
	The infrastructure requirements of the selected mining methods.	The selected mining method and location of the deposit is close to the current operating Thunderbox operations. The existing operation has adequate infrastructure available to support the current and future mine plan.
Metallurgical factors or assumptions	*The metallurgical process proposed and the appropriateness of that process to the style of mineralisation*	The selected mining method and location of the deposit is close to existing Thunderbox operations, which consists of open pit, underground and 2.9mt processing plant, modern camp site and all other required infrastructure to support the current and future mine plan.
	Whether the metallurgical process is well-tested technology or novel in nature.	The current Thunderbox processing plant and method applied utilises well tried and proven technology and since being in operation averages gold recoveries typically between 93 to 94% while processing similar types of ore material without any issue.
	The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.	The average gold recovery for the Otto Bore deposit is estimated at 94%. The recovery estimation is based on met test work and ongoing long term actual average recovery data collected at Thunderbox Plant. The plant performance is consistent between 93 to 94% while processing similar types of ore material without any issue. Metallurgical testwork has been carried out on samples from the Otto Bore deposit by processing and test lab, with suggested recoveries could go as high as 97% hence the estimated recovery is in line with expectation.
	Any assumptions or allowances made for deleterious elements.	There are no known deleterious elements present in Otto Bore ore.

Section 4: Estimation and Reporting of Ore Reserves		
Criteria	JORC Code Explanation	Commentary
	The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the ore body as a whole.	A number of samples of each expected rock type have been sampled through the Thunderbox processing plant for trial test work. These bulk samples/pilot test work are considered as sufficient to represent the Otto Bore ore body as a whole.
	For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications.	N/A
Environmental factors or assumptions	*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.*	All required Environmental studies have been completed and relevant vegetation clearances, dewatering permits has been granted. The current Mining Approvals will be revised and resubmitted to accommodate the new reserve pit. The Otto Bore mine is located ~15km from Thunderbox operation and connected to the processing plant via combination of Goldfields Highway and site internal access haul road. The Otto Bore operation will utilise the existing Thunderbox processing facility, and TSF storage facilities that are all located on granted mining leases. The gas spur pipeline, the bore field and the airstrip at Thunderbox are all on granted miscellaneous licences. A waste rock characterisation study has been carried out and is expected to be representative of Bannockburn waste rock. An appropriate landform design criteria has been considered based on rock characteristics to mitigate current and any future waste landform expansion.
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.*	The Otto Bore operation will require minimum infrastructure given its close proximity to the well-established and maintained Thunderbox operation. The ore will be transported to the Thunderbox processing plant via internal haul road. The processing facility and major infrastructure are fully operational at Thunderbox. A modern accommodation camp is located within a few kilometres of the pit, and a well maintained gravel airstrip services the camp. The mine site is connected to Goldfields highway and the Gas Transmission Line, and runs on dual fuel (diesel/gas) power generator.
Costs	*The derivation of, or assumptions made, regarding projected capital costs in the study.*	Capital costs relating to the establishment, mobilisation and pre striping of the pit are included in the financial modelling. A haul road will need to be upgraded at the commencement of operation to facilitate better connectivity to Thunderbox operation.
	The methodology used to estimate operating costs.	Operating costs for open pit mining have been derived from a combination of actual mining costs for Thunderbox Operations and costs supplied by various contract mining companies, and independent consultants. Operating costs for ore processing, haulage and administration have been derived from known parameters at Thunderbox Operations.
	Allowances made for the content of deleterious elements	Met test work carried out for Otto Bore material did not reveal any deleterious elements within the ore or waste that required any additional cost allowances.
	The derivation of assumptions made of metal or commodity price(s), for the principal minerals and co-products	An assumed gold price of AUD$1,750/oz has been adopted for the financial modelling. No allowance is made for silver by-products.
	The source of exchange rates used in study	All revenue and cost calculations have been made in AUD, so no exchange rate usage or assumptions have been necessary.
	Derivation of transportation charges	Costs associated with bullion transportation have been derived from existing contractual arrangements at Thunderbox.

Section 4: Estimation and Reporting of Ore Reserves		
Criteria	JORC Code Explanation	Commentary
	The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.	Costs associated with refining have been derived from existing contractual arrangements at Thunderbox.
	The allowances made for royalties payable, both Government and private.	Royalty costs are the WA state government royalty of 2.5% is payable. Third Party Royalty of 2.5% for the ounce production between 42,000 to 100,000 oz. No Third-party royalty is applicable below and above the given ounce production range.
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.*	For the purposes of the Ore Reserve Estimation it has been assumed that there is no gold hedging. All gold production will be sold at spot price to the Perth Mint.
	The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products	Assumed gold price of AUD$1,750/oz has been adopted for financial modelling. No allowance is made for silver by-products.
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.	There is a transparent quoted market for the sale of gold.
	For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.	N/A
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.*	The Ore Reserve Estimation is based on a detailed life of mine pit design and reflects positive economic outcomes. All relevant capital and operating costs as well as revenue and royalty factors have been included with appropriate discount factor for cash flow analysis.
	NPV ranges and sensitivity to variations in the significant assumptions and inputs.	A full financial model is 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*	Both Otto Bore and the Thunderbox mine/processing plant are located on lease-hold pastoral land with regular community engagement and communication of the mining lease and operation. Compensation agreements are in place with the local pastoralist and Saracen enjoys a good relationship with neighbouring stakeholders, including local pastoralists and the traditional owners. Granted mining leases cover all of the proposed mining and processing assets
Other	*To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:*	N/A
	Any identified material naturally occurring risks	Water inrush is identified as a naturally occurring risk with in the operation and will be addressed at the commencement of the operation by constructing appropriate water diversion bunds to provide a safe and risk free work environment.

Section 4: Estimation and Reporting of Ore Reserves		
Criteria	JORC Code Explanation	Commentary
	The status of material legal agreements and marketing arrangements	A Royalty of 2.5% of gold production is payable to WA State Government and a Third Party Royalty of 2.5% for the ounce production between 42,000 to 100,000 oz. The agreement is in place for the Joint Venture tenement that exist within Otto Bore deposit. The estimated Ore Reserve representing appropriate allocation of tenements ownership.
	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.	All required Environmental studies have been completed and relevant vegetation clearances and dewatering permits have been granted. The current Mining Approvals will be revised and resubmitted to accommodate the new reserve pit.
Classification	*The basis for the classification of the Ore Reserve into varying confidence categories*	The Ore Reserve Estimate classification for Otto Bore has been made in accordance with the JORC code 2012. The Ore Reserve Estimate classified as being Probable has been derived from the Mineral Resource classified as Indicated only.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	Cost assumptions and modifying factors are applied to the pit optimisation and subsequent designs were derived from current operational data relating to the Thunderbox operations, and supplied by contract mining companies and independent consultants. Results of these optimisations, reserve pit design and the resultant inventory reflect the Competent Person's view regarding the Otto Bore deposit.
	The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any)	100% of Probable ore from the Ore Reserve Estimate has been derived from Indicated ore of the Mineral Resource.
Audits or reviews	*The results of any audits or reviews of Ore Reserve estimates*	The Ore Reserve Estimation process is in line with the Saracen Ore Reserve Policy and has undergone internal review. The estimated Ore Reserve representing appropriate allocation of tenements ownership.
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 geo-statistical 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 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.* *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*	The Ore Reserve estimate has been prepared in accordance with the guideline of the 2012 JORC Code. The relative confidence of the estimate complies with the criteria of Probable Ore Reserves. Based upon; • Resource estimate • significant operating history, • application of current industry practices, • appropriate operating and capital costs, The range of the modifying factors and mining parameters applied are reasonable and confidence in the resulting reserve estimate is reasonable. The reserve mine design has adopted all reasonable modifying factors and financial analysis used in the estimated Ore Reserve have been the subject to peer review internally, and the Competent Person is confident that it is an accurate estimation of the reserve. The Otto Bore operation will utilise the same grade control methods that are widely utilised at current Thunderbox operations.

Section 4: Estimation and Reporting of Ore Reserves		
Criteria	JORC Code Explanation	Commentary
	which there are remaining areas of uncertainty at the current study stage. *It is recognised that this may not be possible or appropriate in all circumstances. These statements or relative accuracy and confidence of the estimate should be compared with production data, where available.*	

<u>Rainbow</u>

Section 1: Sampling Techniques and Data		
Criteria	JORC Code Explanation	Commentary
Sampling Techniques	*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.*	Sampling methods undertaken at Rainbow by previous owners have included rotary air blast (RAB), reverse circulation (RC) and diamond drillholes (DD). Saracen has not carried out any sampling activities at Rainbow due to only recently acquiring the deposit.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used	RC, RAB, and DD core drilling is assumed to have been completed by previous holders to industry standard at that time (1980- 2010).
	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 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information	Limited information has been found for historic drilling so it is assumed all RAB, RC and DD and sampling was carried out to industry standard at that time. More recent RAB and RC drilling has involved a total preparation sample protocol involving 4m composite samples or 1m samples from which a 50g charge is produced for aqua regia or fire assay digest and flame AAS 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.).*	Drilling activities at Rainbow have included 308 RAB holes, 173 RC holes (assumed standard 5 ¼'' bit size) and 5 DD holes (HQ diameter). Limited historic diamond core hole was oriented by unknown methods.
Drill Sample Recovery	*Method of recording and assessing core and chip sample recoveries and results assessed*	Recoveries for some more recent RC drilling have been recorded based on a visual weight estimate. It is unknown historic recoveries were recorded.
	Measures taken to maximise sample recovery and ensure representative nature of the samples	It is unknown what, if any, measures were taken to ensure sample recovery and representivity.
	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.	Any historical relationship is not known.
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. Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.*	Logging of diamond drill core, RAB and RC chips record lithology, mineralogy, texture, mineralisation, weathering, alteration and veining. Some diamond drilling has had limited geotechnical logging carried out. It is unknown if any diamond core was photographed.

Section 1: Sampling Techniques and Data		
Criteria	JORC Code Explanation	Commentary
	The total length and percentage of the relevant intersections logged	Some early drilling has not had lithology recorded in the database; the majority of more recent drillholes appear to have been logged in full.
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.*	The method for diamond core is quarter or half core sampling.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	The sampling methods for much of the historic RC and RAB drilling are unknown. More recent RC and RAB drilling has been riffle split or spear sampled. It is unknown if wet samples were encountered.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	The sampling techniques for much of the historic, RAB, RC and DD drilling are unknown, best practice is assumed.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	Best practice is assumed at the time of historic RAB, DD and RC sampling.
	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.	It is unknown if duplicate sampling was performed on the majority of historic RAB, RC and DD drilling. There is evidence of field duplicate sampling being conducted in more recent RC campaigns.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	It is assumed sample sizes were appropriate for the grain size of material being sampled. More recent drilling included sizing analysis (90% passing 75 micron) to confirm this.
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.*	Numerous assay techniques have been used in the history of the deposit, most recently fire assay, fire assay with flame finish and aqua regia. These methods are considered suitable for determining gold concentrations in rock and are total digest methods. Other assay methods utilised for gold determination include BETA and unknown methods.
	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.	It is unknown if any instruments of this nature have been used at Rainbow.
	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.	QAQC information from historic Rainbow sampling data is limited therefore all drilling is assumed to have been carried out to industry standard. More recent drilling carried out at the deposit adhered to strict QAQC protocols involving weighing of samples, collection of field duplicates and insertion of blanks and standards. Laboratory repeats were also carried out. Analysis of the data confirmed acceptable levels of precision and accuracy.
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.*	It is unknown if historic intercepts were verified by alternative company personnel.
	The use of twinned holes.	Specific drilling programs consisting of twinned holes are not apparent.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols	Limited documentation of this nature has been provided. Data has been stored in an acQuire database.
	Discuss any adjustment to assay data.	No adjustment to assay data appears to have been made
Location of data points	*Accuracy and quality of surveys used to locate drillholes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.*	The survey quality and control is unknown for the majority of historic drilling. More recent drilling has collar locations surveyed by unspecified GPS and DGPS equipment. Downhole survey methods recorded include Eastman single shot, Reflex, gyro, inferred and unknown methods.

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
	Specification of the grid system used.	MGA Zone 51 grid coordinate system is used. Some historic data drilled on local grid systems has been converted to this grid system
	Quality and adequacy of topographic control.	LionOre purchased digital orthoimagery of the area from Kevron Aerial Surveys in the early 2000s and used this to establish topographic control.
Data spacing and distribution	*Data spacing for reporting of Exploration Results.*	No exploration results reported in this release. The nominal drillhole spacing is 25 m (northing) by 25 m (easting) in the core of the deposit, and increases to the margins of the deposit.
	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 mineralised domains at Rainbow have demonstrated sufficient continuity in both geological and grade continuity to support the definition of Mineral Resources and the classifications applied under the 2012 JORC Code.
Orientation of data in relation to geological structure	*Whether sample compositing has been applied.*	Historic 1990s RAB and RC drilling was generally sampled on 3 - 4m composites. More recent RAB and RC drilling was composited into 4m samples with any assay >250ppb resampled to 1m.
	Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.	The deposit is drilled towards grid east at angles varying from -60⁰ and -90⁰ to intersect the mineralised zones at a close to perpendicular relationship for the bulk of the deposit.
	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.	All drilling from surface has been drilled as close to perpendicular as possible. This has reduced the risk of introducing a sampling bias as far as possible. No orientation based sampling bias has been identified at Rainbow in the data at this point.
Sample security	*The measures taken to ensure sample security.*	Information on sample security measures has not been provided
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	No evidence of external reviews has been supplied. Saracen has not had access to this information during the acquisition process.

Section 2: Reporting of Exploration Results		
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 Rainbow resource is located on M36/541, with near mine exploration extending onto M36/476 and M36/462. Mining Leases M36/541 and M36/476 are held by Saracen Metals Pty Limited, a wholly owned subsidiary of Saracen Minerals Holdings Limited. The mining leases have a 21 year life: Mining Leases M36/541 and M36/476 are held until 2021 and Mining Leases M36/462 is held until 2022. All are renewable for a further 21 years on a continuing basis. M36/462 is subject to a royalty of 2.5% on the net smelter return (NSR) from mined ore between 42,000 and 100,000 ounces of gold payable to Black Mountain Gold Limited. All production is subject to a Western Australian state government NSR royalty of 2.5%. A single Aboriginal Heritage site exists within M36/541 – Site ID 2551 Leonora-Leinster 22 artefacts and scatter. The site is not impacted by near mine exploration on the tenement. There are newly identified Aboriginal Heritage sites on the tenements that are yet to be released on the DPLH register. Mining Lease 37/462 is subject to a Westpac Mortgage (499141).

Section 2: Reporting of Exploration Results		
Criteria	**JORC Code Explanation**	**Commentary**
		There are no caveats relating to the tenements. There are no pastoral compensation agreements over the tenements. The Mining Rehabilitation Fund applies to the tenements.
	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 impediment exists to obtaining a licence to operate and the tenements are all in good standing.
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	Initial exploration efforts carried out in the Rainbow area in the late 1970s- early 1980s by companies including WMC, Seltrust and BP minerals concentrated on nickel sulphide mineralisation. Gold and PGE exploration in the district began in the 1980s, carried out by companies including BHP, Dominion, Dalrymple and Miralga. The Rainbow mineralisation was discovered in 1997 by Forrestania (the managing party in the Wildara JV with Dalrymple) after anomalous rock chips were followed up with soil sampling. This defined two broad zones of anomalism. RAB drilling confirmed mineralisation over a 1.2km strike length and RC drilling was carried out to test the down dip extent. RAB and RC drilling continued along the Rainbow mineralisation hosting structure, extending the mineralised strike considerably. Further RC and drilling activities occurred in order to define the resource. In 2007 Norilsk acquired the project after taking over Lionore (who had previously merged with Dalrymple). Little work was carried out after this.
Geology	*Deposit type, geological setting and style of mineralisation.*	Regionally the Rainbow deposit occurs on the southern end of the Yandal greenstone belt in an area where several major intra-greenstone shear zones converge and join with the Perseverance Fault. This shear system (the "Yandal-Melita shear") hosts the Bronzewing and Mt McClure deposits to the north of Thunderbox and continues south beyond the pinch out of the Yandal greenstone belt to the Leonora district, where it is associated with the Tarmoola, Jasper Flat, Tower Hill, Harbour Lights and Gwalia deposits This shear system appears to be a major geological discontinuity, defining the boundary between two potentially distinct geological domains. The western domain is continuous with the Wiluna – Mt Keith – Leinster – Mt Clifford sequence and is characterised by deformed and metamorphosed ultramafic and mafic dominated greenstone stratigraphy intruded by granitoid plutons. The eastern domain is dominated by sediments, felsic volcanics and felsic intrusive complexes in addition to mafics and contains copper-zinc volcanogenic massive sulphide mineralisation (at Teutonic Bore).Locally the deposit is contained with a sheared unit with sediments in the footwall and mafics in the hanging wall. The shear dips to the west at approximately 450 and strikes 340 degrees. Gold mineralisation at Rainbow occurs in shallow west dipping quartz +/-sulphide lodes within sheared basalts/sediments. Mineralisation occurs as one main lode, however other smaller lodes are apparent as is some supergene enrichment.
Drillhole 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:* • *easting and northing of the drill hole collar* • *elevation or RL (Reduced Level – elevation* • *above sea level in metres) of the drill hole collar* • *dip and azimuth of the hole* • *down hole length and interception depth*	A total 601 (predominantly Diamond and RC) holes have been used in the mineral resource and are deemed to be material. It is not practical to summarise all of the holes here in this release. Future drill hole data will be periodically released or when a results materially change the economic value of the project. Exclusion of the drilling information will not detract from the reader's view of the report.

Section 2: Reporting of Exploration Results		
Criteria	JORC Code Explanation	Commentary
	• *hole length.* • *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.*	
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.*	No exploration results are reported in this release.
	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.	No exploration results are reported in this release.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	No exploration results are reported in this release.
Relationship between mineralisation widths and intercept lengths	*These relationships are particularly important in the reporting of Exploration Results.* *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* *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').*	Saracen has not previously reported exploration results nor are any included in this release.
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.*	No diagrams are referenced in this release.
Balanced Reporting	*Where comprehensive reporting of all Exploration Results are not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	Saracen has not previously reported exploration results nor are any included in this release.
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*	No substantive data acquisition has been completed in recent times.

Section 2: Reporting of Exploration Results		
Criteria	**JORC Code Explanation**	**Commentary**
	density, groundwater, 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).* *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive*	Saracen is currently working on establishing an exploration program which will identify areas of opportunity to extend or enhance the Rainbow mineral resource.

Section 3: Estimation and Reporting of Mineral Resources		
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.*	The database provide to Saracen was an extract from an acquire SQL database. The primary database is regulated by a locked framework called the acquire data model which fixes the relationships between tables. The data model minimises the potential for data collection and data usage errors through pre-determined look up tables, storage and export functions. User defined permissions also regulate the ability to add, edit or extract data. It is unknown at this stage how the process used to record the primary data. Typical methods are manual translation of logging and data capture from written logs, direct import of csv tables through a data import scheme where data is validated upon import or direct data entry options into the database using predefined look up values.
	Data validation procedures used.	The rigid structure of the acquire data model is such that predefined rules and look up tables are applied to all data entry. Data that does not meet the criteria are highlighted and moved to a buffer area until the data is rectified to meet the passing rules. It is unknown at this stage how the database was managed and who was responsible for its maintenance. It is also unknown if there was any built in functionality around pass/fail checks on assay importing.
Site Visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.*	No site visits have taken place at this point in time by the competent person. However, a team of 12 people including Saracen technical representatives as well as industry consultants did conduct site visits. Historical drill core was inspected during the visits.
	If no site visits have been undertaken indicate why this is the case.	Given that there was no activity (drilling, mining etc.), it was deemed that a site visit during the process would not provide significant value and not materially affect the outcome of any resource estimate.
Geological Interpretation	*Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.*	The interpretation has been based on the detailed geological work completed by previous owners of the deposit. This knowledge is based on extensive geological logging of drill core, RC chips, and assay data. The confidence in the geological interpretation of the Rainbow deposit is considered good. The shear system hosting the deposit is well understood and there are other known gold mines associated with it on a regional scale.
	Nature of the data used and any assumptions made.	The interpretations have been constructed using all available geological logging descriptions including but not limited to, stratigraphy, lithology, texture, and alteration. Cross sectional interpretations of the mineralisation have been created and from the basic framework through which the 3D wireframe solids are built.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	**JORC Code Explanation**	**Commentary**
	The affect, if any, of alternative interpretations on Mineral Resource estimation.	The Rainbow deposit is generally sub-vertical in geometry, with clear boundaries which define the mineralised domains. Infill drilling done over the years supported the current interpretation which is considered to be robust. Over the life of the project several different sources have interpreted the mineralisation and all agree on the same basic interpretation.
	The use of geology in guiding and controlling the Mineral Resource estimation.	Geological controls and relationships were used to define mineralised domains. The Rainbow deposit is within a sequence of sheared basalts
	The factors affecting continuity both of grade and geology.	At the deposit scale the mineralisation at Rainbow is hosted in sheared basalts. Mineralisation is mainly confined to the shear system which trends north south and becomes erratic and discontinuous away from it.
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.*	Rainbow mineralisation extends from 6888600mN to 6889200mN, 304750mE to 305000mE and 170 meters below surface. The shear system controlling mineralisation at Rainbow generally strikes North-South
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.*	Grade estimation using Ordinary Kriging (OK) was completed at Rainbow. Micromine software was used to estimate gold into10m x20m x5m size parent blocks. Drill grid spacing ranges from 25 m to 50 m. Drillhole sample data was flagged using domain codes generated from three dimensional mineralisation domains and oxidation surfaces. Sample data was composited to one metre downhole length. Over 90% of the sample intervals are 1m. Intervals with no assays were excluded from the compositing routine. The influence of extreme sample distribution outliers was reduced by top-cutting where required. The top-cut levels were determined using a combination of top-cut analysis tools (grade histograms, log probability plots and CVs). Top-cuts were reviewed and applied on a domain basis. Variography was conducted in Snowden's supervisor software.
	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 ordinary kriged resource estimate has been compared with previous resource estimate done by the previous owner. The previous resource predicted more tonnes and lower grade for the total inventory resource. This resource estimate done by Saracen predicts less tonnes at higher grades. This discrepancy can be explained by the 'loose' broad mineralisation envelopes used in conjunction with the Multiple Indicator kriging methodology in the previous estimate compared with Saracen's mineralisation envelopes which were constructed using a nominal 0.5 g/t Au cut-off grade. There are no previous mining activities at Rainbow
	The assumptions made regarding recovery of by-products.	No assumptions have been made with respect to the recovery of by-products.
	Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).	There has been no estimate at this point of deleterious elements. Other elements that have been assayed other than gold include Arsenic, Cobalt, Nickel, Chromium and Magnesium albeit in low levels to warrant their estimation. Arsenic occurs in low levels to be considered harmful.
	In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.	A single block model for Rainbow was constructed using a 10 mE by 20 mN by 5 mRL parent block size with sub-celling to 1 mE by 2 mN by 1 mRL for domain volume resolution. All estimation was completed at the parent cell scale. Kriging neighbourhood analysis was carried out for Rainbow in order to optimise the block size, search distances and sample numbers used. Discretisation was set to 4 by 5 by 3 for all domains. The size of the search ellipse per domain was based on the gold variography. Three search passes were used for each domain. In general, the first pass used the ranges of the gold variogram and a minimum of 12 and maximum of 36 samples. In the second pass the search ranges were unchanged and the minimum samples reduced to 8

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC Code Explanation	Commentary
		samples. The third pass ellipse was extended to 2 times the range of the gold variograms and the minimum number of 8 and a maximum of 32 samples were applied. A maximum of 4 samples per hole were used. In the majority of domains, most blocks were estimated in the first pass (particularly for the major domains); however, some more sparsely-sampled domains were predominantly estimated on the second or third pass. Un-estimated blocks, i.e. those outside the range of the third pass, were assigned the estimated domain mean and lower resource confidence classifications. Hard boundaries were applied between all estimation domains.
	Any assumptions behind modelling of selective mining units.	No selective mining units have been assumed.
	Any assumptions about correlation between variables.	No assumptions have been made regarding correlation between variables.
	Description of how the geological interpretation was used to control the resource estimates.	The geological interpretation strongly correlates with the mineralised domains. Specifically where the mineralised domain corresponds with sheared basalts. Where well known the geological unit is described in the block model all wireframe boundaries including those where lithology and mineralisation correspond, hard boundaries are enforced.
	Discussion of basis for using or not using grade cutting or capping.	Statistical analysis showed the populations in some of the domains at Rainbow to generally have outliers which would if left unchecked would compromise the quality of the estimation by the smearing of grade. Where applicable top-cuts where applied to remove the influence of the outliers.
	The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.	Validation of the block model carried out a volumetric comparison of the resource wireframes to the block model volumes. Validating the estimate compared block model grades to the input data using tables of values, and swath plots showing northing, easting and elevation comparisons. Visual validation of grade trends and metal distributions was carried out. There have not been any previous mining activities at Rainbow; therefore no reconciliation data is available.
Moisture	*Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	All tonnages are estimated on a dry basis.
Cut-off parameters	*The basis of the adopted cut-off grade(s) or quality parameters applied.*	Based on Saracen's current economic operations at Carosue Dam, and the natural grade distinction above background, a grade of 0.5g/t has been chosen. This cut-off grade was used to define the mineralised envelopes.
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 Rainbow deposit is amenable to mining by open pit methods. There has not been any previous mining at Rainbow. There are reasonable grounds to assume that in the future this deposit will be mined by conventional open pit methods given the close proximity to surface of the mineralisation. To best capture "reasonable prospects for eventual economic of extraction", the mineral resource was reported within an optimised pit shell at $2250 at a 0.5g/t cut off for the open pit resources.
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*	It is expected that any future mining of the Rainbow deposit will be processed at the Thunderbox processing facility which is currently on care and maintenance. The Thunderbox mill employs a conventional crushing, grinding and CIL leaching process to extract the gold. The mill operated successfully between 2002 and 2007, processing in excess of 9Mt of ore. The conventional plant

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC Code Explanation	Commentary
	metallurgical methods, but the assumptions regarding metallurgical treatment process 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.	displayed excellent performance with gold recoveries between 93.4 to 96.6 % over the life of the mine. Test work by Ammtec completed historically suggests Rainbow mineralisation should achieve similar recoveries to the mineralisation previously processed at Thunderbox.
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 greenfields 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.*	Arsenic is present in the mineralogy of the deposit albeit in low levels to be considered harmful. The processing plant has been designed to ensure effective management of potentially harmful arsenic contamination. A 20m diameter high rate thickener is used to thicken the tails to maximise water and cyanide recovery. Process water is added to the thickener feed to create one wash stage prior to detoxification. Arsenic precipitation is effected in a stirred closed tank with air sparging. Ferric sulphate solution is metered into the reactor on the basis of dissolved arsenic concentration. The fumes from the precipitation tank are passed through a packed bed caustic scrubber before venting to the atmosphere. The precipitation tank overflow is then passed to the tails hopper.
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.*	Previous owners have taken routine density measurements when drilling diamond core. 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. At this point Saracen does not have the available data to comment on the frequency and distribution of the density measurements. The size and nature of the samples is also unknown to Saracen at this time.
	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.	As stated above the frequency and distribution is unknown at this point in time. Saracen however assumes from the very good performance from mine to mill from the other surrounding deposits of similar geology the density assignments at Rainbow are deemed accurate.
	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 mineral resource has been classified into Indicated and Inferred categories based on drill hole spacing, geological confidence, and grade continuity and estimation quality. The combination of these factors together guide the digitising of a “cookie cutter” string in long section view which selects and codes the appropriate blocks with the nominated resource classification category.
	Whether appropriate account has been taken of all the 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).	The input data is comprehensive in its coverage of the mineralisation and does not favour or misrepresent in-situ mineralisation. Geological control at Rainbow is predominantly confined to sheared basalts. The definition of mineralised zones is based on a high level of geological understanding producing a robust model of mineralised domains. Successive drilling campaigns by the previous owners have confirmed the current interpretation used in this resource model. The validation of the block model shows good correlation of the input data to the estimated grades.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	**JORC Code Explanation**	**Commentary**
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The geological model and the mineral resource estimate reflect the competent person's view of the deposit.
Audits or reviews	*The results of any audits or reviews of Mineral Resource estimates.*	Saracen has adopted a process for geological modelling, estimation and reporting of mineral resources that meets high industry standards. No external audits have been conducted, as this deposit was recently acquired, Saracen however intends have an external audit done prior to commencement of any mining activity.
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 relative accuracy of the Mineral Resource estimate is reflected in the reporting of the Mineral Resource as per the guidelines of the 2012 JORC Code. The resource estimates have undergone a robust validation process, and as such, the competent person is satisfied that the resources estimated in the block model are a true representation of the in-situ resources.
	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 statements relate to a global estimate of tonnes and grade.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	There have been no mining activities at Rainbow.

Bannockburn

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
Sampling Techniques	*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.*	Sampling methods undertaken by Saracen at Bannockburn include diamond drilling (DD), reverse circulation (RC) drilling and aircore (AC) drilling. Sampling methods undertaken at Bannockburn by previous owners have included rotary air blast (RAB), reverse circulation (RC) and diamond drillholes (DD). Limited historical data has been provided by previous owners.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used	Sampling for DD, RC and AC drilling is carried out as specified within Saracen sampling and QAQC procedures as per industry standard. RC, RAB, and DD core drilling is assumed to have been completed by previous holders to industry standard at that time (1990- 2008).
	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 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information	RC chips are cone split, while AC samples are spear sampled, with both sampled into 4m or 1m intervals with total sample weights under 3kg. Diamond core is NQ or HQ sized, sampled to 1m intervals or geological boundaries where necessary and cut into half core to give sample weights under 3 kg. Samples are selected to weigh less than 3 kg to ensure total sample inclusion at the pulverisation stage. Saracen core and chip samples are crushed, dried and pulverised to a nominal 90% passing 75µm to produce a 40g sub sample for analysis by FA/AAS. Initial RC drilling in the early 1990s included single stage mix and grind sample preparation to create a 300g pulp from which a 50g charge was used for assay determination. More recent RC drilling involved total preparation of a 4m composite sample to provide a 40g charge for fire assay. No other information has been found or supplied so it is assumed all RAB, RC and DD and sampling was carried out to industry standard at that time.
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.).*	Historic drilling activities at Bannockburn have included 684 RAB holes, 1694 RC holes (some with diamond tails) and 78 DD holes (HQ, NQ, and unknown diameter). Saracen has completed 148 RC drillholes, 6 DD drillholes and 1132 AC holes. The RC drilling was completed with a 5.5 inch diameter bit with a face sampling hammer. The rig was equipped with an external auxiliary booster. Diamond drilling was HQ or NQ sized and core was orientated using an ACT III core orientation tool. Some historic HQ core was oriented by unknown methods.
Drill Sample Recovery	*Method of recording and assessing core and chip sample recoveries and results assessed*	Recoveries for RC and AC drillholes are recorded as a percentage based on a visual weight estimate. Diamond core recovery percentages calculated from measured core versus drilled intervals are logged and recorded in the database No other recoveries have been provided, it is unknown if they were recorded.
	Measures taken to maximise sample recovery and ensure representative nature of the samples	During RC and AC drilling daily rig inspections are carried out to check splitter condition, general site and address general issues. Measures were taken to supress groundwater. Diamond core is reconstructed into continuous runs on an angle iron cradle for orientation marking. Depths are checked against depth given on the core blocks. It is unknown what, if any, measures were taken to ensure sample recovery and representivity.

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
	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.	There is no known relationship between sample recovery and grade for RC or AC drilling. Diamond drilling has high recoveries meaning loss of material is minimal. Any historical relationship is not known.
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.* *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.*	Logging of RC and AC chips and DD core record lithology, mineralogy, texture, mineralisation, weathering, alteration and veining. Chips from all RC holes are stored in chip trays for future reference. Geotechnical and structural logging is carried out on all diamond holes to record recovery, RQD, defect number, type, fill material, shape and roughness and alpha and beta angles. Some historic diamond drilling has been photographed and geotechnically logged. Core is photographed in both dry and wet state. It is unknown if all diamond core was photographed. Qualitative and quantitative logging of historic data varies in its completeness
	The total length and percentage of the relevant intersections logged	All drillholes completed by Saracen have been logged in full.
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.*	All drill core is cut in half onsite using an automatic core saw. Samples are always collected from the same side. The sampling method for most historic drill core is unknown. Some historic core was half core sampled.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	All RC samples were cone split. Occasional wet samples were encountered. AC drillholes were spear sampled RC drilling carried out in the 1990s includes spear sampled composites and riffle split 1m samples. RAB drilling was spear sampled. More recent RC drilling has been riffle split or spear sampled. Some sampling methods remain unknown.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	The sample preparation of RC and AC chips and DD core adheres to industry best practice. It is conducted by a commercial laboratory and involves oven drying, coarse crushing then total grinding to a size of 90% passing 75 microns. The sample preparation of 1990s RC drilling involved a single stage mix and grind method, more recent RC drilling involved a total preparation method. The sampling techniques for much of the remaining historic RAB, RC and DD drilling are unknown, best practice is assumed.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	All subsampling activities are carried out by commercial laboratory and are considered to be satisfactory Best practice is assumed at the time of historic RAB, DD and RC sampling.
	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.	Field duplicate samples are carried out at a rate of 1:20 and are sampled directly from the on-board splitter on the rig. These are submitted for the same assay process as the original samples and the laboratory are unaware of such submissions It is unknown if duplicate sampling was performed on historic RAB, RC and DD drilling. Limited field duplicates were carried out on some more recent RC grade control drilling at a rate of one per hole.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Analysis of data determined sample sizes were considered to be appropriate.
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.*	RC chip samples and DD core samples are analysed by an external laboratory using a 40g fire assay with AAS finish. AC samples are analysed using a 25g aqua regia digest. Both method are considered suitable for determining gold concentrations in rock and are total digest methods. Limited historic samples were assayed using a leachwell digest and AAS finish in the onsite laboratory.

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
		More recent RC drilling has been assayed using a 50g aqua regia or 40g fire assay with AAS finish. Other assay methods for exploration RC, RAB and DD drilling included fire assay with AAS finish, aqua regia with AAS finish and unknown methods.
	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.	It is unknown if any instruments of this nature have been used at Bannockburn.
	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.	Certified reference material (standards and blanks) with a wide range of values are inserted into every drillhole at a rate of 1:25 for RC, DD and AC. These are not identifiable to the laboratory. QAQC data returned are checked against pass/fail limits with the SQL database and are passed or failed on import. A report is generated and reviewed by the geologist as necessary upon failure to determine further action. QAQC data is reported monthly. Sample preparation checks for fineness are carried out to ensure a grindsize of 90% passing 75 microns. The laboratory performs a number of internal processes including standards, blanks, repeats and checks. QAQC data analysis demonstrates sufficient accuracy and precision. Industry best practice is assumed for previous holders.
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.*	Significant intercepts are verified by the Geology Manager and corporate personnel
	The use of twinned holes.	Specific drilling programs consisting of twinned holes are not apparent. However, grade control from both open pit and underground operations have confirmed the width and grade of previous exploration drilling.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols	Primary data is collated in a set of excel templates utilising lookup codes. This data is forwarded to the Database Administrator for entry into a secure acQuire database with inbuilt validation functions. Data from previous owners was taken from a database compilation and validated as much as practicable before entry into the Saracen acQuire database
	Discuss any adjustment to assay data.	No adjustment to assay data appears to have been made
Location of data points	*Accuracy and quality of surveys used to locate drillholes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.*	Saracen drillholes are located using a Leica 1200 GPS with an accuracy of +/- 10mm. Downhole surveys are carried out using a hired Reflex EZ-gyro by the respective drilling companies on a regular basis, between 10-30m. Collar locations for early 1990s RC, RAB and DD drilling were surveyed using an EDM theodolite. The precision of this equipment in unknown. Downhole surveys were carried out using a CHAMP downhole electronic multishot system. More recent drilling has collar locations surveyed by unknown GPS and DGPS equipment, while downhole surveys have been carried out at regular intervals by unknown methods.
	Specification of the grid system used.	MGA Zone 51 grid coordinate system is used. Some historic data drilled on local grid systems has been converted to this grid system
	Quality and adequacy of topographic control.	No detail of topographic control was supplied or found.
Data spacing and distribution	*Data spacing for reporting of Exploration Results.*	AC drilling was carried out on a broad 400x200m to 600x800m grid, with some closer spacing (50x50m) designed to test geophysical and geochemical targets
	Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity	The drilling is distributed and spaced such that geological and grade continuity can be established to estimate the mineral resource and ore reserve appropriately. The mineralisation is continuous over a 2km strike length, therefore

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
	appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.	the 25m x 25m exploration drill spacing effectively defines the continuity. The tight drill spacing at the exploration and mineral resource definition stage highlight the complex nature of some areas of the resource.
Orientation of data in relation to geological structure	*Whether sample compositing has been applied.*	RC and A sampling was composited into 4m samples with mineralised areas resampled to 1m intervals Historic 1990s RC drilling was sampled on 6m composites due to the depth of overburden, with significant gold results being resampled in 1m intervals. Historic RAB drilling was generally 4m composite sampled with anomalous zones resampled to 1m intervals. Some more recent RC drilling was composited into 3m or 4m samples with areas of interest resampled to 1m.
	Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.	Due to the variability in the dip direction of the various lodes at Bannockburn, drilling has been orientated in multiple directions to ensure all mineralisation has been tested effectively. This ensures that minimal bias is introduced when sampling.
	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.	All drilling from surface has been drilled as close to perpendicular as possible. This has reduced the risk of introducing a sampling bias as far as possible. Multiple drill orientations have been used to test the variably orientated mineralisation.
Sample security	*The measures taken to ensure sample security.*	Samples are prepared on site under supervision of Saracen geological staff. Samples are selected, bagged into tied numbered calico bags then grouped into secured cages and collected by the laboratory personnel. Sample submissions are documented via laboratory tracking systems and assays are returned via email
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	An internal review of companywide sampling methodologies was conducted to create the current sampling and QAQC procedures. No external audits or reviews have been conducted

Section 2: Reporting of Exploration Results		
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 Bannockburn pit and associated infrastructure is located across M37/339, M37/340, M37/360, and M37/361. The tenements are 100% held by Saracen Metals Pty Ltd. The mining leases have a 21 year life and are all held until 2034. All are renewable for a further 21 years on a continuing basis. The tenements are the subject of a purchase and sale agreement between Norilsk Nickel Wildara Pty Ltd and Saracen Metals Pty Limited dated the 6 May 2014, whereby Saracen purchased 100% shares in the tenements. The tenements are all subject to a royalty of $25 p/oz over 33,000 and up to 73,000 oz of gold produced from the Resources, and $1 p/oz on each ounce of gold after 73,000 oz of gold produced from the Resource payable to Challenger Gold Operations Pty Ltd. Mining Lease 37/340 is subject to a Westpac Administration Pty Ltd mortgage (499139). All production is subject to a Western Australia state government NSR royalty of 2.5%. There are two registered heritage sites located over the tenements: Bannockburn 1 site (Place ID 1119) located over M37/361 and Koara Camp site (Place ID 1522) located over M37/339 and M37/340 There are no caveats relating to the tenements. There are no native title claims or pastoral compensation agreements over the tenements.
	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.	The tenements are in good standing and the license to operate already exists.

Section 2: Reporting of Exploration Results		
Criteria	**JORC Code Explanation**	**Commentary**
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	Gold was discovered at Bannockburn in the late 1800s with small scaled working of the deposit until the 1950s. Modern exploration began in the late 1970s with initial exploration targeting nickel sulphides before gold exploration began in 1979. Exploration activities by numerous companies including Freeport of Australia, Kulim Limited and Arboyne took place until Dominion purchased the project and commenced mining in 1991. Dominion pushed brownfields exploration which included aeromagnetic surveys, soil sampling, and RAB and RC drilling and led to the discovery of neighbouring deposits North Well, Blue Tank and Slaughter Yard. The Bannockburn mine was placed on care and maintenance in 1995 and by 1996 was back up and running under the management of Consolidated Gold Mines. Subsequent liquidation of the parent company to CGM, saw Arrow Resources continue on with mining until the reserves were exhausted in 1998. They re-evaluated the nickel sulphide potential. Breakaway Resources acquired the project which was then purchased by LionOre Australia in 2005. LionOre Australia NL retained the ground prospective for gold and divested ground considered prospective for nickel to Jubilee Mines. LionOre was then taken over by Norilsk Nickel Australia Pty Ltd in August 2007. Norilsk carried out diamond and RC drilling programmes, geochemical and geophysical surveys and reviews. Review of the base metal potential was carried out in 2010 and Bannockburn AU resource review and geological review was completed in 2011.
Geology	*Deposit type, geological setting and style of mineralisation.*	The Bannockburn deposit is located along the western margin within the central portion of the Norseman-Wiluna greenstone belt. Locally the project area is dominated by an extensive sequence of tholeiitic, high-Mg and komatiitic basalts with intercalated sedimentary and intermediate volcaniclastic horizons. Dolerite and gabbro sills intrude the sequence. The deposit is complex with multiple controlling factors. The gross geometry of the deposit is controlled by the Bannockburn fault, a steeply dipping NNW trending fault that is continuous over at least 2.3km on the western margin of the orebody. The fault separates an ultramafic unit in the west from the Bannockburn host sequence in the east. It dips steeply east, rolling to vertical and steep west dipping in the northern part of the orebody. The Bannockburn fault is effectively the western boundary to the orebody with very little mineralisation penetrating the western side of the fault. The Central fault which hosts the Central orebody has a shallow northerly plunge and is the orebody on which the majority of the underground workings is focused. There are a series of steeply east dipping lodes in the hangingwall of the central lode; these are interpreted as either tensional veins of reverse faults with shearing present along the veins. Black graphic shale units present within the stratigraphy have acted as a localised control on the mineralisation. The black shale units have taken up some of the deformation with stratigraphy parallel shearing and mafic sequences between the shales have extended to form steep east dipping extension veins.
Drillhole 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:* • *easting and northing of the drill hole collar* • *elevation or RL (Reduced Level – elevation* • *above sea level in metres) of the drill hole collar* • *dip and azimuth of the hole* • *down hole length and interception depth*	A total of 2064 holes have been used in the mineral resource and are deemed to be material. It is not practical to summarise all of the holes here in this release. Exclusion of the drilling information will not detract from the reader's view of the report. All material data is periodically released to the ASX: 30/04/2019, 18/02/2019, 27/11/2018

Section 2: Reporting of Exploration Results		
Criteria	**JORC Code Explanation**	**Commentary**
	• *hole length.* • *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.*	
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 significant intercepts have been length weighted with a minimum Au grade of 1ppm for RC and DD drilling or 20ppb for AC drilling. No high grade cut off has been applied.
	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 with minimum width of 1m and maximum width of 3m for internal dilution. Where stand out higher grade zone exist with in 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.	There are no metal equivalents reported in this release.
Relationship between mineralisation widths and intercept lengths	*These relationships are particularly important in the reporting of Exploration Results.* *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* *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').*	The geometry of the mineralisation is highly variable and the complex nature of the orebodies makes the definitive calculation of true thickness difficult. As such, all results are reported as downhole lengths Drilling has been orientated to intersect the various orebodies at most optimum angle where possible. This has not always been achieved. Where holes have drilled parallel to or within a lode, additional holes have been drilled at a more suitable orientation to account for the poor angle.
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.*	All significant exploration results released by Saracen are accompanied by the appropriate diagrams and maps at the time of the release.
Balanced Reporting	*Where comprehensive reporting of all Exploration Results are not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	All results from the recent campaign have been reported, irrespective of success or not.
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*	Various geophysical surveys have been carried out over the Bannockburn deposit in an effort to delineate structure and mineralisation including magnetics, gravity, CSMAT (Controlled Source Audio Magneto Telluric), radiometrics and SAM (sub-audio magnetics). CSMAT was deemed ineffective due to penetration issues while other methods returned varying results.

Section 2: Reporting of Exploration Results		
Criteria	**JORC Code Explanation**	**Commentary**
	density, groundwater, 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).* *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive*	Saracen is currently reviewing its recent exploration programs and identifying further opportunity to extend or enhance the Bannockburn deposit both proximal and distal to the known mineral resource.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	**JORC 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.*	The historic database provided to Saracen was an extract from an acquire SQL database. For the majority of the historic database, the process used to record the primary data was unknown. All data collected and drilled by Saracen Metals is regulated by a locked framework called the acquire data model which fixes the relationships between tables. The data model minimises the potential for data collection and data usage errors through pre-determined look up tables, storage and export functions. User defined permissions also regulate the ability to add, edit or extract data. The rigour of the database is such that transcription or keying errors are identified and amended prior to loading and storage. Typical collection methods are manual capture and translation of logging and other data into tough books (digital format) and subsequent import of csv tables through an automated data import scheme where data is validated upon import into the database using predefined look up values.
	Data validation procedures used.	The rigid structure of the acquire data model is such that predefined rules and look up tables are applied to all data entry. Data that does not meet the criteria are highlighted and moved to a buffer area until the data is rectified to meet the passing rules. All Saracen data was validated and collars and surveys cross referenced with the planned data. The geological data is further cross referenced with IMAGO core photos which ensure consistent and accurate logging. It is unknown at this stage how the historic data was managed and who was responsible for its maintenance. It is also unknown if there was any built in functionality around pass/fail checks on assay importing. The historic data was initially cross validated with the database provided by Norilsk Nickel Australia LTD PTY during the due diligence process, and also the database supplied to Golder by Norilsk Nickel Australia LTD PTY. Such cross validations highlighted variances that were reconciled against, surface, pit and underground surveys. This reconciled database was further validated by Saracen drill programs. These programs successfully targeted voids, mineralised pillars, and tested for geological consistency.
Site Visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.*	The Competent person together with Saracen's technical team has conducted numerous site visits with core inspections, pit visits and remapping exercises. All observations and data collection were used to improve and validate the geological knowledge and subsequent estimation.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	**JORC Explanation**	**Commentary**
	If no site visits have been undertaken indicate why this is the case.	n/a
Geological Interpretation	*Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.*	The interpretation has been based on the detailed geological work completed by a series of previous owners of the project. This knowledge is based on extensive geological logging of drill core, RC chips, detailed open pit mapping, underground mapping and assay data. The gross architecture of the deposit is well known however the local scale structural controls are complex. Confidence can be taken from the fact that the deposit has since been drilled, validated and reviewed by Saracen, but also as it has been mined previously by open pit and underground methods.
	Nature of the data used and any assumptions made.	The interpretations have been constructed using all available geological logging descriptions including but not limited to, stratigraphy, lithology, texture, and alteration. Open pit and underground observations, mapping and face maps have all been included in the interpretation; whilst this data only assists the delineation of the domain boundaries and structures locally, it does highlight both mineralogical and structural trends, and timing relationships between lodes that can be applied throughout the deposit. These relationships and observations are honoured in the creation of the geological and ore lode models (3D hard boundaries) within Leapfrog.
	The affect, if any, of alternative interpretations on Mineral Resource estimation.	No other interpretations have been tested at this point. The tightness of the drilling restricts the possible options of the interpretations particularly about the main Bannockburn fault and Central thrust. These are highly continuous and predictable structures. The shorter scale extensional lodes in the hanging wall or footwall of the central thrust are more variable. Whilst they can still be interpreted between sections more definitive structural work will help to improve the local scaled variability and timing.
	The use of geology in guiding and controlling the Mineral Resource estimation.	The geology has been used to assist controlling the mineral resource estimation. The main mineralised shear zones have been domained such that the geological characteristics have been honoured and validated against historic and current sections and logging. This includes discriminating between the main shear zones and the extensional vein arrays splaying off the shear zones and mineralisation associated with black shale zones.
	The factors affecting continuity both of grade and geology.	At the deposit scale laminated quartz veins have higher grades than bucky and coarsely brecciated quartz veins. Highly silicified mafic schist is the main locus for mineralisation. The stronger the silicic and biotite alteration the higher the grade. It is estimated that 75% of the gold is located in the alteration halos and 25% in the veins themselves. Additionally it has been noted that mineralisation is strong where increased percentages of arsenopyrite are present. A small amount of remobilised mineralisation can be found on the margins of porphyry and lamprophyric intrusives. The interplay of apparent cross cutting NE trending structures locally displaces (few metres at most) the mineralisation. The Bannockburn Shear itself limits the mineralisation to the west. To the south the geology is complex and structurally complicated with minimal mineralisation. The plunge of the of the central thrust limits the mineralisation in the south and to the north it appears to terminate or weaken along a NE trend. Increasing distance away from the Central thrust and the Bannockburn shear tends to weaken the mineralisation, however at this stage the deposit remains open to the North and North East.
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.*	Bannockburn mineralisation extends from 6849500mN to 6852000mN, 292750mE to 294500mE and 150 meters below surface. The Bannockburn gold deposit has a strike of 340° (NNW) and has a shallow plunge 5-10° to the NNW. The Bannockburn Shear dips steeply to the east, whilst the Central thrust varies from 30°dip to the west and east but is predominantly flat.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC Explanation	Commentary
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.*	Block estimation is completed in Datamine software. All wireframes are constructed in leapfrog. All estimation uses these wireframes as hard boundaries. Ordinary Kriging is chosen as the estimation method. Dynamic Anisotropy is used to improve the estimation of domains that have variable dip and plunge orientations. A total of 100 domains are defined in the deposit. Estimation of parent blocks are interpolated, and assigned to sub-cells. The maximum distance of extrapolation is less than 40m. Univariate statistical analysis of length weighted, (1m), domain coded down hole composites are completed for all domains and top-cuts applied where applicable. Extreme grades are appraised in each domain and are analysed to determine specific top-cut values. Log-probability plots are used supplementary to the histogram analysis. KNA is performed on the major domains to determine appropriate block size, sample support, search dimensions and block discretisation values.
	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 OK model has been compared to the due diligence inverse distance cubed resource estimate with similar global results, (<2% variance in tonnes, grade and ounces). This comparison suggests a robust estimation. Since the due diligence the underground void and open pit mined surfaces have been scrutinised. Updated void models have been sourced and surfaces updated to include last stages of production that correlate with grade control production holes. Globally the OK estimate and total production reconcile within 5% of the ounces.
	The assumptions made regarding recovery of by-products.	No assumptions have been made with respect to the recovery of by-products.
	Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).	There has been no estimate at this point of deleterious elements. Recently, within the 2018/2019 drill programs asbestos form was identified (tremolite and actinolite) within the footwall ultramafic unit of the Bannockburn Shear. Mine safety and mine designs will need to consider this deleterious element.
	In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.	The parent block sizes for the rock model are X (10m) by Y (20m) by Z (10m) and for resource domain model are X (5m) by Y (10m) by Z (5m). These are deemed appropriate for the majority of the resource, where KNA and drill spacing is in the order of 20m x 15m to 25m x 20m and less than in the underground GC area. Parent blocks have been sub-celled to X (1.0m) by Y (1.0m) by Z (0.5m) to ensure that the wireframe boundaries are honoured and preserve the location and shape of the mineralisation. Search ranges have been informed by the KNA, knowledge of the drill spacing and the known mineralisation geometry including direction of maximum continuity. Three search estimation runs are used with the aim to satisfy the minimum sample criteria in the first search range where possible. The minimum and maximum samples for search 1 range from 6-10 to 20-30 respectively, dependant on sample density and KNA for +80 domains. The minimum samples were sequentially reduced for Search 2 and Search 3, on average to 6 and 4, whilst the maximums were similar to Search 1.
	Any assumptions behind modelling of selective mining units.	No selective mining units have been assumed.
	Any assumptions about correlation between variables.	No assumptions have been made regarding correlation between variables.
	Description of how the geological interpretation was used to control the resource estimates.	The geological interpretation correlates with the mineralised domains. Specifically the steeply dipping mineralised domains correspond with the key mineralised fault zone, the Bannockburn Fault. Similarly the main Central Lode mimics the thrust plane of the Central Fault. All wireframe boundaries including those where lithology and mineralisation correspond, hard boundaries are enforced. Data selection and estimation are domain controlled.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	**JORC Explanation**	**Commentary**
	Discussion of basis for using or not using grade cutting or capping.	Statistical analysis of all domains highlight that there are very few grades (1% of the total samples) in the domain populations that require top-cutting. Top-cut have been employed to eliminate the risk of overestimating in the local areas where high grade samples exist.
	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 key model validation steps have been taken to validate the resource estimate. These steps include; The volume variance between the estimate and the wireframed domains with the expectation that the variance is<1% The metal variance between composited values and non-composited values. The composited declustered grades are compared to the estimate mean grade for each individual domain. Within +-10% is an acceptable result. The comparison of the model mean grade, the composite grades and their informing sample numbers are further investigated by appropriate northing, easting and bench interval slices displayed as swathe plots. Visually the mineral resource model is stepped through in sectional and plan view to appreciate the composite grades used in the estimate and the resultant block grades. Kriging efficiency and slope results also gave an indication of the quality of the estimate, which deteriorated as the search increased.
Moisture	*Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	All tonnages are estimated on a dry basis.
Cut-off parameters	*The basis of the adopted cut-off grade(s) or quality parameters applied.*	Based on Saracen's current economic operations at Thunderbox Operations, and the natural grade distinction above background, a grade of 0.5g/t has been chosen.
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 Bannockburn deposit is amenable to mining by both open pit and underground methods. The deposit has been mined by open pit and underground methods historically. There are reasonable grounds to assume that in the future this deposit will again be mined by conventional open pit load and haul operations. It is unlikely that the mineralisation would be accessed by underground methods. Any open pit operations that may interact with historical underground workings would need to assume a higher ore loss factor around the margins of voids. This is particularly important to consider if underground voids have not been filled as is the majority of the case at Bannockburn. To best capture "reasonable expectation of extraction" as an open pit, the mineral resource was cut to an optimised pit shell at $2250 at a 0.5g/t cut off.
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 process 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.*	It is expected that any future mining of the Bannockburn deposit will be processed at the Thunderbox processing facility which is currently on care and maintenance. The Thunderbox mill employs a conventional crushing, grinding and CIL leaching process to extract the gold. The mill operated successfully between 2002 and 2007, processing in excess of 9Mt of ore. The conventional plant displayed excellent performance with gold recoveries between 93.4 to 96.6 % over the life of the mine. Test work by Ammtec completed historically suggests Bannockburn mineralisation should achieve similar recoveries to the mineralisation previously processed at Thunderbox.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	**JORC Explanation**	**Commentary**
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 greenfields 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.*	As arsenic is present in the mineralogy of the deposit, the processing plant has been designed to ensure effective management of potentially harmful arsenic contamination. A 20m diameter high rate thickener is used to thicken the tails to maximise water and cyanide recovery. Process water is added to the thickener feed to create one wash stage prior to detoxification. Arsenic precipitation is affected in a stirred closed tank with air sparging. Ferric sulphate solution is metered into the reactor on the basis of dissolved arsenic concentration. The fumes from the precipitation tank are passed through a packed bed caustic scrubber before venting to the atmosphere. The precipitation tank overflow is then passed to the tails hopper.
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.*	Previous owners have taken routine density measurements when drilling diamond core. 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. At this point Saracen does not have the available data to comment on the frequency and distribution of the density measurements. The size and nature of the samples is also unknown to Saracen at this time.
	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.	As stated above the frequency and distribution is unknown at this point in time. It has assumed from the very good reconciliation performance from mine to mill that the determined density assignments from the mine are accurate. Recent drill campaigns were predominantly RC. The density data gathered from the few diamond holes are still being processed. They are expected to return similar values to those currently applied to the estimate.
	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 mineral resource has been classified into Measured, Indicated and Inferred categories based on drill hole spacing, geological confidence, and grade continuity and estimation quality. The combinations of these factors together guide the formation of 3D wireframes that code the appropriate blocks with the nominated resource classification category.
	Whether appropriate account has been taken of all the 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 care has been taken to account for relevant factors influencing the mineral resource estimate. Confidence in the predicted tonnes and grade estimated in the model is high and previous mining performance suggests that the input data and geological continuity are such that a reasonable resource estimate can achieved.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The geological model and the mineral resource estimate reflect the competent person's view of the deposit.
Audits or reviews	*The results of any audits or reviews of Mineral Resource estimates.*	Saracen has adopted a process for geological modelling, estimation and reporting of mineral resources that meets high industry standards. CSA global completed an external audit on Bannockburn in June 2019. It found no fatal flaws or any issues that could affect the resultant estimation.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC 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 established in the 2012 edition of the JORC code. Analysis, cross checks and validation of the acquired database occurred prior to the construction of this detailed mineral resource update. The previous sections of this table identify the areas that require further update and validation. It is unlikely that these minor checks would have any material effect on the results of mineral resource. It was highlighted in the initial review process that the surfaces supplied by the previous owners were incomplete. As the in pit water depletes, the final pit surface is resurveyed and the model surfaces updated in the estimate. The clear line between potential backfill and what was previously mined is still unclear, and as such where logic prevails (historic GC drilling), the estimation within these "unsurveyed zones" has been preferentially depleted, assuming mining has occurred. The underground void shape is currently in the best shape that can be expected. It is likely that there will be local variations in this. Within the block model and estimate, a 5m skin is flagged about the voids to ensure this material is duly factored and treated conservatively.
	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 statements relate to a global estimate of tonnes and grade.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	Previous mining operation reports suggest that the estimated metal is within 5%.

Section 4: Estimation and Reporting of Ore Reserves		
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 estimate for the Bannockburn gold deposit is a robust global estimate that was used as a basis for conversion to the Ore Reserve estimate. The resource estimate was compiled by Saracen using exploration, resource definition, and grade control drilling and assay data, geological mapping and historical mining records to validate the model against and solid interpretation wireframes of the geology. This information was used to construct a model estimated by various kriging methods. Zones around underground workings, and areas highlighted as backfill and/ or containing water were flagged in the estimate to allow for conservative evaluations during the optimisation. The block model was depleted with the end of June 2020 survey pickup for Reserve Estimation.
	Clear statement as to whether the Mineral Resources are reported additional to. Or inclusive of, the Ore Reserves.	The Mineral Resource reported is inclusive of the Ore Reserve.
Site Visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.*	A Competent Person has conducted several site visits to the Bannockburn open pit operation since the inclusion in Thunderbox operation's life of mine plan. The purpose of these visits is to collect information for optimisation work, validating input parameters, visual pit inspection, and discussion and feedback for life of mine planning. The information also includes the discussion around current mining performance, wall conditions and overall stability, and groundwater conditions.

Section 4: Estimation and Reporting of Ore Reserves		
Criteria	JORC Code Explanation	Commentary
	If no site visits have been undertaken indicate why this is the case.	N/A
Study status	*The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves*	The Bannockburn deposit has been mined using both open pit and underground methods in the past with ore processed through nearby processing facility. Since being acquired by Saracen a full scale feasibility study has been conducted with a view to bring the Bannockburn open pit in to operation. The 2020 Ore Reserve has been subject to validating all aspects of operational inputs such as production parameters, operating costs of mining, processing, general administration and environment management related costs.
	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.	Modifying factors have been applied to the optimisation study and resultant Reserve pit design work to ensure the rigor of the financial analysis. Operational costs and production parameters have been estimated from actual mining and processing performance. Saracen has completed all appropriate supporting mining studies required for the Ore Reserve estimate.
Cut-off parameters	*The basis of the cut-off grade(s) or quality parameters applied*	The Ore Reserve is estimated at cut-off grade of 0.50g/t, estimated using an assumed gold price of AUD$1,750/oz and operating costs of mining, processing, haulage and general administration. A top cut has already been applied to the Mineral Resource Estimate eliminating the necessity for any further adjustment to the Ore Reserve Estimate.
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).*	The resource model used in the Mineral Resource Estimation was the basis for the generation of a range of Whittle 4X pit optimisation shells. The generation of these shells was reliant upon costs and inputs derived from current operational data, contractors and independent consultant recommendations. An appropriate shell was then selected as the basis for an iterative process of pit design work, culminating in the finalisation of a detailed pit design for the Bannockburn Reserve.
	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 mining method to be employed at the Bannockburn deposit is conventional open pit with hydraulic excavator and dump truck fleet, and drill and blast activity. The class of excavator employed is similar to other open pit mining operations, providing a good operating dataset for production and productivity rate measurement and financial modelling. The Bannockburn Reserve pit is designed as a large pit and will be mined in couple of stages to improve ore stock balance. The Reserve pit will be mined such that it meets the operational efficiency, safety and production rates. Appropriate mine schedules and lead times have been considered to maintain efficient mining operations between the stages.
	The assumptions made regarding geotechnical parameters (e.g. pit slopes, stope sizes, etc.), grade control, and pre-production drilling.	Life of Mine geotechnical recommendations were made by an independent external consultant following site visits, inspection of drill core, and a review of the geotechnical data gathered during earlier operations. The geotechnical consultant was engaged by Saracen to assist with the geotechnical aspects of technical studies. It is expected that once the pit is in operation there may be some need for additional geotechnical input and possible changes to the life of mine pit design. The Grade control method to be employed at Bannockburn will utilise an RC drilling and sampling method. This method and practice has been utilised successfully at all current and past mining operations at Saracen.
	The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).	The Ore Reserve Estimate is based on detailed life of mine pit design work by using a geology approved resource model, and making an appropriate dilution and recovery factor allowance for the mining fleet and method utilised.
	The mining dilution factors used.	A mining dilution factor of 12% is applied in the Ore Reserve estimation and reflects the mining performance based on ore body characteristics, mining method and equipment utilised.

Section 4: Estimation and Reporting of Ore Reserves		
Criteria	JORC Code Explanation	Commentary
		The dilution factor applied takes into account the historic underground workings. Material that is located in proximity to the underground void will have a higher potential for dilution and ore loss compared to other ore loads away from underground void.
	The mining recovery factors used.	A mining ore loss factor of 5% is applied in the Ore Reserve estimation and reflects the mining performance based on ore body characteristics, mining method and equipment utilised.
	Any minimum mining widths used	A minimum mining width of 25m has been adopted for the primary excavation fleet. Where 'pinch-points' occur or "Good Bye" cuts are considered at the base of the pit, it is assumed that a smaller or more versatile excavator will be employed. The practice is very consistent across all open pit operations and reflects the suitability and efficiency of the mining performance.
	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 does not generate any revenue. Therefore the final pit reserve inventory has excluded any inferred mineral resources.
	The infrastructure requirements of the selected mining methods.	The selected mining method and location of the deposit is close to the Thunderbox operations, which consists of open pit, underground and 2.9mt processing plant, modern camp site and all other required infrastructure to support the current and future mine plan.
Metallurgical factors or assumptions	*The metallurgical process proposed and the appropriateness of that process to the style of mineralisation*	The Ore Reserve will be treated at the established Thunderbox processing facility. The facility is a conventional crushing, gravity circuit, grind, and CIL (carbon in leach) plant and is appropriate for the extraction of gold from free milling mineralisation.
	Whether the metallurgical process is well-tested technology or novel in nature.	The current Thunderbox processing plant and method applied utilises well tried and proven technology and since being in operation averages gold recoveries typically between 93% to 95% for all available material types near the Thunderbox operations.
	The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.	The average gold recovery for the Bannockburn deposit is estimated at 94%. The recovery estimation is based on met test work and ongoing long term actual average recovery data collected at the Thunderbox Plant. The plant performance is consistent between 93 to 94% while processing similar types of ore material without any issue. Metallurgical testwork has been carried out on samples from the Bannockburn deposit at both test labs and the processing plant, with suggested recoveries in the range of 92-98% hence the estimated recovery is in line with expectation.
	Any assumptions or allowances made for deleterious elements.	There are no known deleterious elements present in Bannockburn ore.
	The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the ore body as a whole.	A number of samples of each expected rock type have been sampled through the Thunderbox processing plant for trial test work. These bulk samples/pilot test work are considered as sufficient to represent the Bannockburn ore body as a whole.
	For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications.	N/A
Environmental factors or assumptions	*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 mine is currently on 'care and maintenance'. All required Environmental studies have been completed and subsequent clearing permits and dewatering licences are in place. A Mining Proposal will be submitted at later stage in an appropriate manner for the operation to recommence. The Bannockburn mine is located ~35km from the Thunderbox processing plant and is well connected via site internal access haul roads. The Bannockburn operation will utilise the existing Thunderbox processing facility, and

Section 4: Estimation and Reporting of Ore Reserves		
Criteria	JORC Code Explanation	Commentary
	the status of approvals for process residue storage and waste dumps should be reported.	TSF storage facilities that are all located on granted mining leases. The gas spur pipeline, the bore field and the airstrip at Thunderbox are all on granted miscellaneous licences. A waste rock characterisation study has been carried out is expected to be representative of the Bannockburn waste rock. An appropriate landform design criteria has been considered based on rock characteristics to mitigate current and any future waste landform expansion.
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.*	The Bannockburn operation will require minimum infrastructure given its close proximity to the well-established and maintained Thunderbox operation. The ore will be transported to Thunderbox processing plant via internal gravel haul road. The processing facility and major infrastructure are fully operational at Thunderbox. A modern accommodation camp is located within a few kilometres of the pit, and a well maintained gravel airstrip services the camp. The mine site is connected to Goldfields highway and the Gas Transmission Line, and runs on dual fuel (diesel/gas) power generator.
Costs	*The derivation of, or assumptions made, regarding projected capital costs in the study.*	Capital costs relating to the establishment, mobilisation and pre striping of the pit are included in the financial modelling. A haul road will need to be upgraded at the commencement of operation to facilitate better connectivity to Thunderbox operation.
	The methodology used to estimate operating costs.	Operating costs for open pit mining have been derived from a combination of actual mining costs for Thunderbox operations and costs supplied by various contract mining companies, and independent consultants. Operating costs for ore processing, haulage and administration have been derived from known parameters at Thunderbox Operations.
	Allowances made for the content of deleterious elements	Historical data and met test work carried out at Bannockburn did not reveal any deleterious elements within the ore or waste that required any additional cost allowances.
	The derivation of assumptions made of metal or commodity price(s), for the principal minerals and co-products	An assumed gold price of AUD$1,750/oz has been adopted for the financial modelling. No allowance is made for silver by-products.
	The source of exchange rates used in study	All revenue and cost calculations have been made in AUD, so no exchange rate usage or assumptions have been necessary.
	Derivation of transportation charges	Costs associated with bullion transportation have been derived from existing contractual arrangements at Thunderbox.
	The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.	Costs associated with refining have been derived from existing contractual arrangements at Thunderbox.
	The allowances made for royalties payable, both Government and private.	The WA state government royalty of 2.5% and a Third Party Royalty of AU$1/ounce produced will be applicable.
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.*	For the purposes of the Ore Reserve Estimation it has been assumed that there is no gold hedging. All gold production will be sold at spot price to the Perth Mint.
	The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products	An assumed gold price of AUD$1,750/oz has been adopted for financial modelling. No allowance is made for silver by-products.

Section 4: Estimation and Reporting of Ore Reserves		
Criteria	JORC Code Explanation	Commentary
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.	There is a transparent quoted market for the sale of gold.
	For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.	N/A
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.*	The Ore Reserve Estimation is based on a detailed life of mine pit design and reflects positive economic outcomes. All relevant capital and operating costs as well as revenue and royalty factors have been included with appropriate discount factor for cash flow analysis.
	NPV ranges and sensitivity to variations in the significant assumptions and inputs.	A full financial model is 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*	Both Bannockburn and the Thunderbox mine/processing plant are located on lease-hold pastoral land with regular community engagement and communication of the mining lease and operation. Compensation agreements are in place with the local pastoralist and Saracen enjoys a good relationship with neighbouring stakeholders, including local pastoralists and the traditional owners. Granted mining leases cover all of the proposed mining and processing assets.
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	Water inrush is identified as a naturally occurring risk with in the operation and has been addressed by the construction of appropriate water diversion bunds to provide a safe and risk free work environment.
	The status of material legal agreements and marketing arrangements	A Royalty of 2.5% of gold production is payable to WA State Government and a third party royalty of AU$1/ounce produced will be applicable.
	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.	All required Environmental studies have been completed and subsequent clearing permits and dewatering licences are in place. A Mining Proposal will be submitted at later stage in an appropriate manner for operation commencement.
Classification	*The basis for the classification of the Ore Reserve into varying confidence categories*	The Ore Reserve Estimate classification for Bannockburn has been in accordance with the JORC code 2012. The Ore Reserve Estimate classified as being Probable has been derived from the Mineral Resource classified as Indicated only.

Section 4: Estimation and Reporting of Ore Reserves		
Criteria	JORC Code Explanation	Commentary
	Whether the result appropriately reflects the Competent Person's view of the deposit.	Cost assumptions and modifying factors applied to the pit optimisation and subsequent designs were derived from current operational data relating to Thunderbox operations, and supplied by contract mining companies and independent consultants. Results of these optimisations, reserve pit design and the resultant inventory reflect the Competent Person's view regarding the Bannockburn deposit.
	The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any)	100% of Probable ore from the Ore Reserve Estimate has been derived from Indicated ore of the Mineral Resource.
Audits or reviews	*The results of any audits or reviews of Ore Reserve estimates*	The Ore Reserve Estimation process is in line with the Saracen Ore Reserve Policy and has undergone internal review.
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 geo-statistical 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 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.* *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.* *It is recognised that this may not be possible or appropriate in all circumstances. These statements or relative accuracy and confidence of the estimate should be compared with production data, where available.*	The Ore Reserve estimate has been prepared in accordance with the guideline of the 2012 JORC Code. The relative confidence of the estimate complies with the criteria of Probable Ore Reserves and is based upon; • Resource estimate • significant operating history, • application of current industry practices, • appropriate operating and capital costs, The range of the modifying factors and mining parameters applied are reasonable and confidence in the resulting reserve estimate is reasonable. The reserve mine design has adopted all reasonable modifying factors and financial analysis used in the estimated Ore Reserve have been the subject to peer review internally, and the Competent Person is confident that it is an accurate estimation of the reserve. The Bannockburn operation will utilise the same grade control methods that are widely utilised at the current Thunderbox operations.

North Well

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
Sampling Techniques	*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.*	Sampling methods undertaken at North Well by previous owners have included rotary air blast (RAB), reverse circulation (RC) and diamond drillholes (DD). Saracen has completed DD drilling at the prospect
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used	Sampling for diamond drilling is carried out as specified within Saracen sampling and QAQC procedures as per industry standard Historic RC, RAB, and DD core drilling is assumed to have been completed by previous holders to industry standard at that time (1992- 2010).
	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 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information	Diamond core is NQ sized, sampled to 1m intervals or geological boundaries where necessary and cut into half core to give sample weights under 3 kg. Samples are selected to weigh less than 3 kg to ensure total sample inclusion at the pulverisation stage. Saracen core and samples are crushed, dried and pulverised to a nominal 90% passing 75µm to produce a 40g sub sample for analysis by FA/AAS Limited information has been found or supplied so it is assumed all RAB, RC and DD and sampling was carried out to industry standard at that time. More recent sampling carried out by Norilsk has involved the use of 4m composite or 1m re-split samples from which a 40g charge was produced for fire assay and aqua regia digest.
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.).*	Drilling activities at North Well have included 818 RAB holes, 785 RC holes (assumed standard 5 ¼ '' bit size) and 25 DD holes (HQ, NQ, and unknown diameter, some with RC precollars). Limited historic diamond core hole was oriented by unknown methods. Saracen has completed 8 NQ diameter DD holes, oriented via an ACT III tool.
Drill Sample Recovery	*Method of recording and assessing core and chip sample recoveries and results assessed*	Recoveries for some more recent RC drilling have been recorded based on a visual weight estimate. It is unknown historic recoveries were recorded.
	Measures taken to maximise sample recovery and ensure representative nature of the samples	Diamond core is reconstructed into continuous runs on an angle iron cradle for orientation marking. Depths are checked against depth given on the core blocks. It is unknown what, if any, measures were taken to ensure sample recovery and representivity in historical drilling.
	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.	Any historical relationship is not known.
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.*	Logging of diamond drill core, RAB and RC chips record lithology, mineralogy, texture, mineralisation, weathering, alteration and veining. Some historic diamond drilling has been geotechnically logged.

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	It is unknown if any historic diamond core was photographed, all core drilled by Saracen was photographed in both dry and wet state
	The total length and percentage of the relevant intersections logged	All diamond drillholes have been logged in full The majority of historic drillholes appear to have been logged in full.
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.*	Diamond drilling was half core sampled. Some historic core was half core or quarter core sampled.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	The sampling methods for RC and RAB drilling carried out in the 1990s are unknown More recent RC drilling has been riffle or cyclone split, or spear sampled. It is unknown if wet samples were encountered.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	The sample preparation of diamond core adheres to industry best practice. It is conducted by a commercial laboratory and involves oven drying, coarse crushing then total grinding to a size of 90% passing 75 microns. The sampling techniques for much of the historic RAB, RC and DD drilling are unknown, best practice is assumed.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	All subsampling activities are carried out by commercial laboratory and are considered to be satisfactory Best practice is assumed at the time of historic RAB, DD and RC sampling.
	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.	It is unknown if duplicate sampling was performed on the majority of historic RAB, RC and DD drilling. Limited field duplicate samples were carried out in more recent RC drilling programs.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	It is assumed sample sizes were appropriate for the grain size of material being sampled. Some recent campaigns included sizing analysis (90% passing 75 microns) to ensure this.
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.*	Certified reference material (standards and blanks) with a wide range of values are inserted into every drillhole at a rate of 1:25 for exploration RC and DD. These are not identifiable to the laboratory. QAQC data returned are checked against pass/fail limits with the SQL database and are passed or failed on import. A report is generated and reviewed by the geologist as necessary upon failure to determine further action. QAQC data is reported monthly. Sample preparation checks for fineness are carried out to ensure a grindsize of 90% passing 75 microns. The laboratory performs a number of internal processes including standards, blanks, repeats and checks. QAQC data analysis demonstrates sufficient accuracy and precision. Industry best practice is assumed for previous holders.
	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.	It is unknown if any instruments of this nature have been used at North Well.
	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.	QAQC information from North Well sampling data is limited therefore all drilling is assumed to have been carried out to industry standard. There is evidence of standards being routinely included in more recent drilling (from 2006 onward) along with limited duplicate sampling. Laboratory repeats were recorded and analysed.

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.*	Significant intercepts are verified by the Geology Manager and corporate personnel
	The use of twinned holes.	Specific drilling programs consisting of twinned holes are not apparent.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols	Primary data is collated in a set of excel templates utilising lookup codes. This data is forwarded to the Database Administrator for entry into a secure acQuire database with inbuilt validation functions. Data from previous owners was taken from a database compilation and validated as much as practicable before entry into the Saracen acQuire database
	Discuss any adjustment to assay data.	No adjustment to assay data has been made
Location of data points	*Accuracy and quality of surveys used to locate drillholes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.*	The survey quality and control is unknown for the majority of historic drilling. More recent drilling has collar locations surveyed by unknown GPS and DGPS equipment. Downhole survey methods recorded include Eastman single and multishot, gyro, inferred and unknown methods.
	Specification of the grid system used.	MGA Zone 51 grid coordinate system is used. Some historic data drilled on local grid systems has been converted to this grid system
	Quality and adequacy of topographic control.	No detail of topographic control was supplied or found.
Data spacing and distribution	*Data spacing for reporting of Exploration Results.*	No exploration results reported in this release. The nominal drillhole spacing is 25 m (northing) by 25 m (easting) in the core of the deposit, and increases to the margins of the deposit.
	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 mineralised domains at North Well have demonstrated sufficient continuity in both geological and grade continuity to support the definition of Mineral Resources and Reserves, and the classifications applied under the 2012 JORC Code.
Orientation of data in relation to geological structure	*Whether sample compositing has been applied.*	Historic 1990s RAB and RC drilling was generally sampled on 3 - 4m composites with significant gold results being resampled in 1m intervals Some more recent RC pre-collar drilling was composited into 6m samples with areas of interest resampled to 1m.
	Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.	The deposit is drilled towards grid west at angles varying from -60⁰ and -90⁰ to intersect the mineralised zones at a close to perpendicular relationship for the bulk of the deposit.
	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.	All drilling from surface has been drilled as close to perpendicular as possible. This has reduced the risk of introducing a sampling bias as far as possible. No orientation based sampling bias has been identified at North Well in the data at this point.
Sample security	*The measures taken to ensure sample security.*	Information on sample security measures has not been provided
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	No evidence of external reviews has been supplied.

Section 2: Reporting of Exploration Results		
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 North Well resource is located on M37/358, M37/359 and M37/465. Near Mine exploration extends onto M37/340. The tenements are held by Saracen Metals Pty Limited, a wholly owned subsidiary of Saracen Mineral Holdings Limited. The mining leases have a 21 year life: Mining Lease M37/465 is held until 2015 and Mining Leases M37/340, M37/358, and M37/359 are held until 2034. All are renewable for a further 21 years on a continuing basis. All production is subject to a Western Australian state government NSR royalty of 2.5%. Mining Leases M37/358 and M37/359 are subject to a royalty of $25.00 per ounce of gold produced from the tenements over 33,000 ounces and up to 73,000 ounces and of $1.00 per ounce of gold produced over 73,000 ounces payable to Dominion Gold Operations Pty Ltd. Mining Lease M37/465 is subject to a royalty payable to Forsyth NL calculated as a percentage of the Ore Value for ore processed each quarter. The Ore Value is calculated by reference to the Ore Grace and the Average Gold Price for the quarter. For ore processed with an Ore Grade greater than 1.5 g/tonne the royalty is 4% of the Ore Value and less than 1.5g/tonne, the royalty is 2.5% of the Ore Value. The tenements are all subject to a 1.5% royalty on all minerals which are capable of being sold or otherwise disposed of, multiplied by the Net Smelter Return, capped at $17 million, payable to Norilsk Nickel Wildara Pty Ltd. M37/465 is subject to one consent caveat related to RG Royalties, LLC (513930). M37/340, M37/358, and M37/359 are subject to a Westpac Administration Pty Limited mortgage (499139). A single Aboriginal Heritage site exists within M37/340 – Site ID 1522 Koara Camp artefacts and scatter. The site is not impacted by near mine exploration on the tenement. There are no other registered Aboriginal Heritage sites within the tenements. There are no pastoral compensation agreements over the tenements. The Mining Rehabilitation Fund applies to the tenements.
	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 impediment exists to obtaining a licence to operate and the tenements are all in good standing.
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	Gold was discovered in the area in the late 1800s with intermittent working of the nearby Bannockburn deposit until the 1950s. Modern exploration began in the late 1970s with initial exploration targeting nickel sulphides before gold exploration began in 1979. Exploration activities by numerous companies including Freeport of Australia, Kulim Limited and Arboyne took place until Dominion purchased the project. Soil sampling and RAB drilling highlighted the North Well anomaly followed by an extensive RC campaign to delineate the resource. Mining at North Well began in 1995 and continued after the project was sold to Australian Goldfields. DD and RC drilling continued in and around the deposit along with surface sampling and various geophysical surveys in an effort to extend mineralisation and define new targets. AGF were placed under administration and mining ceased in 1998 upon the exhaustion of the mine reserves. Arrow Resources Management acquired the project and sold it to Breakaway Resources who carried out minor RAB drilling in the area. Lionore acquired the ground from Breakaway and completed resource extension and near mine exploration RC drilling. Norilsk acquired the project and carried out further drilling as well as a MILTEM survey over the North Well area, highlighting several areas of interest.
Geology	*Deposit type, geological setting and style of mineralisation.*	The North Well deposit is located on the central portion of the Archaean Norseman- Wiluna greenstone belt. Mafic to ultramafic intrusive and extrusive rocks, with intercalated sedimentary horizons dominate the greenstone stratigraphy. There are some felsic rocks to intermediate volcanic rocks and their derivatives. The greenstone

Section 2: Reporting of Exploration Results		
Criteria	**JORC Code Explanation**	**Commentary**
		sequences, confined to the west by basement (pre-tectonic) granitoid, gneiss, smaller syntectonic granitoid stocks, and batholiths, generally occupy the core of anticlinal domes. Some basement rocks partially invade the greenstone stratigraphy. Stratigraphy dips are relatively modest throughout the majority of the project, but steepen considerably towards more vertical, major tectonic structures. The mineralisation at North Well is confined to the Bannockburn Shear Zone ("BSZ"). The BSZ is a concave structure that has a strike length of approximately 30km, strikes roughly north south, and dips to the east. The BSZ is an approximately one kilometre wide zone of deformation that separates the basement granite/gneiss terrane to the west from greenstone terrane to the east. At North Well, the gold mineralisation is located approximately 400m from the main granite greenstone contact. Gold mineralisation is in east dipping basalts within a sequence of siltstones and acid volcaniclastics and occurs over a strike length of approximately 2600m and to a depth of 170m. Gold mineralisation is predominantly associated with quartz +/- sulphide filled shear structures. A strong S2/S3 lineation controls the mineralisation into a series of shallow (~25°) south plunging ore shoots that form en echelon zones along strike and down the dip of the shear zone. A series of east west late stage faults (some with dolerite intrusions) cross cut the mineralisation.
Drillhole 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:* • *easting and northing of the drill hole collar* • *elevation or RL (Reduced Level – elevation* • *above sea level in metres) of the drill hole collar* • *dip and azimuth of the hole* • *down hole length and interception depth* • *hole length.* • *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.*	A total of 515 holes have been used in the mineral resource and are deemed to be material. It is not practical to summarise all of the holes here in this release. Future drill hole data will be periodically released or when a results materially change the economic value of the project. Exclusion of the drilling information will not detract from the reader's view 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.*	No exploration results are reported in this release.
	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.	No exploration results are reported in this release.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	No exploration results are reported in this release.

Section 2: Reporting of Exploration Results		
Criteria	**JORC Code Explanation**	**Commentary**
Relationship between mineralisation widths and intercept lengths	*These relationships are particularly important in the reporting of Exploration Results.* *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* *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').*	Saracen has not previously reported exploration results nor are any included in this release.
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.*	No diagrams are referenced in this release.
Balanced Reporting	*Where comprehensive reporting of all Exploration Results are not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	Saracen has not previously reported exploration results nor are any included in this release.
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.*	A number of geophysical surveys have been completed and interpreted including regional aeromagnetics, radiometrics, SAM (sub-audio magnetics) and MLTEM (Moving loop electromagnetics) in an effort to highlight potential target areas.
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).* *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive*	Saracen is currently working on establishing an exploration program which will identify areas of opportunity to extend or enhance the North Well mineral resource.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	**JORC Code Explanation**	**Commentary**
Database Integrity	*Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors,*	The database provided to Saracen was an extract from an acquire SQL database. The primary database is regulated by a locked framework called the acquire data model which fixes the relationships between tables. The

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	**JORC Code Explanation**	**Commentary**
	between its initial collection and its use for Mineral Resource estimation purposes.	data model minimises the potential for data collection and data usage errors through pre-determined look up tables, storage and export functions. User defined permissions also regulate the ability to add, edit or extract data. It is unknown at this stage how the process used to record the primary data. Typical methods are manual translation of logging and data capture from written logs, direct import of csv tables through a data import scheme where data is validated upon import or direct data entry options into the database using predefined look up values.
	Data validation procedures used.	The rigid structure of the acquire data model is such that predefined rules and look up tables are applied to all data entry. Data that does not meet the criteria are highlighted and moved to a buffer area until the data is rectified to meet the passing rules. It is unknown at this stage how the database was managed and who was responsible for its maintenance. It is also unknown if there was any built in functionality around pass/fail checks on assay importing.
Site Visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.*	No site visits have taken place at this point in time by the competent person. However, a team of 12 people including Saracen technical representatives as well as industry consultants did conduct site visits. Historical drill core was inspected during the visits.
	If no site visits have been undertaken indicate why this is the case.	Given that there was no activity (drilling, mining etc.), it was deemed that a site visit during the process would not provide significant value and not materially affect the outcome of any resource estimate.
Geological Interpretation	*Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.*	The interpretation has been based on the detailed geological work completed by previous owners of the project. This knowledge is based on extensive geological logging of drill core, RC chips, detailed open pit mapping and assay data. The majority of the mineralisation is mainly confined to Bannockburn Shear Zone (BSZ) that passes through the deposit, with weaker mineralisation on the footwall and hanging wall lodes. Within the BSZ, mineralisation is hosted in east dipping basalts within a sequence of siltstones and acid volcanics and is associated with quartz+/- sulphide filled structures. A strong S2/S3 lineation controls the mineralisation into a series of shallow (~25 ^{o}) south plunging shoots that form en echelon zones along strike and down dip of the shear zone.
	Nature of the data used and any assumptions made.	The interpretations have been constructed using all available geological logging descriptions including but not limited to, stratigraphy, lithology, texture, and alteration. Interpreted cross cutting faults have been observed and have been use to guide disruptions in the position of the key mineralised domains. Surface mapping had been included in the interpretation. Cross sectional interpretations of the mineralisation have been created and from the basic framework through which the 3D wireframe solid is built.
	The affect, if any, of alternative interpretations on Mineral Resource estimation.	The North Well deposit is generally sub-vertical in geometry, with clear boundaries which define the mineralised domains. Infill drilling has supported and refined the model and the current interpretation is thus considered to be robust. Over the life of the project several different sources have interpreted the mineralisation and all agree on the same basic interpretation, given the bulk of the mineralisation is confined to the Bannockburn Shear Zone.
	The use of geology in guiding and controlling the Mineral Resource estimation.	Geological controls and relationships were used to define mineralised domains. Key features are sulphide content, associated with quartz structures.
	The factors affecting continuity both of grade and geology.	At the deposit scale the gold distribution is predominantly confined to the Bannockburn shear zone, with distinct south dipping (~25 ^{o}) higher grade shoots forming an en echelon pattern along the strike of the deposit. Mineralisation is mainly associated with quartz+/- sulphide filled structures. These factors have been addressed via the resource estimation process applied.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	**JORC Code Explanation**	**Commentary**
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.*	North Well mineralisation extends from 6853875mN to 6856525mN, 291700mE to 292500mE and 250 meters below surface. The Bannockburn shear generally strikes north-south along the North Well deposit.
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.*	Grade estimation using Ordinary Kriging (OK) was completed for North Well. CAE Studio 3 software was used to estimate gold into10m x20m x5m size parent blocks. Drill grid spacing ranges from 25 m to 50 m. Drill hole sample data was flagged using domain codes generated from three dimensional mineralisation domains and oxidation surfaces. Sample data was composited to one metre downhole length. Over 90% of the sample intervals are 1m. Intervals with no assays were excluded from the compositing routine. The influence of extreme sample distribution outliers was reduced by top-cutting where required. The top-cut levels were determined using a combination of top-cut analysis tools (grade histograms, log probability plots and Coefficient of Variation (CV)). Top-cuts were reviewed and applied on a domain basis. Due to the flexures in the mineralised envelopes, the estimation process was guided by the Dynamic Anisotropy technique in Datamine Studio RM. This basically links the geometrical shape of the mineralisation wireframe to the search ellipse during the estimation process. Variography was conducted in Snowden's supervisor software.
	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 ordinary kriged resource estimate has been compared with previous resource estimate done by the previous owner. The previous resource predicted more tonnes and lower grade for the total inventory resource. This resource estimate done by Saracen predicts less tonnes at higher grades. This discrepancy can be explained by the 'loose' broad mineralisation envelopes used in conjunction with the Multiple Indicator kriging methodology in the previous estimate compared with Saracen's mineralisation envelopes which were constructed using a nominal 0.5 g/t Au cut-off. Although there is previous mining activities at North Well, no historical mine production and mill reconciliation records were sighted that can be directly compared with this resource estimate.
	The assumptions made regarding recovery of by-products.	No assumptions have been made with respect to the recovery of by-products.
	Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).	There has been no estimate at this point of deleterious elements. Saracen is unaware if any elements other than gold have been assayed. Arsenic may have been assayed; however this data has not been made available.
	In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.	A single block model for North Well was constructed using a 10 mE by 20 mN by 5 mRL parent block size with subcelling to 1 mE by 2 mN by 1 mRL for domain volume resolution. All estimation was completed at the parent cell scale. Kriging neighbourhood analysis was carried out for North Well in order to optimise the block size, search distances and sample numbers used. Discretisation was set to 4 by 8 by 5 for all domains. The size of the search ellipse per domain was based on the gold variography. Three search passes were used for each domain. In general, the first pass used the ranges of the gold variogram and a minimum of 12 and maximum of 32 samples. In the second pass the search ranges were unchanged and the minimum samples reduced to 8 samples. The third pass ellipse was extended to 2 times the range of the gold variograms and the minimum number of samples reduced to 4 and a maximum of 32 samples were applied. A maximum of 4 samples per hole were used. In the majority of domains, most blocks were estimated in the first pass (particularly for the main domains); however, some more sparsely-sampled domains were predominantly estimated on the second or third pass. Un-estimated

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC Code Explanation	Commentary
		blocks, i.e. those outside the range of the third pass, were assigned the estimated domain mean and lower resource confidence classifications. Hard boundaries were applied between all estimation domains except for the major domain D_200_MN (at diesel) and F_100_MN (at Frosties) where a soft boundary was applied.
	Any assumptions behind modelling of selective mining units.	No selective mining units have been assumed.
	Any assumptions about correlation between variables.	No assumptions have been made regarding correlation between variables.
	Description of how the geological interpretation was used to control the resource estimates.	The geological interpretation strongly correlates with the mineralised domains. Specifically where the mineralised domain corresponds with the presence of sulphide filled quartz structures. Where well known the geological unit is described in the block model. All wireframe boundaries including those where lithology and mineralisation correspond, hard boundaries are enforced.
	Discussion of basis for using or not using grade cutting or capping.	Statistical analysis showed the populations in each domain at North Well to generally have a low coefficient of variation but it was noted that a very small number of estimation domains included outlier values that required top-cut values to be applied.
	The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.	Validation of the block model carried out a volumetric comparison of the resource wireframes to the block model volumes. Validating the estimate compared block model grades to the input data using tables of values, and swath plots showing northing, easting and elevation comparisons. Visual validation of grade trends and metal distributions was carried out. Although there has been historical mining at North Well there has not been any historical data that has been verified to be directly linked to the North Well deposit. There have not been accurate mining records kept by a succession of previous owners of this deposit.
Moisture	*Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	All tonnages are estimated on a dry basis.
Cut-off parameters	*The basis of the adopted cut-off grade(s) or quality parameters applied.*	Based on Saracen's current economic operations at Thunderbox, and the natural grade distinction above background, a grade of 0.5g/t has been chosen.
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 North Well deposit is amenable to mining by open pit methods. The deposit has successfully been mined by open pit in the past prior to 2007. There are reasonable grounds to assume that in the future this deposit will again be mined by conventional open pit load and haul operations, particularly to the south of the current mined out pits at Diesel and Frosties. To best capture "reasonable prospects for eventual economic of extraction", the mineral resource was reported within an optimised pit shell at $2250 at a 0.5g/t cut off for the open pit resources.
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*	North well ore presents as a conventional free milling ore, for both oxide and deeper sulphide ore mineralogy. It indicates a high amenability for gravity recovery. It is expected to be processed with relative ease through the Thunderbox facility, with recoveries expected to land within 93 – 96% range.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	**JORC Code Explanation**	**Commentary**
	metallurgical methods, but the assumptions regarding metallurgical treatment process 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.	
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 greenfields 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.*	As arsenic is present in the mineralogy of the deposit, the processing plant has been designed to ensure effective management of potentially harmful arsenic contamination. A 20m diameter high rate thickener is used to thicken the tails to maximise water and cyanide recovery. Process water is added to the thickener feed to create one wash stage prior to detoxification. Arsenic precipitation is effected in a stirred closed tank with air sparging. Ferric sulphate solution is metered into the reactor on the basis of dissolved arsenic concentration. The fumes from the precipitation tank are passed through a packed bed caustic scrubber before venting to the atmosphere. The precipitation tank overflow is then passed to the tails hopper.
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.*	Previous owners have taken routine density measurements when drilling diamond core. 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. At this point Saracen does not have the available data to comment on the frequency and distribution of the density measurements. The size and nature of the samples is also unknown to Saracen at this time.
	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.	As stated above the frequency and distribution is unknown at this point in time. It has assumed from the very good reconciliation performance from mine to mill that the determined density assignments from the mine are accurate.
	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 mineral resource has been classified into Indicated and Inferred categories based on drill hole spacing, geological confidence, and grade continuity and estimation quality. The combination of these factors together guide the digitising of a “cookie cutter” string in long section view which selects and codes the appropriate blocks with the nominated resource classification category.
	Whether appropriate account has been taken of all the 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).	The input data is comprehensive in its coverage of the mineralisation and does not favour or misrepresent in-situ mineralisation. Geological control at North Well consists of a primary mineralisation is associated with sulphide filled quartz structures within the major BSZ (Bannockburn Shear Zone) regional structure. The definition of mineralised zones is based on a high level of geological understanding producing a robust model of mineralised domains. The validation of the block model shows good correlation of the input data to the estimated grades.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC Code Explanation	Commentary
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The geological model and the mineral resource estimate reflect the competent person's view of the deposit.
Audits or reviews	*The results of any audits or reviews of Mineral Resource estimates.*	Saracen has adopted a process for geological modelling, estimation and reporting of mineral resources that meets high industry standards. No external audits have been conducted, as this deposit was recently acquired, Saracen however intends have an external audit done prior to commencement of any mining activity.
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 relative accuracy of the Mineral Resource estimate is reflected in the reporting of the Mineral Resource as per the guidelines of the 2012 JORC Code. The resource estimates have undergone a robust validation process, and as such, the competent person is satisfied that the resources estimated in the block model are a true representation of the insitu resources.
	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 statements relate to a global estimate of tonnes and grade.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	No accurate records at of production data is available at North Well to say to a give a realistic comparison with this resource estimate

Wonder

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
Sampling Techniques	*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.*	Saracen has completed reverse circulation drilling (RC) and diamond (DD) drilling at Wonder. Sampling methods undertaken at Wonder by previous owners have included rotary air blast (RAB), (RC), and diamond drillholes (DD). Limited historical data has been provided by previous owners.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used	Sampling for RC and DD drilling is carried out as specified within Saracen sampling and QAQC procedures as per industry standard. RC chips and diamond core provide high quality representative samples for analysis. RC, RAB and DD core drilling is assumed to have been completed by previous holders to industry standard at that time (1992- 2019).
	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 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information	RC Chips are cone split and sampled into 1m intervals with total sample weights under 3kg to ensure total sample inclusion at the pulverisation stage. Diamond core is NQ sized, sampled to 1m intervals or geological boundaries where necessary and cut into half core to give sample weights under 3 kg. Samples are selected to weigh less than 3 kg to ensure total sample inclusion at the pulverisation stage. Saracen core and chip samples are crushed, dried and pulverised to a nominal 90% passing 75µm to produce a 40g sub sample for analysis by FA/AAS. All RAB, RC and DD and sampling is assumed to have been carried out to industry standard at that time. The majority of recent drillholes have been riffle or cone split to provide 1m samples for analysis. Older drillholes have been sampled via spear sampling or unknown methods. Analysis methods include fire assay and unknown methods.
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.).*	Historic drilling included 1335 RAB holes, 772 RC holes (assumed standard 5 ¼" face sampling hammer bit) 62 RC collar/diamond tail holes, 1228 grade control drillholes and 21 NQ and unknown diameter diamond drillholes. Saracen has completed 1 NQ diamond hole, 22 RC drillholes, completed with a 5.5 inch diameter bit with a face sampling hammer. The rig was equipped with an external auxiliary booster. 5 RC precollar/ diamond tail (tails averaging 160m) drillholes have also been completed. Diamond drilling was orientated using a Reflex ACT 3 orientation unit. It is unknown if historic diamond drill core was oriented.
Drill Sample Recovery	*Method of recording and assessing core and chip sample recoveries and results assessed*	Recoveries for RC drilling are recorded as a percentage based on a visual weight estimate. Historic recoveries have not been recorded
	Measures taken to maximise sample recovery and ensure representative nature of the samples	During RC drilling daily rig inspections are carried out to check splitter condition, general site and address general issues. It is unknown what, if any, measures were taken to ensure sample recovery and representivity.
	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.	There is no known relationship between sample recovery and grade for RC drilling. Diamond drilling has high recoveries meaning loss of material is minimal. Any historical relationship is not known.
Logging	*Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support*	Logging of RC chips and DD core has recorded lithology, mineralogy, texture and colour, mineralisation, weathering, alteration and veining.

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
	appropriate Mineral Resource estimation, mining studies and metallurgical studies. *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.*	Geotechnical and structural logging is carried out on all diamond holes to record recovery, RQD, defect number, type, fill material, shape and roughness and alpha and beta angles. Chips from all RC holes are stored in chip trays for future reference. Some historic diamond drilling has been geotechnically logged to provide data for geotechnical studies. Core has been photographed in both dry and wet state. It is unknown if historic diamond core was photographed.
	The total length and percentage of the relevant intersections logged	All drillholes completed by Saracen have been logged in full.
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.*	All drill core is cut in half onsite using an automatic core saw. Samples are always collected from the same side. The sampling method for historic drill core is half or quarter core sampled, with some remaining unknown
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	All RC samples are cone split. Occasional wet samples are encountered. The sampling methods for the historic RAB and RC drilling include cone split, riffle split, spear and grab sampling as well as some unknown methods
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	The sample preparation of RC chips and DD core adheres to industry best practice. It is conducted by a commercial laboratory and involves oven drying, coarse crushing then total grinding to a size of 90% passing 75 microns. The sampling techniques for historic RAB, RC and DD drilling are unknown, best practice is assumed.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	All subsampling activities are carried out by commercial laboratory and are considered to be satisfactory. Best practice is assumed at the time of historic RAB, DD and RC sampling.
	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.	RC field duplicate samples are carried out at a rate of 1:20 and are sampled directly from the on-board splitter on the rig. These are submitted for the same assay process as the original samples and the laboratory are unaware of such submissions. It is unknown if duplicate sampling was performed on historic RAB, RC and DD drilling.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Analysis of data determined sample sizes were considered to be appropriate.
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.*	RC chip and diamond core samples are analysed by an external laboratory using a 40g fire assay with AAS finish. This method is considered suitable for determining gold concentrations in rock and is a total digest method. Methods for historic RC, RAB and DD drilling included fire assay, aqua regia and unknown methods.
	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 have been utilised at the Wonder project
	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.	Certified reference material (standards and blanks) with a wide range of values are inserted into every drillhole at a rate of 1:25 for RC and DD drilling. These are not identifiable to the laboratory. QAQC data returned are checked against pass/fail limits with the SQL database and are passed or failed on import. A report is generated and reviewed by the geologist as necessary upon failure to determine further action. QAQC data is reported monthly. Sample preparation checks for fineness are carried out to ensure a grindsize of 90% passing 75 microns. The laboratory performs a number of internal processes including standards, blanks, repeats and checks. QAQC data analysis demonstrates sufficient accuracy and precision. Industry best practice is assumed for previous holders.

Section 1: Sampling Techniques and Data		
Criteria	JORC Code Explanation	Commentary
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.*	Significant intercepts are verified by the Geology Manager and corporate personnel
	The use of twinned holes.	No holes are twinned. Selected holes were drilled in close proximity to historic holes to replicate anomalous zones
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols	Primary data is collated in a set of excel templates utilising lookup codes. This data is forwarded to the Database Administrator for entry into a secure acQuire database with inbuilt validation functions. Data from previous owners was taken from a database compilation and validated as much as practicable before entry into the Saracen acQuire database
	Discuss any adjustment to assay data.	No adjustments have been made to assay data. First gold assay is utilised for resource estimation.
Location of data points	*Accuracy and quality of surveys used to locate drillholes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.*	Drillholes are located using a Trimble R10 GPS/GNSS with an accuracy of +/- 10mm horizontally and +/- 15mm vertically. Downhole surveys are carried out using a hired Reflex EZ-gyro by the respective drilling companies on a regular basis, between 10-30m. Some historic drillholes were surveyed via Eastman or gyroscopically surveyed and many survey methods remain unknown.
	Specification of the grid system used.	MGA Zone 51 grid coordinate system is used
	Quality and adequacy of topographic control.	DTM surveys were obtained for the project area from using the WingtraOne unmanned aerial vehicle
Data spacing and distribution	*Data spacing for reporting of Exploration Results.*	40x40 is the nominal spacing for drilling
	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 drilling is distributed and spaced such that geological and grade continuity can be established to estimate the mineral resource and ore reserve appropriately. The mineralisation is continuous over a 600 m strike length, therefore the 40m x 40m exploration drill spacing effectively defines the continuity.
Orientation of data in relation to geological structure	*Whether sample compositing has been applied.*	RC precollars were composited into 4m zones with anomalous areas resampled into 1m samples Some historic RAB and RC drilling was sampled with 3-4m composite samples. Anomalous zones were resampled at 1m intervals in some cases; it is unknown at what threshold this occurred.
	Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.	Drillholes are drilled perpendicular to the shear zone and hence intersects dominant structures within the deposit type.
	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.	All drilling from surface has been drilled as close to perpendicular as possible. This has reduced the risk of introducing a sampling bias as far as possible.
Sample security	*The measures taken to ensure sample security.*	Samples are prepared on site under supervision of Saracen geological staff. Samples are selected, bagged into tied numbered calico bags then grouped into secured cages and collected by the laboratory personnel. Sample submissions are documented via laboratory tracking systems and assays are returned via email
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	An internal review of companywide sampling methodologies was conducted to create the current sampling and QAQC procedures. No external audits or reviews have been conducted

Section 2: Reporting of Exploration Results		
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 Wonder resources are located on M37/513 held by SR Mining Pty Ltd which is a wholly owned subsidiary of Saracen Mineral Holdings Limited. Mining Lease 37/513 has a 21 year life (held until 2021) and is renewable for a further 21 years on a continuing basis. The tenement is subject to one third party royalty and one caveat (118H/067). All production is subject to a Western Australian State Government NSR royalty of 2.5%. There are no native title claims registered over the tenement. There are fourteen registered heritage sites located on the tenement, six of which affect the Wonder resource. The tenement is subjection to a Section 18 clearance. The Mining Rehabilitation Fund applies to the tenement.
	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.	The tenements are in good standing and the license to operate already exists.
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	The Bundarra Project area has been subject to over a century of small scale mining and gold prospecting, much of which has no record. Modern gold exploration first started in the mid-1990's with Mt Edon Gold Mines conducting systematic exploration over the area which resulted in definition of the Wonder prospect. Pacmin Mining Corporation Ltd held the project between 1996 and 2000 and completed resource drilling and modelling. Sons of Gwalia purchased Pacmin Mining in 2000, acquiring access to Wonder in the sale. Following further resource drilling, Sons of Gwalia started mining activities at Wonder from 2002 to 2003 before the company become insolvent in 2004. St Barbara acquired Wonder as part of a larger project purchase, eventually selling the project to Terrain Minerals in 2006. Between 2006 and 2011, Terrain Minerals conducted additional resource drilling, modelling and detailed scoping studies for both open pit and underground mining. In 2011 the project was sold to SR Mining. In 2012, Blight Resources acquired 33.5% stake in SR Mining which included exploration rights at Wonder. Between 2012 and 2019, Bligh Resource undertook further resource drilling and modelling but no mining activities occurred. Saracen Metals Pty Ltd purchased the project in 2019. Overall, historic exploration has defined the geological controls on mineralisation and extent of the gold system at Wonder.
Geology	*Deposit type, geological setting and style of mineralisation.*	Bundarra is located in the Murrin Domain of the Kurnalpie Terrain. The geology is characterised by large volumes of tonalites and granodiorite with assimilated rafts of mafic xenoliths from the greenstone in which the tonalite laccolith intruded. The Bundarra tonalities have been intruded by a number of Andesites, Lamprophyres and fractionated intrusions such as "mafic granites". Cutting across the tonalites is the NW trending Wonder Shear which dips steeply to the NE. It controls the main mineralised packages that stretches 1000m. Quartz veining with chlorite sericite alteration is closely associated with mineralisation. Geological and structural evidence suggests an overall southerly plunge to the mineralisation, which is indicative of the regional geology.
Drillhole 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:* *- easting and northing of the drill hole collar elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* *- dip and azimuth of the hole* *- down hole length and interception depth*	A total of 1013 holes have been used in the mineral resource and are deemed to be material. It is not practical to summarise all of the holes here in this release. Future drill hole data will be periodically released or when a results materially change the economic value of the project. Exclusion of the drilling information will not detract from the reader's view of the report.

Section 2: Reporting of Exploration Results		
Criteria	JORC Code Explanation	Commentary
	- hole length. *• 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.*	
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 significant intercepts have been length weighted with a minimum Au grade of 0.5ppm. No high grade cut off has been applied.
	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 with minimum width of 1m and maximum width of 3m for internal dilution.
	The assumptions used for any reporting of metal equivalent values should be clearly stated	There are no metal equivalents reported in this release.
Relationship between mineralisation widths and intercept lengths	*These relationships are particularly important in the reporting of Exploration Results.* *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* *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').*	This announcement includes sufficient detail to clearly illustrate the geometry of the mineralisation and the recent drilling. All results are reported as downhole lengths. The geometry of the mineralisation is well known and true thickness can be calculated. Drilling intersects the mineralisation perpendicular and at an average intersection angle of 45 degrees.
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.*	All significant exploration results released by Saracen are accompanied by the appropriate diagrams and maps at the time of the release.
Balanced Reporting	*Where comprehensive reporting of all Exploration Results are not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	All results from the recent campaign have been reported, irrespective of success or not.
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*	No other substantive exploration data has been obtained

Section 2: Reporting of Exploration Results		
Criteria	**JORC Code Explanation**	**Commentary**
	density, groundwater, 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).* *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive*	Saracen is currently planning follow-up drilling programs to test the extension of intersected mineralisation at depth. Potential to the SE of the Wonder North project area will be evaluated with planned exploration drilling in previously untested ground

Section 3: Estimation and Reporting of Mineral Resources		
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.*	The historic data was provided to Saracen in a series of excel files For the majority of the historic database, the process used to record the primary data is unknown. All data collected and drilled by Saracen Metals is regulated by a locked framework called the acquire data model which fixes the relationships between tables. The data model minimises the potential for data collection and data usage errors through pre-determined look up tables, storage and export functions. User defined permissions also regulate the ability to add, edit or extract data. The rigour of the database is such that transcription or keying errors are identified and amended prior to loading and storage. Typical collection methods are manual capture, and translation of logging and other data into tough books (digital format) and subsequent import of csv tables through an automated data import scheme where data is validated upon import into the database using predefined look up values.
	Data validation procedures used.	The rigid structure of the acQuire 4 SQL data model is such that predefined rules and look up tables are applied to all data entry. Data that does not meet the criteria are highlighted and moved to a buffer area until the data is rectified to meet the passing rules. Validation of data includes visual checks of hole traces, analytical and geological data. IMAGO photogrammetry of all drill hole logs and RC chips are also used to further validate the geological logging, whereby high-resolution photographs of holes can be compared to each other and known geological codes to ensure consistency and accuracy. It is unknown at this stage how the predecessors' database was managed and who was responsible for its maintenance. It is also unknown if there was any built-in functionality around pass/fail checks on assay importing.
Site Visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.*	The competent person has undertaken several site visits to Wonder since Saracen acquired the project in 2019. Historical drill core as well as recent drill core was inspected during the visits. Historic and current geological data, such as mapping and modelling, were reviewed and scrutinised
Geological Interpretation	*Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.*	The interpretation of Wonder was based primarily on previous work completed by previous owners, Bligh Resources. Saracen has reviewed and scrutinised the available data that includes, geophysical and geological regional interpretations, regional to local and pit mapping, interpreted structures over aeromagnetic data, logging that was converted into Saracen codes and familiarisation with the local host and waste rock types from rock boards and pit reconnaissance. The historic Grade Control data, that was previously omitted from the interpretation, was used to

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	**JORC Code Explanation**	**Commentary**
		provide local/small scaled detail which was insightful for mineralisation trends in the hangingwall and footwall positions of the main Wonder Shear. In addition, Saracen drilled 22RC holes into Wonder North that confirmed the previous interpretation. A major change was the conversion of the data from AMG to MGA.
	Nature of the data used and any assumptions made.	It was assumed, however validated within Acquire and checked against original data where available, that the historic data was the best available data and the collar and survey positions were accurate. Where possible historic collar positions were resurveyed in the field and compared to the database data. The interpretations have been constructed for Wonder North using all available geological logging descriptions including but not limited to, stratigraphy, lithology, texture, veining, structure, mineral assemblages and alteration. .Pit mapping and Cross sectional interpretations of the mineralisation have been created and from the basic framework through which the 3D wireframe solids are built in leapfrog. The interpretations have been constructed for Wonder West using all available geological logging descriptions including but not limited to, stratigraphy, lithology, texture, veining, structure, mineral assemblages and alteration. These, along with historic interpretations, were used in the leap frog domain modelling.
	The affect, if any, of alternative interpretations on Mineral Resource estimation.	Currently there are no alternative interpretations on the Mineral Resource estimation. The 15RC holes drilled by Saracen confirm the known interpretation.
	The use of geology in guiding and controlling the Mineral Resource estimation.	Structural controls and relationships define the geological framework on which the mineralised domains are modelled. The NW trending, steeply NE dipping Wonder Shear, controls the main mineralised packages that stretch from Wonder North to Wonder West, (the names of these deposits are historic and are not indicative of their location), within a regional tonalite/diorite laccolith. Geological and structural evidence suggests a southerly plunge to the mineralisation, which is indicative of the regional geology. The main lodes make up 91% of the resource estimate. Situated in the hanging wall and footwall are discrete subsidiary mineralised domains that dip moderately to the NE and have a short strike range (<30m). These features are observed in the Wonder North pit. Using the observed orientations and widths, numeric modelling within leap frog, defines these domains which only make up 1% of the total resource.
	The factors affecting continuity both of grade and geology.	Mafic xenoliths (as observed in Wonder West) and mafic granite intrusive lamprophyres (as observed in Wonder North) and late WNW to NW cross cutting structures all interplay with the Wonder Shear and have a strong relationship with the gold mineralisation. These features control the apparent southerly plunge. Mineralisation, (associated with quartz veining and pyrite), at this stage is open at depth in the plunge orientation. Along strike, the mineralisation appears to weaken both north and south, however the areas remain relatively untested. Historic mining reports indicate local variations in the expected grade due to “cross cutting” shears.
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 Wonder mineralisation extends from 6863110mN to 6864350mN, and 320850mE to 322500mE and from 500mRL to -100mRL below surface. The mineralisation has a strike length of 1.4km and up to 0.5km down dip extent at Wonder North. Planned widths vary locally from 1m up to 45m, but predominantly 5-20m.
Estimation and modelling techniques	*The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining,*	All wireframes are constructed in Leapfrog, which are used as hard boundaries for the estimations. Datamine is used for the estimation of the Wonder resource. The domains were extrapolated 50m beyond the last data point and controlled by the resource classifications.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC Code Explanation	Commentary
	interpolation parameters and maximum distance of extrapolation from data points.	Block estimation used a combination of ordinary kriging (OK) and categorical indicator kriging (CIK). CIK estimation is used to define high and low grade subdomains within the main lodes, where drill density is 5mX10m, and up to 40mX40m. To ensure good emulation of the gold trends, dynamic anisotropy (unfolding) is used in the formation of the subdomains. The variography and search parameters honour the southerly plunge of the mineralisation. This method of estimating subdomains is deemed more reliable than using hard boundaries. Grade is estimated into parent blocks, meaning all the sub-cells within a parent cell assumed the grade of the parent cell. Univariate statistical analysis of length weighted (1m) domain coded downhole composites have been completed for all domains and top-cuts applied where applicable. Extreme grades are not common in the data set and all domains have been analysed individually to determine specific top-cut values. Due to the lack of extreme grades the top-cut process affects only 1-2% of the data. Variogram modelling was completed with Snowden's Supervisor software. This measures the spatial variance of the gold grade within the domains. The parameters determined from this analysis were used in the interpolation process.
	The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.	Previous estimates were performed by CSA global on the behalf of Bligh Resources. These were informally compared to the Saracen estimate, which came in 10% under in tonnes and 20% under in ounces. Additional 'Saracen" drill results, a change in top cuts, subdomaining, a change in variography and search parameters, and a change in resource categories meant comparisons were subjective. Historical mining records indicated minor issues with local grade reconciliation however no final reconciled values of the ore material from Wonder North and Wonder West were available.
	The assumptions made regarding recovery of by-products.	No assumptions have been made with respect to the recovery of by-products.
	Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulfur for acid mine drainage characterisation).	There has been no estimate at this point of deleterious elements
	In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.	The parent block sizes for the resource model are 10m(X) by 10m(Y) by 5m (Z). These are deemed appropriate for the majority of the resource, where drill spacing is in the order of 40m x 40m. Parent blocks have been sub-celled to 1m(X) by 1m(Y) by 1m(Y) to ensure that the wireframe boundaries are honoured and preserve the location and shape of the mineralisation. Volume checks were performed with changes <1% between the wireframe volume and block model volume. Search ranges have been derived from the variogram modelling and knowledge of the drill spacing and the known mineralisation geometry including direction of maximum continuity. Three search estimation runs are used with the aim to satisfy the minimum sample criteria in the first search range where possible. A kriging neighbourhood analysis study conducted ensured that the block sized and the search volume used in the resource estimate are optimal after considering all the relevant factors (i.e. drill spacing, geometry and dimensions of mineralisation).
	Any assumptions behind modelling of selective mining units.	A block size of 10 x 10 x 5 m is used in the estimation of grade and is currently deemed appropriate as a Selective Mining Unit (SMU) for future mining activities at Wonder.
	Any assumptions about correlation between variables.	No assumptions have been made regarding correlation between variables. Gold is the only mineral of economic significance at Wonder at this stage.
	Description of how the geological interpretation was used to control the resource estimates.	The geological interpretation, particularly the structural deformation and associated alteration, and quartz veining, correlates with the mineralised domains. The apparent southerly plunge of the ore shoots is captured by the variograms direction of maximum continuity. Search ellipses are aligned to that direction and affect both the CIK

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	**JORC Code Explanation**	**Commentary**
		subdomaining and the grade estimation. Observed geological features from pit mapping were also used to define the orientation of the discrete subsidiary lodes.
	Discussion of basis for using or not using grade cutting or capping.	Statistical analysis of all domains highlights that there are very few grades in the domain populations that require top-cutting. Top-cuts have been employed to eliminate the risk of overestimating in the local areas where a few high-grade samples exist.
	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 key model validation steps have been taken to validate the resource estimate. The mineral resource model has been stepped through visually in sectional and plan view to compare the composite grades used in the estimate and the resultant block grades. This has also been carried out in 3D with the composite grades and a point cloud of the model grades. Across Strike (45 degrees), Northing, Easting and Elevation swathe plots have been constructed to evaluate the composited (declustered) assay means against the mean block estimates. The averaged means by domain were also compared for a global comparison. Global Change of support plots were also used to validate the estimate against the declustered composites. The mineral resource model has been constructed to include kriging efficiency and the slope of regression values. These values are used to measure the quality of the estimate. Natural deterioration of the quality is observed at the perimeter of the modelled areas where data density is lower.
Moisture	*Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	All tonnages are estimated on a dry basis.
Cut-off parameters	*The basis of the adopted cut-off grade(s) or quality parameters applied.*	Based on Saracen's current economic operations at Thunderbox, and the natural grade distinction above background, a grade of 0.5g/t has been chosen for open pit operations and 1.2g/t for underground operations.
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 Wonder deposit is amenable to mining by both open pit and underground methods. Currently there is no mining activities, however Wonder North has the potential to be extracted by both open cut and underground methods. The details of those methods are still in discussion. To best capture "reasonable prospects of eventual economic extraction", the mineral resource is reported within an optimised pit shell at $2250 at a 0.5g/t cut off for the open pit resources, and for the underground resource, within MSO underground shells generated at a 1.2g/t cut off.
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 process and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported*	Upcoming are a number of planned diamond holes that will be used to assess the metallurgical amenability. Historic reports indicate there was no issue with metallurgy. It is expected that any future mining of the Wonder deposit will be processed at the Thunderbox processing facility which is currently processing ore from the Thunderbox Open Pit. The Thunderbox mill employs a conventional crushing, grinding and CIL leaching process to extract the gold. The mill has operated successfully displaying excellent performance with gold recoveries between 93.4 to 96.6 % over the life of the mine.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	**JORC Code Explanation**	**Commentary**
	with an explanation of the basis of the metallurgical assumptions made.	
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 greenfields 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.*	As arsenic is present in the mineralogy of the deposit, the processing plant has been designed to ensure effective management of potentially harmful arsenic contamination. A 20m diameter high rate thickener is used to thicken the tails to maximise water and cyanide recovery. Process water is added to the thickener feed to create one wash stage prior to detoxification. Arsenic precipitation is affected in a stirred closed tank with air sparging. Ferric sulphate solution is metered into the reactor on the basis of dissolved arsenic concentration. The fumes from the precipitation tank are passed through a packed bed caustic scrubber before venting to the atmosphere. The precipitation tank overflow is then passed to the tail's hopper.
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.*	Dry bulk density values were extrapolated from the CSA resource global report that used averaged historic density values compiled from historic reports. These values were applied to regolith profile. There was no other available information. Upcoming are a number of planned diamond holes that will be used to assess the dry bulk density of the various rock types across the regolith profile. These will be reconciled against the historic data.
	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.	The methods used for measuring the historic dry bulk densities are unknown. It is assumed that the historic bulk density values are accurate and historic mining reports indicated that there were no issues with reconciling tonnes.
	Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	An average mean of densities has been uniformly applied to the modelled regolith profiles.
Classification	*The basis for the classification of the Mineral Resources into varying confidence categories.*	The mineral resource has been classified into Measured, Indicated and Inferred categories based on drill hole spacing, geological confidence, and grade continuity and estimation quality. The combination of these factors together guides the digitising of a "cookie cutter" string in long section view which selects and codes the appropriate blocks with the nominated resource classification category.
	Whether appropriate account has been taken of all the 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 care has been taken to account for relevant factors influencing the mineral resource estimate. Confidence in the estimated tonnes and grade in the model is reflected by the resource categories and is supported by the rigorous validation process undertaken by Saracen. Recent drilling activity conducted by Saracen confirms the current interpretation.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The geological model and the mineral resource estimate reflect the competent person's view of the deposit.
Audits or reviews	*The results of any audits or reviews of Mineral Resource estimates.*	Saracen has adopted a process for geological modelling, estimation and reporting of mineral resources that meets high industry standards.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC Code Explanation	Commentary
		At this stage, no external audits have been conducted.
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 relative accuracy of the Mineral Resource estimate is reflected in the reporting of the Mineral Resource as per the guidelines of the 2012 JORC Code. The resource estimates have undergone a robust validation process, and as such, the competent person is satisfied that the resources estimated in the block model are a true representation of the in-situ resources.
	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 statements relate to a global estimate of tonnes and grade

Kailis

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
Sampling Techniques	*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.*	Saracen has completed reverse circulation drilling (RC) and diamond (DD) drilling at Kailis. Sampling methods undertaken at Kailis by previous owners have included rotary air blast (RAB), (RC), aircore (AC) and diamond drillholes (DD). Limited historical data has been provided by previous owners.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used	Sampling for RC and DD drilling is carried out as specified within Saracen sampling and QAQC procedures as per industry standard. RC chips and diamond core provide high quality representative samples for analysis. RC, RAB, AC and DD core drilling is assumed to have been completed by previous holders to industry standard at that time (1980- 2008).
	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 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information	RC Chips are cone split and sampled into 1m intervals with total sample weights under 3kg to ensure total sample inclusion at the pulverisation stage. Diamond core is HQ sized, sampled to 1m intervals or geological boundaries where necessary and cut into half core to give sample weights under 3 kg. Samples are selected to weigh less than 3 kg to ensure total sample inclusion at the pulverisation stage. Saracen core and chip samples are crushed, dried and pulverised to a nominal 90% passing 75µm to produce a 40g sub sample for analysis by FA/AAS. All RAB, RC, AC and DD and sampling is assumed to have been carried out to industry standard at that time. The majority of recent drillholes have been riffle or cone split to provide 1m samples for analysis. Older drillholes have been sampled via spear sampling or unknown methods. Analysis methods include aqua regia, fire assay and unknown methods.
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 deposit was initially sampled by 156 RAB holes. Further drilling included 51 RAB holes, 1186 RC holes (assumed standard 5 ¼" face sampling hammer bit) 220 AC holes and 54 HQ (mostly standard tube, a limited number were triple tube) and unknown diameter diamond drillholes. A number of these were diamond tails on existing RC drillholes. Saracen has completed 5 diamond geotechnical holes and 190 RC drill holes, completed with a 5.5 inch diameter bit with a face sampling hammer. The rig was equipped with an external auxiliary booster. 3278 grade control RC drillholes have been completed within the pit. Diamond drilling was HQ sized and orientated using an ACT 11 core orientation tool. It is unknown if historic diamond drill core was oriented.
Drill Sample Recovery	*Method of recording and assessing core and chip sample recoveries and results assessed*	Recoveries for RC drilling are recorded as a percentage based on a visual weight estimate. In historical data it has been noted that recoveries were rarely less than 100% although recovery data has not been provided. Some problems were reported with wet samples from RC drilling. Core loss through the ore zone was reported occasionally however recoveries for diamond drilling programs were around 95%.
	Measures taken to maximise sample recovery and ensure representative nature of the samples	During RC drilling daily rig inspections are carried out to check splitter condition, general site and address general issues. It is unknown what, if any, measures were taken to ensure sample recovery and representivity.

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
	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.	There is no known relationship between sample recovery and grade for RC drilling. Diamond drilling has high recoveries meaning loss of material is minimal. Any historical relationship is not known.
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.* *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.*	Logging of RC chips and DD core has recorded lithology, mineralogy, texture and colour, mineralisation, weathering, alteration and veining. Geotechnical and structural logging is carried out on all diamond holes to record recovery, RQD, defect number, type, fill material, shape and roughness and alpha and beta angles. Chips from all RC holes are stored in chip trays for future reference. Some historic diamond drilling has been geotechnically logged to provide data for geotechnical studies. Core has been photographed in both dry and wet state. It is unknown if historic diamond core was photographed.
	The total length and percentage of the relevant intersections logged	All drillholes completed by Saracen have been logged in full.
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.*	All drill core is cut in half onsite using an automatic core saw. Samples are always collected from the same side. The sampling method for most historic drill core is unknown, a small amount is recorded as half core sampled.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	All RC samples are cone split. Occasional wet samples are encountered. The sampling method for the majority of the historic RAB, AC and RC drilling is unknown: a small number have been recorded as spear sampled. Some wet sampling has been reported in historic drilling but only a small proportion of these had poor recoveries
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	The sample preparation of RC chips and DD core adheres to industry best practice. It is conducted by a commercial laboratory and involves oven drying, coarse crushing then total grinding to a size of 90% passing 75 microns. The sampling techniques for historic RAB, RC, AC and DD drilling are unknown, best practice is assumed.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	All subsampling activities are carried out by commercial laboratory and are considered to be satisfactory. Best practice is assumed at the time of historic RAB, DD, AC and RC sampling. Procedures adopted to ensure sample representivity for more recent drilling included sizing analysis, with an expected return of 85% passing 75um.
	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.	RC field duplicate samples are carried out at a rate of 1:20 and are sampled directly from the on-board splitter on the rig. These are submitted for the same assay process as the original samples and the laboratory are unaware of such submissions. It is unknown if duplicate sampling was performed on historic RAB, RC, AC and DD drilling.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Analysis of data determined sample sizes were considered to be appropriate.
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.*	RC chip and diamond core samples are analysed by an external laboratory using a 40g fire assay with AAS finish. This method is considered suitable for determining gold concentrations in rock and is a total digest method. Methods for historic RC, RAB, AC and DD drilling included fire assay, aqua regia and unknown methods.
	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 have been utilised at the Kailis project
	Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks)	Certified reference material (standards and blanks) with a wide range of values are inserted into every drillhole at a rate of 1:25 for RC and DD drilling. These are not identifiable to the laboratory.

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
	and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.	QAQC data returned are checked against pass/fail limits with the SQL database and are passed or failed on import. A report is generated and reviewed by the geologist as necessary upon failure to determine further action. QAQC data is reported monthly. Sample preparation checks for fineness are carried out to ensure a grindsize of 90% passing 75 microns. The laboratory performs a number of internal processes including standards, blanks, repeats and checks. QAQC data analysis demonstrates sufficient accuracy and precision. Industry best practice is assumed for previous holders.
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.*	Significant intercepts are verified by the Geology Manager and corporate personnel
	The use of twinned holes.	A number of historic DDH holes were drilled to twin original RC holes and verify results.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols	Primary data is collated in a set of excel templates utilising lookup codes. This data is forwarded to the Database Administrator for entry into a secure acQuire database with inbuilt validation functions. Data from previous owners was taken from a database compilation and validated as much as practicable before entry into the Saracen acQuire database
	Discuss any adjustment to assay data.	No adjustments have been made to assay data. First gold assay is utilised for resource estimation.
Location of data points	*Accuracy and quality of surveys used to locate drillholes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.*	Drillhole are located using a Trimble R8 GPS/GNSS with an accuracy of +/- 10mm. Downhole surveys are carried out using a hired Reflex EZ-gyro by the respective drilling companies on a regular basis, between 10-30m. Historic drilling was located using mine surveyors and standard survey equipment; more recent drilling has been surveyed using a Real Time Kinetic GPS system. The majority of downhole surveys for RC drilling were carried out using an Eastman single shot camera at regular intervals. Some drillholes were gyroscopically surveyed and some survey methods remain unknown.
	Specification of the grid system used.	MGA Zone 51 grid coordinate system is used
	Quality and adequacy of topographic control.	DTM surveys were obtained for the project area from Tesla Airborne Geoscience
Data spacing and distribution	*Data spacing for reporting of Exploration Results.*	No exploration results reported in this release
	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.	Data spacing is nominally 20m N-S by 20m E-W and 20m N-S by 40m E-W in more sparsely drilled areas of the resource. 10m N-S x16m E-W to 5m N-S x8m E-W grade control drilling is staged over mined areas to establish continuity of the main lode.
Orientation of data in relation to geological structure	*Whether sample compositing has been applied.*	No samples have been composited. Some historic RAB and AC drilling was sampled with 3-4m composite samples. Anomalous zones were resampled at 1m intervals in some cases; it is unknown at what threshold this occurred.
	Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.	Sampling is perpendicular to the main mineralisation orientation and is well understood from past production.
	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.	There is no record of any sample bias that has been introduced because of the relationship between the orientation of the drilling and that of the mineralised structures. There is the possibility of the very high nugget and visual gold distribution introducing a local bias. This is factored into the modelling of domains and estimation with broader mineralised envelopes, top cuts and indicator estimation techniques.

Section 1: Sampling Techniques and Data		
Criteria	JORC Code Explanation	Commentary
Sample security	*The measures taken to ensure sample security.*	Samples are prepared on site under supervision of Saracen geological staff. Samples are selected, bagged into tied numbered calico bags then grouped into secured cages and collected by the laboratory personnel. Sample submissions are documented via laboratory tracking systems and assays are returned via email
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	An internal review of companywide sampling methodologies was conducted to create the current sampling and QAQC procedures. No external audits or reviews have been conducted

Section 2: Reporting of Exploration Results		
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 Kailis pit and near mine exploration are located on M37/46, M37/219, M37/564, and M37/902 which are granted until 2027, 2031, 2020, and 2030 respectively. All mining leases have a 21 year life and are renewable for a further 21 years on a continuing basis. The mining leases are 100% held and managed by Saracen Metals Pty Limited, a wholly owned subsidiary of Saracen Minerals Holdings Limited. The tenements are subject to a 1.5% International Royalty Corporation (IRC) royalty. The tenements are subject to an IRC caveat (68H/067, 87H/067, 122H/067, and 403551) and a St Barbara Limited caveat (498250, 498249, 498248, and 498251). The tenements are subject to a Westpac mortgage (499141). All production is subject to a Western Australian state government NSR royalty of 2.5%. The tenements are subject to the Mining Rehabilitation Fund. There are currently no native title claims applied for or determined across the tenements. However, an historic agreement for Heritage Protection with the Wutha People still applies. Lodged Aboriginal Heritage site 17587 (Kailis Project Quartz Site) is located on M37/46.
	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.	The tenements are in good standing and the license to operate already exists.
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	Mineralisation was discovered in the Kailis project area in the early 1980s after RAB drilling returned anomalous gold and arsenic values. Carr Boyd minerals intersected mineralisation with an initial RC program targeting these anomalies in 1982. Esso, City Resources and Sons of Gwalia all held the project at various times and carried out RAB, RC, AC and DDH programs delineating the resource. The deposit was mined in 2000-2001 by Sons of Gwalia. Mining was carried out by St Barbara at the nearby Trump deposit between 2008-2009.
Geology	*Deposit type, geological setting and style of mineralisation.*	Gold mineralisation at Kailis is hosted in quartz-sericite schist within a broad east-west trending, shallow to moderately dipping (40-50 degrees SSE) shear zone with a strike length in excess of 1800m. Mineralised intervals are often narrow (1-3m) but thicken to 8-20m in places. The shear zone encapsulates a high nugget mineralisation style with common occurrences of visual gold. Structural studies identified narrow sub vertical NE-SW trending quartz vein sets/structures that cross cut the main shear zone as possible controls on high grade mineralisation. The best gold grades tend to occur in the oxide and transitional zones with lower grades in the fresh rock. Mineralisation is open at depth but closed along strike.
Drillhole information	*A summary of all information material to the understanding of the exploration results including a*	A total of 3491 holes have been used in the mineral resource and are deemed to be material. It is not practical to summarise all of the holes here in this release.

Section 2: Reporting of Exploration Results		
Criteria	**JORC Code Explanation**	**Commentary**
	tabulation of the following information for all Material drill holes: *- easting and northing of the drill hole collar* *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* *- dip and azimuth of the hole* *- down hole length and interception depth* *- hole length.* *• 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.*	All material data is periodically released on the ASX: 27/11/2018, 31/07/2018, 27/11/2017, 01/05/2017 Future drill hole data will be periodically released or when a results materially change the economic value of the project. Exclusion of the drilling information will not detract from the reader's view 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 significant intercepts have been length weighted with a minimum Au grade of 0.5ppm. No high grade cut off has been applied.
	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 with minimum width of 1m and maximum width of 3m for internal dilution.
	The assumptions used for any reporting of metal equivalent values should be clearly stated	There are no metal equivalents reported in this release.
Relationship between mineralisation widths and intercept lengths	*These relationships are particularly important in the reporting of Exploration Results.* *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* *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').*	Saracen has not previously reported exploration results nor are any included in this release. The geometry of the mineralisation is well known and true thickness can be calculated. Mineralisation at Kailis has been mainly intersected by vertical drill holes which have an average intersection angle to mineralisation of approximately 68 degrees.
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.*	Included also in this release are cross section views of the mineralisation which provides the visual perspective of the typical drilling angle.
Balanced Reporting	*Where comprehensive reporting of all Exploration Results are not practicable, representative reporting of both low and high grades and/or widths should be*	Saracen has not previously reported exploration results nor are any included in this release.

Section 2: Reporting of Exploration Results		
Criteria	JORC Code Explanation	Commentary
	practiced to avoid misleading reporting of Exploration Results.	
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.*	Historic activities have included drilling to obtain samples for metallurgical, geotechnical and hydrological test work. A number of geophysical surveys including airborne magnetics, radiometrics, and gravity have been carried out over the project area by various companies to identify strike extensions and /or strike parallel mineralisation. Drilling of identified targets proved successful identifying several anomalous zones. A detailed structural review of the nearby Trump deposit was carried out in 2012, highlighting the importance of the cross cutting structures as possible controls on the high grade mineralisation.
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).* *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive*	Saracen is not actively exploring proximal to the Kailis deposit, however exploration potential is being considered in the form of repeat structures.

Section 3: Estimation and Reporting of Mineral Resources		
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.*	The historic database provided to Saracen was an extract from an acquire SQL database. For the majority of the historic database, the process used to record the primary data was unknown. All data collected and drilled by Saracen Metals is regulated by a locked framework called the acquire data model which fixes the relationships between tables. The data model minimises the potential for data collection and data usage errors through pre-determined look up tables, storage and export functions. User defined permissions also regulate the ability to add, edit or extract data. The rigour of the database is such that transcription or keying errors are identified and amended prior to loading and storage. Typical collection methods are manual capture and translation of logging and other data into tough books (digital format) and subsequent import of csv tables through an automated data import scheme where data is validated upon import into the database using predefined look up values.
	Data validation procedures used.	The rigid structure of the acQuire 4 SQL data model is such that predefined rules and look up tables are applied to all data entry. Data that does not meet the criteria are highlighted and moved to a buffer area until the data is rectified to meet the passing rules. Validation of data includes visual checks of hole traces, analytical and geological data. IMAGO photogrammetry of all drill hole logs and RC chips are also used to further validate the geological logging, whereby high resolution photographs of holes can be compared to each other and known geological codes to ensure consistency and accuracy.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	**JORC Code Explanation**	**Commentary**
		It is unknown at this stage how the predecessors' database was managed and who was responsible for its maintenance. It is also unknown if there was any built in functionality around pass/fail checks on assay importing.
Site Visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.*	The competent person together with Saracen technical representatives conducted numerous site visits and have an appreciation of the Kailis deposit geology and the historic and current mining activities. Drilling, mining, safety and geological processes were inspected during the visits.
Geological Interpretation	*Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.*	The interpretation has been based on the detailed geological work completed both by the previous owners of the project, but more so by the current Saracen Metals technical team. Saracen has reviewed and validated the historical interpretation of the Kailis deposit by comparing it to its current geological findings. Saracen Metals knowledge has increased from extensive geological logging of Grade Control and Resource Definition RC chips, detailed open pit mapping and assay data. Mineralisation domains are defined by a combination of quartz veining, regolith (dominantly oxide profile), colour and gold grade. Given the extreme nuggetty distribution of the gold (70%) with common occurrences of visual gold, a bulk method of domaining (within the shear package) was adopted for the primary lodes to ensure maximum recovery of the gold and limit ore loss during the planning and mining phase. Such decisions to define bulk domains improved both geological and mining confidence. Cross cutting structures (NE-SW and a weaker conjugate set) were mapped and understood to both displace the ore (few metres) and control the SE shallow plunging high grade envelopes.
	Nature of the data used and any assumptions made.	The interpretations have been constructed using all available geological logging descriptions including but not limited to, regolith profiles, veining, lithology, texture and colour, and alteration. Open pit mapping and observations on vein continuity and the relationship between veining and visual gold, which was established during the mining process, has assisted in the interpretation. This has aided better informed assumptions on domain continuity where RC drill intercepts has missed the very high nuggetty gold. Cross sectional interpretations of the mineralisation have been created and from the basic framework through which the 3D leapfrog shapes have been created.
	The affect, if any, of alternative interpretations on Mineral Resource estimation.	A comparative study was completed between bulk domaining of the primary ore lodes and defining those lodes as more unique individual lodes. Given the nature of the gold distribution within a less visual oxide profile and at a moderate dip, the refined interpretation introduced a lot of risk and significantly lowered the confidence in recovering the gold.
	The use of geology in guiding and controlling the Mineral Resource estimation.	Structural understanding, the plunging nature of higher grade zones, and the nugget distribution all helped to refine and control the method of domaining, and refine the variography and estimation.
	The factors affecting continuity both of grade and geology.	The cross cutting structures have an effect on both the continuity and the thickening of grade. Movement along these structures defines a SE plunging envelopes or pillows of increased grade. In these zones visual gold was particularly focused at the hangingwall contact. Further to the east (stage 2) the primary lodes less continuous and are generally of lower tenor than the primary domains to the west.
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 Kailis resource is contained within a + 40m wide shear zone which extends over a strike length of approximately 1,300m from 174,400mE to 175,720mE (MGA), and dips 30° to the south. Mineralisation is open at depth and to the west. It sits primarily within the oxide profile with economic mineralisation occurring at 30m below surface to 120m depth.
Estimation and modelling techniques	*The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining,*	Block estimation using ordinary kriging and Multiple Indicator Kriging is completed in Datamine. MIK estimation technique is applied to the primary domains as this non-linear technique is better suited for grade distributions that

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC Code Explanation	Commentary
	interpolation parameters and maximum distance of extrapolation from data points.	have greater variance and high CV's after top cutting is imposed. All other domains are being estimated with Ordinary kriging. All wireframes are constructed in Leapfrog, which are used as hard boundaries for the estimations. Estimation of parent blocks are interpolated, and assigned to sub-cells. Univariate statistical analysis of length weighted (1m) domain coded downhole composites have been completed for all domains and top-cuts applied where applicable. Extreme grades are common in the primary domains and are part of the true population. In these cases top cuts are scrutinised and sensitivity studies are completed and compared back to mill reconciled data. All domains have been analysed individually to determine specific top-cut values. The top-cut process affects only 2-3% of the data, depending on the gold distribution. Care was taken not to severely reduce the metal by cutting a large proportion of the data. Variogram modelling was completed with Snowden's Supervisor software. Variography directions were checked against possible high grade shoot plunges, with good correlation between those directions and geological observations. The parameters determined from this analysis were used in the interpolation process. The maximum distance of extrapolation from known data points is <30m.
	The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.	Given its nuggetty gold distribution numerous check estimates, using differently spaced grade control data and various estimation techniques have been completed for the Kailis deposit. Categorical, Conditional simulation, MIK and OK have all been compared, resulting in a combination of MIK and OK estimation methods. Validation of these methods (comparison of composite and model means, swathe plots and visual checks) indicate a good reconciliation. The estimation was continuously compared back to mining and mill reconciled data for Stage 1 and Stage 2. Due to a consistent positive MCF (mill/metal call factor), which for the end of stage 1 was 126%, and currently at 115% for Stage 2, a number of model iterations were run (at the time of mining) with variable to no top cuts applied. It was concluded that the 10x5m diced spaced GC pattern could not accurately define the amount of nuggetty (visual gold) gold within the deposit.
	The assumptions made regarding recovery of by-products.	No assumptions have been made with respect to the recovery of by-products.
	Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulfur for acid mine drainage characterisation).	There has been no estimate at this point of deleterious elements. Arsenic has been found in some samples however not to a level of interference.
	In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.	The parent block sizes for the resource model are 10m(X) by 10m(Y) by 2.5m (Z). These are deemed appropriate for the majority of the resource, where drill spacing is in the order of 5m x10m. Parent blocks have been sub-celled to 1m(X) by 1m(Y) by 0.25m (Z) to ensure that the wireframe boundaries are honoured and preserve the location and shape of the mineralisation. Search ranges have been informed by variogram modelling and knowledge of the drill spacing and the known mineralisation geometry including direction of maximum continuity. Three search estimation runs are used with the aim to satisfy the minimum sample criteria in the first search range where possible. A kriging neighbourhood analysis study conducted ensured that the block sized and the search volume used in the resource estimate are optimal after considering all the relevant factors (i.e. drill spacing, geometry and dimensions of mineralisation).
	Any assumptions behind modelling of selective mining units.	A block size of 10 x 10 x 2.5 m is used in the estimation of grade in the active mining areas and is deemed appropriate as a Selective Mining Unit (SMU) which matches the current mining equipment. Ore lodes are mined

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC Code Explanation	Commentary
		using selective mining techniques on 5m benches at 2.5 metre flitches. In most cases the oxide profile does not require blasting allowing digging to occur insitu.
	Any assumptions about correlation between variables.	No assumptions have been made regarding correlation between variables.
	Description of how the geological interpretation was used to control the resource estimates.	The geological interpretation of the sheared package and structural disruption of cross cutting shears strongly correlates with the mineralised domains. Care is taken with the bulk domain shapes to ensure the nuggetty gold is captured. These are refined and expanded at the mining stage when in pit observations help to guide domain continuity.
	Discussion of basis for using or not using grade cutting or capping.	Statistical analysis of all domains highlight that very high grades are part of the true population that require sensitivity studies and careful top-cutting. Top-cuts have been employed to eliminate the risk of overestimating in the local areas.
	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 key model validation steps have been taken to validate the resource estimate. Validation of the block model carried out a volumetric comparison of the resource wireframes to the block model volumes. The mineral resource model has been stepped through visually in sectional and plan view to appreciate the composite grades used in the estimate and the resultant block grades. This has also been carried out in 3D with the composite grades and a point cloud of the model grades. Across Strike, Northing, Easting and Elevation swathe plots have been constructed to evaluate the composited assay means against the mean block estimates. The mineral resource model has been constructed to include kriging efficiency and the slope of regression values. These values are used to measure the quality of the estimate. Natural deterioration of the quality is observed at the perimeter of the modelled areas where data density is lower. The estimate is regularly checked against the current mill reconciled production records. Stage 1 resulted in a large upside or positive MCF of 126% and Stage 2 currently at 115% indicating the underestimation of the model. Even with the removal of top cuts, the final metal within the system could not be appropriately estimated. It was concluded, given the 70% nugget factor, that the 10x5m diced spaced GC pattern could not accurately define the amount of nuggetty (visual gold) gold within the deposit. It was unreasonable from a cost perspective and mining schedule to reduce the drill spacing.
Moisture	*Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	All tonnages are estimated on a dry basis.
Cut-off parameters	*The basis of the adopted cut-off grade(s) or quality parameters applied.*	Based on Saracen's current economic operations at Thunderbox, the consistent positive MCF for Kailis and the natural grade distinction above background, a grade of 0.7g /t has been chosen. However, in a high nugget deposit defined by RC grade control and in an oxide environment, all factors of geology and knowledge are applied to the domain definition and material <0.7g/t is included in the bulk shapes to ensure all metal is captured.
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*	The Kailis deposit, being shallow and primarily oxide source, is currently being mined as an open pit load and haul operation. The deposit has successfully been mined by open pit in the past and in Stage 1 and Stage 2. To best capture "reasonable prospects for eventual economic of extraction", the mineral resource was reported within an optimised pit shell at $2250 at a 0.5g/t cut off for the open pit resources.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	**JORC Code Explanation**	**Commentary**
	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.	
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 process 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.*	Kailis ore presents as a free milling conventional gold ore with high amenability for gravity recovery and total cyanide solubility. It has been processed historically at Leonora facilities and more recently in the last 3 years at Thunderbox. It has lab and plant scale recoveries in the 93 – 97% range. This is respective to both oxide and transitional mineralogy.
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 greenfields 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.*	As arsenic is present in the mineralogy of the deposit, the processing plant has been designed to ensure effective management of potentially harmful arsenic contamination. A 20m diameter high rate thickener is used to thicken the tails to maximise water and cyanide recovery. Process water is added to the thickener feed to create one wash stage prior to detoxification. Arsenic precipitation is affected in a stirred closed tank with air sparging. Ferric sulphate solution is metered into the reactor on the basis of dissolved arsenic concentration. The fumes from the precipitation tank are passed through a packed bed caustic scrubber before venting to the atmosphere. The precipitation tank overflow is then passed to the tails hopper.
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.*	Previous owners have taken routine density measurements when drilling diamond core, along with a comprehensive grab sampling regime during the mining of the pit. 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. Validation of the historic density data revealed minor discrepancies between these results and the application of these to the previous estimation. Saracen initially took a conservative view and as mining progressed updated the density profile of the deposit by following its density sample collection procedure. Samples were allowed to dry and wrapped/coated to ensure no moisture absorption during the water displacement method. All samples were paired to the oxide profile. A number of diamond holes drilled into the Stage 2 area of Kailis allowed further validation of the density data, which proved to reconcile well with the values being used in the oxide, transitional and fresh regolith profiles of the estimate.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC Code Explanation	Commentary
	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.	The procedure the previous owners utilised, included the coating of dried samples in paraffin wax where the samples had some degree of weathering, were porous or clay rich. These coated samples were then tested using the water displacement technique as previously mentioned. Saracen implements a similar process.
	Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	An average mean of bulk densities collected for each weathering profile material, (fresh, transitional and oxide) and within the main shear zone. These values were uniformly applied to the modelled geological/regolith zones.
Classification	*The basis for the classification of the Mineral Resources into varying confidence categories.*	The mineral resource has been classified into Measured, Indicated and Inferred categories based on, mining, drill hole spacing, geological confidence, and grade continuity and estimation quality. The combinations of these factors were used to assign resource categories on a domain by domain basis. Care is taken not to over extend the resource categories in a high nugget oxide deposit. As such measured material correlates to that which is mined and the indicated material is largely defined by drilling 5m x10m up to 20m x 20m. Inferred is applied to any estimate define by drilling >20m apart and confidence in geological continuity is low.
	Whether appropriate account has been taken of all the 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 care has been taken to account for relevant factors influencing the mineral resource estimate. Confidence in the predicted tonnes and grade estimated in the model is high and current mining performance suggests that the input data and geological continuity are such that a robust resource estimate can be achieved.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The geological model and the mineral resource estimate reflect the competent person's view of the deposit.
Audits or reviews	*The results of any audits or reviews of Mineral Resource estimates.*	No external reviews or audits were undertaken for this resource estimate, however the resource is actively scrutinised against the current mining and mill reconciled data. At the completion of the resource estimation Saracen Gold Mines undertake an extensive review of the model that covers model inventory and comparisons to previous models. Geological interpretation, wireframing, domain selection, statistics by domain, assay evaluation, parent cell sizes, data compositing, variography, search strategy, estimation and Kriging Neighbourhood Analysis and finally model validation 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 established in the 2012 edition of the JORC code. Saracen Gold Mine uses a standard approach to resource estimation and the procedure requires the systematic completion of the Saracen Resource Estimation Document that is thoroughly investigated and assessed in the Model review process, as stated above. Given the nature and gold distribution of this deposit a large portion of the grade control drilling is completed up front to ensure the global estimate is robust and will closely resemble the local estimate.

Section 3: Estimation and Reporting of Mineral Resources		
Criteria	JORC Code Explanation	Commentary
	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 statements relate to a global estimate of tonnes and grade.

Section 4: Estimation and Reporting of Ore Reserves		
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 estimate for the Kailis deposit is a robust global estimate that was used as a basis for conversion to the Ore Reserve estimate. The Resource estimate was compiled by Saracen using a combination of drill hole database and information compiled by Saracen. The data included resource and grade control drilling and assay data, geological mapping and historical mining records to validate the model against, and solid interpretation wireframes of the geology. This information was used to construct a model estimated by various kriging methods. The block model was depleted with the end of June 2020 survey pickup for Ore Reserve Estimation.
	Clear statement as to whether the Mineral Resources are reported additional to. Or inclusive of, the Ore Reserves.	The Mineral Resource reported is inclusive of the Ore Reserve.
Site Visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.*	A Competent Person has conducted frequent site visits to the Kailis operation since mining has commenced under Saracen ownership. The purpose of these visits is to collect information for optimisation work, validating input parameters, visual pit inspection, and discussion and feedback for life of mine planning. The information also includes the discussion around current mining performance, wall conditions and overall stability, and groundwater condition.
	If no site visits have been undertaken indicate why this is the case.	N/A
Study status	*The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves*	The Kailis open pit has been in operation since April 2017 under Saracen ownership after positive outcomes of the feasibility study. The 2020 Ore Reserve has been subject to validating all aspects of operational inputs such as production parameters, modifying factors, operating costs of mining, processing, general administration and environment management related costs. Kailis ore is currently being treated Thunderbox processing plant.
	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.	Modifying factors have been applied to the optimisation study and resultant Reserve pit design work to ensure the rigor of the financial analysis. Operational costs and production parameters have been used from actual and ongoing mining and processing performance. Saracen has completed all appropriate supporting mining studies required for the Ore Reserve estimate.
Cut-off parameters	*The basis of the cut-off grade(s) or quality parameters applied*	The Ore Reserve is estimated at a cut-off grade of 0.60g/t, and an assumed gold price of AUD$1,750/oz and operating costs of mining, processing, haulage and general administration. A top cut has already been applied to the Mineral Resource Estimate eliminating the necessity for any further adjustment to the Ore Reserve Estimate.
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*	The resource model used in the Mineral Resource Estimation was the basis for the generation of a range of Whittle 4X pit optimisation shells. The generation of these shells was reliant upon costs and inputs derived from current operational data, contractors and independent consultant recommendations. An appropriate shell was then selected

Section 4: Estimation and Reporting of Ore Reserves		
Criteria	JORC Code Explanation	Commentary
	appropriate factors by optimisation or by preliminary or detailed design).	as the basis for an iterative process of pit design work, culminating in the finalisation of a detailed pit design for the Kailis Reserve.
	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 mining method employed at Kailis open pit was conventional open pit with hydraulic excavator and dump truck fleet, and drill and blast activity. The class of excavator employed was similar to other open pit mining operations at Thunderbox/Carosue Dam. Therefore it provided a good operating dataset for production and productivity rate measurement and financial modelling. The Kailis reserve pit is designed as a successive cutback to the previously mined reserve. At present the mine is in "care and maintenance". The cutback will be mined in appropriate manner such that it meets the operational efficiency, safety and production rates. Realistic mine schedules, operating costs and lead times have been applied to maintain an efficient mining operation.
	The assumptions made regarding geotechnical parameters (e.g. pit slopes, stope sizes, etc.), grade control, and pre-production drilling.	The life of mine Reserve pit has been designed following appropriate geotechnical recommendations. The geotechnical guidelines were prepared by the site geotechnical team using wall stability performance data and will be updated or modified as required through a continuous monitoring program. Analysis includes inspection of drill core, review of the geotechnical data, slope monitoring results and probability testing. The geotechnical team oversees all geotechnical aspects of the technical study and provides ongoing site support. The Grade control method employed at Kailis utilises an RC drilling and sampling method. The method and practice has been utilised successfully at all current and past mining operations at Saracen.
	The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).	The Ore Reserve Estimate is based on a detailed life of mine pit design, using a geology approved resource model, and making appropriate dilution and recovery factor allowances for mining fleet and methods utilised.
	The mining dilution factors used.	A mining dilution factor of 20% is applied in the Ore Reserve estimation and reflects the current mining performance based on ore body characteristics, mining methods and equipment utilised.
	The mining recovery factors used.	A mining ore loss factor of 3% is applied in the Ore Reserve estimation and reflects the mining performance based on ore body characteristics, mining methods and equipment utilised.
	Any minimum mining widths used	A minimum mining width of 25m has been adopted for the primary excavation fleet. Where 'pinch-points' occur or "Good Bye" cuts are considered at the base of the pit, it is assumed that a smaller or more versatile excavator will be employed. The practice is very consistent across all open pit operations and reflects the suitability and efficiency of the mining performance.
	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 does not generate any revenue. Therefore the final pit reserve inventory has excluded any inferred mineral resources.
	The infrastructure requirements of the selected mining methods.	The selected mining method and location of the deposit is within close proximity to existing Thunderbox operations, which consists of open pit, underground and 2.9mt processing plant, modern camp site and all other required infrastructure to support current and future mine plan.
Metallurgical factors or assumptions	*The metallurgical process proposed and the appropriateness of that process to the style of mineralisation*	The Ore Reserve will be treated at the established Thunderbox processing facility. The facility is a conventional crushing, gravity circuit, grind, and CIL (carbon in leach) plant and is appropriate for the extraction of gold from free milling mineralisation.
	Whether the metallurgical process is well-tested technology or novel in nature.	The current processing plant and method applied utilises well tried and proven technology since being in operation with average gold recovery typically between 93 to 94% for all different available material types near Thunderbox operations.

Section 4: Estimation and Reporting of Ore Reserves		
Criteria	JORC Code Explanation	Commentary
	The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.	An average gold recovery for Kailis deposit is estimated at 94.0%. The recovery estimation is based on actual recovery data collected and ongoing test work conducted for Kailis at the Thunderbox plant. The plant performance is consistent between 94 to 97% while processing Kailis material along with a constant blend from Thunderbox ore. Approximately three years of processing of Kailis ore through the Thunderbox plant have resulted in a solid understanding of the metallurgical parameters of the ore.
	Any assumptions or allowances made for deleterious elements.	There are no known deleterious elements present in Kailis ore.
	The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the ore body as a whole.	All Kailis ore mined by Saracen has been processed through the Thunderbox processing plant hence it represents the Kailis mineralisation characteristics as a whole. The processing plant regularly carries out bulk sample/pilot tests for continuous improvement and checks.
	For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications.	N/A
Environmental factors or assumptions	*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.*	At present the Kailis open pit is in "care and maintenance". All required Environmental studies have been completed for the current Reserve pit. All statutory government approvals including clearing permit, project management, operating licence and groundwater licences have been granted. The existing Mining Proposal will be revised and resubmitted to accommodate the future reserve pit. Kailis mine is located ~90km from the Thunderbox processing plant and is well connected via the goldfields highway. The Kailis operation will utilise the existing Thunderbox processing facility, and TSF storage facilities that are all located on granted mining leases. The gas spur pipeline, the bore field and the airstrip at Thunderbox are all on granted miscellaneous licences. A waste rock characterisation study has been carried out and is expected to be representative of Kailis waste rock. An appropriate landform design criterion has been applied based on rock characteristic to mitigate current and any future waste landform expansion.
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.*	Kailis mining will require minimum infrastructure. The operation is located 5km north of the Leonora township and 80km south of Saracen's Thunderbox operation, where the ore is currently being treated and has a well maintained processing facility and all other major infrastructure. A modern accommodation camp facility is located at Leonora township and is well connected via both road and airport facility.
Costs	*The derivation of, or assumptions made, regarding projected capital costs in the study.*	Capital costs relating to the establishment, mobilisation and pre striping of the pit are included in the financial modelling.
	The methodology used to estimate operating costs.	Operating costs for open pit mining have been derived from a combination of actual mining costs for Kailis Operation and costs supplied by various contract mining companies, and independent consultants. Operating costs for ore processing, haulage and administration have been derived from known parameters at Thunderbox Operations.
	Allowances made for the content of deleterious elements	Kailis did not reveal any deleterious elements within the ore or waste that required any additional cost allowances.
	The derivation of assumptions made of metal or commodity price(s), for the principal minerals and co-products	An assumed gold price of AUD$1,750/oz has been adopted for the financial modelling. No allowance is made for silver by-products.
	The source of exchange rates used in study	All revenue and cost calculations have been made in AUD, so no exchange rate usage or assumptions have been necessary.

Section 4: Estimation and Reporting of Ore Reserves		
Criteria	JORC Code Explanation	Commentary
	Derivation of transportation charges	Costs associated with bullion transportation have been derived from existing contractual arrangements at Thunderbox
	The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.	Costs associated with refining have been derived from existing contractual arrangements at Thunderbox.
	The allowances made for royalties payable, both Government and private.	Royalty costs are the WA state government royalty of 2.5% and a Third party royalty of 1.5%.
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.*	For the purposes of reserve estimation it has been assumed that there is no gold hedging. All gold production will be sold at spot price to the Perth Mint.
	The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products	Assumed gold price of AUD$1,750/oz has been adopted for financial modelling. No allowance is made for silver by-products.
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.	There is a transparent quoted market for the sale of gold.
	For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.	N/A
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.*	The Ore Reserve Estimation is based on a detailed life of mine pit design and reflects positive economic outcomes. All relevant capital and operating costs as well as revenue and royalty factors have been included with appropriate discount factors for cash flow analysis.
	NPV ranges and sensitivity to variations in the significant assumptions and inputs.	A full financial model is 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*	Kailis open pit is located on lease-hold pastoral land with regular community engagement and communication of the mining lease and operation. Compensation agreements are in place with the local pastoralist and Saracen enjoys a good relationship with neighbouring stakeholders, including local pastoralists and the traditional owners. Granted mining leases cover all of Kailis mining area and processing facility at Thunderbox.
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	Water inrush is identified as a naturally occurring risk with in the operation and was addressed by the construction of appropriate water diversion bunds to provide a safe and risk free work environment.
	The status of material legal agreements and marketing arrangements	A royalty of 2.5% of gold production to WA State Government and additional royalty of 1.5% is payable to third party.

Section 4: Estimation and Reporting of Ore Reserves		
Criteria	JORC Code Explanation	Commentary
	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.	At present Kailis open pit is in "care and maintenance". All required Environmental studies have been completed for the current Reserve pit. All statutory government approvals including clearing permit, project management, operating licence and groundwater licences have been granted. The existing Mining Proposal will be revised and resubmitted to accommodate the future reserve pit.
Classification	*The basis for the classification of the Ore Reserve into varying confidence categories*	The Ore Reserve estimate classification for Kailis has been made in accordance with the JORC code 2012. The Ore Reserve Estimate classified as being Probable has been derived from the Mineral Resource classified as Indicated only.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	Cost assumptions and inputs applied to the pit optimisation and subsequent design were derived from current operational data relevant to Kailis/Thunderbox operations, and supplied by contract mining companies and independent consultants. Results of these optimisations, reserve pit design and the inventory reflect the Competent Person's view regarding the Kailis Reserve.
	The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any)	100% of Probable ore from Ore Reserve estimate has been derived from Indicated ore of the Mineral Resource.
Audits or reviews	*The results of any audits or reviews of Ore Reserve estimates*	The Ore Reserve Estimation process is in line with the Saracen Ore Reserve Policy and has undergone internal review.
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 geo-statistical 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 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.* *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 estimate has been prepared in accordance with the guideline of the 2012 JORC Code. The relative confidence of the estimate complies with the criteria of Probable Ore Reserves and is based upon; • Resource estimate • significant operating history, • application of current industry practices, • appropriate operating and capital costs, The range of the modifying factors and mining parameters applied are reasonable and confidence in the resulting reserve estimate is reasonable. The reserve mine design has adopted all reasonable modifying factors and financial analysis used in the estimated Ore Reserve have been the subject to peer review internally, and the Competent Person is confident that it is an accurate estimation of the reserve. The Kailis operation will utilise the same grade control methods that are widely utilised at current Thunderbox operations.

Section 4: Estimation and Reporting of Ore Reserves		
Criteria	JORC Code Explanation	Commentary
	It is recognised that this may not be possible or appropriate in all circumstances. These statements or relative accuracy and confidence of the estimate should be compared with production data, where available.	

Table 1 – Karari Drill Results

KARARI DRILLING AUG 2020										Downhole	
Hole	Easting	Northing	RL	Depth	Azimuth	Dip		From (m)	To (m)	Width (m)	Grade g/t
KREX061	438695.1	6664048	-234.049	522	323.12	-73.49	no significant results				
KREX065	438694.5	6664049	-234.038	493.1	308.5	-51.28	no significant results				
KREX067	438703.8	6663346	-94.512	500.8	11.6	-58.2		357.8	358.2	0.4	6.64
							and	**404.4**	**408**	**3.6**	**5.56**
							and	412	413	1	2.96
							and	424	424.6	0.6	3.38
							and	430	430.9	0.9	4.40
							and	444.15	445	0.85	3.74
							and	466	467.15	1.15	2.65
							and	470.55	470.97	0.42	2.84
KREX068	438798.6	6663909	-236.552	451.5	221.24	-79.23	no significant results				
KREX069	438856.3	6663849	-233.126	451.22	213.4	-76.08		368.15	369.2	1.05	2.78
							and	374	377.65	3.65	2.72
KREX070A	438856.2	6663849	-232.967	464.7	187.8	-53.42		428.7	429	0.3	2.66
KREX072	438855.7	6663849	-233.021	392.96	229	-73.82		345	346.35	1.35	2.57
							and	355	355.32	0.32	3.49
							and	358.65	361.55	2.9	2.61
KREX073	438693.8	6664048	-232.969	456.9	306.1	-9.18		344.1	345	0.9	3.24
KREX074	438694.2	6664049	-233.815	539	317.2	-30.45	no significant results				
KREX075	438729.1	6663311	-93.914	603	110.2	-70.33	no significant results				
KREX077	438733.3	6663301	-93.178	639	151.7	-22.98	no significant results				
KRGC768	438694.7	6664045	-232.36	135	236.9	7.19	hole not sampled				
KRGC771	438694.5	6664046	-233.106	345	251.7	-6.3		292	302.25	10.25	3.92
KRGC773	438694.3	6664046	-233.167	321	246.2	-14.05		**277.45**	**294.55**	**17.1**	**10.67**
KRGC774	438694.3	6664046	-233.035	320.5	246.21	-18.07		**275**	**295.15**	**20.15**	**8.43**
KRGC781	438711.2	6663338	-94.25	306	102.6	-82.73	no significant results				
KRGC783	438730.5	6663305	-93.791	219	218.2	-77.14	no significant results				
KRGC784	438730.5	6663305	-93.798	198	260.3	-72.35	no significant results				
KRGC785	438730.5	6663305	-93.733	210	254.7	-78.03		156	157	1	9.08
							and	166	169.4	3.4	3.54
KRGC786	438730.7	6663305	-93.657	228	269.6	-84.06		191	191.5	0.5	2.97
							and	196.73	197.16	0.43	3.11
							and	220	221	1	3.61
KRGC787	438731	6663305	-93.779	276	80.1	-87.43	no significant results				
KRGC788	438730.5	6663304	-93.721	207.07	198.3	-57.58		165	166	1	10.60
KRGC789	438730.9	6663304	-93.774	215.13	174.5	-56.83		147.94	148.6	0.66	14.20
KRGC790	438730.5	6663305	-93.815	222	179.9	-65.33		191	192	1	3.22
KRGC791	438730.6	6663305	-93.825	228.07	198.7	-72.71	no significant results				
KRGC792	438730.7	6663305	-93.834	255	194.7	-80.06	no significant results				
KRGC793	438716.8	6664004	-235.512	276.1	224.9	-45.07	no significant results				
KRGC794	438716.7	6664004	-235.52	270	210.3	-43.24	no significant results				
KRGC811	438704.4	6663345	-93.928	416.2	358.2	-54.05		316	317.5	1.5	2.82
							and	374	374.45	0.45	5.11
							and	387	388	1	5.23
KRGC813	438711.7	6663338	-94.106	125	349.3	-63.08	hole not sampled				
KRGC814	438856.1	6663849	-233.138	282	226.9	-28.19		249	251.9	2.9	5.70
							and	266	266.8	0.8	3.52
KRGC815	438856.1	6663849	-233.167	282	230.9	-37.51	no significant results				
KRGC816	438704.5	6663349	-93.701	305.4	343.78	-48.1		241.8	251	9.2	3.05
							and	256.45	258.3	1.85	3.51
							and	265.7	267	1.3	3.42
							and	278.8	284	5.2	4.72
KRGC817	438704.6	6663349	-93.629	332.3	354.5	-39.3		282.8	283.5	0.7	4.31
							and	293	293.4	0.4	3.16
KRGC821A	438693.8	6664047	-233.019	313.5	261.2	-10.9		300.92	305.62	4.7	5.29
KRGC822A	438693.7	6664047	-232.789	327.9	253.1	-15.33		283.05	303	19.95	6.99
KRGC823	438693.7	6664047	-232.803	320.4	263.1	-15.53		293.1	299.8	6.7	5.87

KARARI DRILLING AUG 2020										Downhole	
Hole	**Easting**	**Northing**	**RL**	**Depth**	**Azimuth**	**Dip**		**From (m)**	**To (m)**	**Width (m)**	**Grade g/t**
KRGC824	438694.1	6664046	-233.112	315	248.8	-23.58		**266**	**293.6**	**27.6**	**5.35**
KRGC825	438694.1	6664046	-233.49	299.28	239.97	-24.56		**258.05**	**292**	**33.95**	**4.65**
							and	284	291	7	5.27
KRGC826	438855.6	6663849	-231.935	309	221.7	-8.74		268.34	269.15	0.81	8.80
							and	**272.6**	**295**	**22.4**	**3.75**
KRGC827	438855.5	6663849	-231.92	315	229.1	-9.97		259.63	261.4	1.77	3.09
							and	266.75	267.75	1	3.65
							and	268.75	271.5	2.75	2.52
							and	281.9	282.75	0.85	2.74
							and	287.2	288.8	1.6	2.85
KRGC828	438855.5	6663848	-232.059	309.05	214	-12.21		254.65	255.4	0.75	2.59
							and	265	279	14	3.35
KRGC829	438855.6	6663849	-232.029	333	215.76	-5.61		278.44	295.4	16.96	4.04
							and	307	308	1	4.00
KRGC830	438855.4	6663848	-232.295	321.06	215.7	-12.15		270.9	281	10.1	4.37
							and	284.35	288.6	4.25	3.50
							and	294	295.45	1.45	5.84
KRGC831	438562.2	6663661	-169.997	66	304.1	-37.34		24	24.74	0.74	3.43
							and	51	52.22	1.22	4.94
							and	52.52	53.1	0.58	3.71
KRGC832	438562.1	6663661	-169.863	102	323.1	-42		73.3	79	5.7	6.85
							and	83	83.7	0.7	2.60
KRGC833	438562.6	6663661	-169.943	72	278.7	-78.77		46	58	12	8.23
KRGC834	438855.8	6663849	-233.126	284.7	228.5	-21.02		**250.65**	**273**	**22.35**	**3.40**
KRGC835A	438856.1	6663849	-233.136	285	237.31	-24.57		**245**	**270**	**25**	**4.19**
KRGC837A	438652.7	6663700	-59.075	222	198.2	-3.7293		182.7	183.25	0.55	3.92
							and	201	209.2	8.2	3.95
KRGC838	438609	6663672	-54.594	132	210.9	-13.314		87.74	88.2	0.46	6.17
							and	94.85	96.25	1.4	3.81
							and	99.6	100.8	1.2	3.61
							and	107.2	108	0.8	3.74
							and	117.6	121.55	3.95	7.57
							and	128.46	130	1.54	10.63
KRGC839	438616.3	6663390	-237.516	66	234.3	14.0561	no significant results				
KRGC840	438616.3	6663390	-237.516	66	263.2	13.7118		20.55	20.85	0.3	3.21
							and	43.5	49.6	6.1	2.77
							and	53.9	54.7	0.8	2.59
KRGC841	438652.6	6663700	-59.351	244.2	196.3	-3.2195		191.17	192.8	1.63	5.18
							and	223.4	224.1	0.7	5.05
							and	229.32	231	1.68	6.99
							and	235.05	243	7.95	6.80
KRRD456	438705	6663345	-93.938	342.1	1.2	-60.95		287	290.8	3.8	4.66
							and	299.33	302	2.67	2.92
							and	307.8	308.5	0.7	2.85
							and	312.6	313.4	0.8	3.43
							and	316.2	317.1	0.9	5.35
							and	322.86	323.63	0.77	2.92
KRRD457	438717.3	6664003	-235.695	282	232.9	-52.93		263.7	264	0.3	3.67
KRRD458	438717.2	6664003	-235.717	304.96	218.4	-54.99	no significant results				
KRRD459	438717.1	6664003	-235.714	319.88	197.81	-58.02	no significant results				
KRRD460	438716.9	6664004	-235.758	323.1	246.35	-62.24	no significant results				
KRRD461	438717.4	6664004	-235.738	303	227	-61.61		281	282.3	1.3	6.30
KRRD462	438694.9	6664045	-233.867	387	258.7	-31.44		264	265	1	2.57
							and	**267**	**300**	**30**	**6.58**
							and	302.55	303.15	0.6	2.52

KARARI DRILLING AUG 2020										Downhole	
Hole	**Easting**	**Northing**	**RL**	**Depth**	**Azimuth**	**Dip**		**From (m)**	**To (m)**	**Width (m)**	**Grade g/t**
KRRD463	438694.7	6664045	-234.21	351	261.5	-38.55		261.8	263	1.2	3.06
								268	**300**	**32**	**5.32**
KRRD464	438694.8	6664045	-233.818	362.98	251.6	-38.16		259	262.7	3.7	6.27
							and	267	270.1	3.1	2.72
							and	272	273	1	2.89
							and	283.06	283.86	0.8	19.80
KRRD465	438694.8	6664045	-233.791	303	237.6	-29.15		255.44	258.2	2.76	3.53
							and	262	262.3	0.3	3.33
KRRD466	438694.7	6664045	-233.758	377.1	244.7	-37.45		258.7	262	3.3	5.19
							and	263	264	1	4.29
							and	276.65	277.6	0.95	10.06
KRRD467	438694.7	6664045	-233.737	333	232.46	-36.94	no significant results				
KRRD468	438694.8	6664045	-233.811	354.06	231.7	-46.07	no significant results				
KRRD469	438856	6663849	-233.115	311.8	223.31	-52.51		263.6	269.8	6.2	3.69
							and	277.62	277.92	0.3	3.67
KRRD470	438856	6663849	-233.11	311.8	258.1	-50.5		276.67	282.3	5.63	2.82
							and	289	289.5	0.5	5.00
							and	294.8	295.5	0.7	3.15
KRRD471A	438856	6663849	-233.105	326.8	226.4	-60.57		281.75	286.7	4.95	4.16
							and	293.5	295.3	1.8	3.29
KRRD472	438856.1	6663849	-233.103	326.8	242.1	-60.3	no significant results				
KRRD473	438856.1	6663849	-233.103	338.76	263.7	-56.63	no significant results				
KRRD474	438856.1	6663849	-233.16	446.6	271.8	-60.04		316.25	318	1.75	2.94
							and	327	327.5	0.5	2.78
KRRD475	438856	6663849	-231.855	365.9	221.7	-70		**315.6**	**329**	**13.4**	**4.32**
KRRD476	438856.1	6663849	-233.039	386.9	244.9	-69.84		318.5	321.25	2.75	3.45
							and	327.2	329.7	2.5	3.40
							and	341.4	342	0.6	3.13
KRRD477	438856.2	6663849	-233.125	393.15	270.9	-66.57		330.6	333	2.4	2.86
							and	337	337.7	0.7	3.62
KRRD478	438694.5	6664046	-233.106	348	243.42	-65.58		264	264.8	0.8	2.50
							and	266.55	267	0.45	2.65
KRRD479B	438694.8	6664045	-233.73	357	277.7	-39.17		**297.9**	**316**	**18.1**	**6.86**
KRRD480	438694.9	6664045	-233.676	395.8	284.8	-46.87		255.95	256.9	0.95	3.32
							and	258.9	259.2	0.3	2.85
							and	290	290.45	0.45	5.77
							and	321.2	322	0.8	2.65
							and	330.15	333	2.85	3.88
KRRD481	438694.5	6664046	-233.106	345.1	258.3	-48.51		287	292.55	5.55	6.63
KRRD482	438694.5	6664046	-233.106	327	245	-48.19		280.25	281	0.75	2.79
KRRD483	438694.9	6664045	-233.775	218.1	242.1	-59.48	hole not sampled				
KRRD484	438694.7	6664045	-233.8	354.14	257.3	-60.14		238.55	238.95	0.4	3.36
							and	298	299	1	2.96
KRRD485	438856	6663850	-233.188	294	248.7	-37.7		255.3	261	5.7	3.03
							and	269	270.6	1.6	3.92
KRRD486	438855.9	6663850	-233.188	300.1	231.9	-48.4		256.9	259.3	2.4	4.42
							and	268	268.5	0.5	2.68
KRRD487	438856.2	6663850	-233.188	311.9	213.7	-48.05		262.9	264.54	1.64	3.98
							and	268	268.55	0.55	4.69
							and	270.5	272.17	1.67	3.10
KRRD488	438856.2	6663849	-233.051	357	209.8	-66.17		**321.85**	**333.7**	**11.85**	**3.31**
KRRD489	438694.5	6664046	-233.106	329.86	259.9	-28.06		279.3	285.75	6.45	4.78
							and	289	296.25	7.25	7.21
KRRD490	438693.4	6664048	-233.921	101.77	275.3	-44.41	hole not sampled				
KRRD491	438693.4	6664048	-233.928	368.8	286.71	-53.67		268.55	269.6	1.05	3.02
							and	291.6	296.8	5.2	2.59
KRRD492	438855.8	6663849	-233.009	333	239.97	-64.34		299	305.8	6.8	3.27
							and	317.34	317.64	0.3	2.69

Table 2 – Dervish Drill Results

DERVISH DRILLING AUG 2020										Downhole	
Hole	Easting	Northing	RL	Depth	Azimuth	Dip		From (m)	To (m)	Width (m)	Grade g/t
WDEX065	438335.2	6665829	-35.255	473.1	293.5	-23.15		265.25	266.45	1.2	6.12
							and	356.2	357	0.8	3.05
							and	388.85	389.65	0.8	2.38
WDGC346	438400.4	6665717	-39.304	281.7	239.6	-7.13		**250**	**265**	**15**	**3.00**
WDGC347	438400.4	6665717	-39.307	279	232.8	-8.07		242.82	264	21.18	1.89
							and	271.75	273.13	1.38	6.83
WDGC348	438400.8	6665716	-39.296	291	218.2	-7.83		150	151	1	8.11
							and	**245**	**258.2**	**13.2**	**3.45**
							and	264	265	1	1.54
							and	270.1	271	0.9	2.85
							and	276.25	276.55	0.3	2.59
							and	282.85	285.15	2.3	6.72
WDGC349	438400.3	6665717	-39.71	272.95	239.7	-14.81		232.5	232.9	0.4	2.25
							and	241.75	242.05	0.3	1.66
							and	**251.3**	**261.9**	**10.6**	**2.74**
WDGC350	438400.5	6665717	-39.701	273	225.1	-13.26		230.65	235.3	4.65	3.49
							and	**241.15**	**255**	**13.85**	**4.52**
WDGC352	438334.3	6665825	-34.878	195	214.6	-6.50		151	152	1	3.51
WDGC353	438334.3	6665825	-34.837	165	237.4	-16.66	no significant results				
WDGC354	438334.5	6665825	-34.517	185.5	224.8	-6.01		146.9	148.59	1.69	8.19
WDGC355	438334.2	6665825	-34.793	167.8	248.4	-7.89		**150.26**	**155**	**4.74**	**6.93**
WDGC357	438333	6665827	-34.801	209.6	267.6	-7.25		179	187	8	1.71
							and	191.7	193	1.3	2.33
WDGC358	438450.1	6665663	-40.185	200.58	206.4	-4.99	no significant results				
WDGC359	438450.1	6665663	-40.191	201	202.0	-3.52		188	188.47	0.47	1.99
WDGC368	438334.4	6665825	-34.156	230.9	227.1	4.92		181.2	182.05	0.85	4.66
WDGC369	438334.4	6665825	-34.156	239.9	235.3	7.42		188.95	189.3	0.35	2.62
WDGC370	438334.4	6665825	-34.156	248.9	250.6	7.40		**201.85**	**207.75**	**5.9**	**3.54**
WDGC371	438334.4	6665825	-34.197	254.9	254.5	2.71		209	209.78	0.78	1.80
WDGC372	438491.9	6665639	-38.484	206.6	177.5	-1.20	hole not sampled				
WDGC375	438491.1	6665639	-38.497	396	192.6	-1.36		222	223	1	2.80
							and	276.9	283	6.1	1.75
							and	289	306.55	17.55	1.57
							and	318.65	319	0.35	2.79
							and	320.4	321.7	1.3	1.65
							and	**334.1**	**340**	**5.9**	**4.94**
							and	355.8	360	4.2	4.14
WDGC376	438334.5	6665825	-34.821	175.8	216.4	-15.77		175.5	175.8	0.3	2.35
WDGC377	438334.4	6665825	-34.158	168.05	248.4	-15.95	no significant results				
WDGC378	438334.5	6665825	-34.843	147	227.3	-20.43	no significant results				
WDGC379	438302	6665549	-44.39	231	207.0	-29.55		28.65	29.45	0.8	2.38
							and	**79.15**	**90**	**10.85**	**5.70**
WDGC380	438302.1	6665549	-44.335	110.4	184.8	-29.12		53	54	1	1.90
							and	81.62	82.6	0.98	5.15
							and	98.3	100.74	2.44	4.45
WDGC381	438302.2	6665549	-44.459	114	182.2	-41.78		78	79.7	1.7	2.60
							and	87	87.82	0.82	1.76
							and	100.22	101.7	1.48	4.27
WDGC382	438302.3	6665549	-44.575	135	173.4	-51.06		43.56	44.3	0.74	2.00
							and	47.11	48.11	1	2.26
							and	79.54	81.16	1.62	5.13
							and	100.15	101.5	1.35	1.63
							and	103	104	1	2.68
							and	107.2	109.5	2.3	2.23
WDGC383	438302	6665549	-44.395	105	209.4	-55.68		74.55	75	0.45	1.51
							and	**82.1**	**88**	**5.9**	**10.07**

DERVISH DRILLING AUG 2020										Downhole	
Hole	Easting	Northing	RL	Depth	Azimuth	Dip		From (m)	To (m)	Width (m)	Grade g/t
WDGC384	438302.5	6665549	-44.812	148	182.9	-81.98		50.23	50.55	0.32	3.63
							and	57.3	57.7	0.4	2.81
							and	86.7	89.4	2.7	2.74
							and	97.52	98.15	0.63	3.20
							and	114.6	115.2	0.6	2.60
							and	**124.2**	**132.06**	**7.86**	**4.60**
							and	142	142.4	0.4	4.34
WDGC385	438302.7	6665549	-44.798	144.45	157.2	-74.36		53.63	55.08	1.45	1.77
							and	87.27	94.7	7.43	1.91
							and	117.4	140.2	22.8	3.18
WDGC386	438290	6665598	-43.154	132.4	201.3	-19.79		92.05	92.6	0.55	2.02
							and	102.75	106.9	4.15	4.58
							and	114.1	123.7	9.6	2.43
WDGC387	438289.8	6665599	-43.116	122.45	238.0	-27.28		42	44.35	2.35	1.59
							and	90.54	99.77	9.23	2.43
							and	112.4	113	0.6	5.84
WDGC388	438289.9	6665599	-43.688	137.5	206.1	-37.63		**88.25**	**109.5**	**21.25**	**2.36**
WDGC389	438289.9	6665599	-43.687	135.5	220.1	-43.48		**88.27**	**104**	**15.73**	**3.29**
							and	110	110.6	0.6	8.03
WDGC390	438289.9	6665599	-43.863	141.63	256.6	-39.80		91	97.25	6.25	2.46
							and	**105.12**	**122**	**16.88**	**4.77**
WDGC391	438290	6665599	-43.731	152.9	209.1	-54.70		67.65	68.25	0.6	1.57
							and	75.7	76.25	0.55	2.22
							and	88	96	8	2.05
							and	99.65	110.55	10.9	1.82
							and	141	141.65	0.65	2.71
WDGC392	438290	6665599	-43.82	141	231.7	-55.15		**89.74**	**101.96**	**12.22**	**4.46**
							and	108.45	114	5.55	1.77
							and	120.9	121.3	0.4	2.88
							and	126.44	130.1	3.66	2.12
WDGC393	438289.5	6665600	-42.337	133.4	252.4	-52.58		**88.3**	**105**	**16.7**	**3.73**
							and	110.55	111.3	0.75	2.47
							and	113.35	113.85	0.5	1.85
							and	122.95	123.35	0.4	4.53
							and	129.8	130.3	0.5	5.59
WDGC394	438289.5	6665600	-42.337	152.45	277.8	-43.00		105.55	108	2.45	3.81
							and	**117**	**139.67**	**22.67**	**2.19**
							and	141.6	142	0.4	4.71
WDGC395	438289.5	6665600	-42.337	162	186.7	-64.84		102.25	104.25	2	2.13
							and	110.55	115	4.45	1.89
							and	121.75	125.8	4.05	4.41
							and	140.5	141	0.5	1.92
WDGC396	438289.5	6665600	-42.337	149.9	212.9	-68.15		**95**	**115.55**	**20.55**	**2.59**
							and	122	136.8	14.8	2.64
WDGC397	438289.5	6665600	-42.337	156	262.2	-61.49		53.55	55.3	1.75	1.90
							and	96.2	97.6	1.4	1.70
							and	100	104.9	4.9	1.54
							and	110.35	112	1.65	6.56
							and	119.6	130	10.4	1.88
							and	137	137.95	0.95	1.75
WDGC398	438260.1	6665655	-41.579	147	253.9	-16.93		111	124.4	13.4	3.24
							and	130.75	135.55	4.8	6.85
WDGC399	438260.1	6665655	-41.579	138	247.5	-29.26		100.05	100.4	0.35	3.52
							and	110.1	116	5.9	2.05
WDGC400	438260.1	6665655	-41.579	139.7	254.1	-44.99		106.9	108	1.1	1.82
							and	**116**	**133.95**	**17.95**	**3.60**

Table 3 – Deep South Drill Results

DEEP SOUTH DRILLING AUG 2020										Downhole	
Hole	Easting	Northing	RL	Depth	Azimuth	Dip		From (m)	To (m)	Width (m)	Grade g/t
DSGC380	455996.4	6731293	-18.686	219.09	53.01	-4.61		**184.02**	**187.19**	**3.17**	**3.55**
DSGC381	455996.4	6731293	-18.657	225.08	42.36	-4.25		185.1	185.5	0.4	13.70
							and	194.75	197.68	2.93	5.69
DSGC382	455996.4	6731293	-18.476	222.07	37.40	-1.75		192.78	193.12	0.34	8.74
							and	200.88	207.15	6.27	4.34
DSGC383	455996.3	6731293	-18.437	239.15	30.80	-0.60		**218.96**	**224.85**	**5.89**	**6.19**
DSGC384A	455996.3	6731293	-19.726	246	30.00	-30.31		202.3	203.94	1.64	3.25
							and	214.15	214.7	0.55	4.71
							and	215.78	216.37	0.59	2.57
DSGC385	455996.4	6731293	-19.634	256	28.31	-27.18		215.64	216.07	0.43	2.95
							and	227.12	228.6	1.48	4.61
							and	231.21	231.64	0.43	6.28
DSGC386	455996.4	6731293	-19.527	254.2	25.70	-23.48	no significant results				
DSGC387	455996.4	6731293	-19.413	236.8	29.10	-19.06		208.9	209.24	0.34	5.81
							and	219	219.4	0.4	9.45
DSGC388	455996.3	6731293	-19.554	272.6	21.80	-23.00	no significant results				
DSGC389	456009.2	6731279	-19.455	192.02	62.10	-22.26		174.27	176.9	2.63	4.50
DSGC390	456009.2	6731279	-19.428	292	70.58	-22.48		172.7	173.16	0.46	2.63
							and	199.5	199.81	0.31	10.10
DSGC391	456009.2	6731278	-19.787	325	75.70	-29.45		173.9	179.5	5.6	2.66
DSGC392	456009.4	6731278	-19.736	325.2	68.26	-29.96	no significant results				
DSGC393	456009.2	6731279	-19.855	204.02	61.90	-31.58		182.7	183.65	0.95	3.14
							and	190.97	191.45	0.48	3.47
DSGC394	456009.2	6731279	-19.855	204.06	54.83	-29.71		175.2	176.13	0.93	3.76
DSGC395	456013.6	6731251	-19.953	340.25	84.81	-33.41		181.45	183.96	2.51	3.44
							and	188.51	190.99	2.48	3.31
							and	204.14	204.47	0.33	9.60
DSGC396	456013.6	6731250	-19.953	350.1	72.85	-39.18		185.3	186.2	0.9	4.31
							and	189.32	192.06	2.74	3.60
							and	194.23	197.09	2.86	6.66
DSGC397	456013.7	6731251	-20.101	204	66.39	-34.98		180.54	181.22	0.68	3.14
							and	186.35	186.81	0.46	14.50
							and	188.38	189.56	1.18	6.08
DSGC398	456013.9	6731250	-20.071	400	87.55	-46.25		**201.27**	**203.56**	**2.29**	**12.50**
							and	210.4	211.4	1	9.61
							and	214.5	215	0.5	5.70
DSGC399	456013.8	6731250	-20.071	222	72.51	-46.25		197.5	206	8.5	3.05
DSGC400	456013.7	6731251	-20.05	225	63.60	-45.71		195.99	200.22	4.23	4.26
DSGC401	456013.8	6731250	-19.955	237	84.50	-51.87		**210**	**219.65**	**9.65**	**4.41**
DSGC402	456013.7	6731251	-20.049	234	71.00	-51.41		**206.85**	**214.05**	**7.2**	**4.34**
DSGC403	456013.3	6731259	-20.197	219	58.50	-45.71		200.22	200.7	0.48	15.10
DSGC404	456013.3	6731259	-20.237	234	58.75	-50.99		207.85	208.32	0.47	5.93
							and	211.44	212.95	1.51	3.02
DSGC405	455996.4	6731293	-19.544	231	34.12	-28.43		205.93	207.3	1.37	6.66
DSGC406	455996.3	6731293	-19.605	219	41.49	-36.86		**196.58**	**204**	**7.42**	**10.34**
DSGC407	455996.3	6731293	-19.685	311.51	18.63	-34.88	no significant results				
DSGC408	455996.4	6731293	-19.676	254.96	23.86	-36.58	no significant results				
DSGC409	455996.4	6731293	-19.813	278.8	24.55	-45.37		258.96	261.2	2.24	7.51
DSGC410	456000.1	6731288	-19.801	204	56.25	-31.23		181.08	183	1.92	8.88
							and	185.23	185.54	0.31	16.50
							and	185.9	187.1	1.2	23.68
DSGC411	456000.1	6731288	-19.881	213	46.13	-37.10		**194.3**	**197.03**	**2.73**	**10.98**
DSGC412	456000.2	6731288	-19.787	222	52.25	-45.11		190	191.03	1.03	3.16
							and	200.55	202.65	2.1	4.12
							and	203	204.67	1.67	6.23
DSGC413	456000.2	6731288	-19.979	242.44	53.46	-54.12		216	217	1	2.52
							and	220.95	221.9	0.95	6.09

DEEP SOUTH DRILLING AUG 2020										Downhole	
Hole	Easting	Northing	RL	Depth	Azimuth	Dip		From (m)	To (m)	Width (m)	Grade g/t
DSGC414	456000.3	6731288	-19.9	258.15	80.50	-56.68		**222.7**	**225.85**	**3.15**	**9.87**
							and	231	233.38	2.38	2.69
							and	243.5	244.46	0.96	2.62
DSGC415	456000.1	6731288	-19.924	264	71.10	-59.53		232.95	235.45	2.5	4.56
DSGC416	455999.2	6731290	-19.549	213.1	49.39	-40.07		194.55	201	6.45	4.00
DSGC417	455999.1	6731290	-19.58	228.1	35.08	-37.03		206.75	207.3	0.55	8.09
							and	213.8	214.7	0.9	4.48
DSGC418	455999	6731290	-19.617	258	26.37	-37.53		243	243.3	0.3	2.65
							and	243.97	244.27	0.3	3.45
DSGC419	455999.4	6731289	-19.559	228	47.81	-45.80		**203.5**	**211.21**	**7.71**	**13.46**
DSGC420	455999.4	6731289	-19.821	234	50.30	-49.96		210.19	215.61	5.42	5.35
DSGC421	455999.5	6731289	-19.898	243	68.12	-55.31		218.17	220.31	2.14	4.92
DSGC422	456013.7	6731250	-20.11	345.1	124.40	-23.45		253.73	254.44	0.71	5.29
							and	301.32	302	0.68	3.15
DSGC423	456013.7	6731251	-20.101	236.26	95.81	-38.49		192.6	193.88	1.28	7.15
							and	217	217.49	0.49	3.46
DSGC424	456013.7	6731251	-20.102	105	111.40	-32.77	hole not sampled				
DSGC425	456013.7	6731250	-20.097	314.4	121.53	-27.84		**249.94**	**250.24**	**0.3**	**2.84**
							and	265.39	266.28	0.89	11.50
DSGC426	456013.6	6731251	-20.101	293.8	114.43	-32.69		247.41	247.88	0.47	3.47
							and	265.85	266.22	0.37	30.90
							and	291.6	292	0.4	5.75
DSGC427	456013.7	6731251	-20.112	270	102.97	-50.06		221.63	222.38	0.75	4.37
							and	251.3	252.1	0.8	2.70
DSGC428	455997.7	6731292	-19.708	288	20.24	-40.65		244.82	245.14	0.32	5.71
DSGC429	455997.7	6731292	-19.708	267	33.77	-48.05		228.89	229.19	0.3	2.62
							and	232.25	234.53	2.28	10.27
DSGC430	455997.7	6731292	-19.708	255	65.39	-51.78		**210.35**	**214.96**	**4.61**	**10.09**
							and	225	226	1	3.00
							and	238.08	238.56	0.48	9.51
DSGC431	455997.7	6731292	-19.708	267	74.43	-57.00		225.36	225.68	0.32	2.91
							and	**227.71**	**234.49**	**6.78**	**4.71**
DSGC432	455997.7	6731292	-19.708	300	18.70	-46.41		**265.27**	**266.55**	**1.28**	**21.21**
DSGC433	455997.7	6731292	-19.708	297	27.52	-50.90		254.08	260.37	6.29	3.92
							and	264.95	265.27	0.32	4.94
DSGC434	455997.7	6731292	-19.708	281.95	40.45	-53.54		213.04	213.83	0.79	11.50
							and	**225.75**	**231.38**	**5.63**	**5.60**
							and	242.73	243.52	0.79	3.15
DSGC435	455997.7	6731292	-19.708	269.75	56.10	-58.04		**234.77**	**239.18**	**4.41**	**10.64**
DSGC436	455997.7	6731292	-19.708	303.03	28.90	-55.67		238.68	239.09	0.41	3.79
							and	**261.51**	**262.11**	**0.6**	**4.73**
DSGC437	456013.7	6731252	-19.92	237	95.40	-33.07		183	183.3	0.3	4.03
							and	190.47	191	0.53	11.60
							and	203.78	204.3	0.52	8.03
							and	206	206.5	0.5	2.76
							and	210.3	210.95	0.65	3.92
DSGC438	431230.4	6756034	-19.651	240	102.58	-29.82	no significant results				
DSGC439	431230.2	6756034	-19.719	261	108.88	-30.80		206.28	207.21	0.93	2.93
DSGC440	456013.7	6731252	-19.921	268.7	113.11	-26.15		220.6	221.19	0.59	3.61
DSGC441	431230.1	6756033	-19.841	297	121.99	-28.07		235.39	237.77	2.38	3.65
							and	255.02	256.93	1.91	4.75
							and	276.32	276.8	0.48	4.12
DSGC442	431230.2	6756033	-19.73	291	119.44	-31.31		241.96	242.27	0.31	3.16
							and	245.37	247.8	2.43	7.53
DSGC443	456013.7	6731252	-20.135	243	93.02	-41.90		**198**	**200.81**	**2.81**	**15.65**
DSGC444	456013.7	6731252	-20.152	254.96	94.60	-46.27		206.74	207.1	0.36	3.57
DSGC445	456013.7	6731252	-20.152	273	109.29	-42.65	no significant results				
DSGC446	456013.7	6731252	-20.152	263.95	107.37	-36.82		207.26	208.91	1.65	2.57
							and	244.09	248.7	4.61	3.31
DSGC447	456013.6	6731252	-20.152	290.1	115.20	-40.01		230.05	231.25	1.2	3.22
							and	271.6	274	2.4	2.64

Table 4 – Wonder North Drill Results

WONDER NORTH DRILLING AUG 2020										Downhole	
Hole	**Easting**	**Northing**	**RL**	**Depth**	**Azimuth**	**Dip**		**From (m)**	**To (m)**	**Width (m)**	**Grade g/t**
WNRD1001	321687.8	6863809	503.401	130	220	-60		85	86	1	0.59
							and	118	119	1	1.12
WNRD1002	321757.3	6863820	503.257	202	220.49	-61.35		165	166	1	0.51
							and	172	173	1	0.50
							and	179	180	1	0.51
							and	**188**	**197**	**9**	**2.85**
WNRD1003	321951.1	6863723	503.258	262	223.63	-61.41		192	195	3	0.77
							and	219	231.6	12.6	1.08
							and	236.5	239.7	3.2	0.74
WNRD1004	321936.4	6863690	502.751	220	220	-58		85	86	1	0.97
							and	117	118	1	1.17
							and	122	123	1	0.96
							and	143	146	3	0.70
							and	159	176	17	1.43
							and	182	184	2	0.65
							and	191	192	1	0.65
WNRD1005	321911.5	6863719	502.835	202	220	-58		58	59	1	0.76
							and	118	119	1	1.34
							and	138	139	1	0.51
							and	140	141	1	0.59
							and	161	168	7	2.00
							and	**174**	**189**	**15**	**2.93**
WNRD1006	321825.6	6863799	503.193	250	221.19	-61.3		209	210	1	0.53
							and	216	222	6	0.66
WNRD1007	322056.8	6863587	502.287	256	220	-70		**156**	**248**	**92**	**2.21**
							incl	**156**	**179**	**23**	**4.99**
							incl	228	249	21	2.24
WNRD1008	321705.8	6863862	503.598	220	221.17	-60.69		**175**	**196**	**21**	**1.90**
WNRD1009	322204.2	6863558	501.596	292	220	-60		216	222	6	2.09
							and	**251**	**273**	**22**	**1.64**
WNRD1010	321907.5	6863745	503.029	250	222.71	-60.71		191	192	1	1.14
							and	197	198	1	2.25
							and	205	206	1	0.53
							and	215	232	17	0.96
							and	237	238	1	0.60
WNRD1011	321822.7	6863760	502.928	190	219.37	-59.28		84	86	2	0.85
							and	138	140	2	0.55
							and	**146**	**167**	**21**	**1.61**
WNRD1012	321875	6863742	502.992	202	220	-58		132	133	1	2.27
							and	174	175	1	0.51
							and	180	188	8	2.02
WNRD1013	322172	6863500	501.594	232	220	-65		112	116	4	3.38
							and	**181**	**200**	**19**	**3.46**
							and	206	207	1	0.60
							and	222	223	1	0.59
WNRD1014	321745.6	6863863	503.671	244	220	-60		228	229	1	0.56
WNRD1015	321766.7	6863772	503.082	160	220	-55		71	72	1	1.07
							and	94	96	2	1.04
							and	106	108	2	1.12
							and	**116**	**141**	**25**	**2.53**
WNRD1016	321797.9	6863770	502.944	208	220	-60		89	90	1	1.49
							and	106	108	2	1.82
							and	120	121	1	0.53
							and	130	133	3	0.67
							and	145	171	26	1.13
WNRD1017	322011.7	6863587	502.146	154	220	-60		93	101	8	0.57
							and	137	142	5	1.07

WONDER NORTH DRILLING AUG 2020										Downhole	
Hole	**Easting**	**Northing**	**RL**	**Depth**	**Azimuth**	**Dip**		**From (m)**	**To (m)**	**Width (m)**	**Grade g/t**
WNRD1018	322138.2	6863602	502.091	292	220	-60		**237**	**253**	**16**	**1.80**
							and	265	266	1	1.11
							and	286	288	2	0.76
WNRD1019	322102	6863667	505	184	217.74	-60.69	results outstanding				
WNRD1020	322137	6863751	503	184	223.2	-60.64	results outstanding				
WNRD1021	322156	6863649	501	350.2	221.94	-60.24	results outstanding				
WNRD1022	322203	6863701	501	460.16	224.91	-62.43	no significant results				
WNRD1023	322168.2	6863593	501.937	382	229.4	-65		287.67	288.71	1.04	0.78
							and	294.94	338.11	43.17	6.32
							incl	306.81	327.3	20.49	10.72
							and	355.1	357.49	2.39	1.37
WNRD1024	322237	6863669	502	442	221.13	-60.03	results outstanding				
WNRD1025	322054	6863694	502.964	328	219.06	-60.41		210	211	1	0.94
							and	279	289	10	1.07
							and	294.45	299.3	4.85	1.37
WNRD1026	322101	6863718	503	184	220	-60	no significant results				
WNRD1027	322061	6863734	503	366	220.99	-59.91		297.62	308.87	11.25	1.25
WNRD1028	322174.7	6863580	501.829	294.14	224.26	-60.66		226.69	239	12.31	0.60
							and	243.6	247	3.4	0.73