ASX Announcement
2 May 2024

ANNUAL MINERAL RESOURCES AND ORE RESERVES STATEMENT

Significant increase in Mineral Resources to 61.3Moz and Ore Reserves to 20.9Moz endorses profitable organic growth strategy

KEY POINTS

▪ **Group Mineral Resources increase to 61.3Moz, up 3.9Moz, after mining depletion, reflecting:**

   o **Increase in Measured, Indicated and Inferred from ongoing exploration success**

   o **Growth across Australian production centres to underpin organic growth optionality**

   o **At Kalgoorlie, KCGM delivered a 12% increase to 31.6Moz, driven by:**

      ▪ **Open Pit Resources to 18.8Moz, up 2.0Moz**

      ▪ **Underground Resources to 9.6Moz, up 0.9Moz, at Fimiston Underground and Mt Charlotte**

   o **At Yandal, mineralisation footprint extends at Bannockburn, Griffin and Ramone**

   o **At Pogo, Resource grade of 10.1g/t continues to present operational optionality**

▪ **Group Ore Reserves increase to 20.9Moz, up 0.7Moz, after mining depletion:**

   o **Maiden Reserve at Fimiston Underground of 0.8Moz at 2.2g/t demonstrates huge underground potential at KCGM**

   o **Maiden Reserve at Red Hill of 0.6Moz, 3.5km from Kanowna Belle processing plant**

   o **Maiden Reserve at Griffin enhancing Jundee's underground mining footprint to the north**

▪ **Gold price and cost assumptions revised to reflect current macro environment**

Northern Star Resources Ltd (ASX: NST) is pleased to announce the Mineral Resources and Ore Reserves update for the 12 months ended 31 March 2024. The Group Ore Reserves inventory provides the foundation for Northern Star's profitable organic growth strategy.

Commenting on the Mineral Resources and Ore Reserves update, Northern Star Managing Director Stuart Tonkin said:

"Our geology team has made excellent progress to advance operational, development and discovery projects that provide long-term organic growth optionality across our three production centres – Kalgoorlie, Yandal and Pogo.

"The 3.9Moz increase in Group Mineral Resources is even more impressive when considering the significant mining depletion that has occurred over the past year as we ramp up production in line with our profitable organic growth strategy.

"KCGM continues to impress, with an outstanding 3.3Moz added to the Mineral Resources and 1.0Moz to Ore Reserves. These additional high-margin ounces are close to existing mine infrastructure and further strengthen the economics of our strategy to boost production to a sustainable 900kozpa from FY29.

"Our exploration program remains a highly attractive approach to value creation, adding extra ounces at a cost of just A$31/oz, to support our purpose to deliver superior shareholder returns."

Northern Star Resources Limited - ABN: 43 092 832 892

Level 4, 500 Hay Street   PO Box 2008   T: +61 8 6188 2100   E: info@nsrltd.com
Subiaco WA 6008, Australia   Subiaco WA 6904   F: +61 8 6188 2111   W: www.nsrltd.com   1

EXPLORATION HIGHLIGHTS

KALGOORLIE, WESTERN AUSTRALIA

- **Maiden Fimiston Underground Reserve at 0.8Moz** and **Mineral Resource up 0.4Moz to 5.5Moz**.

- **Mt Charlotte Mineral Resource** increase by **0.5Moz to 4.1Moz.**

- At Kanowna Belle, significant increase in **Mineral Resource of 0.7Moz to 1.9Moz at Red Hill** and **Maiden Ore Reserve at 0.6Moz**.

- At South Kalgoorlie, drilling at **HBJ** has delivered an increase to the **Ore Reserve of 185koz to 0.5Moz.**

- **Recent discovery "Hercules"** located 35km from the Fimiston processing plant continues to deliver exceptional results including **16m @ 18.7g/t, 19m @ 12.9g/t and 35m @ 6.5g/t.**

YANDAL, WESTERN AUSTRALIA

- Exploration drilling at **Bannockburn** has resulted in an increase to the **Mineral Resource to 0.9Moz**.

- Infill drilling success at **Griffin** within the Jundee underground including **0.3m @ 322.5g/t and 0.6m @ 107.7g/t**.

- **Ramone underground** continues to expand, with identified extensions to mineralisation replacing mining depletion.

POGO, ALASKA (USA)

- Mineral Resource grade of 10.1g/t and Ore Reserve grade of 8.0g/t reflects refinements in key planning assumptions and optimisation of large endowment.

- East Deeps mineralisation close to existing infrastructure highlights future near mine potential

Mineral Resources and Ore Reserves Summary

As of 31 March 2024, the Group Mineral Resources are estimated as 1,064Mt @ 1.8g/t Au for 61.3Moz.

Mineral Resources for the Australian Operations (Kalgoorlie and Yandal) were estimated at an assumed gold price of A$2,500/oz (vs A$2,350/oz at March 2023). Mineral Resources for the Pogo Operation were estimated using an assumed gold price of US$1,800/oz (vs US$1,600/oz at March 2023).

As of 31 March 2024, the Group Ore Reserves are estimated at 431Mt @ 1.5g/t Au for 20.9Moz.

Ore Reserves for the Australian Operations were estimated at an assumed gold price of A$2,000/oz (vs A$1,850/oz at March 2023). Ore Reserves for the Pogo Operation were estimated at an assumed gold price of US$1,500/oz (vs US$1,400/oz at March 2023).

These figures represent JORC 2012 Mineral Resources and Ore Reserves for the combined assets owned by Northern Star.

MINERAL RESOURCES as at 31 March 2024												
	MEASURED			INDICATED			INFERRED			TOTAL RESOURCES		
NST ATTRIBUTABLE INCLUSIVE OF RESERVE	Tonnes (000's)	Grade (gpt)	Ounces (000's)	Tonnes (000's)	Grade (gpt)	Ounces (000's)	Tonnes (000's)	Grade (gpt)	Ounces (000's)	Tonnes (000's)	Grade (gpt)	Ounces (000's)
NORTHERN STAR TOTAL	187,219	1.1	6,424	534,201	2.0	34,389	342,802	1.9	20,509	1,064,223	1.8	61,322

ORE RESERVES as at 31 March 2024									
	PROVED			PROBABLE			TOTAL RESERVE		
NST ATTRIBUTABLE RESERVE	Tonnes (000's)	Grade (gpt)	Ounces (000's)	Tonnes (000's)	Grade (gpt)	Ounces (000's)	Tonnes (000's)	Grade (gpt)	Ounces (000's)
NORTHERN STAR TOTAL	165,975	0.9	4,679	264,612	1.9	16,255	430,587	1.5	20,934

Refer to Appendix A for a full breakdown of each project's Mineral Resources and Ore Reserves.

Northern Star Resources Limited - ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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The results demonstrate that Northern Star's commitment to exploration (A$150 million guided for the 12 months ended 30 June 2024) continues to drive organic growth across the Company's three world-class production centres.

Group Mineral Resources as at 31 March 2024

	Mar-23	Kalgoorlie	Yandal	Pogo	Other*	Mar-24
	57,403	4,201	418	(673)	(27)	61,322

Group Ore Reserves as at 31 March 2024

	Mar-23	Kalgoorlie	Yandal	Pogo	Other*	Mar-24
	20,207	1,234	(409)	(97)	(5)	20,934

*Other includes Central Tanami Project JV and divestments.

This announcement is authorised for release to the ASX by Stuart Tonkin, Managing Director & CEO.

Investor Relations:	Media Enquiries:
Sophie Spartalis	Peter Klinger
Northern Star Resources Limited	Purple
T: +61 8 6489 2488	T: +61 411 251 540
E: investorrelations@nsrltd.com	E: pklinger@purple.au

Northern Star Resources Limited - ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

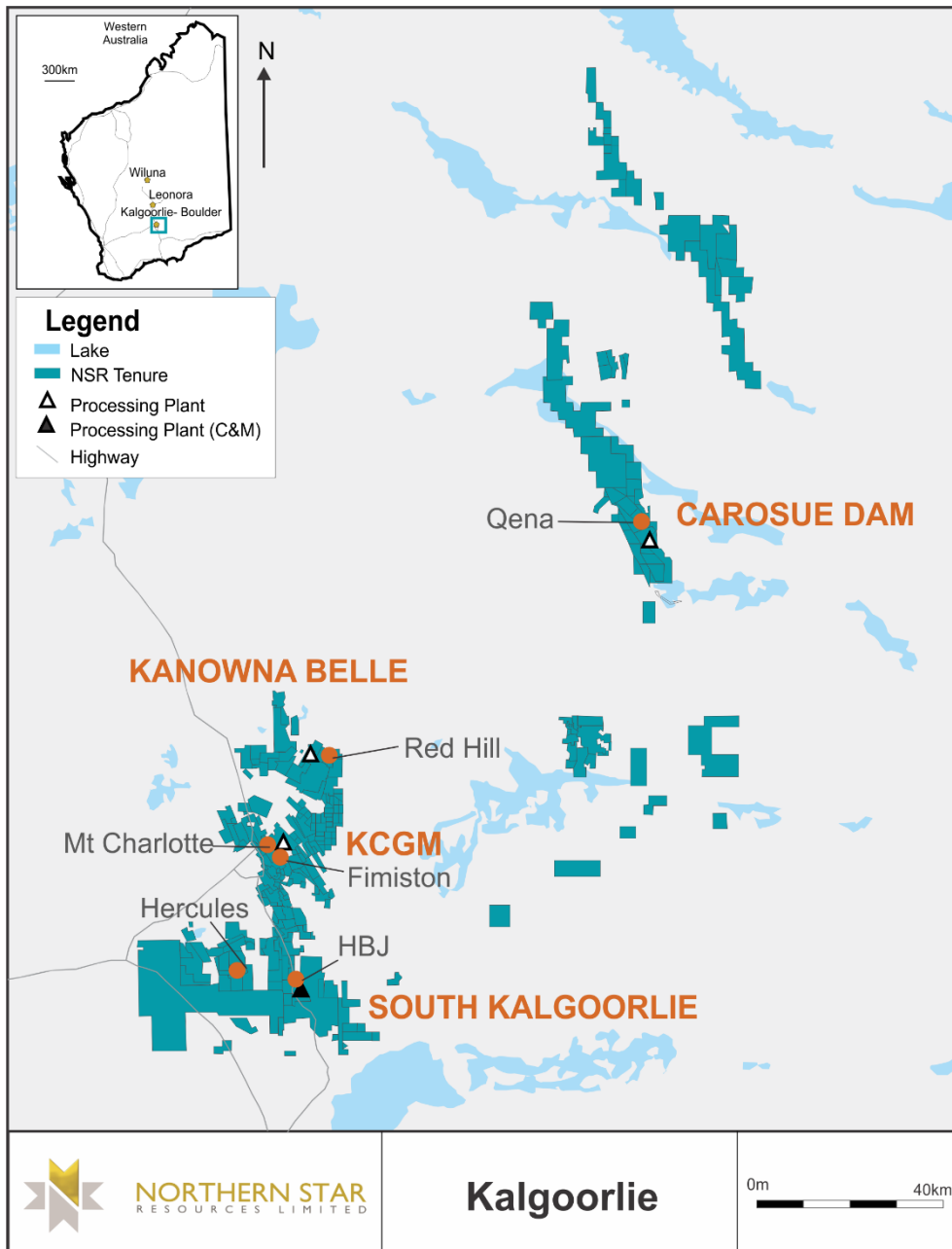E: info@nsrltd.com
W: www.nsrltd.com

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EXPLORATION UPDATE

Northern Star is pleased to provide an update on recent exploration results from its gold production centres in the tier-1 jurisdictions of Western Australia and Alaska, USA.

KALGOORLIE PRODUCTION CENTRE

The Kalgoorlie Goldfields region of Western Australia has a rich history of gold production and exploration success. Northern Star's continued investment in this highly prospective region has yielded exceptional drilling results to drive continued resource and reserve growth across our project portfolio. The Kalgoorlie Production Centre is made up of the KCGM Operations, Kalgoorlie Operations (comprising Kanowna Belle and South Kalgoorlie) and Carosue Dam Operations.

Figure 1 - Kalgoorlie Production Centre Location Map

Northern Star Resources Limited - ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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KCGM OPERATIONS

KCGM Operations include the Fimiston open pit, Fimiston underground mine, Mt Charlotte underground mine, and the Mt Percy project. Drilling has been completed across all areas of the operations from exploration to grade control and has been overwhelmingly successful. Over the past 12 months, Mineral Resources have increased by 3.3Moz (up 12% compared to March 2023) and Ore Reserves have increased by 1.0Moz (up 8% compared to March 2023). Planning works are advancing to optimise the next phase of growth at KCGM and advance knowledge across this world-class system.

Fimiston Underground

Drilling from a dedicated underground drill drive on the western side of the Fimiston open pit continues to define numerous Fimiston-style lodes that extend beyond the northern end of the Super Pit. Due to the number of lodes and scale of deposit, significant drilling is required to establish both Mineral Resources and Ore Reserves. Positive results from the drill program over the last two and a half years have resulted in an increase to the underground Mineral Resources by **0.4Moz to 5.5Moz** and the declaration of a maiden underground Ore Reserve of **10.6Mt at 2.2g/t for 0.8Moz** for Fimiston Underground.

Figure 2 - Fimiston North Lode 139 Long Section and New Drill Results
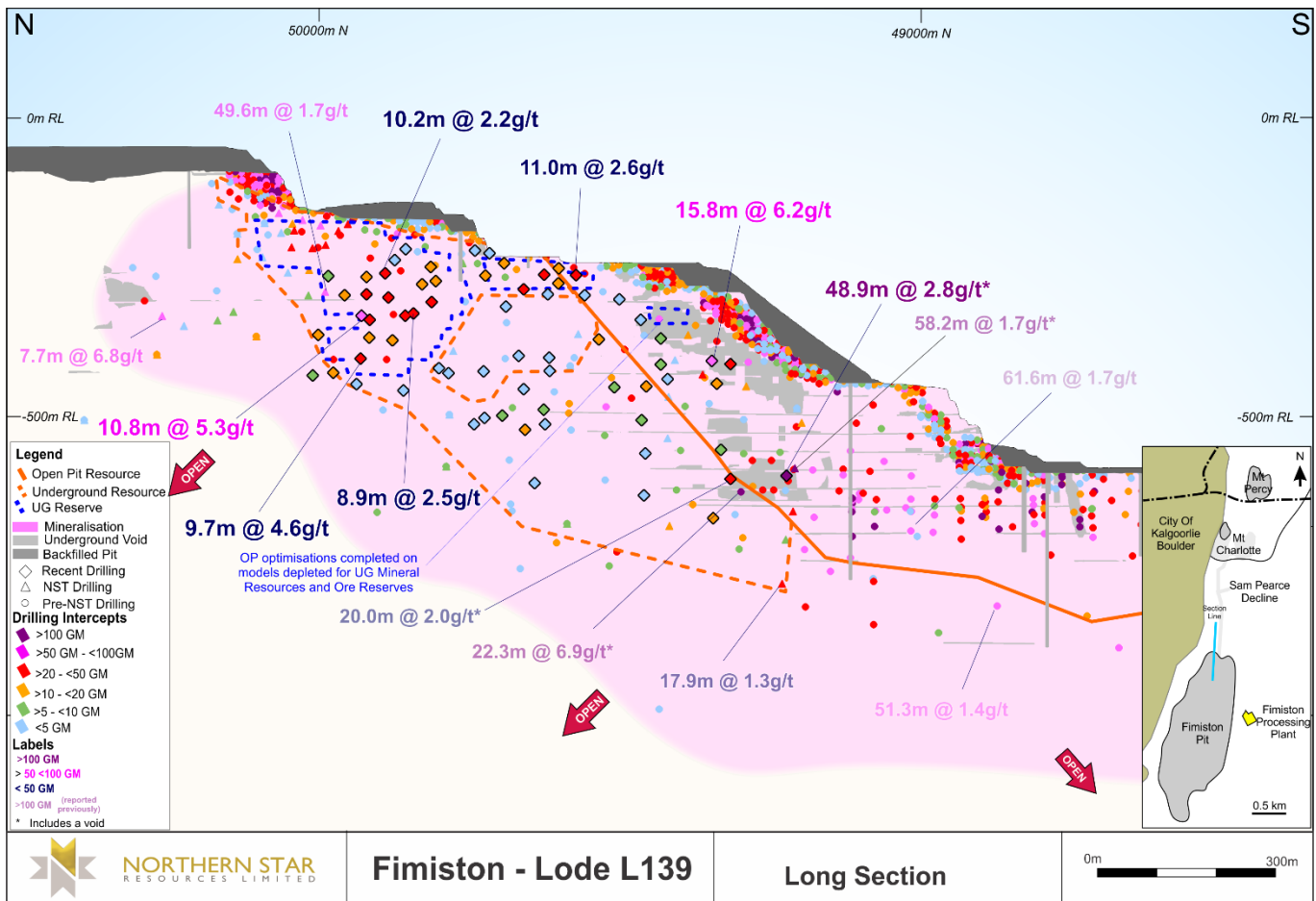
Mineralisation at Fimiston is characterised by steeply dipping lodes of silica-sericite-sulphide-telluride-bearing quartz-carbonate veinlets, crackle and cockade breccias and banded chalcedonic quartz carbonate veins, hosted primarily within the Golden Mile Dolerite and Paringa Basalt. Mineralised lodes are associated with brittle-ductile shears and broad low-grade haloes that extend over one kilometre, both along strike and down dip.

Planned underground development over the coming year will provide additional drill platforms for continued exploration of this world-class mineralised system.

Figure 3 - Fimiston North Lode 103 Long Section and New Drill Results
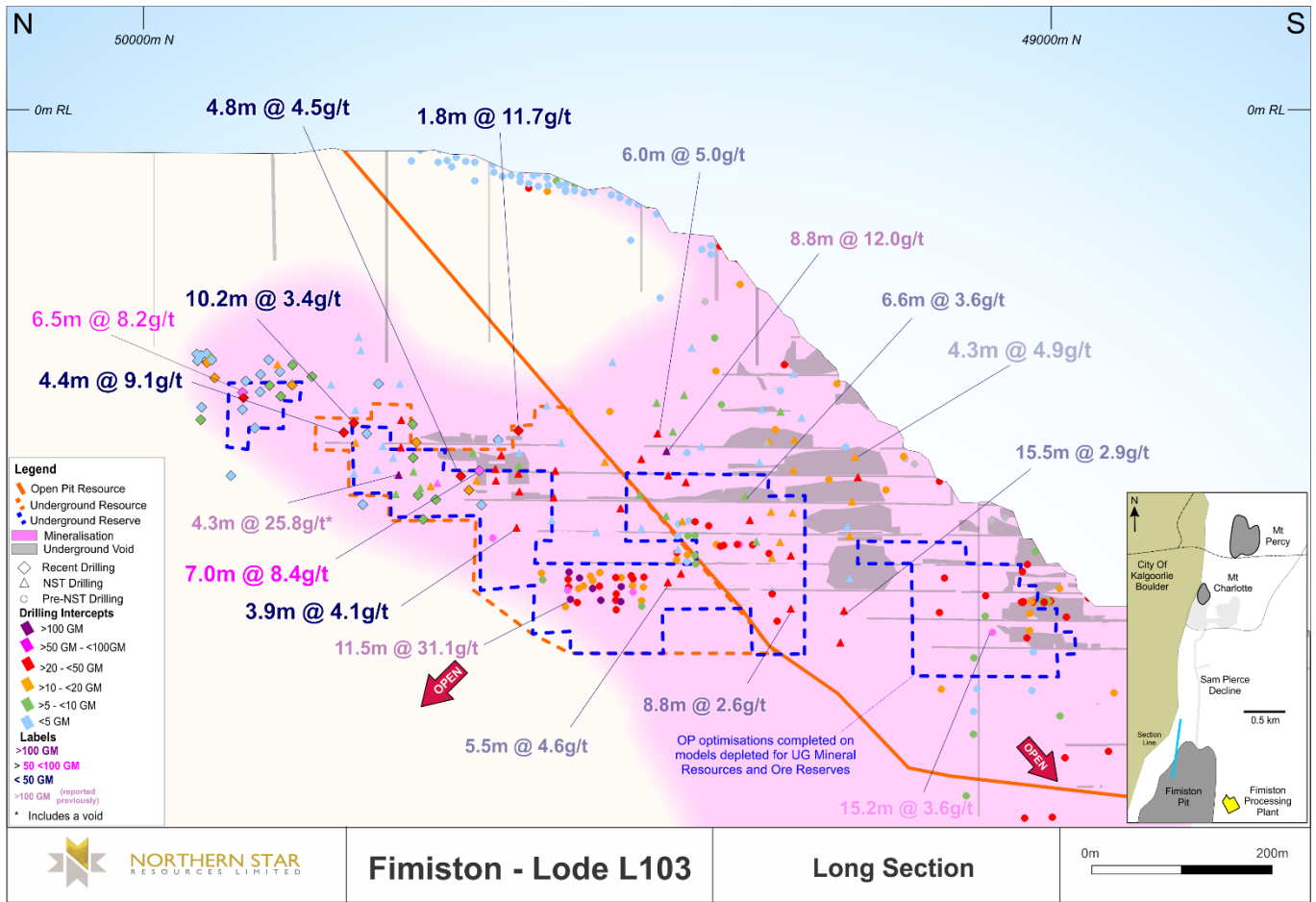
Below is a table of significant Fimiston Underground intercepts reported today.

Significant underground drill results include:	
All widths are estimated true width	
FNUD0111	48.9m @ 2.8g/t *including voids*
FNUD0106	15.8m @ 6.2g/t
FNUD0148	10.8m @ 5.3g/t
FNUD0147	16.0m @ 3.1g/t
FNUD0253	7.0 m @ 8.4g/t
FNUD0144	19.9m @ 2.4g/t
FNUD0145	13.3m @ 3.6g/t

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Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Mt Charlotte – Mt Ferrum

The Mt Ferrum deposit lies approximately 2km north of the Fimiston processing plant, and 300m east of the Sam Pearce decline which connects the Fimiston open pit and Mt Charlotte underground operations.

During 2018, exploration drilling successfully identified strong mineralisation below the historical Mt Ferrum surface workings. Since then, underground drilling has defined a significant Mineral Resource that consists of multiple stacked lodes within the Paringa Basalt and Williamstown Dolerite. Mineralisation is associated with sulphides and tellurides hosted within discrete silica-sericite altered shear zones.

Recent infill drilling has resulted in a maiden Ore Reserve which contributes to the Mt Charlotte Underground Ore Reserve of over 1.4Moz. Extensions to the existing drill drives were completed in FY24 with further infill drilling to be completed during FY25, targeting Reserve growth.

Figure 4 - Mt Ferrum Long Section showing the main MFL01 lode
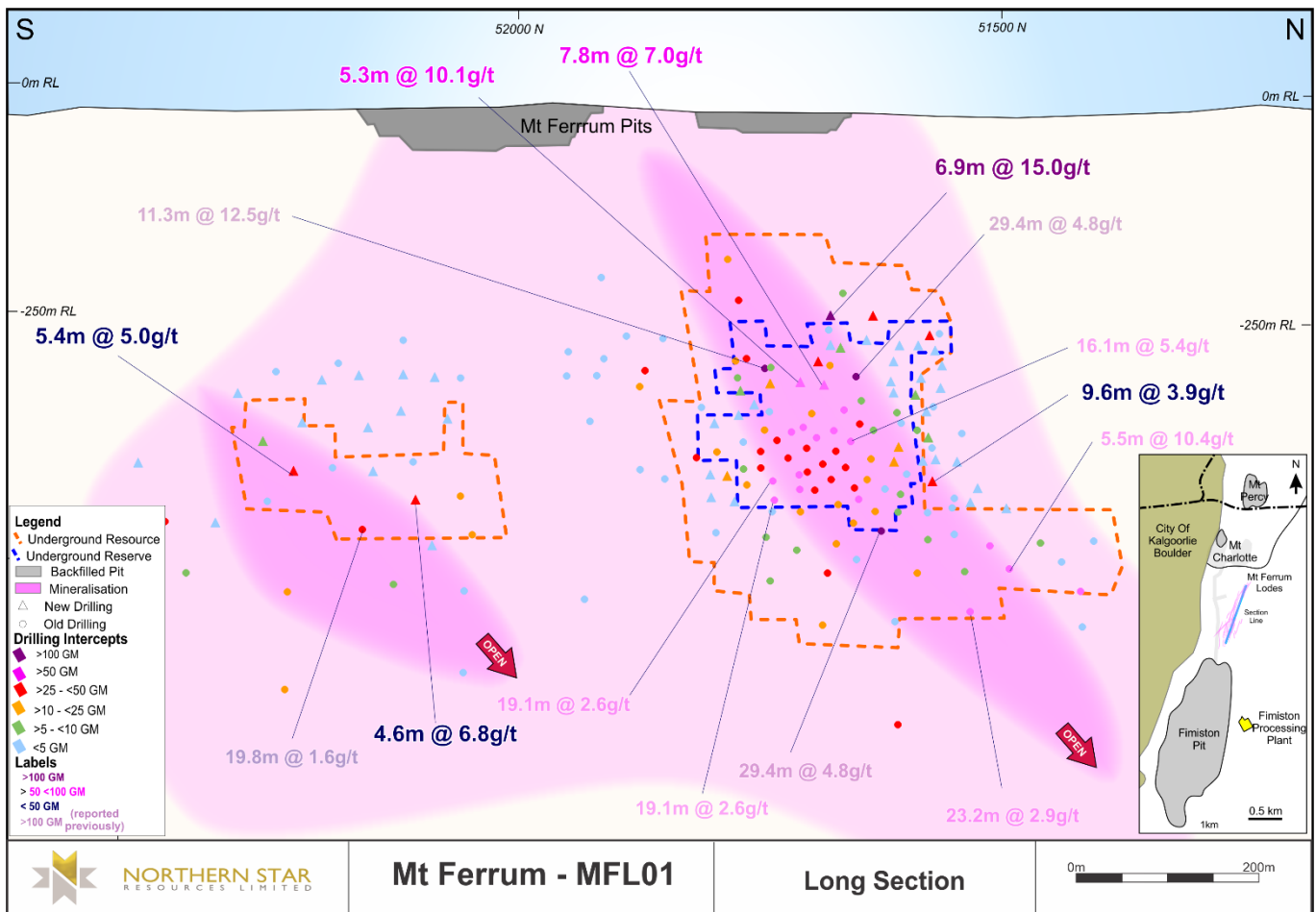
Below is a table of significant intercepts from all Mt Ferrum lodes reported today.

Significant underground drill results include:	
All widths are downhole widths	
LFUD156	4.4m @ 31.8g/t
LFUD146	6.9m @ 15.0g/t
LFUD177	5.7m @ 9.3g/t *and* 7.8m @ 7.0g/t
LFUD191	1.0m @ 83.6g/t *and* 7.5m @ 2.0g/t

Northern Star Resources Limited - ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Mt Charlotte – Little Wonder

The Little Wonder deposit is located less than 1km east of Mt Charlotte and is accessible from underground via the Sam Pearce decline. Mineralisation at Little Wonder is stockwork in nature and is hosted within the Williamstown Dolerite.

Recent drilling has resulted in a maiden Mineral Resource and Ore Reserve which contributes to the Mt Charlotte Underground Mineral Resource of 4.1Moz and Ore Reserve of over 1.4Moz.

Future underground exploration and infill drilling programs will target further growth of the Mt Charlotte stockwork vein complex. The rapid exploration success highlights the near mine opportunities proximal to existing infrastructure at Mt Charlotte.

Figure 5 - Little Wonder Long Section and New Drill Results
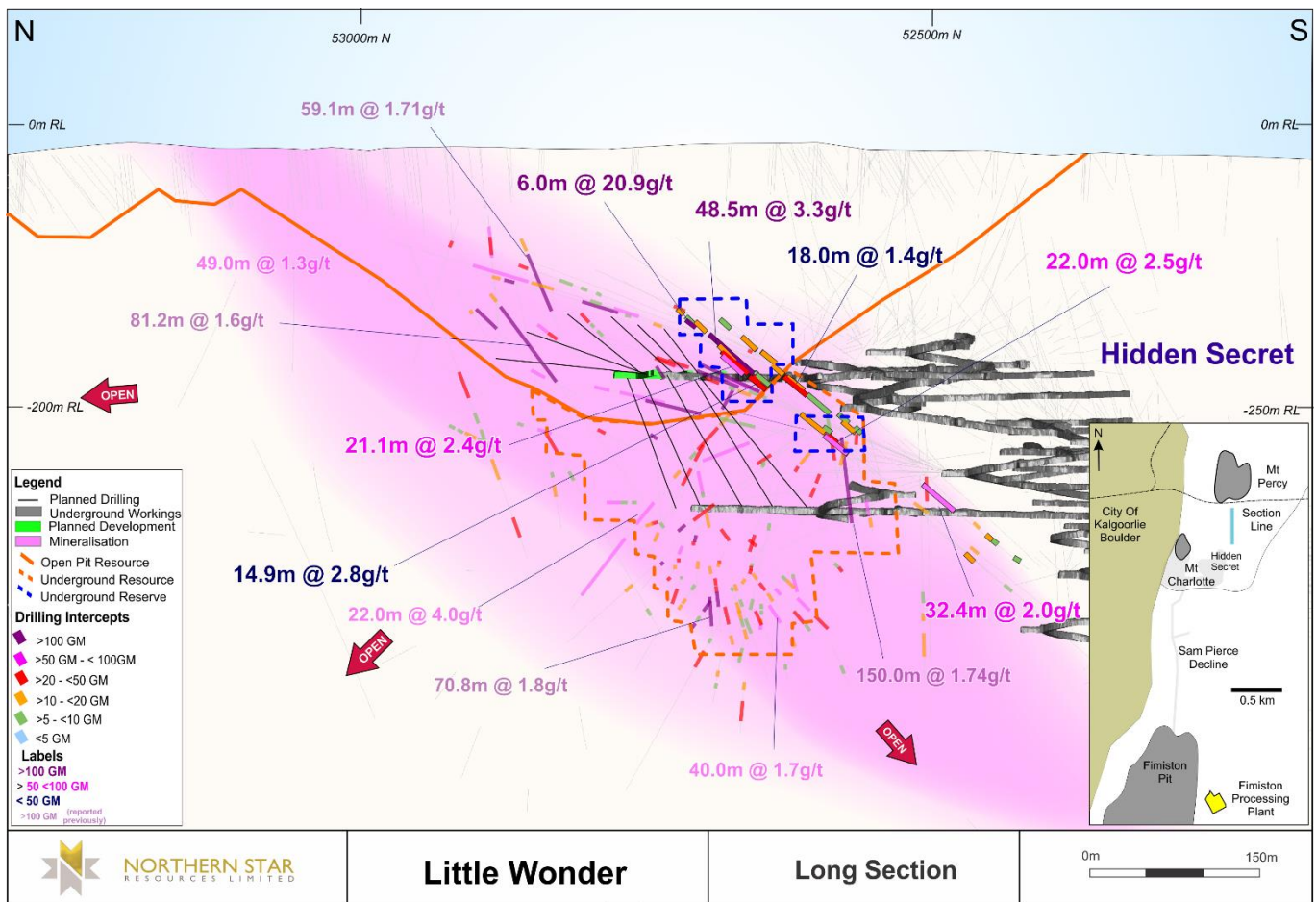
Below is a table of significant Little Wonder intercepts reported today.

Significant underground drill results include:	
All widths are downhole widths	
LWUD0055	48.5m @ 3.3g/t
LWUD0052	269.0m @ 0.8g/t and 6.0m @ 20.9g/t
LWUD0040	14.9m @ 2.8g/t and 22.0m @ 2.5g/t
LWUD0060	32.4m @ 2.0g/t

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Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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KALGOORLIE OPERATIONS

Kanowna Belle – Red Hill

The Red Hill deposit is located 3.5km east of the Kanowna Belle processing plant and 22km from the Fimiston processing plant at KCGM. Recent exploration drilling has delivered increased confidence in the geological and grade continuity. This drilling has resulted in a maiden Ore Reserve of **15.9Mt at 1.1g/t for 0.6Moz**, and an updated Mineral Resource of an impressive **49.9Mt @ 1.2g/t for 1.9Moz (up from 32.4Mt at 1.1g/t for 1.2Moz at March 2023).**

Planned FY25 drilling at Red Hill will continue to target Inferred Resources to further improve geological confidence, across the Mineral Resource.

Figure 6 - Red Hill Long Section and New Drill Results
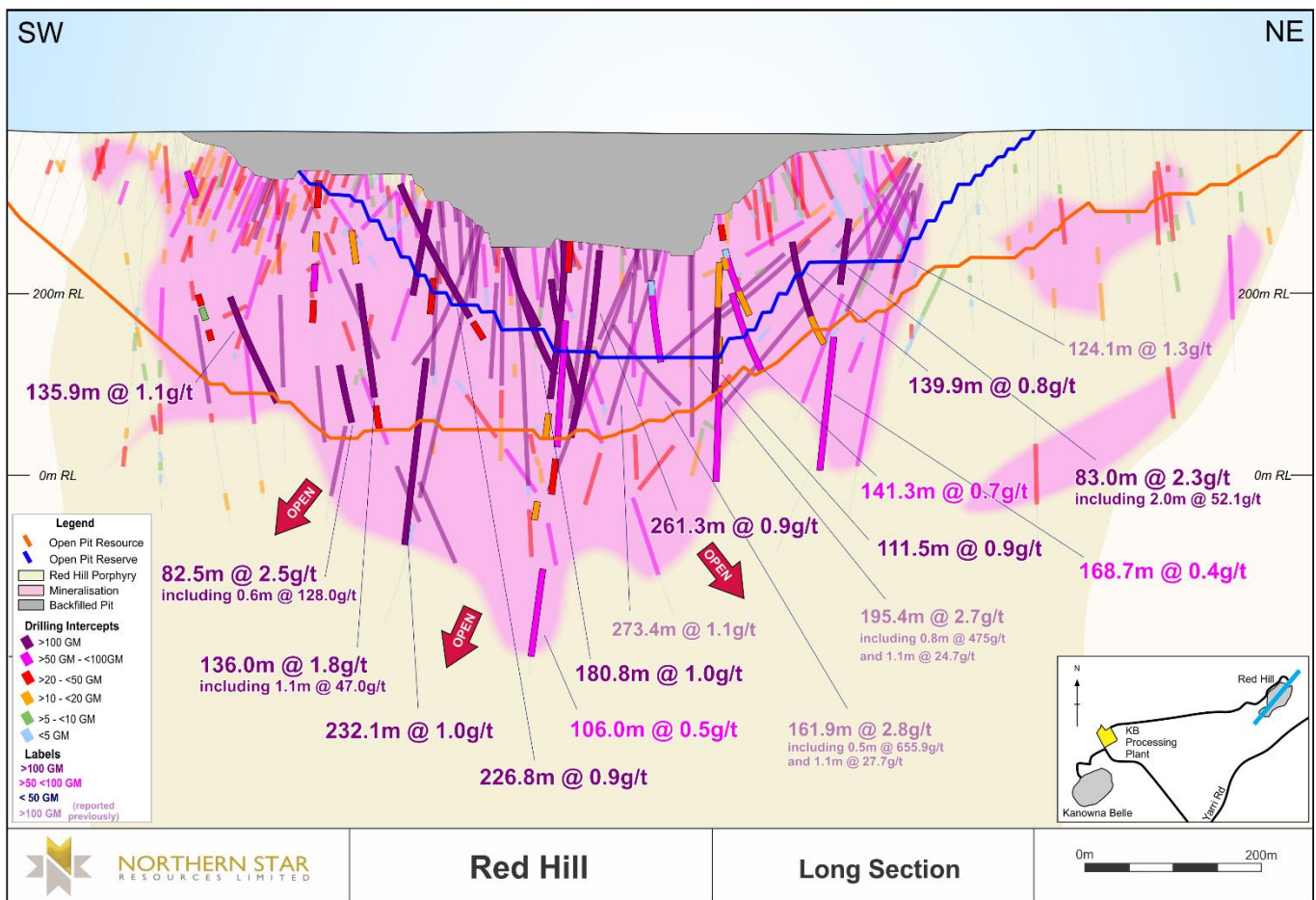
Below is a table of significant Red Hill intercepts reported today.

Significant drill results include:	
All widths are downhole widths	
RHDD23069	136.0m @ 1.8g/t *including* 1.1m @ 47g/t
RHDD23072	83.0m @ 2.3g/t, *including* 2.0m @52.1g/t
RHDD23076	226.8m @ 0.9g/t *including* 0.8 m @ 26.3g/t
RHDD23085	33.0m @ 2.5g/t *and* 135.9m @ 1.1g/t

Northern Star Resources Limited - ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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South Kalgoorlie – HBJ Underground

The HBJ underground mining operation is located 25km south of Kalgoorlie where gold mineralisation is hosted within the regionally significant Boulder-Lefroy Fault system. FY24 exploration drilling focused on Resource definition and extension at both Mutooroo and Mutooroo West.

Exploration activities returned exceptional results at both locations, including **25.0m @ 7.5g/**t **and 23.6m @ 8.9g/t** at Mutooroo and **144.0m @ 3.4g/t and 37.4m @ 6.1g/t** at Mutooroo West.

The new drilling results have led to an increase of the Ore Reserve to 0.5Moz, up 184koz. Planned infill and extensional drilling into Mutooroo and Mutooroo West is expected to continue in FY25.

Figure 7 - HBJ Long Section with New Drill Results for Mutooroo and Updated Resource and Reserve Outlines
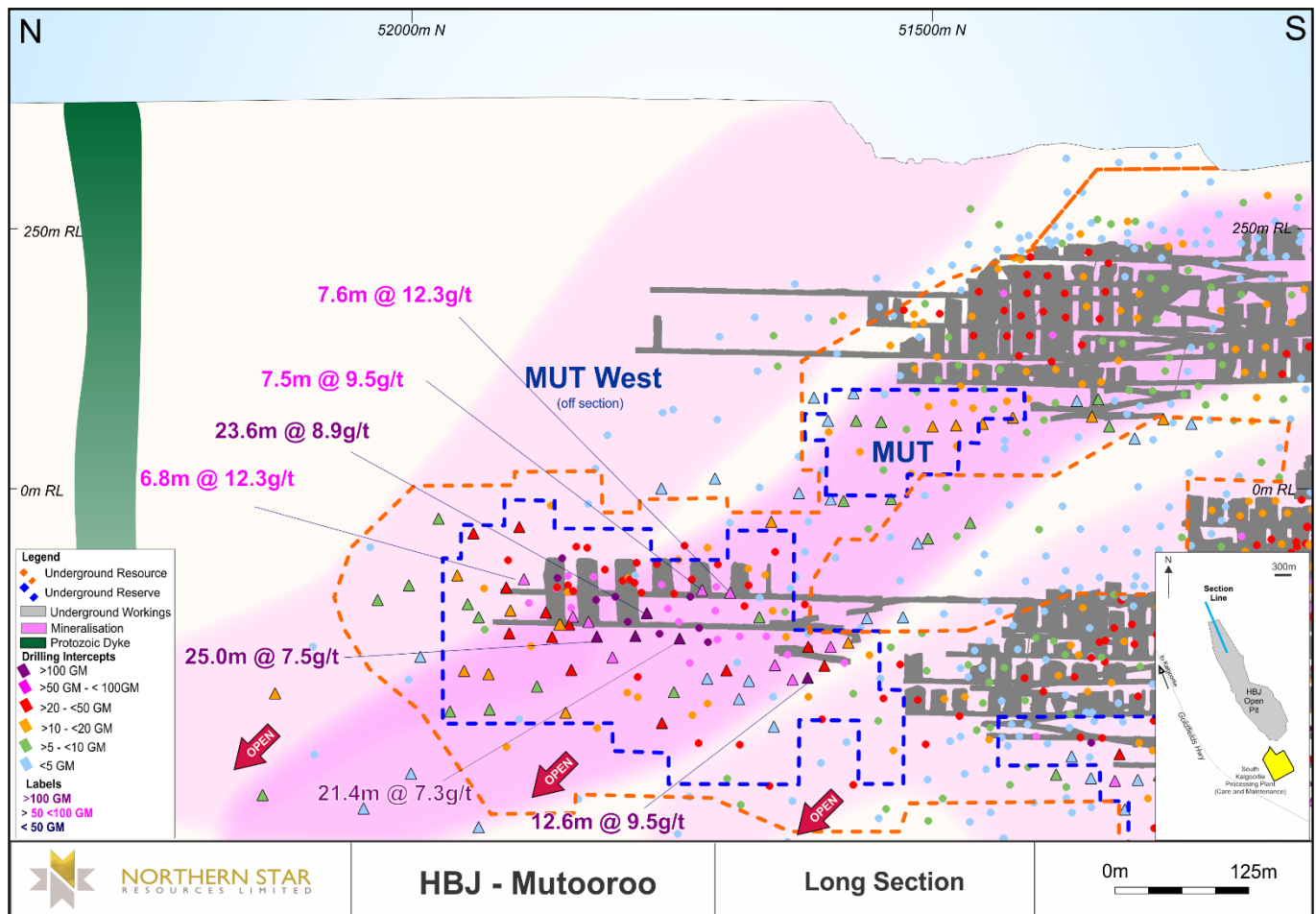
Below is a table of significant Mutooroo intercepts reported today.

Significant underground drill results include:	
All widths are estimated true width unless otherwise stated	
MUTGC23062	23.6m @ 8.9g/t
MUTGC23061	25.0m @ 7.5g/t
MUTGC23098	12.6m @ 9.5g/t
MUTGC23034	7.6m @ 12.3g/t

Northern Star Resources Limited - ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Hercules – Recent Discovery

The Hercules discovery is located approximately 20km west of the HBJ deposit and 35km southwest of the Fimiston processing plant at KCGM.

Recent diamond drillholes targeting the mineralised contact zone between depths of 300m and 500m below surface have continued to deliver exceptional results, with highlights including **16m @ 18.7g/t, 19m @ 12.9g/t and 35m @ 6.5g/t.**

These results have confirmed significant extensions to the Hercules mineralised system at depth. This compares with past exploration efforts across the wider Penfolds district where the primary focus was on shallow oxide targets. Infill reverse circulation and diamond drilling programs are being accelerated to increase confidence in the local geology and grade continuity.

This exciting recent discovery highlights the future potential that exists across the broader Kalgoorlie region and within easy trucking distance to the Company's process plant footprint.

Figure 8 - Hercules Cross Section and New Drill Results

Northern Star Resources Limited - ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

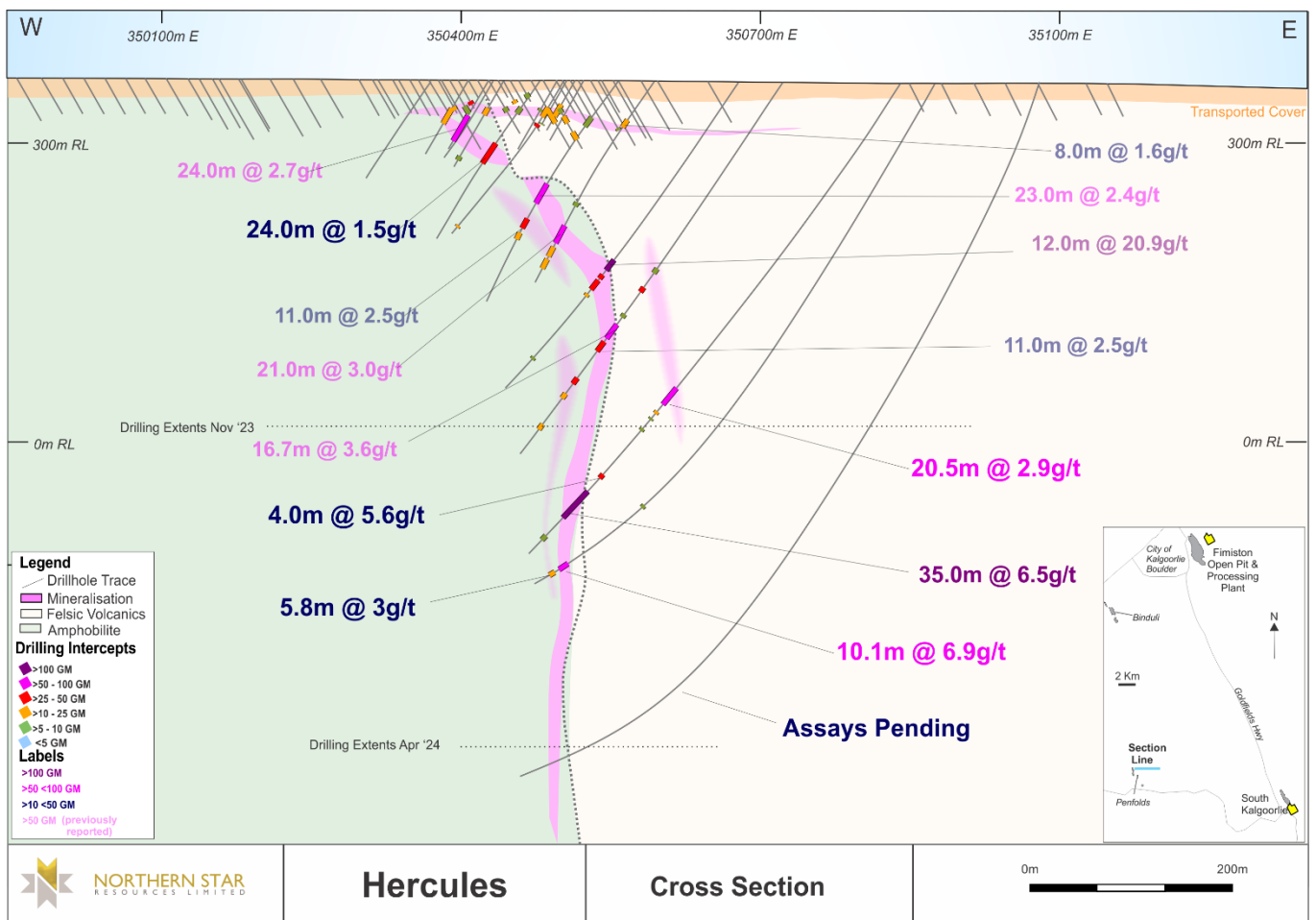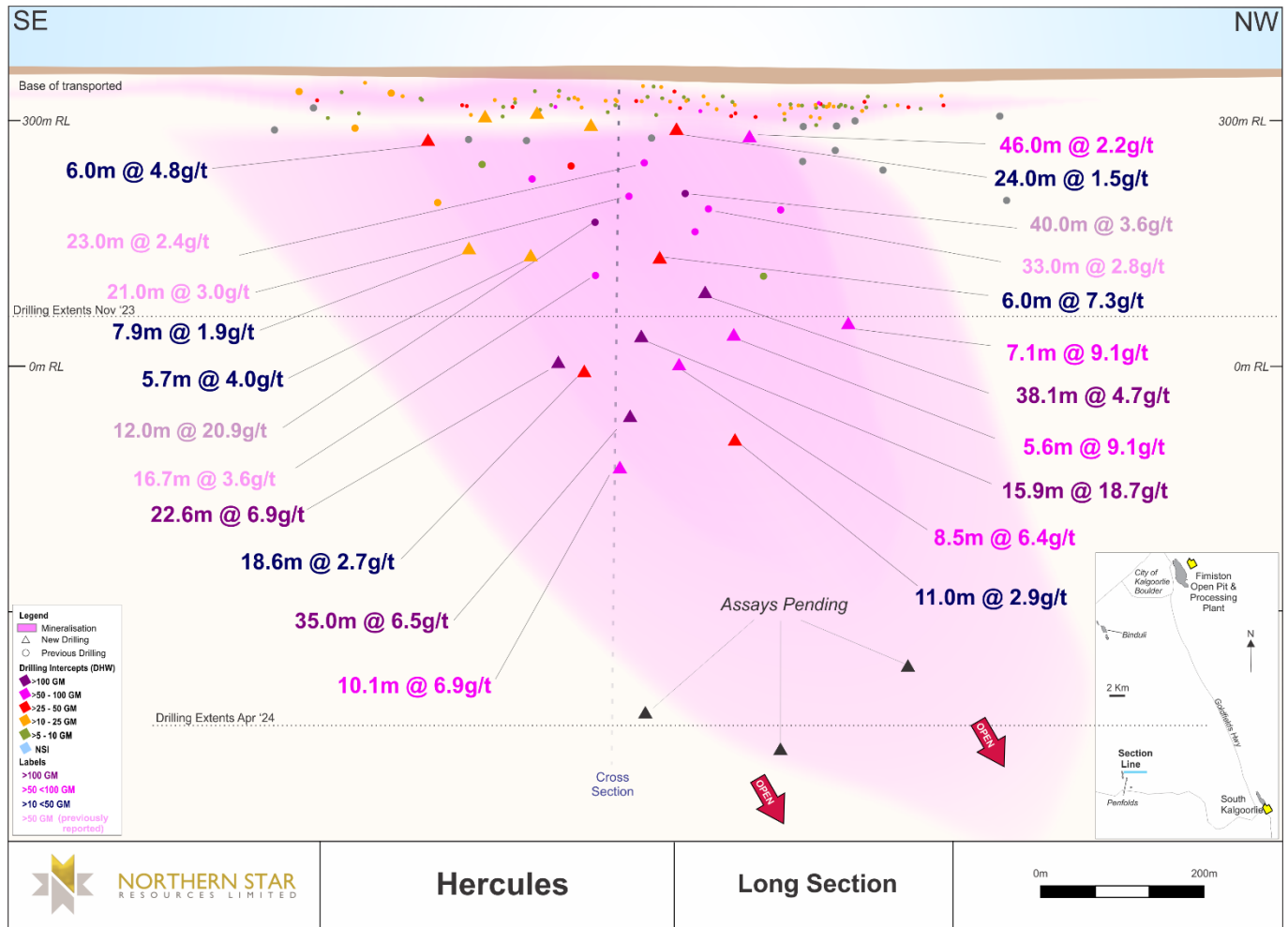E: info@nsrltd.com
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Figure 9 - Hercules Long Section and New Drill Results

Below is a table of significant Hercules intercepts reported today.

Significant drill results include:	
All widths are downhole widths	
HERCD23006	15.9m @ 18.7 g/t *including* 1.1m @ 34.9 g/t
HERCD23015	19.0m @ 12.9 g/t *including* 1.0m @ 93.6 g/t
HERCD23012	35.0m @ 6.5 g/t
HERCD23011	38.1m @ 4.7 g/t *including* 0.4m @ 140 g/t
HEDD23008A	22.6m @ 6.9 g/t

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Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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CAROSUE DAM OPERATIONS

Qena

The Qena deposit is located only 4.5km north of the Carosue Dam processing plant and is scheduled to commence mining late FY25.

Recent drilling has continued to confirm geological continuity within the main lode and has verified geotechnical and metallurgical assumptions resulting in a maiden underground Ore Reserve of **1.8Mt at 3.0g/t for 0.2Moz while the Mineral Resources have increased by 100koz to 0.4Moz.**

Further extensions at Qena will be tested as the mining advances and underground drilling locations are made available.

Figure 10 - Qena Long Section and New Drill Results
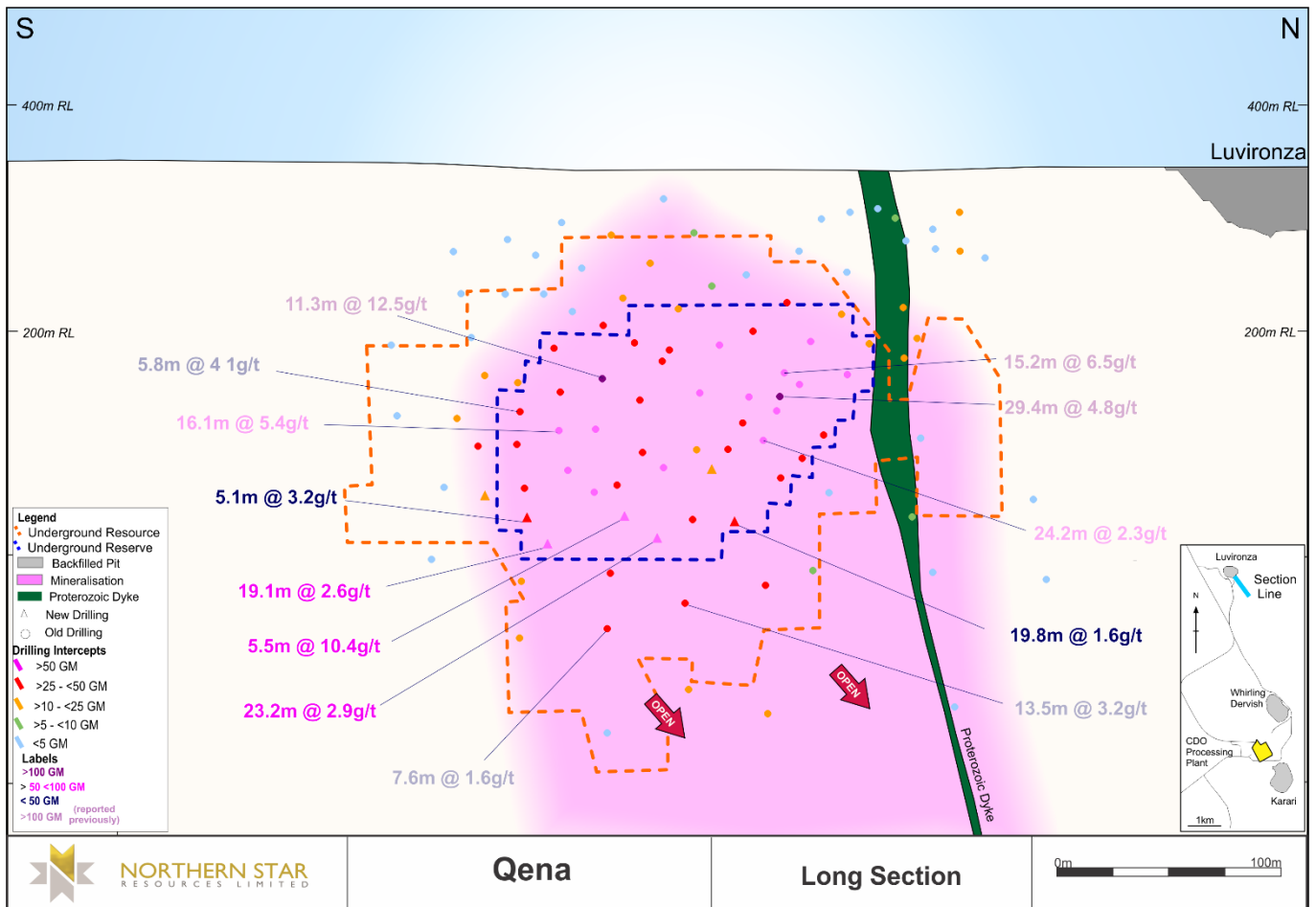
Below is a table of significant Qena intercepts reported today.

Significant drill results include:	
All widths are estimated true width	
QERSD035	19.1m @ 2.6g/t
QERSD046	5.5m @ 10.4g/t and 7.9m @ 5.3g/t
QERSD044	23.2m @ 2.9g/t
QERSD049	19.8m @ 1.6g/t

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Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
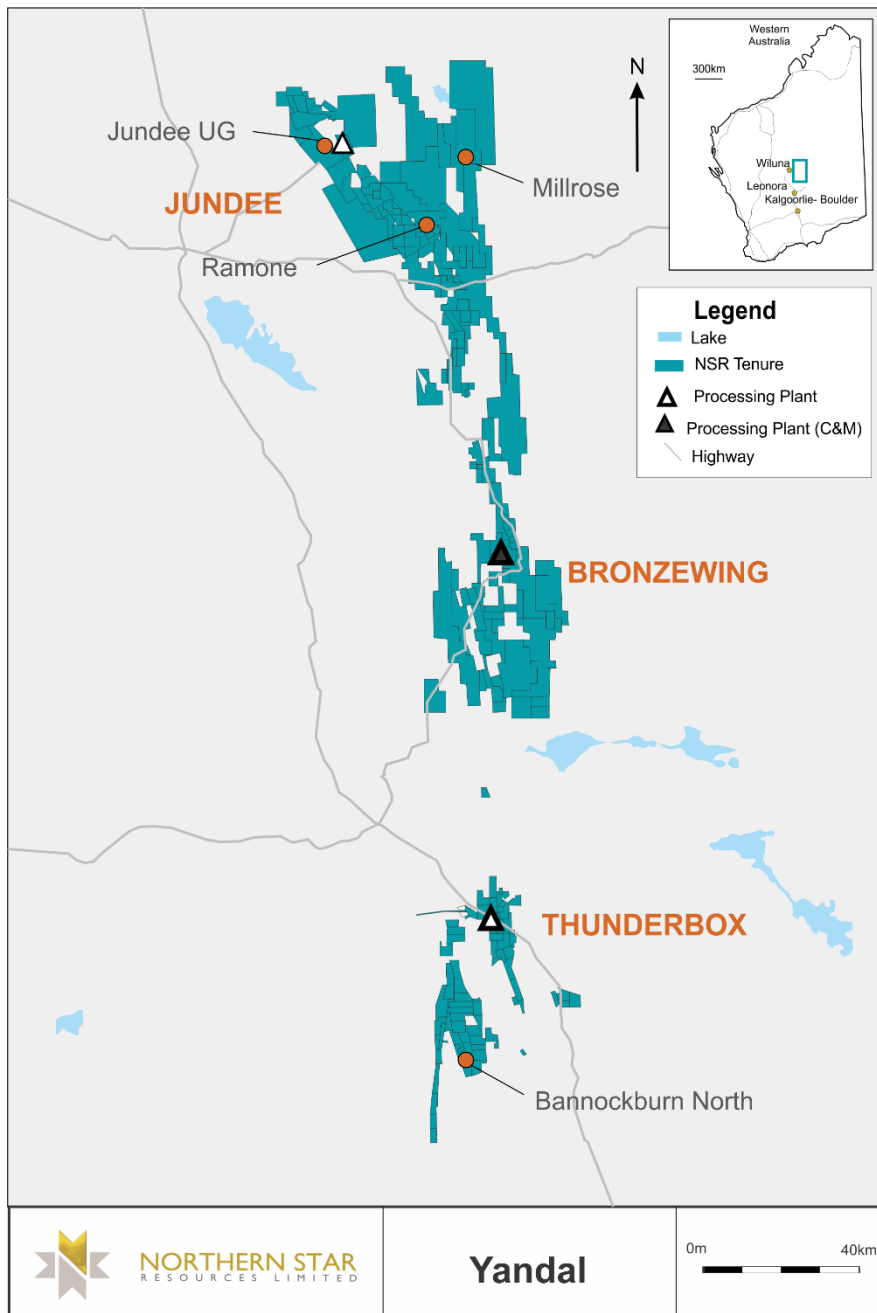W: www.nsrltd.com

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YANDAL PRODUCTION CENTRE

The Yandal Region covers an area of approximately 180 strike kilometres stretching from Jundee in the north to Bannockburn in the south – encompassing several key greenstone belts.

Regional exploration efforts over the past 12 months have focused on mapping and soil sampling within the Bronzewing tenement package to provide future directional drilling.

Northern Star completed the acquisition of the Millrose Project in July 2023. Following an extensive geological review, preparations for the first phase of drilling are underway and are anticipated to commence in late FY24. Millrose is located 35km east of the Jundee processing plant and is open along strike to the north and down plunge.

Figure 11 - Yandal Production Centre, Location Plan

Northern Star Resources Limited - ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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JUNDEE OPERATIONS

Griffin

The Griffin lodes are located 300m north of Cardassian at the northern end of the Jundee deposit. Access to Griffin is currently via the established Invicta portal.

Gold mineralisation at Griffin is characterised by shear hosted quartz-carbonate veins and breccia lodes that vary from 0.1m to 2.2m in width, with visible gold occurrences common.

Recent drilling focused on further defining the existing underground Mineral Resource as well as testing the down-dip potential. A maiden Mineral Resource of 200koz has been declared at Griffin, further enhancing the underground mining footprint of this impressive mineralised system.

Figure 12 - Jundee Griffin and New Drill Results
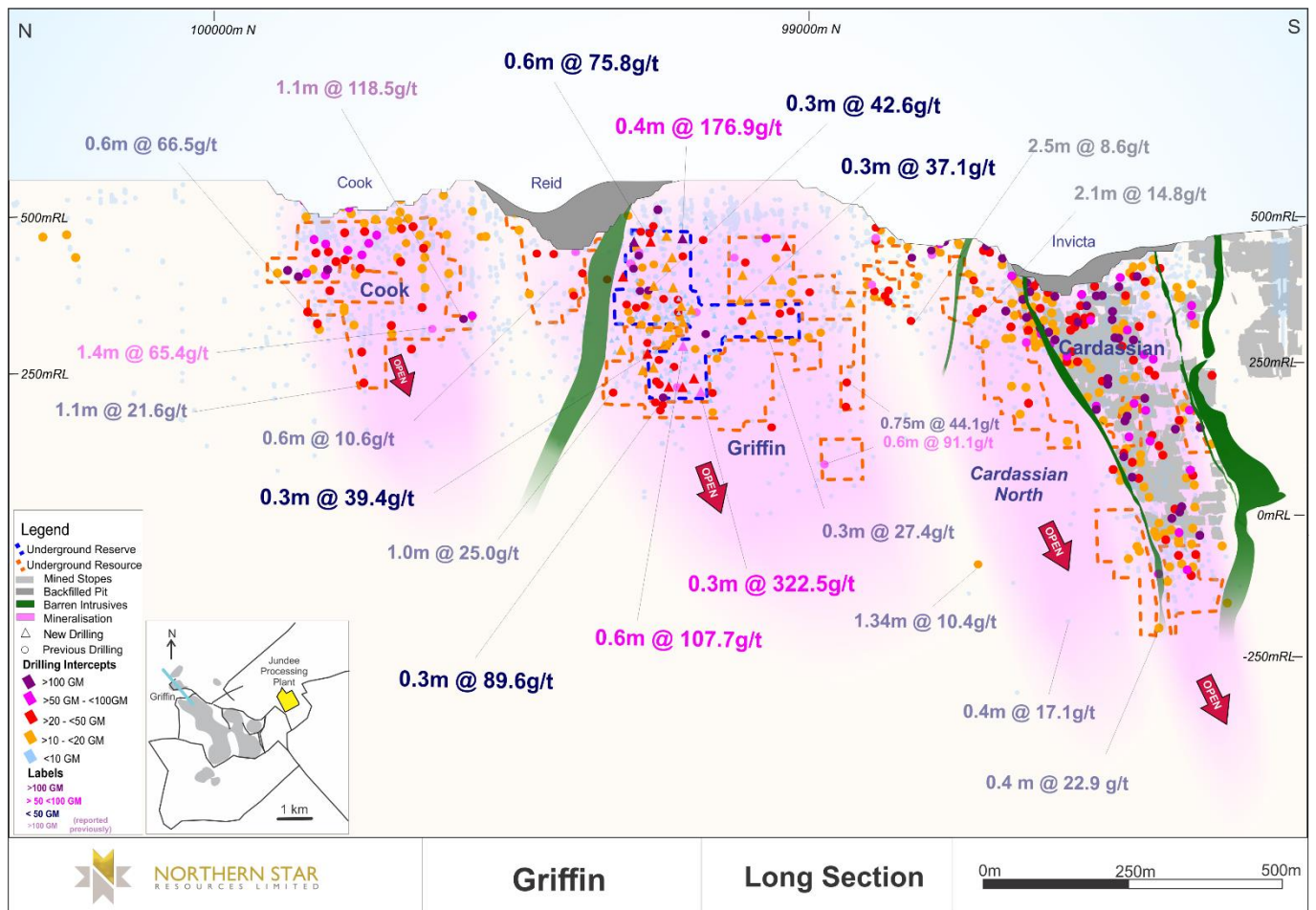
Below is a table of significant Griffin intercepts reported today.

Significant drill results include:	
All widths are estimated true width	
CDGC1166	0.3m @ 322.5g/t
CDGC1180	0.4m @ 176.9g/t
CDGC1217	0.6m @ 107.7g/t and 0.6m @ 17.9g/t
CDGC1228	0.6m @ 75.8g/t

Northern Star Resources Limited - ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Ramone

The Ramone operations are located 35km south-east of the Jundee processing plant. To date, 3.2Mt for 220,000oz, have been produced from both open pit and underground sources.

The deposit is hosted in an Archaean granite with gold mineralisation that is associated with north-east trending shear zones.

Further extensional drilling has returned exceptional results including **9.5m @ 13.7g/t and 12.5m @ 17.0g/t**. These results have extended the Mineral Resource by 28koz to 220koz and Ore Reserve to 50koz.

Future exploration drilling will continue to focus on near mine extensions and growth, and additionally test prospective targets below the Vinyl Fault which truncates mineralisation down dip.

Figure 13 - Ramone Long Section and New Drill Results
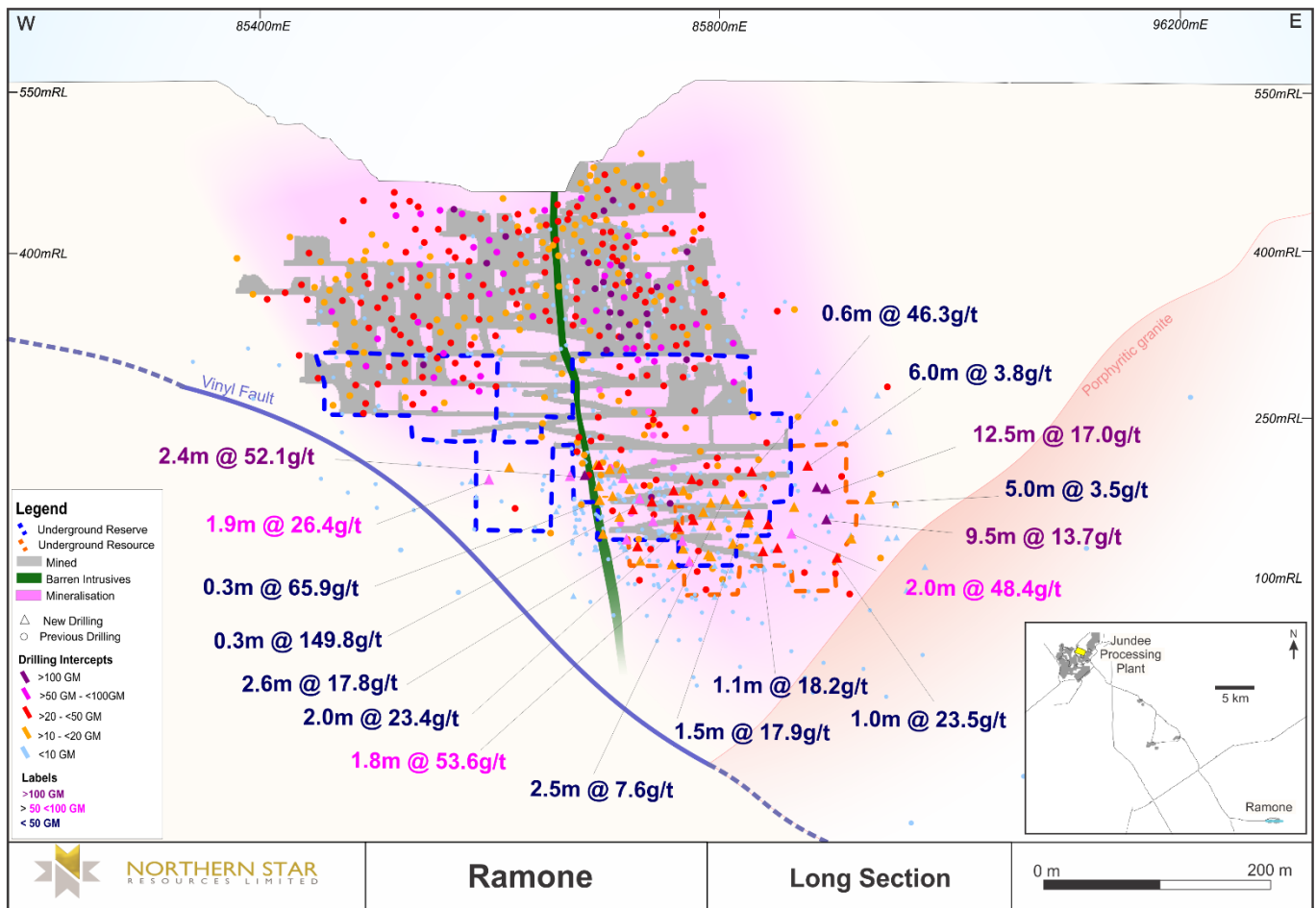
Below is a table of significant Ramone intercepts reported today.

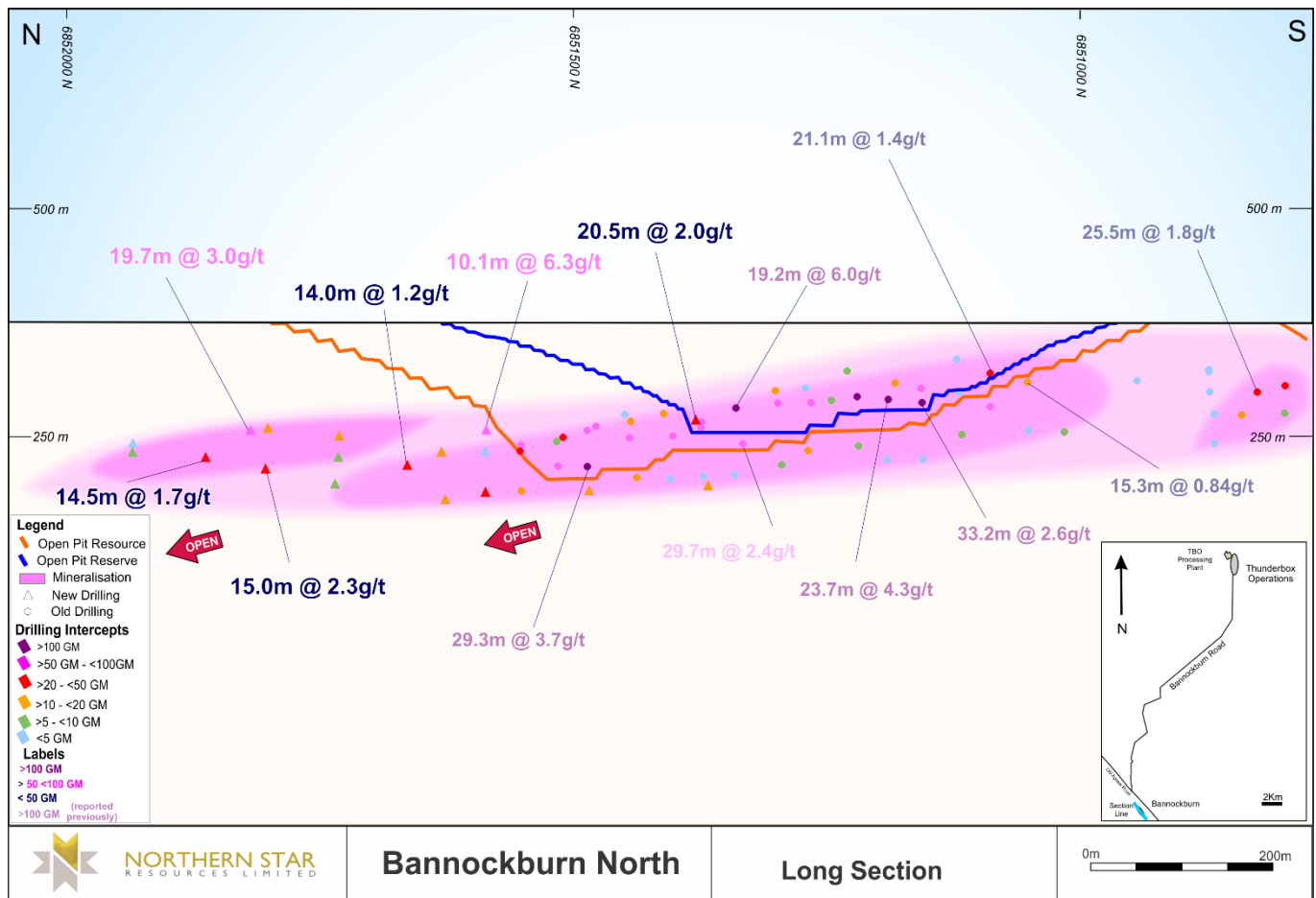| Significant drill results include:	
All widths are estimated true width	
RUGC0412	2.4m @ 52.1g/t
RURD0052	12.5m @ 17.0g/t
RURD0061	2.6m @ 17.8g/t
RURD0053	9.5m @ 13.7g/t

THUNDERBOX OPERATIONS

Bannockburn North

The Bannockburn North project is located only 200m north of the main Bannockburn Mineral Resource, which is 40km southwest of the Thunderbox processing plant. Open pit development is expected to commence at Bannockburn in FY25 with mill feed expected from FY26.

Recent exploration drilling targeting the northern extensions to the Bannockburn North deposit has increased total Mineral Resources across the project to 0.9Moz, up from 0.7Moz in March 2023, with grade similar to the broader district. Significant intercepts returned for the drilling program include **19.7m @ 3.0g/t and 10.1m @ 6.3g/t**.

Further drilling is planned to extend the known mineralisation which remains open down plunge to the north.

Figure 14 - Bannockburn North Long Section and New Drill Results

Below is a table of significant Bannockburn intercepts reported today.

Significant drill results include:	
All widths are estimated true width	
BBDD0034	19.7m @ 3.0g/t
BBDD0027	10.1m @ 6.3g/t
BBDD0035	15.0m @ 2.3g/t
BBGT012	20.5m @ 2.0g/t

Northern Star Resources Limited - ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
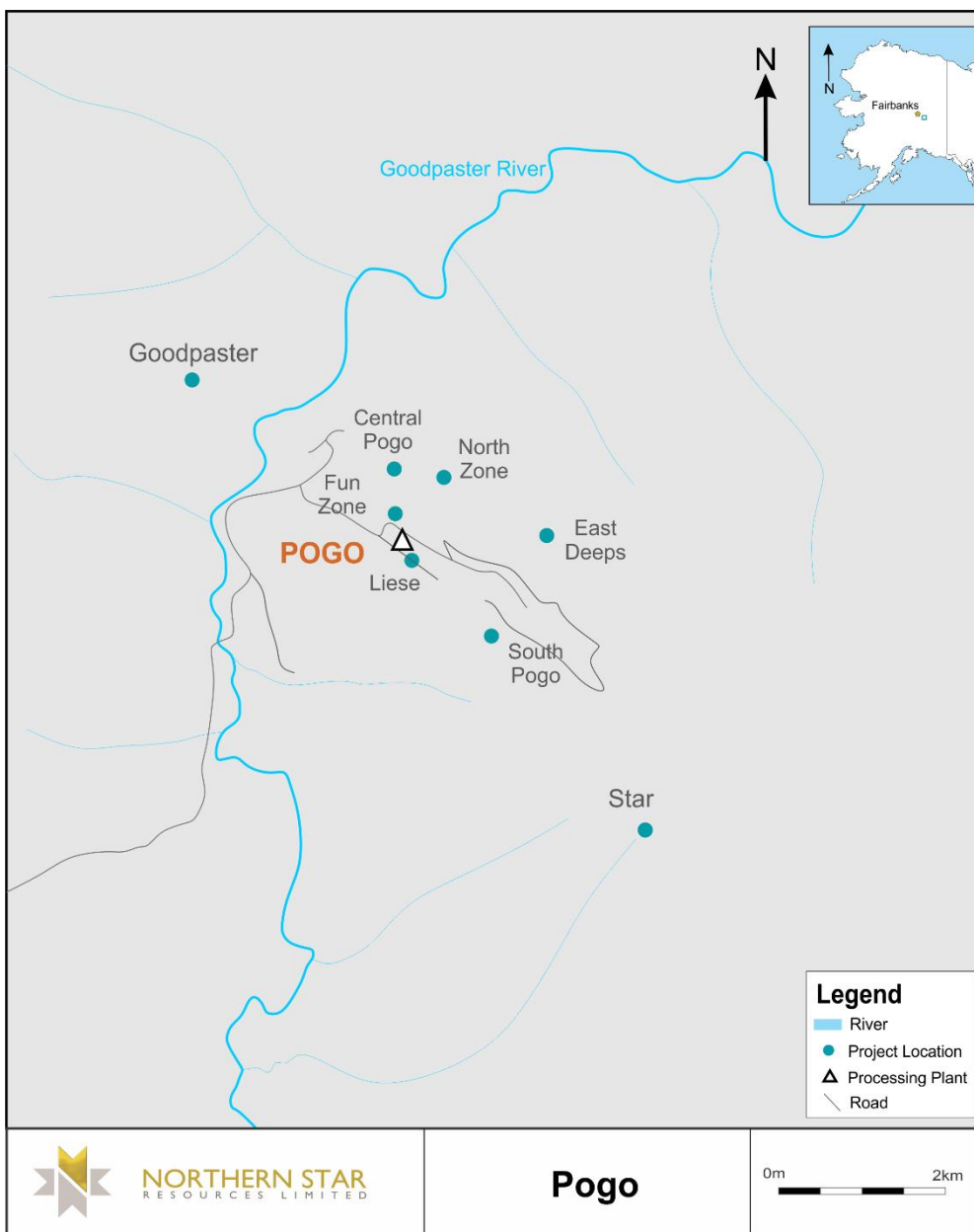W: www.nsrltd.com

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POGO PRODUCTION CENTRE

At Pogo, regional surface exploration has focused on testing new and existing prospects across the greater Pogo property.

Following an interim exploration update on the Star prospect in November 2023, surface exploration drilling has recently recommenced after the annual winter shut, focusing on up dip step out drilling and first drilling between the Central lodes and Goodpaster, known as the Central Gap project.

In-mine extensional drilling at Pogo has recently targeted opportunities at East Deeps and has successfully intercepted strong mineralisation in the hanging wall to the main East Deeps lodes.

Pogo Mineral Resource and Ore Reserve grades have lowered reflecting refinements in key planning assumptions and optimisation of large endowment.

Figure 15 - Pogo Location Plan

Northern Star Resources Limited - ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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East Deeps

East Deeps is located at the eastern most section of the Pogo underground mine and is separated from the main Liese lodes by a large diorite intrusive unit. The mineralisation is predominantly hosted in a biotite-quartz-feldspar rich paragneiss.

East Deeps is an area that has not been tested due to platform access constraints with the area being utilised for mine water storage. Drilling was able to resume in the area this year following a dewatering campaign and highlights this to be a key strategic opportunity which may bring additional optionality into the mine plan.

Recent drilling returned highlights including **5.5m @ 31.4g/t, 2.0m @ 50.3g/t and 6.7m @26.7g/t**, respectively.

The next drilling phase will focus on infill drilling on the most prospective targets to evaluate the resource potential of the prospect.

Figure 16 - East Deeps Cross Section and New Drill Results
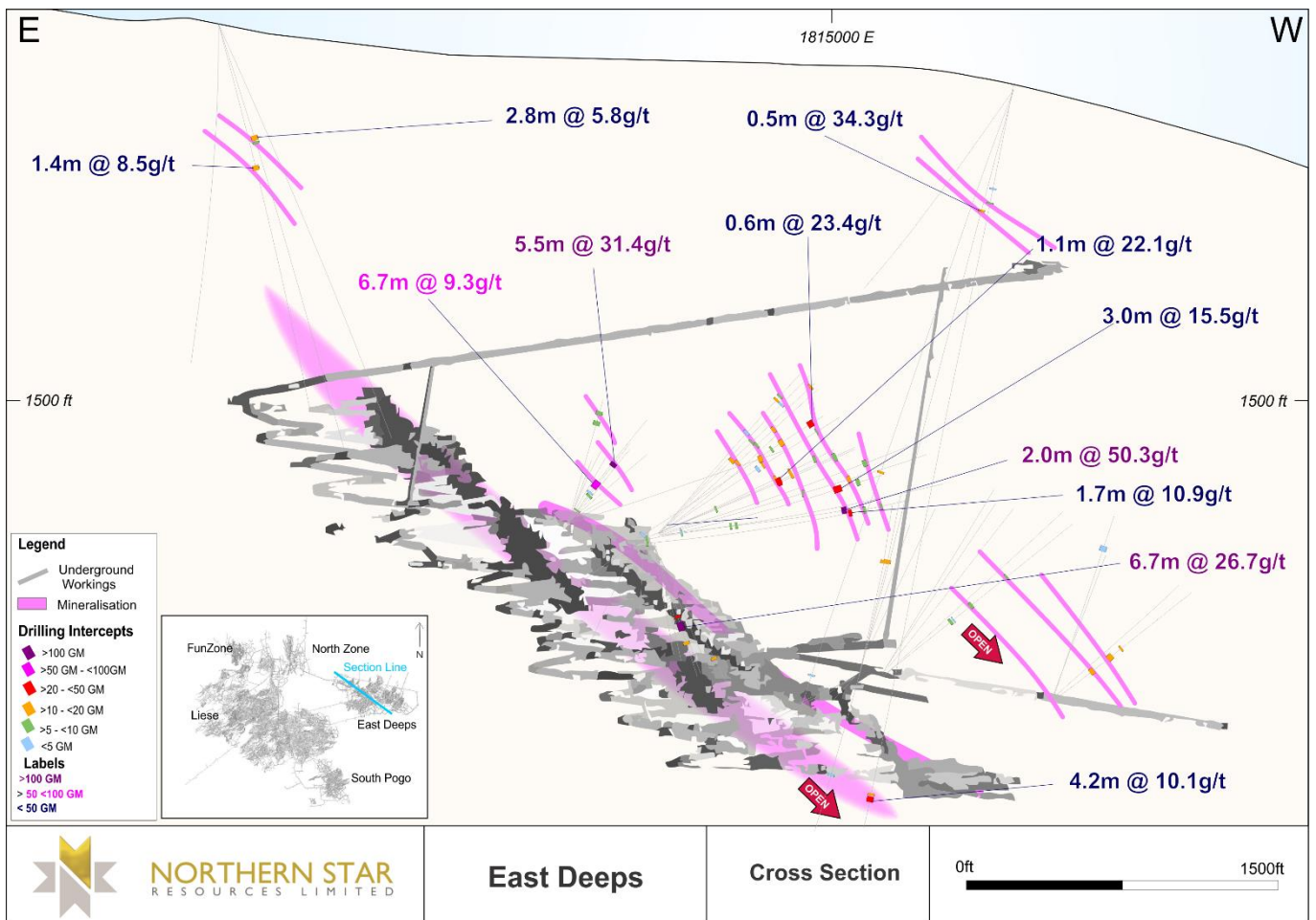
Below is a table of significant East Deeps intercepts reported today.

Significant drill results include:	
All widths are estimated true width	
24U0036	6.7m @ 26.7g/t
24U0037	5.5m @ 31.4g/t
23U01658	2.0 m @ 50.3g/t
23U0588	6.7m @ 9.3g/t

Northern Star Resources Limited - ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Competent Persons Statements

The information in this announcement that relates to exploration results, data quality and geological interpretations for the Company's Operations is based on information compiled by Daniel Howe, a Competent Person who is a Member of the Australasian Institute of Mining and Metallurgy and a full-time employee of Northern Star Resources Limited. Mr Howe has sufficient experience that is relevant to the styles of mineralisation and type of deposits 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". Mr Howe consents to the inclusion in this announcement of the matters based on this information in the form and context in which it appears.

The information in this announcement that relates to Mineral Resource estimations for the Company's Operations (other than the Central Tanami Gold Project) is based on information compiled by Jabulani Machukera, a Competent Person who is a Member of the Australasian Institute of Mining and Metallurgy and a full-time employee of Northern Star Resources Limited. Mr Machukera has sufficient experience that is relevant to the styles of mineralisation and type of deposits 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". Mr Machukera consents to the inclusion in this announcement of the matters based on this information in the form and context in which it appears.

The information in this announcement that relates to Ore Reserve estimations for the Company's Operations is based on information compiled by Jeff Brown, a Competent Person who is a Member of the Australasian Institute of Mining and Metallurgy and a full-time employee of Northern Star Resources Limited. Mr Brown has sufficient experience which 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". Mr Brown consents to the inclusion in this announcement of the matters based on this information in the form and context in which it appears.

The information in this announcement that relates to the Central Tanami Gold Project is extracted from the Tanami Gold NL ASX announcement entitled "Annual Mineral Resource Statement" released on 14 September 2023 and is available to view on www.tanami.com.au. The Company confirms that it is not aware of any further new information or data that materially affects the information included in the original market announcement entitled "Annual Mineral Resource Statement" released on 14 September 2023 and, in the case of estimates of Mineral Resources, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. To the extent disclosed above, the Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.

Northern Star Resources Limited - ABN: 43 092 832 892

Level 4, 500 Hay Street	PO Box 2008	T: +61 8 6188 2100	E: info@nsrltd.com
Subiaco WA 6008, Australia	Subiaco WA 6904	F: +61 8 6188 2111	W: www.nsrltd.com

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APPENDIX A: RESOURCES & RESERVES

MINERAL RESOURCES STATEMENT FOR 12 MONTHS ENDED 31 MARCH 2024

MINERAL RESOURCES as at 31 March 2024

NST ATTRIBUTABLE INCLUSIVE OF RESERVE	MEASURED Tonnes (000's)	MEASURED Grade (gpt)	MEASURED Ounces (000's)	INDICATED Tonnes (000's)	INDICATED Grade (gpt)	INDICATED Ounces (000's)	INFERRED Tonnes (000's)	INFERRED Grade (gpt)	INFERRED Ounces (000's)	TOTAL RESOURCES Tonnes (000's)	TOTAL RESOURCES Grade (gpt)	TOTAL RESOURCES Ounces (000's)
JUNDEE												
Surface	1,526	1.3	62	11,648	1.4	540	5,265	1.3	214	18,439	1.4	816
Underground	521	1.4	23	34,691	3.4	3,834	13,176	3.0	1,255	48,387	3.3	5,113
Stockpiles	483	1.3	12	-	-	-	-	-	-	483	1.3	12
Gold in Circuit	-	-	7	-	-	-	-	-	-	-	-	7
Sub-Total Jundee	2,529	1.3	104	46,339	2.9	4,374	18,441	2.5	1,469	67,309	2.7	5,948
THUNDERBOX												
Surface	3,923	1.6	203	32,902	1.6	1,741	5,508	1.1	193	42,334	1.6	2,137
Underground	11,073	1.9	681	11,936	2.6	1,001	4,046	2.1	275	27,055	2.2	1,956
Stockpiles	5,714	1.3	136	-	-	-	-	-	-	5,714	1.3	136
Gold in Circuit	-	-	3	-	-	-	-	-	-	-	-	3
Sub-Total Thunderbox	20,710	1.5	1,023	44,838	1.9	2,741	9,554	1.5	468	75,102	1.8	4,232
TOTAL YANDAL	**23,239**	**1.5**	**1,127**	**91,177**	**2.4**	**7,116**	**27,995**	**2.2**	**1,937**	**142,411**	**2.2**	**10,180**
POGO												
Surface	-	-	-	-	-	-	503	7.0	114	503	7.0	114
Underground	12	13.0	5	9,986	9.8	3,138	9,997	10.6	3,419	19,995	10.2	6,562
Stockpiles	-	-	-	-	-	-	-	-	-	-	-	-
Gold in Circuit	-	-	5	-	-	-	-	-	-	-	-	5
TOTAL POGO	**12**	**26**	**10**	**9,986**	**9.8**	**3,138**	**10,500**	**10.5**	**3,533**	**20,498**	**10.1**	**6,681**
KCGM												
Surface	-	-	-	263,295	1.5	12,619	174,475	1.1	6,239	437,770	1.3	18,858
Underground	-	-	-	73,354	2.0	4,735	66,900	2.3	4,890	140,254	2.1	9,624
Stockpiles	136,855	0.7	3,127	-	-	-	-	-	-	136,855	0.7	3,127
Gold in Circuit	-	-	28	-	-	-	-	-	-	-	-	28
Sub-Total KCGM	136,855	0.7	3,156	336,649	1.6	17,353	241,375	1.4	11,129	714,879	1.4	31,638
KALGOORLIE OPERATIONS												
Surface	375	3.1	37	35,881	1.5	1,689	33,231	1.2	1,257	69,486	1.3	2,983
Underground	7,421	3.8	907	22,195	3.2	2,273	12,661	3.2	1,283	42,277	3.3	4,463
Stockpiles	142	2.3	11	-	-	-	-	-	-	142	2.3	11
Gold in Circuit	-	-	13	-	-	-	-	-	-	-	-	13
Sub-Total Kalgoorlie Operations	7,938	3.8	967	58,076	2.1	3,962	45,892	1.7	2,540	111,905	2.1	7,469
CAROSUE DAM												
Surface	2,489	1.6	129	17,061	1.8	998	6,559	1.7	356	26,109	1.8	1,483
Underground	6,992	2.9	656	14,752	2.6	1,222	6,282	3.0	514	28,026	2.8	2,392
Stockpiles	6,996	1.5	167	-	-	-	-	-	-	6,996	1.5	167
Gold in Circuit	-	-	6	-	-	-	-	-	-	-	-	6
Sub-Total Carosue Dam	16,476	1.8	958	31,814	2.2	2,220	12,841	2.4	870	61,131	2.1	4,048
TOTAL KALGOORLIE	**161,268**	**1.0**	**5,081**	**426,538**	**1.7**	**23,535**	**300,108**	**1.5**	**14,539**	**887,914**	**1.5**	**43,155**
CENTRAL TANAMI PROJECT JV												
Surface/Underground	2,000	3.0	190	6,500	2.9	600	4,200	3.7	500	12,700	3.2	1,290
Stockpiles	700	0.7	16	-	-	-	-	-	-	700	0.7	16
Sub-Total Central Tanami JV	2,700	2.4	206	6,500	2.9	600	4,200	3.7	500	13,400	3.0	1,306
NORTHERN STAR TOTAL	**187,219**	**1.1**	**6,424**	**534,201**	**2.0**	**34,389**	**342,802**	**1.9**	**20,509**	**1,064,223**	**1.8**	**61,322**

Note:

1. Mineral Resources are inclusive of Ore Reserves.
2. Mineral Resources are reported at A$2,500/oz Au for Australian assets and US$1,800/oz Au - USA assets.
3. Rounding may result in apparent summation differences between tonnes, grade and contained metal content.
4. Numbers are 100 % NST attributable.

Competent Persons:

1. Jabulani Machukera (other than Central Tanami Project JV)

Northern Star Resources Limited - ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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APPENDIX A: RESOURCES & RESERVES

ORE RESERVES STATEMENT FOR 12 MONTHS ENDED 31 MARCH 2024

ORE RESERVES as at 31 March 2024	PROVED			PROBABLE			TOTAL RESERVE		
	Tonnes	Grade	Ounces	Tonnes	Grade	Ounces	Tonnes	Grade	Ounces
NST ATTRIBUTABLE RESERVE	(000's)	(gpt)	(000's)	(000's)	(gpt)	(000's)	(000's)	(gpt)	(000's)
JUNDEE									
Surface	1,501	1.3	61	-	-	-	1,501	1.3	61
Underground	521	1.4	23	7,858	4.7	1,185	8,379	4.5	1,208
Stockpiles	483	0.8	12	-	-	-	483	0.8	12
Gold in Circuit	-	-	7	-	-	-	-	-	7
Sub-Total Jundee	2,504	1.3	103	7,858	4.7	1,185	10,362	3.9	1,288
THUNDERBOX									
Surface	1,165	1.3	49	19,950	1.6	996	21,115	1.5	1,045
Underground	6,927	1.8	395	7,189	2.4	563	14,116	2.1	958
Stockpiles	5,714	1.3	136	-	-	-	5,714	1.3	136
Gold in Circuit	-	-	4	-	-	-	-	-	4
Sub-Total Thunderbox	13,805	1.3	584	27,139	1.8	1,558	40,945	1.6	2,143
TOTAL YANDAL	**16,429**	**1.3**	**698**	**31,959**	**2.4**	**2,501**	**51,307**	**2.1**	**3,431**
POGO									
Surface	-	-	-	-	-	-	-	-	-
Underground	-	-	-	5,884	8.0	1,516	5,884	8.0	1,516
Stockpiles	-	-	-	-	-	-	-	-	-
Gold in Circuit	-	-	6	-	-	-	-	-	6
TOTAL POGO	**-**	**-**	**6**	**5,884**	**8.0**	**1,516**	**5,884**	**8.0**	**1,521**
KCGM									
Surface	-	-	-	159,230	1.6	7,955	159,230	1.6	7,955
Underground	-	-	-	33,273	2.0	2,151	33,273	2.0	2,151
Stockpiles	136,855	0.7	3,127	107	1.4	5	136,962	0.7	3,132
Gold in Circuit	-	-	28	-	-	-	-	-	28
Sub-Total KCGM	136,855	0.7	3,156	192,610	1.6	10,110	329,465	1.3	13,266
KALGOORLIE OPERATIONS									
Surface	-	-	-	17,451	1.3	706	17,451	1.3	706
Underground	2,266	4.2	307	4,264	3.8	516	6,530	3.9	823
Stockpiles	142	2.2	10	-	-	-	142	2.2	10
Gold in Circuit	-	-	7	-	-	-	-	-	7
Sub-Total Kalgoorlie Operations	2,408	4.2	324	21,715	1.8	1,222	24,122	2.0	1,546
CAROSUE DAM									
Surface	-	-	-	6,535	1.8	381	6,535	1.8	381
Underground	3,407	3.0	333	2,870	3.1	283	6,277	3.1	616
Stockpiles	6,996	1.5	167	-	-	-	6,996	0.7	167
Gold in Circuit	-	-	6	-	-	-	-	-	6
Sub-Total Carosue Dam	10,403	1.5	506	9,405	2.2	663	19,809	1.8	1,170
TOTAL KALGOORLIE	**149,666**	**0.8**	**3,986**	**223,731**	**1.7**	**11,996**	**373,397**	**1.3**	**15,982**
CENTRAL TANAMI PROJECT JV									
Underground	-	-	-	-	-	-	-	-	-
Stockpiles	-	-	-	-	-	-	-	-	-
Sub-Total Central Tanami JV	-	-	-	-	-	-	-	-	-
NORTHERN STAR TOTAL	**165,975**	**0.9**	**4,679**	**264,612**	**1.9**	**16,255**	**430,587**	**1.5**	**20,934**

Note:

1. Ore Reserves are reported at various gold price guidelines: a. A$2,000/oz Au - All Australian assets, US$1,500/oz Au - USA assets.
2. Rounding may result in apparent summation differences between tonnes, grade and contained metal content.
3. Ounces are estimates of metal contained in the Ore Reserve and do not include allowances for processing losses.
4. Numbers are 100 % NST attributable.

Competent Persons:
1. Jeff Brown

Northern Star Resources Limited - ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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APPENDIX B: DRILL RESULTS

Drill Hole ID	Easting (MGA)	Northing (MGA)	Collar RL (MGA)	Dip (deg)	Azimuth (deg, MGA)	Total depth (m)	From (m)	To (m)	Intersection (m)	Au (gpt) uncut	Est True Thickness (m)
FNUD0088	19201	49600	-227	-27	90	415.0	387.0	393.0	6.0	0.3	6.0
FNUD0089	19201	49600	-227	-30	91	432.4	389.3	390.6	1.3	1.6	1.2
FNUD0091	19202	49600	-227	-39	88	487.3	410.3	419.2	8.8	0.9	8.5
FNUD0092	19202	49600	-227	-42	89	475.1	417.6	419.7	2.1	1.5	2.0
FNUD0093	19201	49600	-227	-25	85	471.5	421.9	423.7	1.9	2.3	1.8
FNUD0094	19201	49600	-227	-33	85	459.4	410.6	417.5	7.0	0.7	6.8
FNUD0095	19201	49600	-227	-40	85	477.2	438.7	439.1	0.4	34.6	0.4
FNUD0096	19134	49434	-201	-22	94	479.6	455.7	459.3	3.6	2.3	3.6
FNUD0097	19134	49434	-201	-28	93	507.3	454.9	460.0	5.1	1.2	5.1
FNUD0098	19134	49434	-201	-32	94	513.4	456.0	458.9	2.9	0.8	2.8
FNUD0099	19135	49434	-201	-31	91	498.7	459.0	471.5	12.5	1.3	12.4
FNUD0100	19135	49434	-202	-41	87	543.2	471.2	476.0	4.8	1.9	4.6
FNUD0106	19181	49256	-167	-34	79	510.4	431.1	447.4	16.3	6.2	15.8
FNUD0112	19201	49600	-226	-22	103	417.4	389.0	397.0	8.0	1.3	7.8
FNUD0114	19202	49600	-226	-12	90	423.0	367.0	368.0	1.0	0.5	1.0
FNUD0116	19135	49434	-201	-13	86	474.3	463.0	464.0	1.0	0.8	1.0
FNUD0117	19135	49434	-202	-32	85	537.0	469.6	478.0	8.4	1.0	8.3
FNUD0120	19134	49434	-202	-43	90	549.3	500.0	500.6	0.6	0.6	0.6
FNUD0126	19182	49254	-167	-50	82	597.4	523.0	545.6	22.6	2.0	20.0
FNUD0127	19181	49254	-167	-46	80	555.4	509.8	513.0	3.2	2.2	2.9
FNUD0128	19202	49601	-225	-6	94	804.2	379.0	384.6	5.6	2.5	5.4
FNUD0129	19202	49600	-225	-10	96	819.3	372.0	383.4	11.4	2.6	11.0
FNUD0130	19202	49600	-226	-10	93	768.5	366.7	381.0	14.3	0.9	14.0
FNUD0132	19267	49766	-251	-1	88	411.3	355.6	362.0	6.4	2.0	6.0
FNUD0133	19267	49765	-251	-4	100	378.2	318.0	327.0	9.1	1.3	8.5
FNUD0134	19267	49766	-251	-15	85	432.3	303.9	320.8	16.8	1.2	16.7
FNUD0137	19267	49765	-251	-15	106	384.2	306.0	306.6	0.6	0.6	0.6
FNUD0140	19201	49599	-227	-51	108	586.0	510.2	516.0	5.8	0.8	4.9
FNUD0140A	19201	49599	-227	-53	120	612.2	560.0	569.2	9.2	1.7	7.2
FNUD0142	19324	49935	-276	-2	95	374.4	301.7	312.4	10.7	1.4	9.9
FNUD0143	19325	49935	-276	-3	99	363.3	302.7	313.6	10.9	2.2	10.2
FNUD0144	19325	49934	-277	-6	95	363.1	271.8	292.6	20.8	2.4	19.9
FNUD0145	19325	49934	-277	-9	101	354.2	269.2	283.2	14.0	3.6	13.3
FNUD0147	19325	49934	-277	-16	109	375.0	243.0	260.0	17.0	3.1	16.0
FNUD0148	19325	49934	-277	-15	94	318.2	253.5	264.4	10.9	5.3	10.8
FNUD0149	19202	49601	-225	-8	88	753.5	374.4	388.9	14.5	1.5	14.1
FNUD0151	19202	49600	-226	-16	97	785.9	378.6	379.0	0.4	3.5	0.4
FNUD0153	19267	49765	-252	-33	89	426.2	321.9	323.8	1.9	1.0	1.9
FNUD0156	19267	49765	-252	-34	101	450.2	315.3	317.0	1.7	2.0	1.7
FNUD0157	19267	49765	-251	-10	109	438.2	308.0	322.0	14.0	2.0	12.9
FNUD0160	19267	49765	-252	-40	106	456.0	360.0	363.2	3.2	2.5	2.9
FNUD0161	19267	49764	-252	-38	97	402.2	388.9	389.2	0.3	3.0	0.3
FNUD0162	19266	49764	-252	-43	94	432.1	368.3	371.7	3.4	0.4	3.2
FNUD0167	19266	49764	-252	-52	113	468.3	443.0	446.0	3.0	0.8	2.5
FNUD0170	19267	49764	-251	-14	133	500.9	434.1	435.8	1.7	0.8	1.3
FNUD0171	19267	49765	-251	-2	104	377.5	338.0	346.0	8.0	1.4	7.2
FNUD0173	19267	49765	-251	2	97	402.0	353.2	353.6	0.4	3.3	0.4
FNUD0176	19267	49765	-251	1	100	447.1	345.8	351.7	5.9	0.7	5.3
FNUD0179	19325	49935	-277	-17	96	303.0	246.0	257.5	11.5	2.0	11.3
FNUD0180	19325	49935	-277	-24	95	285.0	246.7	250.1	3.4	3.3	3.4
FNUD0181	19324	49934	-278	-30	93	296.1	247.2	257.0	9.8	4.6	9.7
FNUD0182	19325	49934	-277	-25	105	302.5	243.3	251.2	7.9	2.3	7.6
FNUD0187	19324	49933	-278	-29	122	326.8	297.5	299.4	2.0	0.7	1.7
FNUD0196	19325	49935	-277	-19	78	303.1	272.4	282.9	10.5	1.2	10.3
FNUD0199	19324	49935	-278	-33	75	312.0	279.0	281.6	2.6	2.4	2.5
FNUD0200	19324	49934	-278	-35	81	287.8	256.1	263.4	7.3	1.5	7.0
FNUD0201	19324	49934	-278	-38	91	336.1	270.1	275.0	4.9	1.0	4.7
FNUD0203	19324	49933	-278	-40	106	300.2	282.6	283.0	0.5	5.9	0.4
FNUD0218	19325	49936	-278	0	86	383.6	327.0	327.6	0.6	14.7	0.6
FNUD0261	19325	49934	-276	6	106	350.7	329.3	331.3	2.0	2.2	1.7
FNUD0263	19325	49934	-276	3	103	350.6	320.0	322.1	2.1	2.7	1.8
FNUD0271A	19325	49934	-277	-4	113	320.3	288.6	295.2	6.6	3.0	5.7
FNUD0272A	19325	49934	-277	-2	117	360.0	295.6	302.0	6.4	2.6	5.3
FNUD0276	19325	49934	-277	-14	111	293.8	247.0	256.7	9.7	2.5	8.9
FNUD0107	19180	49256	-167	-37	83	465.0	425.0	441.0	3.2	2.1	12.7
FNUD0108A2	19180	49256	-167	-37	79	452.2	437.7	449.5	1.6	1.5	10.3
FNUD0111	19182	49243	-167	-53	90	563.5	500.4	560.0	7.6	2.8	48.9
FNUD0141	19325	49935	-277	-8	89	359.6	286.0	298.4	1.2	3.1	11.9
FNUD0107	**19180**	**49256**	**-167**	**-36**	**75**	**465.0**	**425.0**	**441.0**	**16.0**	**2.1**	**12.7**
							425.0	428.2	*including* 3.2	1.9	3.1
							and 428.2	433.1	4.9	VOID	2.0
							and 433.1	441.0	7.9	2.2	7.6
FNUD0108A2	**19180**	**49256**	**-167**	**-42**	**72**	**452.2**	**437.7**	**449.5**	**11.9**	**1.5**	**10.3**
							437.7	442.6	*including* 5.0	1.5	4.7
							and 442.6	447.9	5.3	VOID	4.0
							and 447.9	449.5	1.6	1.4	1.5
FNUD0111	**19182**	**49243**	**-167**	**-60**	**96**	**563.5**	**500.4**	**560.0**	**59.6**	**2.8**	**48.9**
							500.4	508.0	*including* 7.6	5.4	6.6

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APPENDIX B: DRILL RESULTS

KCGM - FIMISTON SIGNIFICANT INTERSECTIONS											
Drill Hole ID	Easting (MGA)	Northing (MGA)	Collar RL (MGA)	Dip (deg)	Azimuth (deg, MGA)	Total depth (m)	From (m)	To (m)	Intersection (m)	Au (gpt) uncut	Est True Thickness (m)
							and 508.0	512.0	4.0	VOID	2.2
							and 512.0	522.9	10.9	0.6	9.4
							and 522.9	526.0	3.1	VOID	2.0
							and 526.0	539.7	13.7	3.3	11.9
							and 539.7	542.7	3.0	VOID	2.3
							and 542.7	546.7	4.0	1.2	3.4
							and 546.7	549.9	3.1	VOID	2.0
							and 549.9	551.2	1.4	0.6	1.2
							and 551.2	553.7	2.5	VOID	2.3
							and 553.7	560.0	6.3	4.2	5.5
FNUD0141	19325	49935	-277	-1	81	359.6	286.0	298.4	12.4	3.1	11.9
							including 286.0	295.5	9.5	3.1	9.2
							and 295.5	297.2	1.7	VOID	1.5
							and 297.2	298.4	1.2	3.8	1.1
FNUD0239	19266	49764	-252	-57	132	254.6	211.9	219.5	7.6	1.7	4.6
							including 211.9	214.2	2.2	3.8	1.4
							and 214.2	214.5	0.3	VOID	0.2
							and 214.5	219.5	5.1	0.9	3.1
FNUD0051	19201	49599	-227	-29	90	780.2	254.2	256.0	1.8	11.7	1.8
FNUD0078	19324	49935	-279	-46	74	352.6	85.2	89.2	4.0	2.1	3.2
FNUD0089	19201	49600	-227	-32	82	432.4	259.0	265.1	6.1	0.4	5.8
FNUD0148	19325	49935	-278	-11	89	318.2	75.0	86.9	11.9	0.9	11.8
FNUD0153	19267	49765	-252	-34	81	426.2	161.0	172.0	11.0	3.4	10.2
FNUD0154	19267	49765	-252	-16	93	426.1	156.5	157.5	0.9	0.7	0.9
FNUD0200	19324	49934	-278	-38	75	287.8	77.1	82.8	5.7	0.5	5.0
FNUD0217	19325	49935	-277	8	83	351.0	89.0	91.8	2.8	1.4	2.7
FNUD0223	19266	49765	-250	-66	135	263.3	218.0	222.7	4.7	3.3	2.1
FNUD0225	19267	49766	-252	-70	83	224.6	192.6	195.0	2.4	1.2	1.2
FNUD0234	19267	49765	-251	-31	110	206.6	181.3	184.0	2.7	2.5	2.3
FNUD0236	19266	49765	-250	-38	113	242.7	184.7	188.5	3.8	4.0	3.1
FNUD0237	19267	49764	-252	-44	114	209.7	186.1	188.6	2.5	2.6	2.1
FNUD0238	19266	49764	-252	-60	123	250.0	198.3	202.6	4.3	2.9	2.4
FNUD0239	19266	49764	-252	-57	132	254.6	211.9	219.5	7.6	1.7	4.6
FNUD0241	19324	49934	-278	-77	124	164.4	127.1	128.7	1.6	5.3	0.6
FNUD0245	19325	49935	-276	4	86	350.9	86.9	91.7	4.9	1.3	4.8
FNUD0246	19325	49935	-276	1	83	335.9	85.4	89.3	3.9	4.1	3.9
FNUD0247	19325	49935	-276	2	87	335.8	87.0	90.0	3.0	0.6	3.0
FNUD0253	19266	49765	-250	-38	135	263.6	223.0	235.0	12.0	8.4	7.0
FNUD0254	19266	49764	-252	-42	131	245.0	214.0	222.0	8.0	4.5	4.8
FNUD0256	19266	49765	-250	-49	142	295.0	239.1	244.0	4.9	1.5	2.0
FNUD0257	19266	49765	-250	-47	136	292.3	223.6	230.4	6.8	5.7	3.4
FNUD0259	19267	49765	-252	-38	73	194.6	164.7	169.7	5.0	9.1	4.4
FNUD0260	19267	49765	-252	-40	88	185.3	160.8	162.0	1.3	3.7	1.1
FNUD0285	19324	49934	-277	0	131	174.1	127.0	131.5	4.6	1.7	3.5
FNUD0286	19324	49933	-277	-5	137	174.2	146.1	147.0	0.9	10.4	0.7
FNUD0284	19324	49934	-277	-11	133	147.2	119.7	126.5	6.8	2.5	5.3
FNUD0283	19324	49933	-277	-4	127	149.4	117.7	118.0	0.3	2.2	0.3
FNUD0282	19324	49934	-277	2	121	151.2	111.7	112.4	0.7	0.3	0.3
FNUD0280	19325	49934	-277	-12	124	142.6	112.5	113.7	1.3	7.6	1.1
FNUD0281	19325	49934	-277	-18	131	132.0	116.6	118.1	1.5	5.2	1.2
FNUD0215	19324	49934	-277	7	77	374.5	90.4	93.7	3.3	0.2	3.1
FNUD0216	19325	49936	-277	7	80	357.1	90.0	91.2	1.2	4.0	1.1
FNUD0218	19325	49936	-278	3	77	383.6	87.7	90.0	2.3	1.7	2.3
FNUD0240	19324	49934	-278	-46	129	140.1	98.8	99.4	0.6	3.0	0.4
FNUD0186	19324	49933	-278	-18	120	322.4	103.1	103.8	0.7	2.6	0.7
FNUD0279	19325	49934	-277	-5	118	137.9	107.6	108.0	0.4	5.2	0.4
FNUD0276	19325	49934	-277	-12	112	293.8	93.0	94.0	1.0	1.6	1.0
FNUD0278	19325	49934	-277	-20	112	147.0	88.9	95.5	6.6	8.2	6.5
FNUD0184	19325	49934	-277	-25	113	324.2	90.2	93.0	2.8	3.2	7.7
FNUD0185	19324	49934	-278	-33	113	726.0	91.2	94.0	2.8	1.1	2.5

Drill Hole ID	Easting (MGA)	Northing (MGA)	Collar RL (MGA)	Dip (deg)	Azimuth (deg, MGA)	Total depth (m)	From (m)	To (m)	Intersection (m)	Au (gpt) uncut	Est True Thickness (m)
KCGM – MT FERRUM SIGNIFICANT INTERSECTIONS											
LFUD144	20208	51594	-296	4	110	467	95.0	100.9	5.9	9.9	4.9
							and 168.6	169.3	0.7	40.8	0.6
							and 342.3	344.0	1.7	16.4	1.5
LFUD145	20208	51594	-296	9	112	310	216.0	218.7	2.7	9.5	2.3
							and 275.9	278.7	2.9	4.2	2.4
							and 281.4	287.0	5.6	3.1	4.7
LFUD146	20208	51594	-296	9	102	334	160.8	163.0	2.2	3.9	1.9
							and 292.0	300.0	8.0	15.0	6.9
LFUD147	20208	51594	-296	3	101	325	162.6	170.0	7.4	1.0	6.7
							and NSI				
LFUD149	20208	51594	-296	-4	114	369	336.6	338.1	1.5	3.6	1.4

Northern Star Resources Limited - ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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APPENDIX B: DRILL RESULTS

KCGM – MT FERRUM SIGNIFICANT INTERSECTIONS											
Drill Hole ID	Easting (MGA)	Northing (MGA)	Collar RL (MGA)	Dip (deg)	Azimuth (deg, MGA)	Total depth (m)	From (m)	To (m)	Intersection (m)	Au (gpt) uncut	Est True Thickness (m)
LFUD150	20208	51594	-297	-9	116	331	152.1	155.1	3.0	4.3	2.7
							and	314.4	315.0	0.6	16.7	0.6
LFUD151	20208	51594	-296	8	124	201	170.0	180.6	10.6	2.8	10.6
LFUD152	20208	51594	-296	3	123	291	280.0	282.0	2.0	14.0	1.7
LFUD153	20208	51594	-296	3	122	390	158.5	159.4	0.9	62.4	0.7
							and	375.2	376.2	0.9	11.4	0.8
LFUD154	20208	51594	-297	-10	122	366	157.7	160.1	2.4	3.5	2.1
							and	211.1	213.5	2.4	4.2	2.2
LFUD156	20208	51594	-296	-3	130	408	373.1	378.3	5.2	31.8	4.4
LFUD157	20421	52162	-353	9	145	356	NSI				
LFUD158	20421	52162	-353	-2	148	327	NSI				
LFUD159	20421	52162	-353	-10	151	314	154.0	162.0	8.0	2.5	5.1
							and	155.0	159.0	4.0	4.4	2.6
LFUD160	20421	52162	-352	10	138	300	112.0	124.0	12.0	1.3	8.1
LFUD161	20421	52162	-353	-3	138	297	116.0	123.4	7.4	2.4	5.5
LFUD162	20422	52163	-352	11	127	285	162.4	166.2	3.8	6.2	2.7
LFUD163	20422	52162	-353	-7	131	249	NSI				
LFUD164	20422	52162	-353	-22	132	255	242.0	245.8	3.8	4.6	2.6
LFUD165	20421	52162	-352	8	115	278	NSI				
LFUD166	20423	52163	-353	-6	109	245	189.0	190.0	1.0	0.8	1.0
LFUD167	20423	52163	-354	-22	104	231	173.0	178.0	5.0	3.9	5.0
LFUD169	20422	52162	-354	-27	147	289	215.0	218.5	3.5	12.7	2.7
LFUD170	20421	52162	-354	-40	161	390	357.1	359.8	2.7	12.5	1.6
LFUD171	20423	52164	-353	6	85	282	NSI				
LFUD172	20423	52163	-353	-10	95	309	200.0	202.0	2.0	16.4	2.0
							and	201.0	202.0	1.0	31.7	1.0
LFUD174	20423	52164	-353	-2	74	279	76.9	78.4	1.6	5.0	1.5
LFUD175	20423	52165	-353	-13	63	453	133.9	139.7	5.8	10.1	5.3
							and	303.3	305.6	2.3	4.9	1.9
							and	317.8	321.1	3.3	4.1	3.2
LFUD176	20423	52165	-354	-37	71	342	60.0	69.8	9.8	1.2	8.4
LFUD177	20208	51595	-296	-6	101	387	248.0	254.0	6.0	9.3	5.7
							and	248.0	256.1	8.1	7.0	7.8
LFUD178	20208	51595	-296	0	100	382	253.1	262.6	9.6	3.0	9.1
LFUD179	20208	51595	-296	4	101	384	277.4	279.7	2.3	4.5	2.1
LFUD181	20208	51595	-296	-7	95	390	249.0	264.6	15.6	3.4	14.9
							and	251.2	259.0	7.8	5.0	7.5
							and	261.0	264.0	3.0	3.8	2.9
LFUD182	20208	51595	-296	-10	100	309	173.0	178.2	5.2	2.0	5.1
							and	249.6	251.3	1.7	9.5	1.6
							and	249.6	251.8	2.2	7.7	2.2
LFUD183	20192	51525	-295	-6	103	363	141.1	142.9	1.7	4.2	1.7
							and	153.7	156.5	2.8	2.5	2.7
							and	198.0	203.8	5.8	1.3	5.6
LFUD184	20188	51507	-295	-9	108	384	202.6	204.0	1.4	4.3	1.3
LFUD185	20188	51508	-294	8	105	360	171.8	173.8	2.0	3.0	1.8
LFUD186	20188	51508	-295	-6	105	366	NSI				
LFUD187	20221	51670	-298	-6	104	387	168.3	171.5	3.2	3.1	3.0
							and	272.0	278.0	6.0	1.8	5.6
LFUD188	20221	51670	-298	-11	99	363	46.7	49.4	2.7	3.1	2.6
							and	181.7	183.6	1.9	4.4	1.9
							and	182.0	182.8	0.8	10.0	0.8
LFUD189	20225	51685	-298	-7	100	372	176.6	186.0	9.4	5.8	9.2
							and	184.4	185.5	1.1	29.7	1.1
							and	187.0	190.5	3.5	7.7	3.4
LFUD190	20225	51685	-298	-13	99	408	103.3	107.0	3.8	4.3	3.7
							and	187.8	188.5	0.7	25.7	0.7
							and	379.1	382.1	3.0	3.6	2.9
LFUD191	20225	51685	-299	-37	95	381	127.8	131.0	3.2	3.0	3.0
							and	157.8	165.6	7.8	2.0	7.5
							and	334.9	336.0	1.1	83.6	1.0
LFUD192	20229	51703	-297	-16	97	393	126.0	129.7	3.7	6.2	3.6
							and	126.0	132.8	6.8	3.7	6.6
							and	205.0	209.0	4.0	2.7	3.9
LFUD193	20229	51703	-298	-31	98	369	99.7	100.6	0.8	24.6	0.8
							and	149.4	153.2	3.8	2.5	3.8
LFUD194	20229	51703	-298	-37	92	381	142.3	146.0	3.7	2.4	3.2
							and	346.6	347.4	0.8	55.0	0.7
LFUD195	20229	51703	-298	-32	93	369	140.6	145.1	4.5	2.4	4.4
							and	342.0	344.0	2.0	12.8	1.8

APPENDIX B: DRILL RESULTS

KCGM – MT FERRUM SIGNIFICANT INTERSECTIONS											
Drill Hole ID	Easting (MGA)	Northing (MGA)	Collar RL (MGA)	Dip (deg)	Azimuth (deg, MGA)	Total depth (m)	From (m)	To (m)	Intersection (m)	Au (gpt) uncut	Est True Thickness (m)
LFUD196	19923	51033	-218	-8	92	699	NSI				
LFUD197	19922	51033	-219	-18	90	603	146.4	154.0	7.7	2.2	7.5
							and	151.0	152.0	1.0	10.5	1.0
							and	472.9	474.2	1.3	47.6	1.2
LFUD201	20229	51703	-297	-3	95	312	48.8	49.4	0.6	14.4	0.6
							and	94.4	96.9	2.5	3.4	2.2
							and	185.4	191.2	5.8	2.7	5.5
							and	223.5	227.1	3.6	2.1	3.5
LFUD202	20230	51703	-297	2	96	312	66.2	69.0	2.8	6.4	2.4
							and	66.6	68.5	1.9	8.1	1.6
							and	242.7	245.2	2.5	10.3	2.4
LFUD203	20230	51703	-297	1	92	336	66.0	69.3	3.3	3.0	2.8
							and	267.4	275.0	7.6	2.6	7.3
LFUD204	20230	51704	-297	7	103	330	288.6	290.0	1.4	9.9	1.2
							and	288.6	293.9	5.3	6.8	4.6
							and	291.4	293.0	1.6	11.8	1.4
LFUD205	20230	51704	-297	6	94	336	69.0	71.5	2.5	4.1	2.4
							and	93.2	97.0	3.8	3.9	3.1
LFUD208	20230	51703	-296	12	101	358	64.7	66.7	2.0	4.7	1.8
							and	236.0	241.7	5.7	3.4	5.1
							and	250.3	251.8	1.5	11.7	1.3
							and	301.0	313.0	12.0	2.9	10.1
LFUD209	20225	51685	-297	6	99	330	78.0	82.3	4.3	2.1	3.5
							and	218.0	221.7	3.7	3.6	3.4
							and	283.4	289.3	6.0	3.3	5.3
LFUD211	20199	51557	-296	-2	104	378	257.7	260.3	2.7	6.5	2.5
LFUD212	20199	51557	-296	5	106	369	326.9	327.2	0.3	38.9	0.3
LFUD213	20217	51650	-298	-6	103	346	189.0	191.9	2.9	4.2	2.8
							and	265.5	273.6	8.1	4.1	7.7
							and	297.0	298.0	1.0	6.3	0.9
LFUD214	20217	51650	-298	0	103	354	51.0	52.7	1.7	14.3	1.6
							and	279.2	283.3	4.1	3.2	3.8
LFUD215	20217	51650	-298	-11	103	300	59.5	62.9	3.5	2.3	3.3
							and	251.5	263.7	12.1	2.8	11.8
							and	252.0	257.7	5.7	5.0	5.4
LFUD216	20208	51595	-296	1	103	369	165.0	169.0	4.0	6.1	3.7
							and	166.8	168.0	1.2	19.7	1.1
							and	212.3	219.0	6.7	1.9	6.3
							and	217.0	219.0	2.0	5.4	1.9
							and	262.8	266.6	3.8	2.4	3.5
LFUD217	20192	51525	-295	-2	105	348	232.0	233.2	1.2	2.3	1.1
LFUD218	20192	51525	-295	8	103	357	88.0	91.3	3.3	3.7	2.6

KCGM – LITTLE WONDER SIGNIFICANT INTERSECTIONS											
Drill Hole ID	Easting (LOC 48)	Northing (LOC 48)	Collar RL (LOC 48)	Dip (deg)	Azimuth (deg, LOC 48)	Total depth (m)	From (m)	To (m)	Intersection (m)	Au (gpt) uncut	Est True Thickness (m)
LWUD0040	20430	52653	-223	-37	192	300.0	0.0	14.9	14.9	2.8	
							and	85.0	107.0	22.0	2.5	
							and	249.0	255.0	6.0	2.1	
LWUD0041	20413	52654	-222	-37	192	300.0	1.6	7.4	5.8	4.1	
							and	86.0	94.0	8.1	3.5	
LWUD0042	20399	52654	-222	-38	193	299.9	19.3	20.7	1.4	0.8	
							and	55.5	78.0	22.5	0.8	
LWUD0043	20383	52654	-222	-37	193	270.0	73.0	74.0	1.0	5.0	
LWUD0044	20367	52654	-221	-37	193	199.9	1.0	11.0	10.0	1.0	
							and	76.0	80.1	4.1	1.4	
LWUD0045	20513	52659	-220	41	23	139.9	42.6	59.0	16.4	0.9	
							and	116.0	118.0	2.0	5.3	
							and	122.3	128.0	5.7	1.1	
LWUD0046	20513	52659	-220	42	15	130.0	54.0	64.8	10.8	2.2	
							and	121.0	129.0	8.0	1.5	
LWUD0047	20496	52658	-220	41	14	130.0	NSI				
LWUD0048	20480	52659	-220	42	15	130.0	77.7	81.5	3.8	1.7	
LWUD0049	20463	52658	-220	41	14	130.1	29.4	32.0	2.6	153.1	
LWUD0050	20448	52659	-220	42	15	129.9	0.4	9.9	9.5	3.3	
LWUD0051	20432	52659	-220	42	15	130.1	2.0	23.1	21.1	2.4	
LWUD0052	20414	52659	-219	42	15	130.1	63.0	69.0	6.0	20.9	
LWUD0053	20400	52659	-218	42	15	130.0	79.5	82.0	2.5	4.0	
LWUD0054	20383	52659	-218	42	15	130	17.8	34.0	16.2	1.0	
							and	122.5	123.3	0.7	1.6	

Northern Star Resources Limited - ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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APPENDIX B: DRILL RESULTS

KCGM – LITTLE WONDER SIGNIFICANT INTERSECTIONS											
Drill Hole ID	Easting (LOC 48)	Northing (LOC 48)	Collar RL (LOC 48)	Dip (deg)	Azimuth (deg, LOC 48)	Total depth (m)	From (m)	To (m)	Intersection (m)	Au (gpt) uncut	Est True Thickness (m)
LWUD0055	20368	52659	-218	41	15	130	0.0	48.5	48.5	3.3	
							56.0	65.2	9.2	1.2	
LWUD0056	20511	52623	-225	-40	195	353	200.0	201.0	1.0	1.9	
							249.5	256.0	6.5	0.8	
LWUD0057	20496	52622	-225	-38	191	353	10.0	11.0	1.0	0.5	
LWUD0058	20478	52623	-225	-38	193	353	25.0	58.2	33.2	1.1	
							132.0	176.0	44.0	0.9	
							204.6	209.2	4.6	3.5	
							219.0	220.2	1.2	4.1	
LWUD0059	20462	52623	-224	-37	192	353	39.0	84.0	45.0	2.0	
							150.0	173.0	23.0	1.4	
LWUD0059A	20462	52623	-224	-40	188	165	48.4	59.0	10.6	2.8	
							65.0	79.4	14.4	1.9	
							137.0	143.0	6.0	2.0	
LWUD0059B	20462	52623	-224	-39	192	252	48.6	84.0	35.5	1.4	
							146.5	159.9	13.4	1.8	
LWUD0060	20443	52624	-223	-38	193	353	158.0	190.4	32.4	2.0	
LWUD0061	20430	52623	-223	-38	192	340	1.1	3.8	2.7	2.1	
							8.0	23.0	15.0	1.4	
							228.0	232.3	4.3	2.6	
LWUD0062	20414	52624	-223	-38	192	300	0.0	18.0	18.0	1.4	
							39.4	42.3	2.9	1.7	
							66.0	76.0	10.0	1.7	
LWUD0063	20397	52623	-223	-38	192	300	0.0	15.9	15.9	0.9	
							59.6	68.4	8.8	0.5	
LWUD0064	20382	52624	-222	-37	192	291	56.0	63.7	7.7	1.0	
							74.6	78.3	3.7	2.7	
LWUD0065	20366	52624	-222	-38	193	230	42.0	47.1	5.1	0.5	
LWUD0066	20367	52629	-218	41	16	132	13.6	26.2	12.6	1.0	
							53.0	55.7	2.7	1.7	
LWUD0067	20384	52629	-219	41	15	132	34.4	47.0	12.6	1.5	
LWUD0068	20398	52629	-219	40	16	131	0.0	9.8	9.8	1.3	
							63.5	71.0	7.5	1.1	
LWUD0069	20414	52629	-219	40	18	131	84.0	84.3	0.3	0.8	
LWUD0070	20430	52629	-220	40	17	130	42.6	44.0	1.4	1.1	
LWUD0071	20446	52629	-220	40	15	130	1.0	8.0	7.0	1.5	
							24.0	26.0	2.0	1.8	
LWUD0072	20463	52628	-220	40	18	130	66.8	79.0	12.3	3.3	
							121.1	124.0	2.9	2.5	
LWUD0073	20480	52628	-221	40	15	130	8.6	14.0	5.4	1.1	
							34.4	37.5	3.1	3.4	
							70.0	77.0	7.0	1.2	
							111.4	115.0	3.6	1.3	
LWUD0074	20494	52628	-221	41	16	130	104.0	106.0	2.0	3.4	
LWUD0075	20512	52628	-221	40	15	130	10.9	28.0	17.1	1.2	
							33.3	41.0	7.7	4.0	
							91.0	101.0	10.0	1.2	
							107.8	117.0	9.2	1.6	
LWUD0076	20513	52628	-222	41	26	130	11.0	18.4	7.4	0.8	
							23.0	42.0	19.0	3.8	
							93.2	129.0	35.8	12.5	
LWUD0077	20531	52644	-221	41	25	137	2.9	11.0	8.1	1.1	
LWUD0078	20545	52644	-221	40	25	126	0.0	8.0	8.0	2.0	
							26.0	39.0	13.0	2.5	
							93.0	101.0	8.0	1.5	
LWUD0079	20530	52600	-221	41	21	130	46.2	76.0	29.9	2.2	
							106.4	128.4	22.0	3.3	
LWUD0080	20540	52597	-221	41	22	130	75.5	130.0	54.5	1.0	

KANOWNA BELLE - RED HILL SIGNIFICANT INTERSECTIONS											
Drill Hole ID	Easting (LOC 48)	Northing (LOC 48)	Collar RL (LOC 48)	Dip (deg)	Azimuth (deg, LOC 48)	Total depth (m)	From (m)	To (m)	Intersection (m)	Au (gpt) uncut	Est True Thickness (m)
RHDD23068	366602.2	6614202.5	380.7	-60	130	275.0	67.2	99.0	31.8	0.9	
							133.0	155.0	22.0	0.6	
							172.3	204.7	32.4	1.8	
						includes	180.0	181.0	0.9	36.5	
						and	217.0	245.4	28.4	2.3	
						includes	217.0	218.0	1.0	32.9	
RHDD23069	366604.4	6614224.0	381.3	-65	112	442.0	191.0	327.0	136.0	1.8	
						includes	202.0	203.1	1.1	47.0	
						includes	326.0	327.0	1.0	22.4	

APPENDIX B: DRILL RESULTS

	KANOWNA BELLE - RED HILL SIGNIFICANT INTERSECTIONS										
Drill Hole ID	Easting (LOC 48)	Northing (LOC 48)	Collar RL (LOC 48)	Dip (deg)	Azimuth (deg, LOC 48)	Total depth (m)	From (m)	To (m)	Intersection (m)	Au (gpt) uncut	Est True Thickness (m)
RHDD23070	366871.3	6614550.8	376.6	-58	129	349.2	91.8	120.3	28.5	0.9	
RHDD23071	366870.8	6614551.3	376.6	-66	129	418.1	302.7	418.1	115.4	0.6	
RHDD23072	367244.2	6614478.7	383.0	-55	292	460.9	124.0	207.0	83.0	2.3	
						includes	137.0	139.0	2.0	52.1	
						and	280.3	449.0	168.7	0.4	
RHDD23073	367217.0	6614286.2	379.7	-32	310	442.9	195.4	218.0	22.6	1.3	
						and	257.0	331.0	74.0	0.8	
RHDD23074	367019.3	6614117.9	375.5	-42	318	453.0	234.2	415.0	180.8	1.0	
includes						includes	272.0	273.0	1.0	100.6	
RHDD23075	367082.1	6614155.1	376.2	-40	313	465.0	253.0	457.1	204.1	0.7	
RHDD23076	366876.0	6614086.7	375.8	-43	327	375.0	86.8	313.6	226.8	0.9	
						and	328.0	353.7	25.7	1.0	
RHDD23077	367144.1	6614268.7	381.1	-42	306	420.0	126.0	159.0	33.0	0.9	
						and	272.0	393.4	121.4	0.6	
RHDD23078	367217.9	6614285.4	379.8	-40	310	462.2	220.8	235.0	14.2	1.1	
						and	281.6	422.9	141.3	0.7	
RHDD23079A	367019.3	6614118.1	375.0	-34	315	428.6	231.3	389.0	157.7	1.0	
						includes	354.0	355.0	1.0	40.5	
RHDD23080	367256.5	6614359.6	381.9	-37	309	440.7	219.1	359.0	139.9	0.8	
RHDD23081	366755.5	6614435.0	375.7	-60	134	541.0	119.2	341.0	221.8	0.7	
RHDD23082	366755.3	6614435.3	375.6	-69	134	660.1	230.0	374.5	144.5	0.7	
						and	392.3	433.0	40.8	0.6	
						and	528.0	634.0	106.0	0.5	
RHDD23083	366786.0	6614463.6	374.8	-55	134	439.1	157.9	419.2	261.3	0.9	
						includes	218.0	219.0	1.0	70.6	
RHDD23084	366752.3	6613900.8	377.8	-55	310	483.9	239.0	251.0	12.0	3.8	
						includes	239.0	240.0	1.0	32.3	
						and	295.7	307.0	11.3	1.8	
						and	439.0	460.0	21.0	1.0	
RHDD23085	366752.3	6613900.8	377.8	-55	326	393.8	56.0	89.0	33.0	2.5	
						includes	64.5	68.6	4.1	15.4	
						and	236.1	372.0	135.9	1.1	
RHDD24092	366643.7	6614339.1	381.5	-46	140	276.3	125.0	253.0	128.0	0.9	
						includes	133.0	134.0	1.0	45.6	
RHDD24093	366982.0	6614074.0	375.0	-48	310	498.2					
RHDD24094	366863.0	6614021.0	379.2	-55	307	429.8	323.5	406.0	82.5	2.5	
						includes	336.0	336.6	0.6	128.0	
						includes	339.0	340.0	1.0	29.7	
						includes	349.7	351.1	1.4	14.9	
RHDD24095	366641.0	6614339.0	381.7	-64	132	521.1	190.0	228.9	38.9	0.6	
						and	289.0	521.1	232.1	1.0	
						includes	353.0	354.0	1.0	51.4	
						includes	369.0	370.0	1.0	44.3	

	SOUTH KALGOORLIE - HBJ SIGNIFICANT INTERSECTIONS										
Drill Hole ID	Easting (LOC 48)	Northing (LOC 48)	Collar RL (LOC 48)	Dip (deg)	Azimuth (deg, LOC 48)	Total depth (m)	From (m)	To (m)	Intersection (m)	Au (gpt) uncut	Est True Thickness (m)
MUTGC23030	20106	51208	142	-36	64	150	138.0	139.4	1.4	3.3	1.2
MUTGC23031	20106	51208	142	-32	50	165	143.7	148.1	4.4	3.9	3.8
MUTGC23034	20137	51691	-103	26	46	15	0.0	12.3	12.3	12.3	7.6
MUTGC23035	20133	51716	-102	25	52	27	0.0	11.3	11.3	9.5	7.5
							and	15.3	20.0	4.7	4.4	3.1
MUTGC23039	20187	51330	92	-64	75	54	36.0	41.0	5.0	2.1	3.5
MUTGC23041	20187	51330	93	-41	41	57	35.0	38.3	3.3	8.7	2.1
							and	43.1	45.8	2.7	4.0	1.7
MUTGC23042	20159	51416	111	-45	74	81	62.0	65.5	3.5	3.4	2.9
MUTGC23043	20146	51433	111	-42	65	93	71.0	78.5	7.5	1.8	6.2
MUTGC23044	20146	51433	111	-38	43	96	80.1	87.0	7.0	3.3	4.9
MUTGC23045	20146	51433	111	-33	29	108			NSI		
MUTGC23046	20146	51433	112	-21	14	150	131.4	136.8	5.4	6.1	2.1
MUTGC23047	20146	51433	112	-18	10	165	148.1	158.0	9.9	7.0	3.2
MUTGC23048	20146	51433	112	-8	10	159	149.0	150.3	1.3	3.0	0.3
MUTGC23049	20146	51433	112	-15	7	186	176.1	179.8	3.8	2.7	0.7
MUTGC23059	20187	51330	93	-13	32	60	42.1	44.1	2.0	3.0	1.3
MUTGC23060	19981	51626	-106	-12	50	219	179.9	204.6	24.7	7.3	21.4
MUTGC23061	19981	51626	-106	-10	40	246	200.4	233.0	32.6	7.5	25.0
MUTGC23062	19981	51626	-106	-3	43	234	190.8	221.0	30.2	8.9	23.6
MUTGC23063	19980	51633	-106	-9	35	267	223.0	251.4	28.4	9.3	16.5
MUTGC23064A	19981	51626	-106	-4	33	276	238.0	261.1	23.1	8.1	15.8
MUTGC23065	19979	51633	-106	-4	31	285	244.8	263.3	18.5	8.7	9.2
MUTGC23066	19981	51626	-106	-6	75	186	167.4	168.5	1.2	6.7	1.1
							and	177.2	178.6	1.4	6.3	1.3
MUTGC23089	20140	51606	-136	-21	138	60	26.1	33.4	7.3	1.7	5.3

APPENDIX B: DRILL RESULTS

SOUTH KALGOORLIE - HBJ SIGNIFICANT INTERSECTIONS											
Drill Hole ID	Easting (LOC 48)	Northing (LOC 48)	Collar RL (LOC 48)	Dip (deg)	Azimuth (deg, LOC 48)	Total depth (m)	From (m)	To (m)	Intersection (m)	Au (gpt) uncut	Est True Thickness (m)
MUTGC23090	20139	51606	-137	-38	110	45	18.9	32.2	13.2	7.1	9.5
MUTGC23091	20139	51606	-137	-61	93	63	31.9	44.0	12.1	4.7	7.6
MUTGC23092	20138	51615	-137	-43	72	45	19.6	27.4	7.8	6.2	5.0
MUTGC23095	19975	51646	-106	-25	79	207	188.0	189.6	1.6	2.6	1.5
MUTGC23096	19975	51646	-106	-22	71	207	186.0	188.6	2.6	20.9	2.4
MUTGC23097	19975	51646	-106	-24	65	213	193.7	196.1	2.4	2.6	2.1
MUTGC23098	19975	51646	-106	-23	96	221	188.0	201.0	13.0	9.5	12.6
MUTGC23100	19975	51646	-106	-21	87	204	179.7	187.0	7.3	7.1	7.1
MUTGC23101	19975	51646	-106	-25	92	210	185.8	194.6	8.8	7.4	8.8
MUTGC23139	19947	51723	-104	-3	36	287	269.1	271.5	2.4	3.3	1.5
MUTGC23140	19947	51723	-104	-3	40	273	248.0	254.5	6.5	4.3	4.4
						and	255.3	259.1	3.8	4.9	2.6
MUTGC23141	19947	51723	-104	-3	47	261	220.5	233.8	13.3	4.1	9.8
						and	247.0	250.0	3.0	4.0	3.0
MUTGC23142	19946	51724	-104	3	40	270	247.4	254.0	6.6	9.3	4.5
MUTGC23143	19947	51723	-104	-9	40	270	248.6	252.2	3.6	13.0	2.6
MUTGC23144	19946	51723	-104	4	44	276	236.7	246.1	9.5	12.3	6.8
MUTGC23145	19947	51723	-104	-10	48	246	225.0	234.1	9.1	7.7	5.2
MUTGC23175	20119	51850	-131	0	105	15	0.0	2.9	2.9	7.7	2.2
MUTGC23176	20120	51857	-131	0	105	12	0.0	1.4	1.4	10.7	1.2
MUTGC23177	20120	51857	-131	0	65	12	0.0	1.3	1.3	10.7	0.6
MUTRSD23067	20138	51440	112	-38	5	261	199.0	208.0	9.0	2.7	2.4
MUTRSD23068	20140	51439	112	-63	28	213	191.1	195.0	3.9	0.8	1.4
MUTRSD23071	19983	51609	-104	31	82	231	194.3	198.5	4.2	1.1	2.6
MUTRSD23072	19983	51609	-105	24	73	204	182.1	184.6	2.5	6.6	1.7
MUTRSD23073	19983	51609	-104	31	57	243	224.9	225.4	0.5	1.2	0.3
MUTRSD23074	19983	51609	-105	25	46	255	240.2	246.3	6.1	1.2	2.8
MUTRSD23075	19989	51567	-105	31	83	225	194.0	195.9	1.9	4.5	1.4
MUTRSD23076	19989	51567	-105	29	97	227	203.8	205.3	1.5	4.3	1.2
MUTRSD23077	19989	51567	-105	18	106	228			NSI		
MUTRSD23084	20072	51648	-132	-42	60	133	104.1	106.1	2.0	2.3	1.7
MUTRSD23085	20072	51652	-131	-39	24	191	146.8	158.2	11.5	8.7	5.5
MUTRSD23086	20071	51652	-131	-11	17	204	164.0	182.6	18.6	12.0	6.3
MUTRSD23087	20072	51648	-132	-53	86	153	95.3	99.7	4.4	8.6	3.2
						and	121.5	123.3	1.8	1.5	1.5
MUTRSD23088	20072	51652	-131	-30	30	159	95.8	101.0	5.3	4.6	3.1
						and	127.9	132.7	4.9	2.7	2.9
MUTRSD23120	19948	51720	-105	-28	49	279	234.7	239.6	5.0	1.1	3.9
						and	239.6	242.8	3.2	4.5	1.3
MUTRSD23121	19948	51721	-104	-19	52	240	221.0	224.7	3.7	13.0	3.1
MUTRSD23122	19948	51721	-104	-20	44	270	248.5	250.7	2.2	4.4	1.6
MUTRSD23123	19948	51721	-105	-23	36	306	282.1	285.4	3.3	4.7	1.9
MUTRSD23124	19948	51721	-104	-15	36	300	272.2	275.5	3.3	8.2	2.0
MUTRSD23125	19963	51677	-105	-19	23	366	334.0	338.4	4.4	4.6	3.0
MUTRSD23126	19948	51721	-104	-13	32	309	288.0	293.0	5.0	4.5	3.3
MUTRSD23127	19963	51677	-105	-8	21	358	339.0	347.8	8.8	3.1	3.3
MUTRSD23128	19946	51724	-104	-1	33	321	273.4	277.4	3.9	4.9	1.9
MUTRSD23129	19948	51721	-104	2	27	342	320.5	324.0	3.5	5.7	1.4
MUTRSD23129	19948	51721	-104	2	27	342	225.6	263.0	37.4	6.1	
MUTRSD23130	19948	51721	-104	4	31	315	283.1	287.1	4.0	9.2	1.7
						and	199.9	222.8	22.9	1.8	
MUTRSD23132	19948	51721	-103	13	34	318	275.9	283.6	7.6	8.3	3.2
						and	204.4	223.0	18.7	1.0	
MUTRSD23134	19948	51721	-103	16	42	293	247.9	255.5	7.6	5.1	4.8
MUTRT23037	19979	51633	-105	12	19	415	370.4	375.5	5.2	4.8	2.4
MUTRT23038	19979	51633	-106	1	15	462	296.0	303.0	7.0	6.9	6.5
						and	307.3	333.3	26.0	3.7	24.2
						and	416.6	422.5	5.9	5.6	3.1
MUTRT23182C	19943	51727	-104	-2	358	501	472.1	476.3	4.2	5.4	2.6
						and	430.5	442.4	11.9	2.6	
MUTRT23183	19945	51727	-104	-20	7	516	484.4	488.4	4.0	5.1	2.6
						and	421.1	440.3	19.2	8.9	
MUTRT23184	19945	51727	-104	-33	15	532	280.9	326.4	45.4	5.1	
MWGC23187	20112	51598	129	34	7	108	44.2	107.5	63.3	1.7	
MWGC23188	20111	51598	129	35	357	105	30.0	104.8	74.8	0.6	
MWGC23189	20111	51573	186	7	3	177	0.0	163.9	163.9	1.4	
MWGC23190	20111	51573	186	13	0	153	0.0	147.3	147.3	0.7	
MWGC23191	20112	51573	186	12	8	144	0.0	123.0	123.0	0.8	
MWGC23192	20111	51573	186	18	4	177	0.0	176.9	176.9	0.4	
MWGC24001	20106	51669	130	16	0	198	0.0	144.0	144.0	3.4	
MWGC24002	20106	51669	129	8	359	216	0.0	142.0	142.0	1.6	
MWGC24003	20106	51669	129	-2	358	156	0.0	156.0	156.0	2.3	
MWRSD23137	20136	51551	127	19	353	237	121.6	215.3	93.7	1.1	
MWRSD23138	20136	51551	127	14	352	222	125.0	222.0	97.0	2.2	
MWRSD24009	20098	51770	129	-77	270	84	0.0	61.0	61.0	0.2	
MWRSD24010	20098	51770	129	-66	236	57	0.0	29.7	29.7	0.1	
MWRSD24011	20098	51770	129	-75	203	79	0.0	59.3	59.3	4.4	
MWRSD24012	20098	51770	129	-62	200	90	0.0	75.0	75.0	1.2	

Northern Star Resources Limited - ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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APPENDIX B: DRILL RESULTS

SOUTH KALGOORLIE - HBJ SIGNIFICANT INTERSECTIONS											
Drill Hole ID	Easting (LOC 48)	Northing (LOC 48)	Collar RL (LOC 48)	Dip (deg)	Azimuth (deg, LOC 48)	Total depth (m)	From (m)	To (m)	Intersection (m)	Au (gpt) uncut	Est True Thickness (m)
MWRSD24014	20099	51752	129	-66	202	84	18.3	73.0	54.8	1.7	
MWRSD24015	20099	51751	129	-56	195	96	20.5	64.3	43.9	1.9	
MWRSD24016	20098	51730	129	-67	222	54	2.3	17.8	15.5	0.8	
MWRSD24018	20099	51709	128	-71	232	54	9.9	37.6	27.8	1.2	
MWRSD24019	20100	51709	128	-62	185	87	26.0	29.0	3.0	4.3	
MWRSD24020	20100	51708	128	-57	197	60	0.0	47.1	47.1	0.4	
MWRT24004	20108	51766	-102	29	345	188	154.0	156.0	2.0	0.0	
MWRT24005	20109	51766	-103	13	348	269	156.4	192.2	35.8	3.3	
MWRT24006	20109	51766	-103	10	343	186	135.5	162.3	26.9	3.7	
MWRT24007	20109	51766	-102	21	348	269	157.4	184.8	27.4	4.0	
MWRT24008	20109	51766	-103	9	349	330	179.3	215.0	35.7	2.4	

KALGOORLIE OPERATIONS - HERCULES SIGNIFICANT INTERSECTIONS											
Drill Hole ID	Easting (MGA)	Northing (MGA)	Collar RL (MGA)	Dip (deg)	Azimuth (deg, MGA)	Total depth (m)	From (m)	To (m)	Intersection (m)	Au (gpt) uncut	Est True Thickness (m)
HEDD23007	350661	6569501	361	-57	277	435.72	154.00	162.80	8.80	2.82	
							including 160.70	161.28	0.58	36.20	
							and 249.00	254.00	5.00	10.18	
							including 250.00	250.65	0.65	71.00	
							and 259.00	268.00	9.00	1.66	
							and 277.00	283.00	6.00	7.34	
							including 277.73	278.15	0.42	27.50	
							including 279.70	280.25	0.55	47.90	
							and 296.00	307.38	11.38	3.35	
							including 306.85	307.38	0.53	43.90	
							and 325.95	338.63	12.68	1.43	
HEDD23008A	350791	6569358	360	-55	275	474.95	343.00	343.98	0.98	33.00	
							and 359.00	360.40	1.40	9.08	
							including 359.64	360.40	0.76	14.20	
							and 399.00	415.02	16.02	2.23	
							including 412.95	414.00	1.05	15.30	
							and 428.00	450.56	22.56	6.91	
							including 432.00	433.00	1.00	15.20	
							including 433.00	433.65	0.65	114.00	
							including 440.00	441.00	1.00	11.65	
							including 448.65	449.50	0.85	13.90	
HEDD23013	350800	6569598	359	-57	269	564.74	452.00	453.98	1.98	5.94	
							and 459.77	461.00	1.23	9.88	
							including 459.77	460.41	0.64	18.05	
							and 504.00	513.96	9.96	7.30	
							including 510.03	511.13	1.10	55.60	
							and 519.10	524.02	4.92	3.91	
							including 522.90	524.02	1.12	10.30	
							and 553.00	560.00	7.00	3.17	
							including 554.00	555.00	1.00	17.80	
HEDD23013D1	350800	6569598	359	-57	269	674.51	549.97	561.00	11.03	2.87	
							including 554.50	555.08	0.58	37.90	
HEDD23017	350735	6569374	361	-56	275	409.87	198.00	199.00	1.00	17.05	
							and 266.00	271.70	5.70	3.97	
							and 306.00	309.35	3.35	3.41	
							including 308.81	309.35	0.54	16.95	
							and 361.60	362.30	0.70	22.10	
HEDD23018	350875	6569414	360	-60	270	655.01	615.49	625.58	10.09	6.87	
							including 616.36	617.00	0.64	27.00	
							including 617.64	618.40	0.76	18.05	
							including 620.49	620.94	0.45	16.55	
							including 623.71	624.36	0.65	11.25	
							and 631.18	637.00	5.82	2.95	
							including 631.18	631.94	0.76	16.95	
HERC23063	350439	6569554	362	-55	275	180	55.00	69.00	14.00	1.45	
							and 76.00	122.00	46.00	2.20	
							including 106.00	107.00	1.00	13.25	
							including 113.00	114.00	1.00	29.40	
							including 120.00	121.00	1.00	13.85	
							and 132.00	150.00	18.00	2.52	
							including 142.00	143.00	1.00	14.85	
HERC23064	350479	6569470	362	-55	278	192	78.00	102.00	24.00	1.54	
HERC23066	350559	6569402	362	-56	280	192	74.00	93.00	19.00	0.93	
HERC23067	350581	6569345	363	-55	279	180	64.00	71.00	7.00	3.51	
							including 64.00	65.00	1.00	16.75	
							and 165.00	167.00	2.00	5.12	
HERC23068	350623	6569294	362	-54	278	174	57.00	64.00	7.00	2.02	
							and 70.00	78.00	8.00	1.68	
HERC23069	350697	6569248	361	-55	278	204	80.00	84.00	4.00	10.98	
							including 81.00	82.00	1.00	29.60	
							and 102.00	108.00	6.00	4.82	

Northern Star Resources Limited - ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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APPENDIX B: DRILL RESULTS

KALGOORLIE OPERATIONS - HERCULES SIGNIFICANT INTERSECTIONS											
Drill Hole ID	Easting (MGA)	Northing (MGA)	Collar RL (MGA)	Dip (deg)	Azimuth (deg, MGA)	Total depth (m)	From (m)	To (m)	Intersection (m)	Au (gpt) uncut	Est True Thickness (m)
							including 105.00	106.00	1.00	13.55	
							including 107.00	108.00	1.00	12.50	
HERCD23004	350773	6569286	360	-56	281	403	261.07	269.00	7.93	1.85	
							including 268.42	269.00	0.58	13.55	
							and 298.45	299.38	0.93	17.39	
							including 298.45	298.95	0.50	31.70	
HERCD23006	350754	6569481	360	-57	270	511	365.04	366.06	1.02	21.40	
							and 375.90	380.98	5.08	3.53	
							including 378.73	379.50	0.77	18.45	
							and 392.05	408.00	15.95	18.74	
							including 393.00	394.10	1.10	34.90	
							including 401.27	402.00	0.73	90.20	
							including 402.86	403.50	0.64	176.50	
							including 403.98	404.64	0.66	12.95	
							including 404.64	405.74	1.10	42.20	
							including 406.21	407.00	0.79	13.20	
							and 445.00	449.40	4.40	3.72	
							including 448.83	449.40	0.57	10.15	
HERCD23009	350818	6569413	359	-56	274	547	323.41	329.00	5.59	8.50	
							including 323.41	323.75	0.34	127.00	
							and 454.53	473.13	18.60	2.68	
							including 463.53	464.28	0.75	14.00	
							and 526.00	529.00	3.00	6.22	
							including 527.00	528.02	1.02	17.30	
HERCD23010	350769	6569534	360	-57	273	556.02	343.00	350.07	7.07	1.52	
							and 445.10	453.65	8.55	6.40	
							including 445.59	446.53	0.94	15.50	
							including 449.67	450.18	0.51	29.00	
							including 451.00	452.00	1.00	20.90	
							and 461.46	467.00	5.54	3.45	
							including 461.46	462.18	0.72	20.30	
							and 479.00	483.00	4.00	3.18	
HERCD23011	350681	6569558	361	-57	274	511.02	244.00	257.04	13.04	1.24	
							and 293.59	294.24	0.65	70.40	
							and 318.07	356.18	38.11	4.66	
							including 319.64	320.22	0.58	14.20	
							including 323.74	324.71	0.97	31.60	
							including 329.62	330.00	0.38	140.00	
							including 336.47	336.92	0.45	23.70	
							including 339.97	340.53	0.56	23.30	
							including 346.29	347.00	0.71	19.15	
							including 351.51	352.00	0.49	18.95	
HERCD23012	350840	6569471	359	-57	273	601.15	379.49	400.00	20.51	2.88	
							including 393.91	395.00	1.09	12.40	
							including 398.00	398.50	0.50	26.80	
							including 399.52	400.00	0.48	29.50	
							and 409.74	412.00	2.26	5.50	
							including 409.74	410.80	1.06	10.90	
							and 493.00	497.04	4.04	5.59	
							including 493.66	494.33	0.67	10.80	
							including 495.41	496.08	0.67	16.55	
							and 516.04	551.00	34.96	6.45	
							including 516.94	517.58	0.64	48.30	
							including 517.58	518.00	0.42	15.60	
							including 526.33	527.00	0.67	30.10	
							including 530.00	530.53	0.53	17.20	
							including 531.92	532.50	0.58	41.10	
							including 541.79	542.38	0.59	60.40	
							including 543.00	544.00	1.00	12.25	
							including 549.58	550.40	0.82	30.60	
							including 550.40	551.00	0.60	37.40	
HERCD23014	350720	6569618	360	-56	267	622.59	381.54	388.26	6.72	8.04	
							including 381.54	381.98	0.44	23.60	
							including 383.86	384.31	0.45	41.20	
							including 384.31	385.09	0.78	10.60	
							including 386.94	387.37	0.43	35.70	
							and 395.04	397.00	1.96	9.27	
							and 403.06	408.65	5.59	9.14	
							including 403.63	404.55	0.92	32.50	
							including 407.11	407.79	0.68	18.25	
							and 425.00	430.99	5.99	5.99	
							including 425.56	426.51	0.95	12.05	
							including 428.65	429.05	0.40	17.30	
HERCD23015	350624	6569628	361	-57	273	487.1	255.95	267.80	11.85	2.02	
							including 261.93	262.67	0.74	12.50	
							and 279.00	298.00	19.00	12.95	
							including 281.14	282.15	1.01	93.60	
							including 282.15	282.98	0.83	11.80	

APPENDIX B: DRILL RESULTS

						KALGOORLIE OPERATIONS - HERCULES SIGNIFICANT INTERSECTIONS					
Drill Hole ID	Easting (MGA)	Northing (MGA)	Collar RL (MGA)	Dip (deg)	Azimuth (deg, MGA)	Total depth (m)	From (m)	To (m)	Intersection (m)	Au (gpt) uncut	Est True Thickness (m)
							including	290.00	291.12	1.12	43.50	
						including	291.12	292.07	0.95	25.80	
						including	292.07	293.00	0.93	21.10	
						and	305.00	323.00	18.00	2.22	
						including	311.00	312.00	1.00	18.90	
						and	329.00	337.05	8.05	1.34	
						and	348.00	349.00	1.00	10.10	
HERCD23016	350547	6569669	361	-58	274	409.1	203.35	207.00	3.65	4.99	
						including	206.30	207.00	0.70	10.60	
						and	371.95	379.03	7.08	9.13	
						including	371.95	372.97	1.02	43.10	
						including	372.97	374.00	1.03	15.90	

					CAROSUE DAM - QENA SIGNIFICANT INTERSECTIONS						
Drill Hole ID	Easting (MGA)	Northing (MGA)	Collar RL (MGA)	Dip (deg)	Azimuth (deg, MGA)	Total depth (m)	From (m)	To (m)	Intersection (m)	Au (gpt) uncut	Est True Thickness (m)
QERSD031	437415	6668885	344.8	-60.0	230	400	309.0	325	16	1.5	11.2
QERSD035	437455	6668851	344.3	-60.0	235	575	368.9	397.66	29	2.6	19.1
QERSD041A	437506	6668781	344.7	-60.0	230	401	381.3	391.66	10	5.7	6.8
							and	374.0	380.86	7	7.3	4.5
QERSD044	437473	6668830	344.5	-60.0	230	400	346.8	381	34	2.9	23.2
							and	240.0	243	3	7.3	2.0
QERSD046	437531	6668760	344.7	-60.0	230	412	268.0	276	8	10.4	5.5
							and	362.0	373	11	5.3	7.9
QERSD047	437537	6668722	344.9	-60.0	230	391	341.0	348.17	7	3.2	5.1
QERSD049	437419	6668920	344.5	-60.0	230	400	350.0	379	29	1.6	19.8

						JUNDEE - GRIFFIN SIGNIFICANT INTERSECTIONS					
Drill Hole ID	Easting (MGA)	Northing (MGA)	Collar RL (MGA)	Dip (deg)	Azimuth (deg, MGA)	Total depth (m)	From (m)	To (m)	Intersection (m)	Au (gpt) uncut	Est True Thickness (m)
CDGC1133	258652	7082259	384	14	59	340.0	277.8	278.1	0.3	7.9	0.3
CDGC1141	258728	7082422	381	-37	105	64.0	44.0	44.3	0.3	7.2	0.3
CDGC1143	258650	7082259	383	-21	22	461.0	384.1	384.4	0.3	12.3	0.3
							and	386.5	387.0	0.5	40.5	0.5
CDGC1148	258650	7082260	383	-20	33	361.0	309.0	309.4	0.4	11.4	0.3
CDGC1149	258651	7082260	383	-18	37	340.0	294.0	294.5	0.5	5.3	0.4
CDGC1155	258591	7082567	385	-48	49	261.0	86.5	87.0	0.5	33.2	0.3
CDGC1155							and	174.8	175.5	0.7	22.0	0.4
CDGC1156	258591	7082567	385	-54	53	293.0	88.5	89.0	0.5	5.4	0.4
CDGC1157	258591	7082566	385	-45	61	251.0	74.8	75.4	0.7	12.1	0.3
							and	135.3	135.8	0.5	39.4	0.3
							and	136.2	137.5	1.3	14.0	0.5
							and	181.2	182.1	0.9	35.8	0.3
							and	187.0	187.7	0.7	14.7	0.5
CDGC1158	258591	7082567	386	-1	67	196.0	77.3	77.8	0.5	23.4	0.3
CDGC1159	258591	7082566	385	-58	69	296.0	82.0	82.5	0.5	18.9	0.4
CDGC1160	258591	7082566	385	-27	76	226.0	65.5	66.4	0.9	14.1	0.4
CDGC1161	258592	7082566	385	-9	77	208.0	69.2	69.5	0.3	13.7	0.3
							and	194.0	195.0	1.0	38.7	1.0
CDGC1162	258592	7082564	385	-23	83	317.0	65.0	65.3	0.4	11.2	0.4
							and	193.5	193.8	0.4	15.2	0.4
CDGC1163	258592	7082564	384	-42	88	390.0	69.0	69.3	0.3	16.1	0.3
							and	205.4	205.9	0.5	65.7	0.5
CDGC1164A	258592	7082565	385	-35	88	357.2	65.5	66.3	0.8	15.0	0.8
							and	166.4	166.8	0.4	15.0	0.4
							and	179.0	179.3	0.3	18.4	0.3
CDGC1166	258592	7082564	385	-51	91	291.0	73.5	74.0	0.5	7.7	0.5
							and	221.1	221.4	0.3	322.5	0.3
CDGC1168	258758	7082364	382	22	86	114.2	97.2	98.3	1.1	4.5	0.4
CDGC1169	258759	7082364	380	-17	97	82.0	54.7	55.1	0.4	28.3	0.3
CDGC1172	258588	7082566	385	-40	7	214.0	151.7	152.0	0.3	58.9	0.3
							and	157.4	158.2	0.8	12.6	0.3
CDGC1173	258588	7082566	385	-34	13	196.0	142.9	143.4	0.5	19.9	0.3
							and	143.4	143.7	0.3	48.8	0.3
							and	143.7	144.0	0.3	28.3	0.3
							and	144.0	144.3	0.3	23.3	0.3
CDGC1175	258591	7082566	385	-74	29	150.0	134.8	135.1	0.3	12.8	0.3
CDGC1176	258590	7082567	385	-55	30	133.0	106.2	106.5	0.3	30.3	0.3
CDGC1177	258590	7082567	385	-27	32	136.0	110.2	110.8	0.6	12.4	0.6
CDGC1178	258590	7082567	387	28	47	176.0	138.8	140.2	1.4	74.4	0.6
CDGC1178	258590	7082567	387	28	47	176.0	142.2	142.8	0.6	5.2	0.3
CDGC1180	258592	7082564	387	34	61	185.0	142.5	143.1	0.6	176.9	0.4
							and	157.3	158.0	0.7	11.1	0.3
CDGC1181	258592	7082564	387	20	66	133.0	107.8	108.9	1.2	11.5	0.3
CDGC1182	258592	7082564	387	37	71	189.0	150.0	151.1	1.1	12.2	0.5
CDGC1183	258592	7082564	387	26	72	145.1	118.8	119.3	0.5	26.8	0.3
CDGC1189	258648	7082478	384	14	81	128.0	105.2	107.0	1.8	9.7	0.5
CDGC1190	258648	7082478	383	-32	89	100.0	79.9	80.3	0.4	30.6	0.3

Northern Star Resources Limited - ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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APPENDIX B: DRILL RESULTS

JUNDEE - GRIFFIN SIGNIFICANT INTERSECTIONS											
CDGC1196	258648	7082478	386	27	100	142.0	116.6	117.3	0.7	8.2	0.3
CDGC1197	258648	7082478	383	13	112	122.0	95.0	95.5	0.5	18.1	0.3
						and	96.1	96.6	0.5	6.6	0.3
CDGC1198	258602	7082543	387	28	81	154.0	128.3	128.6	0.3	10.7	0.3
CDGC1199	258602	7082543	387	37	89	230.0	165.6	166.0	0.4	12.7	0.3
CDGC1200	258602	7082543	386	20	93	137.0	120.7	121.0	0.3	6.3	0.3
CDGC1203	258612	7082525	384	-32	90	116.1	86.2	86.6	0.4	9.7	0.4
CDGC1206	258619	7082511	383	-53	88	110.0	87.9	88.2	0.3	7.0	0.3
CDGC1206						and	95.8	96.2	0.4	17.4	0.4
CDGC1208	258619	7082511	385	-12	108	110.0	90.5	90.9	0.4	37.1	0.3
CDGC1209	258602	7082543	386	5	95	113.0	96.1	96.6	0.5	5.2	0.3
CDGC1209						and	97.9	98.2	0.3	15.2	0.3
CDGC1214	258590	7082567	386	4	49	241.0	95.3	95.6	0.3	42.6	0.3
CDGC1214						and	184.8	185.8	1.1	19.4	0.3
CDGC1215	258592	7082565	385	-49	73	228.0	201.7	202.0	0.3	9.1	0.3
						and	205.2	206.1	0.9	24.0	0.4
						and	207.2	207.6	0.4	89.6	0.3
CDGC1217	258592	7082565	385	-39	79	400.2	67.4	67.8	0.5	11.3	0.4
						and	168.5	169.5	1.0	107.7	0.6
						and	170.5	171.3	0.8	17.9	0.6
						and	182.2	182.5	0.3	16.6	0.3
CDGC1218	258592	7082564	385	-43	97	257.0	211.9	212.2	0.4	22.8	0.3
CDGC1228	258590	7082567	388	32	56	192.0	141.6	141.9	0.3	16.4	0.3
						and	141.9	143.2	1.3	75.8	0.6
CDGC1229	258591	7082567	387	24	65	200.1	117.0	117.6	0.6	5.4	0.3
CDGT0027	258591	7082566	386	2	60	190.0	82.4	82.8	0.4	16.4	0.3
CDGT0032	258619	7082511	385	15	90	155.0	126.8	127.1	0.3	9.8	0.3
CDGT0038	258928	7082164	379	80	280	79.0	30.6	30.9	0.3	6.3	0.3
CDXP0700	258680	7082436	382	-24	263	213.0	14.5	15.0	0.5	7.1	0.3

JUNDEE - RAMONE SIGNIFICANT INTERSECTIONS											
Drill Hole ID	Easting (MGA)	Northing (MGA)	Collar RL (MGA)	Dip (deg)	Azimuth (deg, MGA)	Total depth (m)	From (m)	To (m)	Intersection (m)	Au (gpt) uncut	Est True Thickness (m)
RUGC0384	285812	7060544	203	-10.5	16.0	252.3	112.0	112.6	0.6	19.4	0.5
							140.8	141.2	0.4	75.8	0.3
							172.6	174.3	1.8	15.5	1.3
							183.0	188.3	5.3	4.1	4.0
							222.0	226.6	4.6	3.9	3.5
RUGC0385	285812	7060544	203	-14	22.0	250.0	130.4	135.6	5.2	2.3	3.5
							139.0	142.0	3.0	2.8	2.5
							149.2	151.8	2.7	5.0	2.2
							177.9	178.5	0.6	20.5	0.5
							198.4	207.0	8.6	3.2	7.0
RUGC0386	285813	7060544	203	-13	29.0	250.0	123.7	124.3	0.6	12.6	0.5
RUGC0387	285814	7060544	203	-10	34.0	250.3	116.2	116.5	0.3	35.3	0.3
RUGC0388	285813	7060544	202	-20	17.5	246.7	135.7	136.3	0.6	14.1	0.5
							141.4	142.2	0.8	25.6	0.5
							145.4	145.7	0.3	21.1	0.3
							150.0	151.0	1.0	11.0	0.8
							230.2	230.7	0.5	38.0	0.3
							240.7	241.5	0.8	12.1	0.6
RUGC0389	285813	7060544	202	-20	29.0	250.0	113.2	113.6	0.3	36.8	0.3
							220.0	221.0	1.0	8.1	0.7
RUGC0390	285813	7060544	202	-17	25.0	249.3	122.0	122.9	0.9	9.6	0.8
							128.4	128.7	0.3	30.8	0.3
							129.1	132.5	3.4	7.6	2.5
RUGC0406	285700	7060505	189	-3.5	311.0	204.0	152.9	153.2	0.3	27.0	0.3
							155.1	155.4	0.3	21.8	0.3
							183.7	184.4	0.6	12.6	0.5
							188.0	189.0	1.0	9.0	0.6
RUGC0407	285700	7060505	189	-1	35.0	194.0	86.4	86.9	0.5	39.6	0.3
							127.7	128.0	0.3	29.6	0.3
							161.3	163.0	1.7	16.7	1.2
							164.0	165.8	1.8	15.7	1.0
RUGC0408	285700	7060505	189	-8	319.0	195.0	90.2	90.8	0.6	33.8	0.5
							156.9	157.8	0.8	13.0	0.5
							162.0	165.5	3.5	12.4	2.8
							174.0	174.6	0.6	30.5	0.5
RUGC0409	285700	7060505	190	2	25.0	192.0	99.7	100.0	0.3	76.1	0.3
							167.5	169.0	1.5	16.4	1.2
RUGC0410	285700	7060505	189	-6	25.0	195.0	92.6	93.3	0.7	11.0	0.5
							127.7	128.2	0.5	37.5	0.3
							140.7	141.2	0.5	21.6	0.3
RUGC0411	285699	7060505	190	3.5	16.0	187.4	63.0	63.9	0.9	20.3	0.6
RUGC0412	285699	7060504	189	3.5	9.0	200.0	65.4	66.1	0.6	40.7	0.5
							72.6	75.3	2.7	52.1	2.4
							78.9	79.6	0.8	11.1	0.5
							96.3	97.0	0.7	156.1	0.5
RUGC0413	285700	7060505	189	-11	321.0	200.0	53.0	53.4	0.4	18.7	0.3
							98.4	98.7	0.4	95.1	0.3

APPENDIX B: DRILL RESULTS

JUNDEE - RAMONE SIGNIFICANT INTERSECTIONS											
Drill Hole ID	Easting (MGA)	Northing (MGA)	Collar RL (MGA)	Dip (deg)	Azimuth (deg, MGA)	Total depth (m)	From (m)	To (m)	Intersection (m)	Au (gpt) uncut	Est True Thickness (m)
							164.8	165.4	0.5	45.7	0.3
							165.7	167.6	1.9	10.1	1.2
RUGC0414	285700	7060505	189	-10	27.0	190.0	134.1	134.4	0.3	65.9	0.3
							140.7	141.2	0.5	65.6	0.3
RUGC0415	285700	7060505	189	-7	15.0	194.0	170.0	170.9	0.9	38.4	0.6
RUGC0416	285701	7060505	189	-13	310.0	210.0	64.4	64.7	0.3	23.5	0.3
							68.0	68.7	0.7	16.1	0.5
							82.2	82.5	0.3	108.7	0.3
							120.0	120.3	0.3	17.9	0.3
							179.1	181.6	2.5	23.4	2.0
							187.0	188.1	1.1	17.5	0.8
RUGC0417	285701	7060505	189	-16.5	316.0	198.0	99.4	99.8	0.5	149.8	0.3
							178.0	180.3	2.3	31.0	2.0
RUGC0418	285700	7060505	189	-22	34.0	195.0	103.0	104.0	1.0	16.0	0.6
RUGC0419	285700	7060505	189	-17	27.0	190.0	68.3	68.8	0.6	50.2	0.3
RUGC0420	285700	7060505	189	-13	14.0	182.8	93.0	93.4	0.4	17.7	0.3
RUGC0421	285695	7060505	162	-8	320.0	175.6	144.9	146.0	1.1	14.3	0.8
							150.3	152.8	2.5	23.1	1.8
							165.0	166.4	1.4	23.3	1.1
RUGC0422	285695	7060505	161	-20	318.0	180.1	102.4	102.7	0.3	21.6	0.3
							107.9	108.5	0.7	127.3	0.5
RUGC0424	285695	7060505	161	-15	19.0	179.8	62.0	63.0	1.0	9.7	0.8
							63.3	64.2	0.9	17.8	0.6
RUGC0429	285582	7060501	231	-26	21.0	120.0	99.0	101.1	2.1	9.3	1.7
							102.0	104.4	2.4	26.4	1.9
RUGC0430	285582	7060502	231	-22	32.0	120.0	12.7	13.2	0.5	26.3	0.3
							99.8	101.0	1.2	11.3	1.0
RUGC0432	285582	7060501	230	-31	8.0	125.0	99.4	101.0	1.6	6.9	1.2
RUGC0436	285796	7060539	202	-27	19.0	258.3	126.6	127.2	0.6	21.2	0.5
							138.4	139.0	0.6	44.4	0.5
RUGC0437	285796	7060539	202	-31	23.0	258.0	178.4	180.7	2.3	53.6	1.8
RUGC0438	285796	7060539	202	-28	32.0	260.0	190.6	191.2	0.6	22.4	0.5
							202.3	203.0	0.7	12.2	0.5
							231.0	232.0	1.0	8.0	0.7
RUGC0439	285796	7060539	202	-35	16.0	275.0	141.8	142.9	1.1	65.8	0.8
RUGC0441	285813	7060544	202	-23	26.0	254.9	232.8	233.2	0.3	26.3	0.3
							236.6	237.0	0.4	25.1	0.3
							238.6	240.0	1.4	11.3	1.1
RUGC0442	285813	7060544	202	-30	32.0	261.0	143.2	143.6	0.3	18.9	0.3
RUGC0443	285814	7060544	202	-25	322.0	265.0	134.9	137.0	2.1	17.9	1.5
RUGC0444	285813	7060544	203	-17	35.0	235.7	125.9	127.1	1.2	18.3	0.8
RUGC0445	285814	7060544	203	-7	320.0	239.9	111.2	112.0	0.8	46.3	0.6
							215.9	216.2	0.3	23.7	0.3
RUGC0453	285583	7060502	230	-41	295.0	155.8	15.3	15.8	0.4	17.7	0.3
RUGC0456	285704	7060509	161	-31	291.0	215.1	81.4	81.7	0.4	35.0	0.3
RUGC0457	285704	7060509	161	-24	300.0	225.5	126.0	126.4	0.4	17.0	0.3
RUGC0459	285704	7060509	161	-13	310.0	201.1	96.4	96.7	0.4	39.0	0.3
							170.2	170.5	0.3	29.8	0.3
RUGC0461	285704	7060509	161	-33	302.0	141.0	80.1	80.7	0.6	27.2	0.5
							93.3	94.4	1.1	33.4	0.7
							108.2	108.8	0.6	31.4	0.5
RUGC0463	285692	7060504	161	-15	7.0	190.0	132.5	133.1	0.6	22.3	0.5
RUGC0465	285815	7060544	203	-41	31.0	176.8	143.3	143.6	0.3	38.1	0.3
RUGC0466	285815	7060544	203	-37	321.0	162.1	131.4	132.0	0.6	11.6	0.5
RUGC0467	285815	7060544	203	-42	315.0	170.9	129.6	131.0	1.4	18.2	1.1
RUGC0473	285825	7060547	203	-22	290.0	150.0	123.8	124.6	0.8	16.9	0.5
RUGC0475	285825	7060547	203	-32	290.0	165.0	120.7	123.0	2.3	48.4	2.0
RUGC0476	285825	7060547	203	-40	303.0	159.1	125.0	125.5	0.5	20.5	0.3
RUGC0477	285825	7060547	203	-34	299.0	159.0	125.1	126.2	1.1	10.4	0.6
							130.3	130.6	0.3	35.8	0.3
RUGC0478	285825	7060547	203	-39	292.0	168.0	140.0	141.0	1.0	9.9	0.7
							145.9	146.6	0.7	13.2	0.5
RUGC0479	285825	7060547	203	-33	285.0	165.0	157.0	157.8	0.8	20.7	0.5
RUGC0481	285825	7060547	203	-28	275.0	170.7	168.1	170.4	2.2	13.7	1.5
RURD0040	285815	7060544	204	16	310.0	329.7	254.4	256.2	1.8	3.8	1.5
RURD0042	285815	7060545	203	-3	307.0	245.0	119.7	120.2	0.5	12.4	0.5
							183.8	194.9	11.1	3.8	6.0
RURD0046	285815	7060544	203	-8	302.0	258.1	245.2	251.5	6.3	3.5	5.0
RURD0047	285815	7060544	203	-9	292.0	276.0	271.0	276.0	5.0	1.6	4.0
RURD0048	285815	7060544	204	10	301.0	331.6	112.5	112.8	0.3	24.9	0.3
							121.2	121.6	0.3	17.7	0.3
							179.0	179.5	0.5	16.9	0.5
RURD0049	285815	7060545	203	5	295.0	354.1	330.6	330.9	0.3	24.0	0.3
RURD0050	285825	7060547	203	-17	305.0	265.0	236.9	241.0	4.1	3.1	3.1
RURD0051	285825	7060547	203	-24	304.0	270.0	122.7	124.0	1.3	10.4	1.0
							216.6	218.0	1.4	23.5	1.0
RURD0052	285826	7060548	203	-16	295.0	269.8	108.0	121.3	13.3	17.0	12.5
							127.5	127.8	0.3	204.8	0.3

APPENDIX B: DRILL RESULTS

JUNDEE - RAMONE SIGNIFICANT INTERSECTIONS											
Drill Hole ID	Easting (MGA)	Northing (MGA)	Collar RL (MGA)	Dip (deg)	Azimuth (deg, MGA)	Total depth (m)	From (m)	To (m)	Intersection (m)	Au (gpt) uncut	Est True Thickness (m)
							161.4	161.8	0.3	74.7	0.3
RURD0053	285825	7060547	203	-26	294.0	275.0	119.0	135.1	16.1	13.7	9.5
RURD0054	285826	7060547	203	-21	285.0	280.0	263.5	264.5	1.1	8.5	0.8
RURD0055	285826	7060548	203	-12	285.0	277.9	157.6	158.2	0.6	17.4	0.5
RURD0056	285825	7060547	203	-29	319.0	281.0	118.0	127.6	9.6	2.7	8.0
							239.9	240.2	0.3	17.3	0.3
RURD0057	285825	7060547	203	-21	315.0	260.0	118.0	125.0	7.1	5.7	6.8
RURD0058	285700	7060505	188	-36	23.0	220.8	119.2	125.0	5.8	2.5	2.5
RURD0061	285701	7060505	188	-45	312.0	243.0	88.7	94.3	5.6	17.8	2.6
							101.4	105.4	4.0	15.0	2.0
RURD0067	285813	7060549	149	-38	291.0	281.9	120.7	121.3	0.6	17.2	0.5
RURT0040	285746	7060575	245	-59	258.0	707.8	146.9	152.2	5.3	7.4	3.5

THUNDERBOX - BANNOCKBURN SIGNIFICANT INTERSECTIONS											
Drill Hole ID	Easting (MGA)	Northing (MGA)	Collar RL (MGA)	Dip (deg)	Azimuth (deg, MGA)	Total depth (m)	From (m)	To (m)	Intersection (m)	Au (gpt) uncut	Est True Thickness (m)
BBDD0027	292755	6852574	407	-60	250	250.0	126.1	136.1	10.1	6.3	10.1
BBDD0028	292755	6852574	407	-75	250	235.0	180.0	196.0	16.0	4.0	11.1
BBDD0029	292700	6852604	406	-71	250	210.0	142.0	149.0	7.0	2.8	6.9
BBDD0030	292793	6852636	407	-63	250	260.0	204.9	217.3	12.4	1.9	9.4
BBDD0032	292761	6852668	407	-62	251	349.0	162.0	184.0	22.0	1.8	21.3
BBDD0033	292744	6852749	407	-62	250	290.0	140.4	150.0	9.6	1.1	9.3
						and	165.2	182.2	17.0	0.5	16.6
BBDD0034	292655	6852814	407	-60	250	280.0	114.0	136.0	22.0	3.0	19.7
BBDD0035	292732	6852827	407	-60	250	280.0	122.4	129.6	7.2	2.6	6.9
						and	170.0	186.0	16.0	2.3	15.0
BBDD0036	292728	6852868	407	-60	270	380.0	156.8	172.0	15.2	1.7	14.5
BBDD0038	292745	6852751	406	-68	250	367.0	179.9	191.0	11.1	0.9	10.0
BBRC0246A	292824	6852472	406	-60	249	240.0	185.0	207.0	22.0	0.7	18.2
BBRC0269	292882	6852363	407	-61	248	252.0	190.0	204.0	14.0	1.2	14.0
BNWR013	292707	6852977	408	-60	250	300.0	151.0	163.0	12.0	0.8	11.0
BBGT012	292742	6852268	46	-65	340	210.0	100.0	127.0	27.0	2.0	20.5

POGO - EAST DEEPS SIGNIFICANT INTERSECTIONS											
Drill Hole ID	Easting (AKSP3)	Northing (AKSP3)	Collar RL (AKSP3)	Dip (deg)	Azimuth (deg, AKSP3)	Total depth (m)	From (m)	To (m)	Intersection (m)	Au (gpt) uncut	Est True Thickness (m)
23-020	1814775	3823074	2709	-74	110	774.53	120.9	122.3	1.4	8.5	
							and	279.6	281.1	1.5	6.4	
							and	707.2	707.5	0.3	13.6	
23-021	1814775	3823074	2709	-70	125	706.53	401.4	401.9	0.5	34.3	
23-022	1814775	3823074	2709	-77	141	769.62	95.1	96.1	1.0	4.9	
							and	716.0	718.9	3.0	15.5	
23-023	1817250	3821963	2889	-71	326	442.36	113.5	116.3	2.8	5.8	
							and	119.1	120.4	1.4	8.4	
23-024	1817250	3821963	2889	-60	344	471.53	190.2	190.5	0.3	9.2	
							and	259.8	260.2	0.4	6.4	
23-025	1817250	3821963	2889	-63	7	400.35	155.7	158.3	2.6	5.5	
23-026	1817250	3821963	2889	-53	18	479.54	105.2	105.6	0.4	8.1	
23-027	1817250	3821963	2889	-45	43	480.36	164.3	164.7	0.4	23.9	
23U0345	1815285	3821414	1330	18	313	228.3	0.0	0.5	0.5	42.6	
							and	203.4	206.9	3.5	6.9	
23U0356	1815327	3821474	1351	57	13	129.84	112.3	112.8	0.5	11.2	
23U0358	1815325	3821475	1348	49	356	80.16	NSI				
23U0359A	1815326	3821469	1352	61	343	78.03	0.7	1.8	1.1	5.6	
23U0587	1814910	3821285	1271	5	303	285.66	18.9	20.0	1.1	11.3	
							and	223.8	226.6	2.8	14.4	
							and	255.7	257.0	1.3	10.7	
23U0588	1814911	3821285	1277	12	307	261.52	18.7	19.8	1.1	20.6	
							and	213.3	220.0	6.7	9.3	
							and	238.3	239.8	1.5	7.5	
23U0589	1814911	3821285	1277	22	307	227.69	12.8	13.7	0.9	3.4	
23U0590	1814912	3821287	1274	19	333	207.87	175.1	178.2	3.1	10.8	
23U0591	1814911	3821284	1278	34	305	233.78	17.5	17.8	0.3	23.7	
23U0592	1814912	3821285	1278	33	321	234.03	172.2	175.0	2.7	4.0	
							and	217.7	223.4	5.8	6.1	
23U0710	1814682	3821129	1291	-43	23	127.1	110.5	111.3	0.8	6.9	
23U0711	1814684	3821126	1290	-62	355	151.5	81.7	99.1	17.4	14.2	
							and	113.3	113.9	0.6	27.9	
23U0712	1814681	3821124	1291	-60	291	166.5	130.4	131.7	1.3	23.9	

Northern Star Resources Limited - ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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APPENDIX B: DRILL RESULTS

	POGO - EAST DEEPS SIGNIFICANT INTERSECTIONS										
Drill Hole ID	Easting (AKSP3)	Northing (AKSP3)	Collar RL (AKSP3)	Dip (deg)	Azimuth (deg, AKSP3)	Total depth (m)	From (m)	To (m)	Intersection (m)	Au (gpt) uncut	Est True Thickness (m)
23U0713A	1814698	3821105	1291	-54	45	115.2	NSI				
23U0715	1814702	3821074	1292	-63	111	110.43	NSI				
23U0716	1814707	3821073	1294	-26	77	99.06	NSI				
23U1654	1815043	3821574	1296	43	284	230.89	114.3	116.0	1.7	7.5	
							and	143.3	144.6	1.2	6.4	
							and	227.5	228.0	0.5	28.3	
23U1655	1815043	3821574	1296	49	296	218.24	185.6	186.3	0.6	23.4	
23U1656	1815043	3821574	1290	25	298	223.11	138.2	140.4	2.1	12.2	
							and	201.2	201.6	0.3	24.4	
23U1658	1815043	3821574	1290	9	303	213.82	76.8	77.4	0.5	21.6	
							and	192.0	194.0	2.0	50.3	
23U1659	1815042	3821575	1294	34	303	219.3	47.1	47.8	0.6	4.9	
							and	129.6	130.7	1.1	22.1	
							and	193.4	193.9	0.5	15.9	
23U1660	1815043	3821574	1290	18	305	277.06	107.6	108.1	0.5	22.0	
23U1661	1815043	3821574	1290	9	312	292	26.8	27.5	0.7	19.6	
							and	81.4	82.4	1.0	11.9	
23U1662	1815043	3821574	1296	42	313	219.15	109.9	111.4	1.5	12.8	
							and	158.3	160.8	2.5	5.0	
23U1663	1815043	3821574	1290	17	316	284.38	26.5	27.1	0.5	12.5	
							and	155.3	155.9	0.6	22.6	
							and	202.2	204.6	2.4	10.9	
							and	204.8	205.1	0.3	15.5	
23U1664	1815043	3821574	1290	25	317	199.03	31.8	32.4	0.6	8.3	
							and	36.9	39.3	2.3	6.3	
							and	133.7	135.0	1.2	21.3	
							and	149.6	151.0	1.4	12.7	
23U1665	1815047	3821581	1297	46	323	227.99	124.1	124.6	0.5	3.4	
							and	184.0	184.7	0.7	8.4	
23U1666	1815047	3821581	1293	33	339	173.43	NSI				
23U1762	1814199	3821654	958	70	312	121.62	108.6	109.1	0.4	7.1	
							and	114.1	114.6	0.5	6.1	
23U1763	1814199	3821660	958	60	345	155.5	79.7	80.5	0.8	16.9	
23U1764	1814199	3821654	958	74	6	146.0	93.9	94.2	0.3	11.0	
							and	110.7	112.2	1.5	4.6	
23U1765	1814199	3821660	958	56	20	179.4	98.4	99.8	1.4	12.4	
24-038	1814775	3823074	2709	-61	189	272.4	74.9	75.4	0.5	4.6	
24U0034	1814683	3821131	1291	-61	331	142.3	96.1	103.0	6.9	16.8	
							and	106.0	108.7	2.7	9.9	
							and	110.2	111.4	1.2	5.3	
24U0035	1814683	3821131	1291	-70	331	145.08	86.5	90.6	4.1	11.6	
24U0036	1814682	3821135	1291	-56	348	158.2	101.6	108.3	6.7	26.7	
24U0037	1814682	3821135	1291	-53	4	155.1	105.2	110.6	5.5	31.4	
24U0039	1814682	3821135	1291	-56	17	146.3	98.1	103.8	5.7	40.8	

Northern Star Resources Limited - ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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APPENDIX C: TABLE 1

JORC Code, 2012 Edition – Table 1 Report

KCGM: Fimiston – 31 March 2024

Section 1 Sampling Techniques and Data

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

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.	The sampling database for KCGM has been collected over the last 115 years. The data has been collected by many different operations, using varying techniques. Assay information quality also varies with detection limit and quality: generally, the quality appears to be inversely proportional to the age of the samples. All information collected prior to involvement by Northern Star Resources and Saracen Minerals in 2019 is hereafter referred to as historical data. Only historical data that is deemed as having acceptable and traceable location and assay information has been included in the Mineral Resource estimation dataset for Fimiston. Historical data sampled prior to 1984 will be used for grade interpolation incrementally as areas are drilled and reviewed.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	The DD drilling down hole depth is recorded by the drillers on core blocks after every run. This is checked and compared to the measurements of the core by the geologist during core mark-up prior to logging. Sample intervals are then marked on the core by a geologist, to honour geological boundaries. Sample interval lengths vary from 0.3m to 1.3m. DD core is orientated, measured and then sampled by cutting the core in half longitudinally using an "Almonte" or "Corewise" diamond saw. Cutting is along orientation or cut lines. The same half of the core is always selected for each sample interval, placed in numbered calico bags that contain a bar code, scanned into the database and submitted to the laboratory for analysis. The other half of the core is retained in the core tray, which was stamped for identification, stored, and catalogued. Routine 'field duplicates' to assess sample representivity are not performed on diamond core as these are not considered to be true field duplicates. Some intervals have been sampled using full core sampling methods. The intervals are still marked by a geologist to honour geological boundaries, shorter sample lengths are used based upon the diameter of the core to retain similar sample volumes.
		RC samples are homogenised by riffle or cone splitting prior to sampling and then submitted for assay as either 1m or 2m intervals. Certified standard samples, ranging in grades from 0.69 gpt Au to 34.99 gpt Au, purchased from OREAS, are inserted at the rate of one in 40 samples. The results are reviewed on a per batch basis and the entire batch of samples is reanalysed if the result is greater than three standard deviations (SD) from the expected result.
		All drill collars are surveyed by using a total station theodolite or total GPS.
	Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.	Historical sample preparation and assay procedures are variable due to the duration of historical work and the numerous companies involved. All historical sampling accepted for use is considered to have been collected by acceptable practices.
		Current sample preparation and assay procedures employed by KCGM are considered as following industry standard practice. All assay determinations are conducted by internationally recognised laboratories. The primary laboratory, Bureau Veritas, meets ISO 9001:2000.
		Samples are oven dried until a constant mass is achieved. All samples are then processed through an Essa Jaw Crusher or a Boyd Crusher to 90% < 3 mm. The crushed sample is then pulverised in an LM5 pulveriser for a product of 90% passing < 75 µm. Approximately 250 - 300g of the pulp is retained and a 40g charge weight for fire assay is extracted from the pulp packet. Samples are tested for sulphides and flux adjusted, flux is added at a ratio of 1:4. Samples are fired, hammered and cupelled. Prills are placed in tubes, dissolved on hotplates and analysed using AA finish with over-range dilutions used as required. Sample preparation for Sulphur determination follows the same process as for Gold, with assaying taking place using the LECO method.
Drilling techniques	Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc.).	The Fimiston drilling database is composed of surface and in-pit reverse circulation (RC) drill holes and PQ, HQ, HQ3, NQ, triple tube and BQ diamond drill holes from surface and underground.
		Where possible diamond core was orientated using a spear, Ballmark™, Ezimark™, or ACE multi electronic tool. For RC holes either 5.5inch or 5.25inch diameter face sampling hammer was used.
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed.	For DD, all recovery is recorded by the drillers on core blocks. This is checked and compared to the measurements of the core by the geologist. Recovery is generally very high, in excess of 95%, and there have been no significant sample recovery problems. Historic DD core stored on site shows excellent recovery. For DD drilling, any core loss is recorded on the core block by the driller. This is then captured by the logging geologist and entered as interval into the hole log. Drilling within Fimiston regularly intersects historic underground workings (voids), this is recorded on the core block as well as on driller's plods and is recorded in the database. Where possible drilling continues beyond the void.
		RC drilling sample weights were recorded for selected sample intervals and monitored for fluctuations against the expected sample weight. If samples were below the expected weight, feedback was given promptly to the RC driller to modify drilling practices to achieve the expected weights
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	For DD, drilling contractors adjust the rate of drilling and method if recovery issues arise. Minor loss occurs when drilling through fault zones such as the Golden Pike Fault. Areas of potential lower recovery are generally known before hand and controlled drilling techniques employed to maximise recovery.
	Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	No specific study has been carried out on recovery and grade. As recoveries are generally very high (95%+) it is assumed that the potential for bias due to variable sample recovery is low.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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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.	Core is logged using either digital logging into a laptop computer or onto paper logs and then transcribed into the database. Logging records lithology, stratigraphy, oxidation state, structure, vein form, mineralisation, and alteration. All drill core is photographed using a digital camera and stored in the IMAGO cloud based solution. RC samples are first split at the rig using a cone splitter, with the sample stream being placed into numbered calico bags and the reject stream stored in chip trays for logging. Resource definition RC drill chips are sieved and a small representative sample is collected in chip trays, one sample for each two metre interval. These samples are logged using the same parameters as for diamond core above. Geological boundaries are defined to the nearest two metres. The data are manually entered directly into the database. Logging is entered in Acquire using a series of drop-down menus which contain the appropriate codes for description of the rock. Chips from all exploration and resource definition RC holes are stored in chip trays for future reference while remaining core is stored in core trays and archived on site. RC chips from grade control are retained until assays have been returned and validated, after which the chips are disposed of. Qualitative and quantitative logging of historic data varies in its completeness.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	Geology logging is qualitative in nature with visual estimates made of mineralisation percentages for core. Structural and geotechnical logging is quantitative in nature. All core is photographed wet as standard practice. Historically some core may have also been photographed dry.
	The total length and percentage of the relevant intersections logged.	100% of the drill core is logged.
Sub-sampling techniques and sample preparation	If core, whether cut or sawn and whether quarter, half or all core taken.	DD core is sampled by sawn half-core on intervals controlled by geological domaining represented by mineralisation, alteration and lithology. A selected number of grade control holes were full cored. Mineralised intersections are sampled with a maximum and minimum length of 1.3m and 0.3m, respecting lithological or alteration contacts. The down hole depth of all sample interval extents are recorded.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	All RC samples are split using a rig-mounted cone splitter to collect a sample 3 - 4 kg in size from each 1 m interval. Wet samples are rarely encountered in Fimiston, however any samples that fail KCGMQA/QC protocols are removed from the estimate.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	Samples are oven dried until a constant mass is achieved. All samples are then processed through an Essa Jaw Crusher or a Boyd Crusher to 90% < 3 mm. The crushed sample is then pulverised for 4 minutes in an LM5 pulveriser for a product of 90% passing < 75 µm. Approximately 250 - 300 g of the pulp is retained and a 40g charge prepared.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	Coarse grind checks at the crushing stage (3mm) are carried out at a ratio of 1:25 samples with 90% passing required. Pulp grind checks at the pulverising stage (75 µm) are carried out at a ratio of 1:25 samples with 90% passing required. Laboratory duplicate samples are taken for coarse crush (3mm) and pulverising (75 µm) stages at a ratio of 1:25 samples. Repeat assays are carried out at a ratio of 1:10 on prepared pulp samples.
	Measures taken to ensure that the sampling is representative of the in-situ material collected, including for instance results for field duplicate / second-half sampling.	Quarter core sampling of diamond core is occasionally undertaken for check assays, however routine field duplicates are not performed on diamond core as these are not considered to be true field duplicates. Umpire sampling is performed fortnightly, where 10% of the samples are sent to the umpire lab for processing.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	The sample and size (3kg to 4kg) relative to the particle size (>90% passing 75um) of the material sampled is a commonly utilised practice for effective sample representation for gold deposits within the Eastern Goldfields of Western Australia
Quality of assay data and laboratory tests	The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.	Fire assay analysis is undertaken and this is considered to be a total assay method. Quarterly QAQC reports are prepared to check for any bias or trends with conclusions discussed with the laboratory management. Holes that do not pass QAQC are not used for Mineral Resource estimation.
	For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.	No geophysical tools were used to determine any element concentrations.
	Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.	Sampling and assaying QAQC procedures include: - Periodical resubmission of samples to primary and secondary laboratories - Submittal of independent certified reference material - Sieve testing to check grind size - Sample recovery checks. - Unannounced laboratory inspections Standard control samples and blanks purchased from certified commercial suppliers are inserted at a ratio of 1:40. The standard control samples are changed on a 3-month rotation. The results are reviewed on a per batch basis and batches of samples are re-analysed if the result is greater than three standard deviations from the expected result. Any result outside of two standard deviations is flagged for investigation by a geologist and may also be re-assayed.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
		Blanks are inserted into the sample sequence at a nominal ratio of 1:40. The insertion points are selected at random, except where high grade mineralisation is expected. In these cases, a Blank is inserted after the high-grade sample to test for contamination. Results greater than 0.2 gpt are investigated, and re-assayed if appropriate. New pulps are prepared if anomalous results cannot be resolved.
		When visible gold is observed in core, a barren flush is required.
		Laboratory performance was monitored using the results from the QA samples mentioned above. This was supplemented by the internal QA samples used by the laboratories, which included pulp duplicates and CRMs
		The QA studies indicate that accuracy and precision are within industry accepted limits.
Verification of sampling and assaying	The verification of significant intersections by either independent or alternative company personnel.	All significant and anomalous intersections are verified by a Senior Geologist during the drill hole validation process.
	The use of twinned holes.	No twinned holes were drilled for this data set. Re-drilling of some drill holes has occurred due to issues downhole (e.g. bogged rods). These have been captured in the database as an 'A'. Re-drilled holes are sampled whilst the original drill hole is logged but not sampled.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	All data are stored and validated within the site AcQuire database. Data imported into the database is controlled by documented standard operating procedures, and by a set of validation tools included in Acquire import routines. Hard copies and electronic copies of all primary location, logging and sample results data are filed for each hole.
		Assay results are received in a comma-separated values (.csv) file format and loaded directly into the database by the supervising geologist who then checks that the results have inserted correctly. Holes that cannot be accurately validated or do not meet the requirements of Fimiston Quality assurance and Quality Control (QAQC) are excluded prior to Mineral Resource estimation.
	Discuss any adjustment to assay data.	No adjustments are made to this assay data.
Location of data points	Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.	Planned holes are marked up by the KCGM surveyors using RTK-GPS in the mine grid.
		All historical drill hole collar positions were assumed to be surveyed. All recent drill hole collar positions were surveyed. All recent DD holes were surveyed down hole by various methods including single shot down hole camera, EMS (Electronic Multi Shot) method or in-rod gyroscopic survey tools. Holes are typically surveyed at 15m and 30m intervals down hole thereafter.
		QAQC is performed on the speed of running and on the misclose rate for each gyroscopic survey. Where issues are identified, a single survey run can be chosen as preferred with the remaining data ignored. This data is converted to CSV format and imported into the AcQuire database where it is validated by the project geologist.
		Any poor surveys are re-surveyed. If survey data is missing or quality was suspect and not replaced by more recent drilling, affected data was not used in estimation.
	Specification of the grid system used.	The Fimiston data is exported and modelled on the mine Oroya East Grid. This is a rotated grid 38.3° from MGA 94.
	Quality and adequacy of topographic control.	The topography surface wireframe is generated from an annual flyover survey completed by Fugro Australia Land Pty Ltd with +/- 15cm resolution.
Data spacing and distribution	Data spacing for reporting of Exploration Results.	Drill hole spacing varies through the deposit. Exploration drill spacing targets areas of gaps within the current dataset. These vary from 100m to 25m infill spacing. Fimiston is nominally 50mE x 60mN down to 20mE x 25mN in the Eastern zones of mineralisation, 50mE x 60mN down to 15mE x 20mN in the Western Zones of mineralisation and 40mE x 50mN down to 12mE x 20m in the Northern zones of mineralisation. While open pit drill hole spacing is 10mE x 10mN with consideration made for low-risk areas where spacing is expanded to 15mE x 15mN. Cross mineralised structures in the hanging wall and footwall of Fimiston are typically narrower and less consistent so have a nominal drill spacing of 10m x 10m.
	Whether the data spacing, and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.	The data spacing in the ore lodes at Fimiston is considered sufficient to support the estimation of Mineral Resources and Reserves as applied under the 2012 JORC Code. Appropriate geological and grade continuity have been demonstrated during the 20+ years of mining at the Fimiston operations.
	Whether sample compositing has been applied.	No sample compositing has been applied to the database. For grade estimation, the datasets are composited to 2 m intervals prior to grade estimation. This aligns with the most common sample length taken.
Orientation of data in relation to geological structure	Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.	The majority of data is drilled perpendicular to the interpreted strike of the Fimiston ore lodes. Due to the complex overlapping nature of the mineralised zones, actual intersections may be slightly oblique to the intended right-angle intersections. Recent drill intercepts from 2020 onwards are recorded in true width where known. Historical drill intercepts are recorded as downhole width, unless otherwise stated.
		The majority of drill holes are positioned to achieve optimum intersection angles to the ore zone as are practicable.
	If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.	Holes with orientations that are considered likely to introduce sampling bias are flagged during drill hole validation and are excluded from the Mineral Resource estimation datasets.
Sample security	The measures taken to ensure sample security.	All core is kept within the site perimeter fence on the Mining Lease M 26/131, M 26/353, M 26/78 and M 26/86. Samples are dispatched and/or collected by an offsite delivery service on a regular basis. Each sample batch is accompanied with a: - Job number

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
		- Number of Samples - Sample Numbers (including standards and duplicates) - Required analytical methods - A job priority rating A Chain of Custody is demonstrated by both KCGM and Bureau Veritas in the delivery and receipt of sample materials. Any damage to or loss of samples within each batch (e.g. total loss, spillage or obvious contamination), is reported to the KCGM in the form of a list of samples affected and detailing the nature of the problem(s).
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	Sampling performed by KCGM staff and contractors is reviewed weekly by senior KCGM geology personnel including task observations and inspections. Data is reviewed regularly by senior KCGM geology personnel and low confidence data is excluded from the estimate. Audits and inspections of the commercial assay lab are completed monthly by the QA/QC geologist.

Section 2 Reporting of Exploration Results
(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	The tenement portfolio is located on land owned by the State of Western Australia on Crown reserves or vacant Crown land. Northern Star Pty Ltd (Northern Star) manages the tenement portfolio for the KCGM operations. The portfolio comprises of 384 granted tenements which is a combination of Miscellaneous (75) and Prospecting Licenses (70), and General Purpose (115) and Mining Leases (122). The tenements cover a total area of approximately 49,000 hectares extending in a north-south direction over a distance of approximately 45km, centred on the Super Pit. There are two registered Native Title Claims that incorporate the KCGM leases. Claimant groups include the Maduwongga people (WC2017/001) and Marlinyu Ghoorlie (WC2017/007). These claims are currently before the tribunal for the Determination.
	The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.	No known impediments exist, and the tenements are in good standing.
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	In the 1970s, the goldfield was controlled by three companies: Kalgoorlie Mining Associates (KMA), Kalgoorlie Lake View (the majority owner of KMA), and North Kalgurli Mines. In 1974, all operations on the Golden Mile had ceased, with the exception of the highly mechanized Mt Charlotte Underground Mine. Modern day surface mining commenced in 1983 in the Kemlo Pit followed by the Croesus and Eclipse pits, and the Central and Paringa pits in 1985. KCGM was formed in 1989 to run the operation on behalf of its owners Homestake Gold of Australia Ltd (Homestake) and GMK, a subsidiary of Normandy Mining Limited. By 1992, all labour intensive, high cost underground mining of narrow zones stopped in the Main, Croesus, Chaffers, Lake View, and Perseverance shafts. Fimiston underground production ceased in 1994. In 2001, Homestake merged with Barrick to form Barrick Gold Australia, thereby becoming a 50% owner of KCGM. In 2002, Newmont acquired Normandy Mines Limited, thereby becoming a 50% owner of KCGM. In 2019, Saracen and Northern Star acquired the operation from Barrick and Newmont. In 2020, Northern Star announced a merger and the operation is now wholly owned by Northern Star Resources. Exploration drilling is ongoing from surface and underground to extend the known mineral resources.
Geology	Deposit type, geological setting and style of mineralisation.	The Golden Mile deposit occurs in the Kalgoorlie Terrane, within the southern portion of the NNW trending Archaean Norseman-Wiluna Greenstone Belt. The greenstone belt has been multiply deformed and regionally metamorphosed to grades varying from lower greenschist to amphibolite grade (Swager, 1997). The stratigraphy of the Kalgoorlie Terrane consists of a lower mafic-ultramafic volcanic sequence overlain by a thick sequence of clastic sedimentary rocks and intermediate to felsic volcaniclastic rocks (Swager, 1997). Younger sedimentary basins, occurring along major faults or synclines, unconformably overly the greenstone sequence (Swager, 1997). Granitic intrusions occurring within the Norseman-Wiluna Greenstone Belt are divided into two categories: pre-folding and post-folding (Witt and Davy, 1997). The post-folding intrusions are further subdivided as syn-tectonic and late tectonic. The stratigraphy covered by the KCGM tenements consists of a basal ultramafic unit called the Hannan Lake Serpentinite. This ultramafic unit is overlain successively by the high magnesian Devon Consols Basalt, Kapai Slate, tholeiitic Paringa Basalt and the Black Flag sediments. Differentiated zones of dolerite and gabbro texture occur within the mafic sequence. The Golden Mile Dolerite, hosting the bulk of the Golden Mile and Mount Charlotte gold mineralisation, is a strongly differentiated layered gabbro, approximately 700m in thickness. The Golden Mile Dolerite is situated conformably between the Paringa Basalt and the Black Flag sediments. This entire stratigraphic sequence is intruded by numerous porphyry dykes of intermediate to felsic composition. The Fimiston style gold mineralisation, which accounts for the bulk of the economic gold ore of the Golden Mile deposit, is hosted dominantly in the Golden Mile Dolerite with lesser mineralisation hosted in the Paringa Basalt. The Golden Mile deposit is an intensely mineralised Archaean shear zone system developed between the Adelaide and Golden

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
		Pike faults (Clout et al., 1990). Gold mineralisation occurs over a north-south strike length of 4,250m, a width of 1,850m and has been historically mined to a depth of about 1,200m underground. The mineralisation consists of numerous narrow, generally 1-2m wide, but locally up to 20m wide, vertically and laterally extensive lodes, up to 1200m vertical and over 1000m along strike length. The Fimiston lodes occur in three principle orientations: Main 140o/80oW, Caunter 115o/55oW to 80oW and Cross Lodes 050o/90o to 80oN-S (Finucane, 1948). The deposit lies within a regional syncline and is divided into the Eastern Lode System and the Western Lode System, divided by the steeply dipping reverse Golden Mile Fault. The Main and Caunter lodes are the dominant sets in both the Western and Eastern Lode Systems. The lodes in the Western Lode System display good lateral and vertical continuity whereas lodes in the Eastern Lode System are segmented by numerous steep reverse faults. The lodes in the Western and Eastern Lode System form a funnel shaped array, which is sub-vertical in the Western Lode System and steeply west dipping in the Eastern Lode System (Gauthier, 2005).. The Mt Charlotte style gold mineralisation, which accounts for the bulk of the economic gold ore of the Mt Charlotte deposit, but may be seen in some areas of Fimiston Pit, is predominantly associated with pyrite in carbonate alteration haloes around quartz veins, with a minor proportion as relatively coarse free gold within the veins, commonly close to their margins. The veins vary in width from a few millimetres to a maximum of about two metres but are commonly between two centimetres and 50 cm wide. The vein spacing varies from 20 cm to tens of metres but is typically from 50 cm to two metres in areas mined as ore. Quartz is the dominant vein-fill mineral; accessory vein minerals include calcite, ankerite, scheelite, pyrite, pyrrhotite, and gold.
Drill hole Information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: o easting and northing of the drill hole collar o elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar o dip and azimuth of the hole o down hole length and interception depth o hole length.	Refer to the drill hole information table in the Appendix of this report for significant assay results from KCGM for each lode represented throughout the report. All mineralised intercepts are shown in the table.
	If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	Exclusion of the drill information will not detract from the understanding of the report.
Data aggregation methods	In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.	All reported assay results have been length weighted to provide a true intersection width where possible. All reported assay results within Mt Charlotte style stockwork mineralisation are reported using downhole widths, due to the nature of the mineralisation and orientation of the drill holes, true width calculations are not possible or are misleading.
	Where aggregate intercepts incorporate short lengths of high-grade results and longer lengths of low-grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.	Intercepts are aggregated based on underground and open pit reporting criteria. Cut off grades are based on assumed mining grades. Open pit lode mineralised zones were interpreted using a nominal cut-off grade (COG) of 0.5g/t with a maximum internal dilution of 5 meters. Open pit stockwork mineralised zones were interpreted using a nominal cut-off grade (COG) of 0.5g/t with a maximum internal dilution of 5 meters. Underground lode mineralised zones were interpreted using a nominal cut-off grade (COG) of 3g/t with a maximum internal dilution of 2 meters. Underground Stockwork mineralised zones were interpreted using a nominal cut-off grade (COG) of 1.7g/t with no maximum internal dilution. Where a stand out higher grade zone exists within the broader mineralised zone, the higher grade interval is reported also.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	No metal equivalent values have been used for the reporting of these exploration results.
Relationship between mineralisation widths and intercept lengths	These relationships are particularly important in the reporting of Exploration Results.	Estimated true widths have been calculated for intersections of the known ore zones, based on existing knowledge of the nature of these structures.
	If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.	Both the downhole width and estimated true width have been clearly specified when used.
	If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').	Where mineralisation orientations are unknown, downhole lengths are reported.
Diagrams	Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	Appropriate plans and sections have been included in this report.
Balanced reporting	Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	Both high and low grades have been reported accurately, clearly identified with the drill hole attributes and 'From' and 'To' depths.
Other substantive exploration data	Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and	No other material exploration data has been collected for this area.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
	method of treatment; metallurgical test results; bulk 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).	Fimiston Pit is currently in production and resource definition is planned to infill areas of inferred resource inside the pit shell as well as planned exploration testing the down dip and plunge extents of the deposit.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Appropriate diagrams accompany this release.

Section 3 Estimation and Reporting of Mineral Resources
(Criteria listed in section 1, and where relevant in section 2, also apply to this section).

Criteria	JORC Code explanation	Commentary
Database integrity	Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.	Data used for generating the mineral resource estimates is stored in an AcQuire database. The Company employs a database administrator to manage the database. Where possible raw data is loaded directly into the database with adjustments such as survey transformations occurring within the database so that they are fully traceable. Extensive validation is built into the AcQuire database to ensure data integrity and user access logs are maintained for all fields in the dataset. Data validation tools and sign off facilities to record data cross-checking are used.
	Data validation procedures used.	Data that is captured in the field is entered into Excel templates which are checked on import into the AcQuire database for errors. Assay jobs are dispatched electronically to the lab to minimise the chance of data entry errors. Assay results from the lab are received in .csv format and are checked for errors on import into the database. Data is regularly validated using the mining software. The data validation process is overseen by the Database Administrator. Errors are corrected where possible. When not possible the data is flagged as confidence "0" or "1" in the database and the database is re-exported. This data will not be used in the estimation process. Only fully sampled drill holes with a confidence level of 2 or 3 were used for grade estimation.
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	The Competent Person is a fulltime employee of KCGM and is based in Kalgoorlie and has full access to ensure integrity across all geological disciplines.
	If no site visits have been undertaken indicate why this is the case.	Not applicable.
Geological interpretation	Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.	Geological and structural controls of the Fimiston mineralisation are well understood following extensive academic study and ongoing review. The interpretation has been built on this cumulative knowledge and thoroughly tested with significant resource definition and grade control drilling, historical underground exposure, and open pit mining resulting in a high confidence in the position of, and controls to, mineralisation. The interpretation has been generated from geologically logged high confidence diamond and reverse circulation drilling resulting in the creation of a series of mineralised horizons categorised as Main, Caunter, Cross, and Oblique lodes effectively representing a Riedel shear array. Each lode is further refined by historical underground drive mapping, historical stope as-builts, and geological features mapped in open pit exposures. The final geological interpretation utilised in the resource estimation is comprised of 367 Main lodes, 219 Caunter Lodes, 21 Oblique lodes, 33 Cross lodes, 5 Stockwork domains, 12 Atypical lodes (including supergene), and 7 Residual lodes for a total of 664 individual domains. Residual lode wireframes were created around gold intercepts that were not previously captured by lode wireframes. These residual wireframes are created in Leapfrog using interpolant ellipsoids using the most common Fimiston lode orientation (Caunter). Only volumes of greater than or equal to 1000m³ are used in the mineral estimation.
	Nature of the data used and of any assumptions made.	All available geological data was used in the interpretation including open pit mapping, drill holes, scanned level map sheets, structural measurements, and underground void wireframes. Historical underground asbuilt wireframes have been assumed to be spatially accurate.
	The effect, if any, of alternative interpretations on Mineral Resource estimation.	The geological domains defining the mineralised zones are considered robust. Alternative interpretations have historically been trialled where braided lode systems were combined into bulk domains however this resulted in moderately inflated ore tonnes following estimation particularly in poorly supported areas.
	The use of geology in guiding and controlling Mineral Resource estimation.	The underlying geological and structural framework controls gold endowment at the Fimiston deposit. Ore lode interpretations were developed using all available geological data to honour the geological and structural framework and constrain the Mineral Resource estimations.
	The factors affecting continuity both of grade and geology.	Continuity of mineralisation is controlled by host lithology, structural architecture and alteration assemblage. Highest grade lodes occur predominantly within the more fertile geochemical areas of the Golden Mile Dolerite and to a lesser degree the Paringa Basalt.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
		Major shear structures provided fluid pathways, dilatational positions and lode offset. Broadly, mineralisation is constrained to the north by the Golden Pike Fault, the Adelaide Fault in the south, and is effectively partitioned into East and West lodes by the Golden Mile Fault. Numerous other smaller scale fault and shear structures disrupt and offset the resource.
		Four main zones of hydrothermal alteration are recognised. The outermost zone is pervasive chlorite-carbonate alteration followed by progression to ankerite-siderite with increased proximity to the lode. Lode selvage is effectively defined by ankerite-siderite-pyrite-quartz-albite-telluride with occasional haematite-anhydrite. The most intensely altered lodes are locally termed "green leaders" and are comprised of siderite and vanadium rich sericite. Quartz veining is always part of the lode position occurring as either sheeted veins or less common stockwork.
		Fresh ore at Fimiston, comprising most of the resource, is refractory with gold typically associated with pyrite, chalcopyrite, other minor sulphides, tellurides, silver, mercury, and lead. Completed deportment studies indicate that approximately 30% of gold occurs as free milling, 25% as gold tellurides, and 45% as gold inclusions in pyrite.
Dimensions	The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.	The Fimiston resource extends 4.3km's north-south, 1.5km's east-west, and 1.8km's vertical.
		Mineralised domains are categorised by overall geometry and divided into Main, Counter, Oblique, and Cross lodes. Main lodes are predominantly sub-vertical with a north-south strike, Counter lodes strike north-north-west dipping approximately 65° west, and Cross lodes strike east-west with a sub-vertical dip. Oblique lodes are less common but are effectively conjugate to the Counter lodes.
Estimation and modelling techniques	The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.	Mineralisation is domained based on geological continuity. All domain and residual wireframes are created using Leapfrog software and all subsequent geostatistical evaluation and resource estimation is completed using Supervisor and Datamine software respectively.
		Lode wireframes are intersected with a validated drill database from which lower confidence drill holes have been removed. All remaining diamond and RC samples are flagged with a domain identifier and composited to 2m with 0.2m minimum sample. Residual samples are distributed across adjacent component intervals.
		Due to the complexity of Fimiston mineralisation, many of the lodes exhibit mixed grade populations internal to the domain which are difficult to manually partition. Where this is the case and sufficient sample support is available Categorical Indicator Kriging (CIK) is used to sub-domain the lode into low- and high-grade envelopes. This is achieved through review of log probability plots by domain from which grade cut-offs and subsequent indicator variograms are derived. Prior to indicator estimation, simulated drill holes are created on a 10m x10m YZ grid through the historical stope as-builts which are then restricted by the lode interpretations. These data points are appended to the composite file as samples above cut-off and used to supplement the indicator estimate. The rationale for the process is that stoped material was high grade prior to extraction and as such should be used to inform sub-domain continuity. Grade cut-offs are applied to the combined composite file and an indicator assigned by domain and estimated using Ordinary Kriging weighted by the relevant indicator variogram. Dynamic anisotropy is used to control both search ellipse and variogram orientation to account for local variation in lode geometry where appropriate. Domains are subsequently reviewed for a probability threshold above which high grade sub-domains are assigned. The simulated drill holes are then removed from the composite file and sub-domains back flagged from the block model.
		For gold, sub-domains are evaluated for grade variograms and Kriging Neighbourhood Analysis (KNA) conducted to derive appropriate sample counts, search strategy, discretisation and parent block size. For sulphur, variograms on the full domains are created due to less internal grade variation evident in the lode. KNA is again completed to select appropriate estimation parameters.
		Gold and sulphur are primarily estimated using Ordinary Kriging (OK) into sub-domains and domain parent blocks respectively using the requisite variogram model. Hard boundaries are maintained between domains and sub-domains as confirmed by contact analysis. A nested search strategy is employed for select domains that ensures domains fully fill with estimated blocks. The residual lode wireframes are all estimated using OK and a dedicated variogram model.
	The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.	The final resource estimates are compared to the previous model estimates and reconciled to historic production.
	The assumptions made regarding recovery of by-products.	No assumptions are made on recovery of by-products.
	Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).	Sulphur is estimated within every ore lode domain. In exploration and resource definition drill holes, sulphur is assayed for every metre while in grade control drill holes its sampled 1:4 holes.
	In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.	Drill spacing ranges at Fimiston from 10mx10m for grade control (GC) drilling out to >160mx160m's in the potential areas of the resource. Downhole sampling for reverse circulation drilling is taken on 2m intervals and dictated by geology for diamond holes. To capture the variable grade resolution of the GC drilling, the parent block size has been influenced by close spaced holes and set at 5mx10mx5m's with sub-blocking down to 1mx1mx1m's in order to appropriately define domain boundaries.
		The indicator model used to sub-domain well supported lodes has a block size set at 2mx5mx2m's to honour the complexity of the mixed grade populations. Following sub-domaining, the indicator model is optimised to the parent block size (5mx10mx5m) in preparation for grade estimation.
	Any assumptions behind modelling of selective mining units.	Selective mining units were not used during the estimation process.
	Any assumptions about correlation between variables.	No assumptions have been made regarding the correlation between variables for this Mineral Resource Estimation.
	Description of how the geological interpretation was used to control the Resource estimates.	Mineralisation is partitioned into estimation domains relative to stratigraphic position, structural orientation, recorded lithology, and specific alteration assemblage.

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ABN: 43 092 832 892

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Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
		The geological interpretation is initially created from drill data and later calibrated with mapping of open pit and underground exposures.
		Domains are estimated individually with search geometry and variography controlled by lode orientation and grade continuity respectively.
		Variogram major search directions are aligned with geologically interpreted high grade shoot trends.
		Categorical indicator kriging has been utilised to define sub-domains in lodes with mixed grade populations to limit the spread of high-grade mineralisation.
		Dynamic anisotropy has been employed on lodes exhibiting excessive undulation.
		Boundary analysis has been conducted on key lodes indicating hard boundaries should be maintained across domain and sub-domain contacts.
	Discussion of basis for using or not using grade cutting or capping.	Composites are analysed for grade outliers by domain for both gold and sulphur and top cut proximal to population disintegration. Attempts are made to ensure no more than 10% of metal is lost and the co-efficient of variation (CV) is less than 1.8. Where sufficient samples are available and the CV remains elevated following top cutting, basic statistics are re-reviewed following sub-domaining of the lode to ensure metrics are appropriate.
	The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.	Several statistical and visual measures are used to validate the accuracy of the estimation.
		Volume variance between the wireframe domains and block model domains are assessed.
		A visual inspection of input composites is compared to the estimated block model in section for each domain.
		The mean grade of the block model is compared to the naïve and declustered mean grades of the composites by domain with any variance greater than +/-10% investigated.
		Swath plots are created by domain and sub-domain in the X, Y, Z, strike and cross strike directions and viewed holistically to vector into any problematic areas.
		Estimation quality metrics (kriging efficiency, slope) are reviewed by domain/sub-domain to give an indication of the quality of the estimate.
		Global change of support plots are created and reviewed for principal domains.
		End of month production reconciliations in addition to ongoing field observations are used as a feedback loop to continuously calibrate and improve the interpretation and estimation.
Moisture	Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.	Tonnages are estimated on a dry basis
Cut-off parameters	The basis of the adopted cut-off grade(s) or quality parameters applied.	The open pit cut-off grade of 0.35gpt and the Fimiston underground cut-off grade is 0.9gpt these have been derived from current mining costs and parameters at AUD$2,500/oz.
Mining factors or assumptions	Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.	**Open Pit:** The open pit mineral resource inventory assumes open pit extraction and is reported within an AUD$2,500/oz pit optimisation shell generated from the latest resource model with any underground reserve shapes and underground resource shapes in the same area as the UG reserve shapes depleted before pit optimisation. Inputs to the pit optimisation are based on current mining parameters and constraints. The mining method is consistent with current operation and mining factors. Assumptions such as dilution are based on historic performance. The resource model was re-blocked to the current SMU of 8x10x10m via a customised dilution process that accounts for minimum mining width and the effect of historical voids prior to evaluation and reporting of open pit resources.\n\n**Underground:** The Fimiston Underground Mineral Resource estimate is defined by an underground Mining Shape Optimiser (MSO) evaluation generated from the undiluted resource model below the latest AUD$2,500/oz pit optimisation. MSO input parameters include a 0.9gpt grade cut-off, minimum mining width of 3.0m's (X), 20x25m (Y,Z) stope extents, and a gold price assumption of AUD$2,500/oz. MSOs are trimmed to -80mRL, Base of Complete Oxidation and the Open Pit Resource optimisation shell prior to evaluation and reporting of underground 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 processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	Gold recovery is based on a recovery formula which is reconciled annually against historic performance. The average recovery based on this equation is 84%.
Environmental factors or assumptions	Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a green fields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	It has been assumed that current or similar operational approaches, protocols and facilities applied to environmental factors at Fimiston continue for the duration of the project life.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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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.	Density measurements are collected using the industry standard submersion method for determining the density of competent diamond core. The density is assigned based upon stratigraphy and weathering state. Basic statistics are collected by stratigraphy and the mean assigned to all blocks coded with that stratigraphy and oxidation state. The sample size is generally between 0.5 and 1.5kg and the method of calculation is the water displacement technique. Measurements have been recorded in the AcQuire database and extraction schemes pair this data with the major lithology code for statistical analysis.
	The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc.), moisture and differences between rock and alteration zones within the deposit.	Ore zones predominantly exist in transitional to fresh nonporous material, so additional measures to reduce moisture intake during the water displacement method is unnecessary at this stage. Density samples are collected from homogenous lithological units and weathering states.
	Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	Density determinations are made on diamond drill core. The density data is analysed for each resource estimate and assigned to the block model based on the modelled stratigraphic unit. Fresh rock densities range from 2.74t/m3 in basalt units to 2.96t/m3 in the more mafic sills of the Golden Mile Dolerite.
Classification	The basis for the classification of the Mineral Resources into varying confidence categories.	The Fimiston resource is classified as Indicated or Inferred assigned via boundary string by domain based on a combination of physical and estimation quality metrics including mining exposure, drill spacing, variogram range, kriging efficiency / slope / variance, grade, geological continuity and historical reconciliation. Indicated is assigned to mineralisation above the AUD$2,500 pit shell where drill spacing <=50mx50m defined by the average full range of grade variograms, established grade continuity above 0.3gpt gold, geological continuity defined by consistent ore zone alteration and/or exposure by historical underground mining, positive kriging efficiency and >25% slope. Indicated in areas below the AUD$2500 pit shell drilled since 2023 was assigned to mineralisation where drill spacing was <=25mx25m. Inferred material is assigned where drill spacing is >50mx50m and <=90mx90m's with established geological continuity as defined by consistent vein selvage alteration and/or exposure by historical underground mining. Inferred material in areas below the AUD$2500 pit shell drilled since 2023 was assigned where drill spacing was <=50mx50. All other mineralisation is assigned a Potential resource category.
	Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).	All relevant factors have been given due weighting during the classification process. Thorough model validations and internal/external reviews ensure the integrity of the final estimation and reported inventory.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The resource model methodology is appropriate, and the estimated grades reflect the Competent Persons' view of the deposit.
Audits or reviews	The results of any audits or reviews of Mineral Resource estimates.	The Mineral Resource Estimate has been both internally and externally reviewed. Estimation methodology has been assessed as robust and appropriate however the geological interpretation requires greater infill drilling and incremental refinement to ensure areas of risk are mitigated. Continued reconciliation of the resource model to current production has been flagged as critical to ensure the validity of the estimate.
Discussion of relative accuracy/ confidence	Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the Resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.	The Mineral Resource has been reported in accordance with the guidelines of the 2012 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. The relative accuracy and confidence of the mineral resource model estimate is reflected in the assigned Mineral Resource classifications. An area of operational risk to the resource relates to the historical underground workings in two respects. The first is the spatial accuracy of known stopes and development used to deplete the mineral resource. These voids have not been surveyed using modern techniques and are largely defined by historical plans and current drilling. Subsequently a degree of variation in the exact position and extents of the voids can be expected resulting in a potential impact to resource inventory. The second risk is the impact of any unknown voids not captured in historical plans and not yet intersected with infill drilling.
	The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.	The statement relates to global estimates.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	Mineral reserves and resources are reconciled and reported monthly. Reconciliation is conducted by spatially comparing the resource and reserve models with grade control models and the monthly Declared Ore Mined (DOM). Reconciliations show reasonable correlation between the models and production with the process being treated as a feedback loop to ensure continuous improvement of the geological interpretation and estimation workflows.

Section 4 Estimation and Reporting of Ore Reserves
(Criteria listed in section 1, and where relevant in sections 2 and 3, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral Resource estimate for	Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.	The Mineral Resource model used for the conversion of the Ore Reserve is a robust global estimate of the Fimiston gold deposit. Exploration, resource definition, grade control, geological mapping and historical mining records were used to inform and validate the model. The Resource model estimate utilises the Categorical Indicator Kriging (CIK) method. The Resource model was depleted to the end of March 2024 for the Reserve Estimation.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
conversion to Ore Reserves	Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.	The Mineral Resources are reported inclusive of the Ore Reserve.
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	The Competent Person is a fulltime employee of Northern Star Resources with full access to validate and review input parameters, the life of mine plan, current mining performance, geotechnical and groundwater conditions.
	If no site visits have been undertaken indicate why this is the case.	Site visits undertaken.
Study status	The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.	A minimum Pre-Feasibility level study is completed prior to converting a Mineral Resource to an Ore Reserve.
	The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.	**Open Pit:** A minimum Pre-Feasibility level study is completed prior to converting to a Mineral Resource to an Ore Reserve. Ore Reserves have been calculated within detailed pit designs. A series of nested optimised pit shells were generated using Whittle software, an analysis of the shells was completed to identify the preferred shell. The detailed pit design follows the preferred pit shell as closely as practicable. The Whittle optimisation input parameters are validated by Northern Star technical personnel and technical consultants and are supported by current operational and historic data. A detailed mine schedule and cost model has been generated and appropriate ore dilution and recoveries have been applied to the Mineral Resource model. **Underground:** The Ore Reserve methodology at Fimiston Underground is to complete a full mine design built from the latest Resource model using calculated cut-offs as a guide for designing stopes. Stope shapes are designed around material greater than the stoping cut off and evaluated using the design software. Design of stopes is extended beyond the economic limits to ensure that sensitivity results are meaningful. Mine planners utilise guidelines for blocking out stopes to ensure their mineable. In general, the stope designs will not contain material below the stoping cut off unless there are reasonable grounds to include that material. Exceptions to this include sub-economic material which is encapsulated by payable ore. Dilution is applied based on mining method and geotechnical assessment. All design work is carried out with industry recognised mine design software. Mine Scheduling Software is used as a flagging and calculation tool in the processing of assessing ore reserves. The economic designs are evaluated for gold and tonnes by Mineral Resource category bins for reporting.
Cut-off parameters	The basis of the cut-off grade(s) or quality parameters applied.	**Open Pit:** The open pit cut-off grade has been calculated based on the key input components (gold price, processing costs, administration costs and recovery). Forecasted costs and physicals form the basis of the cut-off grade calculations. • The AUD gold price as per corporate guidance. • Mill recovery is based on historical data and metallurgical test work. • Variable treatment costs to open pit mining for processing is a fundamental premise in the evaluation of open pit projects. The Ore Reserve Estimation is based on a cut-off of 0.35gpt and accounts for mining dilution. **Underground:** Forward looking forecast costs and physicals form the basis of the cut-off grade calculations. • The AUD gold price used for basis of the ore reserve estimation is $2,000/oz • Mill recovery factors are based on test work and historical averages from the mine. An historical average of 84% recovery has been applied. Various cut-off grades are calculated including a break-even cut-off grade (BCOG), Stope Only cut-off grade (SCOG), Variable cut-off grade (VCOG) and Mill cut-off grade (MCOG). The VCOG and SCOG are used as the basis for stope design, though any areas which are marginal or require significant development are assessed by a more detailed financial analysis to confirm their profitability. The Fimiston Underground reserve contains material from numerous horizons in the mine from as shallow as 150m down to over 500m of depth. With depth, comes additional costs in terms of haulage and other capital requirements. The spatial economic assessment takes this into account.
Mining factors or assumptions	The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design).	Mineral Resource is converted to Ore Reserve after completing a detailed mine design complete with a detailed financial assessment. The Mineral Resource block model is the basis for design and evaluation. **Open Pit:** Ore Reserves have been calculated by generating detailed pit designs for the proposed cutbacks. A series of nested optimised pit shells were generated using Whittle software, an analysis of the shells was completed to identify the preferred shell. The detailed pit design follows the preferred pit shell as closely as practicable. The Whittle optimisation input parameters are validated by Northern Star technical personnel and technical consultants and are supported by current operational and historic data.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
		Underground: The Ore Reserve methodology at Fimiston Underground is to complete a full mine design built from the latest Resource model using calculated cut-offs as a guide for designing stopes. Stope shapes are designed around material greater than the stoping cut off and evaluated using the design software. The designs are evaluated for gold and tonnes by Mineral Resource category bins. The evaluation results are automatically output to scheduling software. Mine Scheduling Software is used as a flagging and calculation tool in the processing of ore reserves. Factors for dilution and recovery are applied, All stope shapes are assessed with local financial evaluations to determine if they are profitable.
	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:** The selected mining method for the Fimiston Open Pit is a bench mining open pit method. The proposed open pit cutbacks will be mined using conventional open pit mining methods (drill, blast, load and haul) under an owner operator model, utilising 800t class excavators and 240t class trucks. This method is consistent with the current and historic mining method of the Fimiston Open Pit and is deemed appropriate given the proposed cutbacks are an extension of the current Fimiston Open Pit. **Underground:** The Fimiston underground mine is accessed via portal access within an existing open pit. Production at Fimiston underground is planned to be carried out utilising a combination of remnant open stoping and conventional Longhole open stoping. Where possible, stopes are backfilled with development waste to save haulage costs.
	The assumptions made regarding geotechnical parameters (e.g. pit slopes, stope sizes, etc.), grade control and pre-production drilling.	**Open Pit:** Geotechnical slope parameters for the Fimiston Open Pit have been developed and modified throughout the mine's history. A combination of experience, geotechnical design and trial mining has been used to arrive at the parameters currently used. In general, the selection of slope design parameters is controlled by weathering state (oxide/non-oxide), structural fabric and major structures present within the pit. The design process to arrive at slope parameters for new cutbacks includes geotechnical drilling and testing, mapping of current pit faces, geotechnical model and domain creation, and 3-D numerical modelling to assess factors of safety. Independent review of the data collection and geotechnical model development processes is carried out by independent consultants before each cutback is modelled. Further modifications are made as required during mining in response to slope performance and updates to the geotechnical model as the new faces become exposed. **Underground:** The production areas at Fimiston Underground are planned to be access via underground capital and operating development. The dimensions and ground support for the drives are determined using the rock mass Q value, structural information, and current known conditions at the adjacent Mt Charlotte mine. Areas are planned to be mined using the Longhole open stoping mining method; stope dimensions and backfilling requirements are determined using hydraulic radius and Q value, modified by location of major structures.
	The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).	This Table 1 applies to both underground and open pit mining. And detailed interface review was conducted to ensure separation between underground and open pit Reserve material. The Ore Reserve Estimate is based on detailed mine design work based on the approved resource model and is supported by current operational and historic data.
	The mining dilution factors used.	**Open Pit:** Dilution is built into the block model and is based on a minimum mining width calibrated to proposed mining fleet and reconciled against historical performance. **Underground:** The range of stope dilutions applied is 10-25% depending on mining method and stope width. These factors have been applied based on a geotechnical assessment completed for the different mining horizons.
	The mining recovery factors used.	**Open Pit:** Mining recovery is built into the Ore Reserve estimated and is based on current mining performance. **Underground:** The range of mining recoveries applied is 60-90% depending on mining method and stope width. These factors have been applied based on a geotechnical assessment completed for the different mining horizons. These factors include pillar recovery to ensure a stable hydraulic radius is maintained in the open stoping mining method.
	Any minimum mining widths used.	**Open Pit:** Minimum mining width of 40m is applied to both the Whittle optimisation and final mine design as is appropriate for the primary mining fleet. **Underground:** A minimum stope mining width of 3m has been used.
	The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.	**Open Pit:** 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.

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Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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		Underground: Designed stopes with greater than 50% inferred blocks are excluded from the reported Ore Reserve. Inferred Material located within a majority indicated stoping block has been included in the ore reserve if the stoping block is deemed financially viable by use of the indicated material alone (inferred material is considered as a dilutant in this context). This material constitutes less than 6% of the total reserve for Fimiston Underground.
	The infrastructure requirements of the selected mining methods.	**Open Pit:** The Ore Reserve estimate is an extension of the existing Fimiston operation. The existing operation has adequate infrastructure to support the Ore Reserve and future mine plan. **Underground:** Existing mine infrastructure required for the mining of the reserves includes mine dewatering pumps, compressed air supply and mine ventilation. One main access decline connects the mine to a portal in the west end of the Fimiston Pit. The decline and pit ramp are well maintained. There are communication systems throughout the mine. Additional ventilation, dewatering infrastructure and capital development will be required to facilitate mining of reserve shapes. This is a process that is already being completed at KCGM for the Mt Charlotte underground mine.
Metallurgical factors or assumptions	The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.	The Fimiston plant is made up of crushing, grinding, gravity gold recovery, flotation, UFG, CIL, elution and gold recovery circuits. The existing milling facilities are designed to process approximately 12 million tonnes per annum. The plant has the capability to treat both refractory and free milling ores through a flotation circuit and associated concentrate ultra-fine grinding circuit. A new brownfields Fimiston Processing Plant is currently under construction. The new brownfields plant has a capacity of 27 million tonnes per annum. It will follow the same process flowsheet, and will utilise the existing primary crusher, crushed ore cone, and Fimiston SAG mill. Ore Reserves are calculated using processing plant recovery factors that are based on test work and historical performance (84%), and expected operating costs based upon the 27 million tonne per annum plant.
	Whether the metallurgical process is well-tested technology or novel in nature.	Milling experience gained since 2005, 18 years' continuous operation.
	The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.	Milling experience gained since 2005, 18 years' continuous operation.
	Any assumptions or allowances made for deleterious elements.	No allowances made.
	The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.	Milling experience gained since 2005, 18 years' continuous operation.
	For minerals that are defined by a specification, has the ore Reserve estimation been based on the appropriate mineralogy to meet the specifications?	Not applicable.
Environmental	The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.	The Fimiston Operation includes mining of the Fimiston Open Pit and underground, as well as the Mt Charlotte underground mine, and mineral processing at the Fimiston Processing Plant. Tailings generated from the Fimiston Processing Plant are deposited to the Fimiston I, II and Kaltails Tailings Storage Facilities (TSFs). KCGM also operates the Gidji Gold Processing Plant, located approximately 17 km north of Kalgoorlie-Boulder, where sulphide concentrate produced at the Fimiston Processing Plant undergoes further processing. Tailings generated from the Gidji Gold Processing Plant are deposited to the Gidji II TSF. Final gold recovery (elution of the loaded carbon) is conducted at the Fimiston Processing Plant. Mining operations in Western Australia are regulated under the Mining Act 1978 and the Work Health and Safety Act 2022, which are administered by the Department of Mines, Industry Regulation and Safety (DMIRS). KCGM manages over 300 Mining Leases (tenements) granted in accordance with the Mining Act 1978, which stipulate environmental conditions for operation, rehabilitation and reporting. The tenements extend in a general north-south direction centred on the Fimiston Open Pit and cover a surface area of approximately 34,000 ha. Mineral processing and tailings disposal are regulated by the Department of Water and Environmental Regulation (DWER) under the Environmental Protection Act 1986 (EP Act). Accordingly, the Fimiston Processing Plant operates in accordance with Prescribed Premises Licence L6420/1988/14 with an approved production capacity of 14,500,000 tonnes per year, whilst the Gidji Gold Processing Plant operates in accordance with Prescribed Premises Licence L5946/1988/13 with an approved production capacity of 438,000 tonnes per year. KCGM was granted environmental approval for the Fimiston Mine and Waste Dumps under Part IV of the EP Act on 24 October 1991 for the Consultative Environmental Review (CER) Mine and Waste Dumps - Fimiston. Conditions for approval were outlined in Ministerial Statement 188. In September 2006, KCGM released a Public Environmental Review for the Fimiston Gold Mine Operations Extension (Stage 3) Project which was granted Ministerial Approval in January 2009 under Ministerial Statement 782. The Gidji Gold Processing Plant was granted environmental approval under Part IV of the EP in May 1988 under Ministerial Statement 28, and subsequently in September 1989 under Ministerial Statement 77. Following decommissioning of the roasters in 2015, which effectively removed sulphur dioxide point source emissions from the site, KCGM were granted Ministerial Statement 1032 in May 2016.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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		KCGM currently manages potential environment impacts associated with the Fimiston Operation in accordance with the following Environmental Management Plans: • Fimiston Air Quality Management Plan approved by DWER June 2016. • Noise and Vibration Monitoring and Management Plan approved by DWER September 2016. Waste rock characterisation studies have determined that approximately 80% of the waste rock sourced from the Fimiston Open Pit is Golden Mile Dolerite. The remaining waste rock is composed primarily of Paringa Basalt (14%) and the Black Flag Shale (BFS) (4.5%). The studies have concluded that the Golden Mile Dolerite and Paringa Basalt units are classified as non-acid forming (NAF). The ore zone of the BFS is potentially long lag PAF, with the risk diminishing towards the mine waste zones as the sulphur content decreases. The risk of acid rock drainage formation in the Fimiston WRDs is very low to low, due to the large amount of Golden Mile Dolerite containing neutralisation potential in the dumps, and the relatively low sulphur content of waste rock. Further, net acid generation and associated metals leaching would only be possible after very prolonged exposure, and such exposure is unlikely given current waste management practices of blending and encapsulation of BFS material within the WRDs.
Infrastructure	The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.	KCGM Fimiston operations, including Mt Charlotte and the open pit are located adjacent to the City of Kalgoorlie-Boulder, while Gidji processing plant is located 17km north of Kalgoorlie-Boulder. Access to the operations is provided by well-maintained sealed public and private roads. Majority of employees reside in Kalgoorlie-Boulder and commute to site daily. Normal communication channels, satellite and land-based facilities are available. Potable water for the KCGM operations is supplied from the Water Corporation Kalgoorlie water supply system. Non-potable water requirements are sourced from bores fields up to 28km away from the mine site. Makeup water for the Fimiston and Gidji processing plants is supplied from bore fields, water recovered and recycled from the operations, pit dewatering as well as some water sourced from recycled or treated effluent. Electricity is provided by the state electricity grid and Parkeston Power Station. Power lines feed all KCGM operations from Parkeston Power Station or direct from the grid. Sources of fuel, such as diesel, gasoline etc. are readily available at competitive pricing from local suppliers, as there are multiple operating plants in the Kalgoorlie area.
Costs	The derivation of, or assumptions made, regarding projected capital costs in the study.	**Open Pit:** Capital costs are projected through an annual budget process. **Underground:** Mine development capital cost based on historical performance on site at Mt Charlotte and life-of-mine forward planning. Plant and equipment capital are based on site and company experience.
	The methodology used to estimate operating costs.	**Open Pit:** The detailed mine designs are incorporated into the life of mine plan and scheduled through to completion. The schedule is costed in detail from first principals. Cost assumptions are supported by an abundance of historic data and have been validated by an independent third party. **Underground:** All overhead costs and operational costs are projected forward based on historical data at Mt Charlotte and other company operations.
	Allowances made for the content of deleterious elements.	No allowances made.
	The derivation of assumptions made of metal or commodity price(s), for the principal minerals and co-products.	The gold price is based on internal forecasts.
	The source of exchange rates used in the study.	Internal forecasts.
	Derivation of transportation charges.	Historic performance and existing contractual agreements.
	The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.	Historic performance and existing contractual agreements.
	The allowances made for royalties payable, both Government and private.	State Govt. 2.5% royalty is built into the cost model.
Revenue factors	The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc.	AUD$2,000/oz gold price.
	The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.	Corporate guidance.
Market assessment	The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.	There is a transparent quoted market for the sale of gold.
	A customer and competitor analysis along with the identification of likely market windows for the product.	There is a transparent quoted market for the sale of gold.

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Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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	Price and volume forecasts and the basis for these forecasts.	Corporate guidance.
	For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.	Not applicable.
Economic	The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.	NPV is used during Pre-Feasibility and Feasibility studies as required. Economic assumptions such as discount rate and estimated inflation are finalised at the time of the study and based on internal company guidance. The Ore Reserve Estimation is based on detailed life of mine designs. All relevant capital and operating costs as well as revenue and selling costs have been accounted for.
	NPV ranges and sensitivity to variations in the significant assumptions and inputs.	A full financial model was developed with sensitivities applied to all key inputs and assumptions.
Social	The status of agreements with key stakeholders and matters leading to social licence to operate.	Agreements are in place and are current with all key stakeholders. The Ore Reserve is an extension of the existing Fimiston Operations which has a proven track record of good standing regarding social licence to operate.
Other	To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:	
	Any identified material naturally occurring risks.	Mercury occurs naturally in the gold bearing ore that is mined from the Fimiston Open Pit. The mercury is present primarily as tellurides, which are minerals composed of several metals in association with the element tellurium (Te). The telluride minerals containing mercury that are present in the Fimiston Open Pit include Coloradoite, also known as Mercury telluride (HgTe) and cuprian coloradoite ((Hg, Cu)Te). Telluride minerals are rare but widely distributed through the Golden Mile lodes and generally represent less than 0.00014% of the ore mined from the Fimiston Open Pit and the Mt Charlotte Underground Mine. Mercury is also present in the waste rock material mined from the Fimiston Open Pit (typically 0.00001%). An investigation by KCGM in 2006 showed that the distribution of tellurides (including coloradoite) within the Golden Mile lodes is consistent and there is no evidence to suggest that the concentration of mercury in the materials mined from the Fimiston Open Pit will increase or decrease over time.
	The status of material legal agreements and marketing arrangements.	No issues.
	The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the Reserve is contingent.	No issues.
Classification	The basis for the classification of the Ore Reserves into varying confidence categories.	The classification of the Ore Reserve estimate is in accordance with the JORC code 2012. Ore Reserves classifications are derived from the underlying Resource model classifications – i.e. Measured Resource material is converted to either Proved or Probable Reserves, Indicated Resource material is converted to Probable Reserves.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The results accurately reflect the Competent Persons view of the deposit.
	The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).	Nil.
Audits or reviews	The results of any audits or reviews of Ore Reserve estimates.	The Ore Reserves reporting processes has been subjected to an internal review by KCGM Senior Technical personnel in April 2024.
Discussion of relative accuracy/ confidence	Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the Reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.	The Ore Reserve Estimate has been prepared in accordance with the guideline of the 2012 JORC. Confidence in the model and Ore Reserve Estimate is considered high based on current mine and reconciliation performance. The resource model used to derive the Ore Reserve estimate is based on drill-hole data of sufficient continuity and spacing to satisfy the requirements of an Ore Reserve and his been subjected to an internal and external review.
	The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.	Estimates are global but are deemed of sufficient accuracy on a local scale.
	Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.	The Ore Reserve is an extension of the existing Fimiston Operation. Modifying factors have been reconciled against current and historic performance.

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Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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	It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	Reconciliation results from past mining at the Fimiston Operation has been considered and factored into the Ore Reserve assumptions where appropriate.

KCGM: Mt Charlotte – 31 March 2024

Section 1 Sampling Techniques and Data

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

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.	The sampling database for the KCGM Mineral Resource estimation has been collected over the last 115 years. The data has been collected by many different operations, using varying techniques. Assay information quality also varies with detection limit and quality: generally, the quality appears to be inversely proportional to the age of the samples. For this reason, assay information collected prior to 1984 is not used in the interpolation of element grades. All information collected prior to involvement by Northern Star Resources and Saracen Minerals in 2019 is hereafter referred to as historical data. Only historical data that is deemed as having acceptable and traceable location and assay information has been included in the Mineral Resource estimation dataset for Mt Charlotte. For Mineral Resource estimation the MTC deposits are sampled in majority by diamond drilling (DD), reverse circulation (RC) and underground face chip samples. Final sample and drilling meters are the result of a thorough QAQC audit of the database and new drilling. See table below.
		Hole Type / No. of Collars / Total Meters / No. of Samples Diamond — 5,008 — 823,439 — 767,145 RC — 1,772 — 125,492 — 87,051 Underground Face Chips — 905 — 6,915 — 7,218 Total Number of Drillholes — 7,685 — 955,846 — 861,414
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	For DD samples, down hole depths are recorded by the drillers on core blocks. This is checked and compared to the measurements of the core by the geologist during core mark-up prior to logging, to prevent incorrect logging and sampling errors. Sample intervals are then marked on the core by a geologist, to honour geological boundaries. Sample interval lengths vary from 0.3m and 1.3m (NQ). DD core is orientated, measured and then sampled by cutting the core in half longitudinally using an "Almonte" diamond saw. Cutting was along orientation lines. The same half of the core is always selected for each sample interval, placed in numbered calico bags that contain a bar code, scanned into the database and submitted to the laboratory for analysis. The other half of the core is left in the core tray which is stamped for identification, stored and catalogued. Routine 'field duplicates' to assess sample representivity are not performed on diamond core as these are not considered to be true field duplicates. Some intervals have been sampled using full core sampling methods. The intervals are still marked by a geologist to honour geological boundaries, shorter sample lengths are used based upon the diameter of the core to retain similar sample volumes. RC samples were homogenised by riffle or cone splitting prior to sampling and then submitted for assay as 1m or 2m samples. Face chip sampling is performed by geologists using industry standard face sampling protocols. Certified standard samples, ranging in grades from 0.542 g/t Au to 34.99 g/t Au, purchased from OREAS, are inserted at the rate of one in 40 samples. The results are reviewed on a per batch basis and the entire batch of samples is reanalysed if the result is greater than three standard deviations (SD) from the expected result. All drill collars are surveyed by using a total station theodolite or total GPS.
	Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.	Historical sample preparation and assay procedures are variable due to the duration of historical work and the numerous companies involved. All historical sampling accepted for use in the Mineral Resource estimates are considered to have been collected by acceptable practices. Current sample preparation and assay procedures employed by KCGM are considered as following industry standard practice. All assay determinations are conducted by internationally recognised laboratories. The primary laboratory, Bureau Veritas, meets ISO 9001:2000. Samples are oven dried until a constant mass is achieved. All samples are then processed through an Essa Jaw Crusher or a Boyd Crusher to 90% < 3 mm. The crushed sample is then pulverised for 4 minutes in an LM5 pulveriser for a product of 90% passing < 75 μm. Approximately 250 - 300g of the pulp is retained and a 40g charge weight for fire assay is extracted from the pulp packet. Samples are tested for sulphides and flux adjusted, flux is added at a ratio of 1:4. Samples are fired, hammered and cupelled. Prills placed in tubes, dissolved on hotplates and analysed using AA finish with over range dilutions. Sample preparation for Sulphur determination follows the same process as for

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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		Gold, with assaying taking place using the LECO method. Sample preparation for Silver determination follows the same process as for Gold, with assaying taking place using Four Acid Digest with an ICP MS finish.
Drilling techniques	Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc.).	DD core is mostly NQ diameter with some BQ, HQ and LTK60 diameter core. Where possible diamond core was orientated using a spear, Ballmark™, Ezimark™, ACE multi electronic tool, Reflex ACTIIIRD or Trucore™ tool. A small proportion of the Mount Charlotte database is made up of RC drilling completed from surface.
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed.	For DD, all recovery is recorded by the drillers on core blocks. This is checked and compared to the measurements of the core by the geologist and entered as interval into the hole log. Any issues are communicated back to the drilling contractor. Recovery is generally very high, in excess of 95%, and there have been no significant sample recovery problems. Historic DD core stored on site shows excellent recovery. A limited number of drill holes have intersected historical workings, this is recorded on the core block as well as on driller's plods and is recorded in the database. Where possible drilling continues beyond the void. RC drilling sample weights were recorded for selected sample intervals and monitored for fluctuations against the expected sample weight. If samples were below the expected weight, feedback was given promptly to the RC driller to modify drilling practices to achieve the expected weights
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	For DD and RC, drilling contractors adjust the rate of drilling and method if recovery issues arise. Minor loss occurs when drilling through fault zones. Areas of potential lower recovery are generally known before hand and controlled drilling techniques employed to maximise recovery.
	Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	No specific study has been carried out on recovery and grade. As recoveries are generally very high (95%+) it is assumed that the potential for bias due to variable sample recovery is low.
Logging	Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.	All DD core was logged by geologists with lithology, mineralisation, structure, alteration, veining and specific gravity were recorded. Quantitative measures such as structural measurements, intensity of alteration, percentage of mineralisation and vein intensity were also recorded. Geotechnical measurements on DD core include RQD, Recovery, and Fracture Frequency. For selected holes joint sets, infill, infill thickness and roughness were also geotechnically measured. All mineralised intersections are logged and sampled. Logging is entered in acQuire using a series of drop-down menus which contain the appropriate codes for description of the rock. All underground face chips are logged for lithology and mineralisation. Logging is captured on a face sample sheet underground which is then transferred to acQuire, a component of face logging during a trial period was conducted using Datamine StudioMapper software on tablets. Faces are entered into acQuire using a series of drop-down menus which contain appropriate codes for description of the rock.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	Geology logging is qualitative in nature with visual estimates made of mineralisation percentages for core. Structural and geotechnical logging is quantitative in nature. All core is photographed wet as standard practice. Historically some core may have also been photographed dry. Underground faces are logged and sampled to provide both qualitative and quantitative data. All faces are washed down and photographed before sampling is completed.
	The total length and percentage of the relevant intersections logged.	100% of the drill core is logged.
Sub-sampling techniques and sample preparation	If core, whether cut or sawn and whether quarter, half or all core taken.	DD core is sampled by sawn half-core on intervals controlled by geological domaining represented by mineralisation, alteration and lithology. In general, grade control holes are routinely full core sampled. Mineralised intersections are sampled with a maximum and minimum length of 1.3m and 0.3m, respecting lithological or alteration contacts. The down hole depths of all sample interval extents are recorded. For some intervals include most grade control holes full core sampling is completed. Changes to the maximum and minimum sample lengths are applied to maintain sample volume.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	Development face samples are chipped directly off the face into a sample bag aiming for sample size of at least 2.5kg. Samples are a maximum of 1.3m and a minimum of 0.3m in width and honour geological boundaries. Samples are taken horizontally across the mineralisation. Historic RC samples were homogenised by riffle or cone splitting prior to sampling, however it was not recorded whether they were sampled wet or dry.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	Sample preparation follows industry standard practice. Samples are oven dried until a constant mass is achieved. All samples are then processed through an Essa Jaw Crusher or a Boyd Crusher to 90% < 3 mm. The crushed sample is then pulverised for 4 minutes in an LM5 pulveriser for a product of 90% passing < 75 µm. Approximately 250 - 300 g of the pulp is retained and a 40g charge prepared.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	Coarse grind checks at the crushing stage (3mm) are carried out at a ratio of 1:40 samples with 90% passing required. Pulp grind checks at the pulverising stage (75 µm) are carried out at a ratio of 1:40 samples with 90% passing required. Laboratory duplicate samples are taken for coarse crush (3mm) and pulverising (75 µm) stages at a ratio of 1:50 samples. Repeat assays are carried om 5% of prepared pulp samples.
	Measures taken to ensure that the sampling is representative of the in-situ material collected, including for instance results for field duplicate / second-half sampling.	Quarter core sampling of diamond core is occasionally undertaken for check assays, however routine field duplicates are not performed on diamond core as these are not considered to be true field duplicates. Umpire sampling is performed monthly, where 10% of the samples are sent to the umpire lab for processing.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	The sample and size (3kg to 4kg) relative to the particle size (>90% passing 75um) of the material sampled is a commonly utilised practice for effective sample representation for gold deposits within the Eastern Goldfields of Western Australia

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Quality of assay data and laboratory tests	The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.	Fire assay analysis is undertaken and this is considered to be a total assay method. Monthly and more detailed Quarterly QAQC reports are prepared to check for any bias or trends with conclusions discussed with the laboratory management. Holes that do not pass QAQC are not used for Mineral Resource estimation.
	For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.	No geophysical tools were used to determine any element concentrations.
	Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.	Sampling and assaying QAQC procedures include: - Periodical resubmission of samples to primary and secondary laboratories - Submittal of independent certified reference material - Sieve testing to check grind size - Sample recovery checks. - Unannounced laboratory inspections Standard control samples and blanks purchased from certified commercial suppliers are inserted at a ratio of 1:40. The results are reviewed on a per batch basis and batches of samples are re-analysed if the result is greater than three standard deviations from the expected result. Any result outside of two standard deviations is flagged for investigation by a geologist and may also be re-assayed. Blanks are inserted into the sample sequence at a nominal ratio of 1:40. The insertion points are selected at random, except where high grade mineralisation is expected. In these cases, a Blank is inserted after the high-grade sample to test for contamination. Results greater than 0.2 g/t are investigated, and re-assayed if appropriate. New pulps are prepared if anomalous results cannot be resolved. When visible gold is observed in core, a barren flush is required. Laboratory performance was monitored using the results from the QA samples mentioned above. This was supplemented by the internal QA samples used by the laboratories, which included pulp duplicates and CRMs The QA studies indicate that accuracy and precision are within industry accepted limits.
Verification of sampling and assaying	The verification of significant intersections by either independent or alternative company personnel.	All significant and anomalous intersections are verified by a Senior Geologist during the drill hole validation process.
	The use of twinned holes.	Twinning of historic partially sampled GC holes is routinely assessed and where able (and beneficial) drilled when targeting around the Charlotte Stockwork orebodies. Where historic partially sampled GC holes are twinned with new drillholes, the historic holes are excluded from the estimation where appropriate. Re-drilling of some drillholes has occurred due to issues downhole (e.g. deviation). These have been captured in the database as an 'A' and have been logged and sampled as well as the original hole.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	All data are stored and validated within the site acQuire database. Data import into the database is controlled by documented standard operating procedures, and by a set of validation tools included in acQuire import routines. Electronic copies of all primary location, logging and sample results data are filed for each hole. Assay results are received in csv format and loaded directly into the database by the supervising geologist who then checks that the results have inserted correctly. Holes that cannot be accurately validated or do not meet the requirements of MTC QAQC are excluded prior to Mineral Resource estimation.
	Discuss any adjustment to assay data.	No adjustments are made to the diamond or RC assay data. During Mineral Resource estimation, face chip sample assays are calibrated by an average factor of 0.5 due to a sampling bias (in general, the full structure/orebody width not exposed in underground faces) to better correlate with diamond and RC assay data. No adjustments are made to the raw assay data in the database.
Location of data points	Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.	Planned holes are marked up by the KCGM surveyors in the Mt Charlotte mine grid. All drill hole collar positions were surveyed. All recent DD holes were surveyed down hole by various methods including single shot down hole camera, EMS (Electronic Multi Shot) method or in-rod gyroscopic survey tools. Holes are typically surveyed at 15m and 30m intervals down hole thereafter. QAQC is performed on the speed of running, and also on the misclose rate for each gyroscopic survey. Where issues are identified, a single survey run can be chosen as preferred with the remaining data ignored. This data is converted to csv format and imported into the AcQuire database where it is validated by the project geologist. Any poor surveys are re-surveyed If survey data was missing or quality was suspect and not replaced by more recent drilling, affected data was not used in estimation.
	Specification of the grid system used.	MTC models are completed on the Mt Charlotte Grid. This is a rotated grid 38.344° from MGA 94
	Quality and adequacy of topographic control.	The topography surface wireframe is generated from an annual flyover survey completed by Fugro Australia Land PTY LTD with +/- 15cm resolution.
Data spacing and distribution	Data spacing for reporting of Exploration Results.	Drill hole spacing varies through the mine depending on the mineralisation style. For stockwork ore bodies drill spacing is nominally 16mE x 60mN down to 8mE x 30mN. For lode-style ore bodies, including Hidden Secret, drill spacing is nominally 50mE x 50mN down to 12.5mE x 12.5mN

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ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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	Whether the data spacing, and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.	The data spacing in the ore lodes at MTC is considered sufficient to support the definition of Mineral Resources and Reserves as applied under the 2012 JORC Code. Appropriate geological and grade continuity have been demonstrated during the 30+ years of mining at the MTC operations.
	Whether sample compositing has been applied.	No sample compositing has been applied to the database. For grade estimation, the datasets are composited to 1m intervals prior to grade estimation. This aligns with the most common sample length taken.
Orientation of data in relation to geological structure	Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.	Orientation of drilling varies depending on the style of mineralisation. For stockwork ore bodies drilling is specifically orientated to intercept the vein sets at an optimum angle. For the lode-style orebodies, including Hidden Secret, drilling is perpendicular to the interpreted strike of the ore lodes. As a result of limited drill platforms underground actual intersections may be slightly oblique to the intended right-angle intersections. The majority of drillholes are positioned to achieve optimum intersection angles to the ore zone as are practicable.
	If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.	Holes with orientations that are considered likely to introduce a bias to the estimation are flagged during drill hole validation process and are excluded from the Mineral Resource estimation datasets.
Sample security	The measures taken to ensure sample security.	All core is kept within the site perimeter fence on the Mining Lease M26/353, M26/359 and M26/131. Samples are dispatched and/or collected by an offsite delivery service on a regular basis. Each sample batch is accompanied with a: - Job number - Number of Samples - Sample Numbers (including standards and duplicates) - Required analytical methods - A job priority rating A Chain of Custody is demonstrated by both Company and Bureau Veritas in the delivery and receipt of sample materials. Any damage to or loss of samples within each batch (e.g. total loss, spillage or obvious contamination), is reported to the Company in the form of a list of samples affected and detailing the nature of the problem(s).
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	Sampling performed by KCGM staff and contractors is reviewed weekly by senior KCGM geology personnel including task observations and inspections. Data is reviewed regularly by senior KCGM geology personnel and low confidence data is excluded from the estimate. Audits and inspections of the commercial assay lab are completed monthly by the QA/QC geologist.

Section 2 Reporting of Exploration Results
(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	The tenement portfolio is located on land owned by the State of Western Australia on Crown reserves or vacant Crown land. Northern Star Pty Ltd (Northern Star) manages the tenement portfolio for the KCGM operations. The portfolio comprises of 384 granted tenements which is a combination of Miscellaneous (75) and Prospecting Licenses (70), and General Purpose (115) and Mining Leases (122). The tenements cover a total area of approximately 49,000 hectares extending in a north-south direction over a distance of approximately 45km, centred on the Super Pit. There are two registered Native Title Claims that incorporate the KCGM leases. Claimant groups include the Maduwongga people (WC2017/001) and Marlinyu Ghoorlie (WC2017/007). These claims are currently before the tribunal for the Determination.
	The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.	No known impediments exist, and the tenements are in good standing.
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	In the 1970s, the goldfield was controlled by three companies: Kalgoorlie Mining Associates (KMA), Kalgoorlie Lake View (the majority owner of KMA), and North Kalgurli Mines. In 1974, all operations on the Golden Mile had ceased, with the exception of the highly mechanized Mt Charlotte Underground Mine. Modern day surface mining commenced in 1983 in the Kemlo Pit followed by the Croesus and Eclipse pits, and the Central and Paringa pits in 1985. KCGM was formed in 1989 to run the operation on behalf of its owners Homestake Gold of Australia Ltd (Homestake) and GMK, a subsidiary of Normandy Mining Limited. By 1992, all labour intensive, high-cost underground mining of narrow zones stopped in the Main, Croesus, Chaffers, Lake View, and Perseverance shafts. Fimiston underground production ceased in 1994.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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		In 2001, Homestake merged with Barrick to form Barrick Gold Australia, thereby becoming a 50% owner of KCGM. In 2002, Newmont acquired Normandy Mines Limited, thereby becoming a 50% owner of KCGM. In 2019, Saracen and Northern Star acquired the operation from Barrick and Newmont. In 2020, Northern Star announced a merger of equals, and the operation is now wholly owned by Northern Star Resources
		Exploration drilling is ongoing from underground to extend the known mineral resources.
Geology	Deposit type, geological setting and style of mineralisation.	The Golden Mile deposit occurs in the Kalgoorlie Terrane, within the southern portion of the NNW trending Archaean Norseman-Wiluna Greenstone Belt. The greenstone belt has been multiply deformed and regionally metamorphosed to grades varying from lower greenschist to amphibolite grade (Swager, 1997). The stratigraphy of the Kalgoorlie Terrane consists of a lower mafic-ultramafic volcanic sequence overlain by a thick sequence of clastic sedimentary rocks and intermediate to felsic volcaniclastic rocks (Swager, 1997). Younger sedimentary basins, occurring along major faults or synclines, unconformably overly the greenstone sequence (Swager, 1997). Granitic intrusions occurring within the Norseman-Wiluna Greenstone Belt are divided into two categories: pre-folding and post-folding (Witt and Davy, 1997). The post-folding intrusions are further subdivided as syn-tectonic and late tectonic.
		The stratigraphy covered by the KCGM tenements consists of a basal ultramafic unit called the Hannan Lake Serpentinite. This ultramafic unit is overlain successively by the high magnesian Devon Consols Basalt, Kapai Slate, tholeiitic Paringa Basalt and the Black Flag Group sediments. Differentiated zones of dolerite and gabbro texture occur within the mafic sequence. The Golden Mile Dolerite, hosting the bulk of the Golden Mile and Mount Charlotte gold mineralisation, is a strongly differentiated layered gabbro, approximately 700m in thickness. The Golden Mile Dolerite is situated conformably between the Paringa Basalt and the Black Flag Group sediments. This entire stratigraphic sequence is intruded by numerous porphyry dykes of intermediate to felsic composition.
		The Mt Charlotte style gold mineralisation is hosted within the Golden Mile Dolerite and is predominantly associated with pyrite in carbonate alteration haloes around quartz veins, with a minor proportion as relatively coarse free gold within the veins, commonly close to their margins. The veins vary in width from a few millimetres to a maximum of about two metres but are commonly between two centimetres and 50 cm wide. The vein spacing varies from 20 cm to tens of metres but is typically from 50 cm to two metres in areas mined as ore. Quartz is the dominant vein-fill mineral; accessory vein minerals include calcite, ankerite, scheelite, pyrite, pyrrhotite, and gold.
		The Hidden Secret style gold mineralisation is hosted within the Williamstown Dolerite at the contact with the Kapai Slate and Devon Consols Basalt and spatially associated with a porphyritic intrusion and the Towns Fault. Gold is hosted in deformed a quartz vein 2-20cm wide. Vein minerals include pyrite, telluride, silica, carbonate and fuchsite.
		Fairplay is hosted dominantly within the Williamstown Dolerite and Paringa Basalt and is spatially associated with the Acre Fault. Thin shear and stockwork veins contain quartz, pyrite, telluride, carbonate, fuchsite, roscoelite, and gold. Lode style orebodies at Mt Ferrum are considered Fimiston-style gold, and consist of shear zones with fine disseminated pyrite, quartz carbonate veins and broad breccia zones.
Drill hole Information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: o easting and northing of the drill hole collar o elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar o dip and azimuth of the hole o down hole length and interception depth o hole length.	Refer to the drill hole information table in the Appendix of this report for significant assay results from KCGM for each lode represented throughout the report. All mineralised intercepts are shown in the table. All material data is periodically released on the ASX: 03/05/2021 Future drill hole data will be periodically released or when results materially change the economic value of the project.
	If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	Exclusion of the drill information will not detract from the understanding of the report.
Data aggregation methods	In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.	All reported assay results have been length weighted to provide a true intersection width where possible. All reported assay results within Mt Charlotte style stockwork mineralisation are reported using downhole widths, due to the nature of the mineralisation and orientation of the drill holes, true width calculations are not possible or are misleading.
	Where aggregate intercepts incorporate short lengths of high-grade results and longer lengths of low-grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.	Intercepts are aggregated based on underground and open pit reporting criteria. Cut off grades are based on assumed mining grades. Underground lode mineralised zones were interpreted using a nominal cut-off grade (COG) of 3g/t with a maximum internal dilution of 2 meters. Underground Stockwork mineralised zones were interpreted using a nominal cut-off grade (COG) of 1.7g/t with consideration of current bulk mining methods applied for stockwork orebodies at Mt Charlotte. As such, stockwork intercepts may include internal zones of relatively low grades within a wider higher-grade zone, this represents the variable vein abundance and alteration intensity within a stockwork orebody. Where a standout higher grade zone exists within the broader mineralised zone, the higher-grade interval is reported also.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	No metal equivalent values have been used for the reporting of these exploration results.
Relationship between mineralisation	These relationships are particularly important in the reporting of Exploration Results.	Estimated true widths have been calculated for intersections of the known ore zones, based on existing knowledge of the nature of these structures.
	If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.	Both the downhole width and estimated true width have been clearly specified when used.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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widths and intercept lengths	If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').	Where mineralisation orientations are known, downhole lengths are reported.
Diagrams	Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	Appropriate plans and section have been included in this report.
Balanced reporting	Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	Both high and low grades have been reported accurately, clearly identified with the drill hole attributes and 'From' and 'To' depths.
Other substantive exploration data	Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	No other material exploration data has been collected for this area.
Further work	The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).	Mt Charlotte is currently in production and exploration is planned to test for lateral and depth extensions to known orebodies, and to identify new satellite ore bodies.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Appropriate diagrams accompany this release.

Section 3 Estimation and Reporting of Mineral Resources
(Criteria listed in section 1, and where relevant in section 2, also apply to this section).

Criteria	JORC Code explanation	Commentary
Database integrity	Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.	The data used for generating this resource estimation was extracted from Northern Star's acQuire database management system stored on a secure SQL server. The Company employs database administrators to manage the database. Where possible, raw data is loaded directly into the database, with adjustments such as survey transformations occurring within the database, so any changes/adjustments are fully traceable. Extensive validation is built into the acQuire database to ensure data integrity and user access logs are maintained for all fields in the dataset. Data validation tools and sign off facilities to record data cross-checking are used.
	Data validation procedures used.	Data that is captured in the field is entered into templates which are checked on import into the acQuire database for errors. Assay jobs are dispatched electronically to the lab to minimise the chance of data entry errors. Assay results from the lab are received in CSV format and are checked for errors on import into the database. Data is regularly validated using the mining software. The data validation process is overseen by the Database Administrator. Errors are corrected where possible. When not possible the data is flagged as confidence "0" or "1" in the database and the database is re-exported. This data will not be used in the estimation process. A proportion of the historical holes have been partially sampled, these holes are used in the resource estimation and unsampled intervals have been assigned 0.005g/t. These holes are being evaluated for twinning with additional drilling or sampling where core is still available
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	The Competent Person is a full-time employee of KCGM and is based in Kalgoorlie and has full access to ensure integrity across all geological disciplines. The Senior Geologist – Resources for this model undertook a site visit.
	If no site visits have been undertaken indicate why this is the case.	Site visits have been undertaken.
Geological interpretation	Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.	Confidence in the interpretation for each deposit area included within the Mt Charlotte model is dependent on amount and quality of data available, geological setting, and style of mineralisation. The resource categories assigned to the model directly reflect the confidence in the geological interpretation that is built using local, structural, mineral, and alteration geology obtained from mapping, logging, drill results, geochemical and geophysics.
	Nature of the data used and of any assumptions made.	The geological interpretation of the Mt Charlotte Project area has considered all available geological information including local geology, structural deformation events, and relationship to neighbouring mineralised deposits. Rock types, mineral, alteration and veining assemblages from diamond drill core, RC chips, and face sample chips were all used to help define the mineralised domains and regolith boundaries. Fault models were generated from in pit and underground mapping, diamond drilling, historic data and geophysics.

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ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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	The effect, if any, of alternative interpretations on Mineral Resource estimation.	The domain wireframes defining the mineralised zones are considered to reflect the current geological interpretations based on the style of mineralisation (lode, stockwork or oxide). Alternative interpretations were historically in place that reflected a predominantly higher-grade underground mining approach reflective of a lower gold price.
	The use of geology in guiding and controlling Mineral Resource estimation.	The estimation domains have been constructed using all available geological information (as stated above). Terminating/offsetting structures have been honoured, and in general, domains maintain geological homogeneity as they are modelled with respect to the host stratigraphy. Mineralisation style and grade distribution are also considered in the domaining strategy.
	The factors affecting continuity both of grade and geology.	Mineralisation and grade continuity is predominantly affected by rock type, structural setting within the stratigraphy, and mineralisation style. Mineralisation styles at Mt Percy are a combination of: • Mt Charlotte style stockwork veining (variable vein density, north plunging quartz veins, gold associated with quartz-ankerite-pyrite-siderite vein halos). • Fimiston lode style veining (steep dipping north-south quartz veins with ankerite-sericite-siderite-gold-silver telluride halos). • Dispersed mineralisation within the oxide and transitional regolith profiles. Mineralisation at Mt Percy is hosted within the Golden Mile Dolerite, Paringa Basalt, Williamstown Dolerite, Hannans Lake Serpentinite, and Devon Consols basalt. The style of mineralisation varies between these rock types and position within the stratigraphy.
Dimensions	The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.	The Mt Charlotte Project covers an area of 2.6km N-S x 2km E-W x 1.7km Vertical. Within the project area on a deposit scale the project can be broken into: • Mt Ferrum (600mN x 600mE x 600mZ) which is a combination of Fimiston style subvertical lodes within the Paringa Basalt and Charlotte style stockworks within and on the contacts of the Williamstown Dolerite. • Hidden Secret/Belgravia (700mN x 300mE x 600mZ) which is a moderately west dipping, south plunging lode style orebody with overprinting stockwork style mineralisation associated with the Little Wonder deposit within the Devon Consuls Basalt. • Kal East (600mN x 300mE x 400mZ) which is a Fimiston style lode deposit hosted within the Williamstown dolerite overprinted by stockwork style mineralisation. • Mt Charlotte Mine (1.2kmN x 300mE x 1.7kmZ) which is a subvertical north plunging stockwork style deposit hosted within the Golden Mile Dolerite Unit 8 layer. Mineralisation is bound to the north by the Charlotte fault and south by the Lord Nelson fault.
Estimation and modelling techniques	The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.	All geological and mineralisation domains were created within Leapfrog Geo version 2022.1.1. Grade estimation was completed using Datamine Studio RM version 2.0.66.0. Geostatistical analyses were performed in Supervisor software, version 8.15. Mineralisation is domained based on geological continuity and style. Lode wireframes are created using 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. Composites are analysed for population outliers by domain and topcut proximal to population disintegration. Many of the lodes exhibit bi/multi-model grade populations. These internal populations are controlled by grade indicators based on inflexion points in domain log probability plots from which indicator variograms are created. Categorical indicator kriging (CIK) is then used to sub-domain lodes with mixed populations. The block model used in the CIK estimation has blocks set at 1x5x2m to ensure sub-domain complexity is maintained then optimised and re-blocked to the parent block size of 5x10x5m. This model is then used to back flag the composite file with the defined sub-domain identifiers. Multiple Indicator Kriging (MIK) on a 5x10x5m block size was used to estimate the Mt Charlotte Mine stockwork style ore bodies due to factors of drilling density, mineralisation style, and multiple mixed data populations. Variography is created for all domains and sub-domains with sufficient sample data. Output variograms are utilised in kriging neighbourhood analysis (KNA) to generate optimum parent block sizes and estimation parameters. Domains and sub-domains are estimated using ordinary kriging utilising the estimation parameters defined in the KNA as inputs. Grade is estimated into parent blocks only and all kriging quality metrics and search pass values are output.
	The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.	The Mineral Resource Estimation is checked against the previous block model estimations and reconciled production numbers.
	The assumptions made regarding recovery of by-products.	Silver has been estimated using Categorical Indicator Kriging (CIK) and/or Ordinary Kriging (OK) within the Hidden Secret lodes for royalty payments.
	Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).	Sulphur has been estimated within the ore domains using ordinary Kriging (OK) to assist with overall blending strategy.
	In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.	The model has been created using a parent cell size of 5m (East- West) x 10m (North-South) x 5m (vertical) optimised using kriging neighbourhood analysis. Sub-cells have been used at a resolution of 1m x 1m x1m to ensure high resolution at ore boundaries. The search distances are dictated by the range of each individual variogram but typically equate to 1-1.5 times the current resource definition spacing. A 3-pass nested search strategy is employed with the first pass always set to the full range of the variogram. The second pass is set at 2 times the variogram range with the final pass set at a factor large enough to ensure all blocks comprising the domain are estimated.
	Any assumptions behind modelling of selective mining units.	No assumptions have been made regarding the modelling of selective mining units for this Mineral Resource Estimation.
	Any assumptions about correlation between variables.	Within Hidden Secret there is a high correlation between Gold and Silver.
	Description of how the geological interpretation was used to control the Resource estimates.	Mineralisation is partitioned into estimation domains relative to stratigraphic position, structural orientation, recorded lithology, and specific alteration assemblage. The geological interpretation is initially created from drill data and later calibrated with mapping of open pit and underground exposures. Domains are estimated individually with

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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		search geometry and variography controlled by lode orientation and grade continuity respectively. Variogram major search directions are aligned with geologically interpreted high grade 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. Top cuts are not used on the domains estimated with MIK, rather the median of the highest grade bin is used instead of the mean. This effectively limits the influence of extreme 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.	A number of statistical and visual measures are used to validate the accuracy of the estimation. Volume variance between the wireframe domains and block model domains are assessed. A visual inspection of input composites is compared to the estimated block model in section for each domain to ensure a robust correlation. The mean grade of the block model is compared to the naïve and declustered mean grades of the composites by domain with any variance greater than 10% investigated. Swath plots are created by domain and sub-domain in the X, Y, Z, strike, and cross strike directions and viewed holistically to vector into any problematic areas. Kriging efficiency, and slope results are reviewed by domain/sub-domain to give an indication of the quality of the estimate. End of month production and individual stope reconciliations in addition to ongoing field observations are used as a feedback loop to continuously calibrate and improve the interpretation and estimation.
Moisture	Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.	Tonnages are estimated on a dry basis.
Cut-off parameters	The basis of the adopted cut-off grade(s) or quality parameters applied.	The adopted cut-off grades for Mineral Resource Estimation reporting are 1.5g/t for Underground Resources, these have been derived from current mining costs and parameters at $2,500/oz.
Mining factors or assumptions	Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.	The Mt Charlotte Underground Mineral Resource estimate is defined by an underground mining shape optimiser (MSO) using a A$2,500/oz gold price assumption, and 2.5m minimum mining width.
Metallurgical factors or assumptions	The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	The prediction of the metallurgical performance of the Mt Charlotte Project is based on extensive historical information that shows good recovery performance. Extensive multielement data is collected during drilling and metallurgical test work is carried out on all resources within the project area. Predicted mineralogy is expected to show a strong correlation to that experienced during historic operations.
Environmental factors or assumptions	Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a green fields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	Waste rock characterisation has been conducted on the deposit with no environmental issues identified except dispersive oxidised material and waste dump construction plan in place to manage. Tailings from the deposit are stored in an appropriate licensed tailings facility and closure plan in place.
Bulk density	Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.	The bulk densities for the Mt Charlotte Project were determined from significant historical data (drilling and mining) over the entire KCGM project area with more recent testing of representative intervals from diamond drill holes supplemented with regular sampling via grab samples during underground development. The sample size is generally between 0.5 and 1.5kg and the method of calculation is the water displacement technique. Measurements have been recorded in the acquire database and extraction schemes pair this data with the major lithology code for statistical analysis.
	The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc.), moisture and differences between rock and alteration zones within the deposit.	Ore zones predominantly exist in fresh non-porous material, so additional measures to reduce moisture intake during the water displacement method is unnecessary at this stage. The density of stope backfill material consisting of Fimiston pit mineralised waste, historic tails, and waste from Mt Charlotte UG development, has been given a background value of 1.6.
	Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	An average of density measurements collected for each lithological type has been uniformly applied to the modelled geological units. This includes the primary fresh lithologies as well as the weathered oxide and transitional zones.
Classification	The basis for the classification of the Mineral Resources into varying confidence categories.	The Mt Charlotte project resource is classified as Measured, Indicated, Inferred, or Unclassified assigned by boundary string or mining void wireframe per domain, based on a combination of physical and estimation quality metrics including mining exposure, drill spacing, search pass, kriging efficiency/slope of regression, grade continuity, and geological continuity. Mineralisation has been categorised as Measured if it has been exposed by mining (open pit or development), have drill spacing at <=12.5x12.5m for lode

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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		ore bodies and 8x30m for stockwork ore bodies, 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 12.5x12.5m and 25x25m for lode ore bodies and is between 8x30m and 16x30m for stockwork ore bodies, search pass either 1 or 2, established grade and geological continuity, positive kriging efficiency and >50% slope of regression. Inferred material is drill spacing between 25x25m and 50x50m for lode ore bodies and is between 16x30m and 16x60m for stockwork orebodies with established geological and grade continuity. All other mineralisation is assigned a Potential resource category.
	Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).	All relevant factors have been taken into account and are validated through rigorous QAQC of the drillhole database, geological knowledge and interpretation of the Mt Charlotte Project. Thorough model validations and reviews ensure the integrity of the final estimation and the grade and tonnage numbers.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The reviewing process allows the Competent Person to assess and sign off on the model.
Audits or reviews	The results of any audits or reviews of Mineral Resource estimates.	KCGM has adopted a process for geological modelling, estimation and reporting of mineral resources that meets high industry standards. At the completion of resource estimation KCGM undertake an extensive review of the model that covers: • Model inventory and comparisons to previous and budget models if in existence. • Geological interpretation, wireframing, domain selection, statistics by domain, assay and metal evaluation, parent cell sizes, data compositing, variography, search strategy, estimation and KNA. • Model validation – swathe plots, visual checks, volume comparisons, composite to model metal comparisons. In the final stages the model and resource categorisation are all discussed and scrutinized by the geological and mine planning teams.
Discussion of relative accuracy/ confidence	Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the Resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.	The Mineral Resource has been reported in accordance with the guidelines of the 2012 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. KCGM uses a standard approach to resource estimation and the procedure requires the systematic completion of the KCGM Resource Estimation Document that is thoroughly investigated and assessed in the Model review process, as stated above.
	The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.	The statement relates to a global estimate.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	The current resource model is reconciled with production data on a monthly basis. Mt Charlotte undertook a batch trial at the Kanowna Belle Mill during the year (2021). Further batch trials are expected to occur when material and milling opportunity is available. Comparative metrics continue to be within acceptable threshold limits. The Mine Call Factor on tonnes has been 93% and 100% on grade for FY22 (July 21 to March 22). This information is fed back into the resource modelling process and used to refine the model.

Section 4 Estimation and Reporting of Ore Reserves

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

Criteria	JORC Code explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.	The 2024 Mt Charlotte project resource model
	Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.	The Mineral Resources are reported inclusive of the Ore Reserve
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	Site visits have been undertaken by the competent person.
	If no site visits have been undertaken indicate why this is the case.	Site visits undertaken.
Study status	The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.	A minimum Pre-Feasibility level study has been completed. Mt Charlotte is currently an operating underground mine.
	The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.	Ore reserves are re-optimised on a yearly basis taking the most up to date model, gold price and cost forecasts into account. The Ore Reserve methodology at Mount Charlotte is to complete a full mine design built from the latest block model using calculated cut-offs as a guide for designing stopes. Stope shapes are designed around material greater than the stoping cut off and evaluated using the design software. Design of stopes is extended out beyond the economic limits to ensure that sensitivity results are meaningful. Mine planners are supplied with guidelines for blocking out stopes. These guidelines are to ensure mineable stope shapes. In general, the stope designs will not contain material below the stoping cut off unless there are reasonable grounds to include that material. Exceptions to this include sub-economic material which is encapsulated by payable ore.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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		Dilution is applied based on historical stope performance. All design work is carried using industry recognised mine design software. The existing mine design provides the starting point for the reserves. Planned stope geometry follows geotechnical design guidelines which have been in place for several years. The designs are evaluated for gold and tonnes by Mineral Resource category bins to enable final reporting. Mine Scheduling Software is used as a flagging and calculation tool in the processing of ore reserves. All stope shapes are assessed with local financial evaluations to determine if they are profitable.
Cut-off parameters	The basis of the cut-off grade(s) or quality parameters applied.	Forward looking forecast costs and physicals form the basis of the cut-off grade calculations. • The AUD gold price used for basis of the ore reserve estimation is $2,000/oz • Mill recovery factors are based on test work and historical averages from the mine. Various cut-off grades are calculated including a break-even cut-off grade (BCOG), Stope Only cut-off grade (SCOG), Variable cut-off grade (VCOG) and Mill cut-off grade (MCOG). The VCOG and SCOG are used as the basis for stope design, though any areas which are marginal or require significant development are assessed by a more detailed financial analysis to confirm their profitability. Mount Charlotte produces from numerous horizons in the mine from as shallow as 200m down to over 1000m of depth. With depth, comes additional costs in terms of haulage and ground support. The spatial economic assessment takes this into account.
Mining factors or assumptions	The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design).	Mineral Resource is converted to Ore Reserve after completing a detailed mine design complete with a detailed financial assessment. The Mineral Resource block model is the basis for design and evaluation.
	The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc.	The Mount Charlotte underground mine is accessed via a portal within an existing open pit and the Cassidy Shaft. Production in Mount Charlotte is carried out utilising a combination of remnant sublevel caving, modified Avoca and conventional longhole open stoping. Where possible, stopes are backfilled with development waste to save haulage costs.
	The assumptions made regarding geotechnical parameters (e.g. pit slopes, stope sizes, etc.), grade control and pre-production drilling.	The main Mt Charlotte orebodies are worked by sublevel caving; the dimensions and ground support for the mill-holes and access drives are determined using the rock mass Q value and structural information. Hidden Secret is mined using the modified Avoca method; stope dimensions and backfilling requirements are determined using hydraulic radius and Q value, modified by location of major structures. Other mine areas are mined using the Longhole open stoping mining method; stope dimensions and backfilling requirements are determined using hydraulic radius and Q value, modified by location of major structures. Underground operations at Mt Charlotte are subject to mine seismicity. The mechanisms for seismic activity are well understood, and a combination of careful extraction sequencing and appropriate ground support in access drives is used to limit stress build-up (and thus event magnitude) and minimise damage from those seismic events which do occur.
	The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).	This Table 1 applies to underground mining only.
	The mining dilution factors used.	Dilution factors are updated annually and are based on the historical performance of each mining block. Dilution factors are reviewed for each mining method to determine their suitability. Average stope dilution is currently 10-15% depending on mining method.
	The mining recovery factors used.	The recovery factor is reviewed and updated annually based on historical recovery at the site. Recovery factors are reviewed for each mining method to determine their suitability. Average stope recovery is currently 75-85% depending on mining method.
	Any minimum mining widths used.	A minimum stope mining width of 3m has been used.
	The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.	Designed stopes with greater than 50% inferred blocks are excluded from the reported Ore Reserve. Inferred Material located within a majority indicated stoping block has been included in the ore reserve if the stoping block is deemed financially viable by use of the indicated material alone (inferred material is considered as a dilutant in this context). This material constitutes less than 2% of the total reserve for Mount Charlotte.
	The infrastructure requirements of the selected mining methods.	The Mount Charlotte mine infrastructure is developed and in place and includes mine dewatering pumps, compressed air supply and mine ventilation. The main access decline connects the mine to a portal in the north end of the Super Pit. The decline and pit ramp are well maintained. There is a radio communication system throughout the mine.
Metallurgical factors or assumptions	The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.	The Fimiston plant is made up of crushing, grinding, gravity gold recovery, flotation, UFG, CIL, elution and gold recovery circuits. The existing milling facilities are designed to process approximately 12 million tonnes per annum. The plant has the capability to treat both refractory and free milling ores through a flotation circuit and associated concentrate ultra-fine grinding circuit. A new brownfields Fimiston Processing Plant is currently under construction. The new brownfields plant has a capacity of 27 million tonnes per annum. It will follow the same process flowsheet, and will utilise the existing primary crusher, crushed ore cone, and Fimiston SAG mill. Ore Reserves are calculated using processing plant recovery factors that are based on test work and historical performance (84%), and expected operating costs based upon the 27 million tonne per annum plant.
	Whether the metallurgical process is well-tested technology or novel in nature.	Well tested technology.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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	The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.	Recovery factors are based on lab testing and on-going operational experience
	Any assumptions or allowances made for deleterious elements.	No assumptions made
	The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.	All mineralisation systems have significant bulk drill core test work undertaken prior to mining and current resource/reserves have a history of operational experience
	For minerals that are defined by a specification, has the ore Reserve estimation been based on the appropriate mineralogy to meet the specifications?	Not applicable
Environmental	The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.	The Fimiston Operation includes mining of the Fimiston Open Pit and the Mt Charlotte underground mine, and mineral processing at the Fimiston Processing Plant. Tailings generated from the Fimiston Processing Plant are deposited to the Fimiston I, II and Kaltails Tailings Storage Facilities (TSFs). KCGM also operates the Gidji Gold Processing Plant, located approximately 17 km north of Kalgoorlie-Boulder, where sulphide concentrate produced at the Fimiston Processing Plant undergoes further processing. Tailings generated from the Gidji Gold Processing Plant are deposited to the Gidji II TSF. Final gold recovery (elution of the loaded carbon) is conducted at the Fimiston Processing Plant.
		Mining operations in Western Australia are regulated under the Mining Act 1978 and the Mines Safety and Inspection Act 1994, which are administered by the Department of Mines, Industry Regulation and Safety (DMIRS). KCGM manages over 300 Mining Leases (tenements) granted in accordance with the Mining Act 1978, which stipulate environmental conditions for operation, rehabilitation and reporting. The tenements extend in a general north-south direction centred on the Fimiston Open Pit and cover a surface area of approximately 34,000 ha.
		Mineral processing and tailings disposal are regulated by the Department of Water and Environmental Regulation (DWER) under the Environmental Protection Act 1986 (EP Act). Accordingly, the Fimiston Processing Plant operates in accordance with Prescribed Premises Licence L6420/1988/14 with an approved production capacity of 14,500,000 tonnes per year, whilst the Gidji Gold Processing Plant operates in accordance with Prescribed Premises Licence L5946/1988/13 with an approved production capacity of 438,000 tonnes per year.
		KCGM was granted environmental approval for the Fimiston Mine and Waste Dumps under Part IV of the EP Act on 24 October 1991 for the Consultative Environmental Review (CER) Mine and Waste Dumps - Fimiston. Conditions for approval were outlined in Ministerial Statement 188.
		In September 2006, KCGM released a Public Environmental Review for the Fimiston Gold Mine Operations Extension (Stage 3) Project which was granted Ministerial Approval in January 2009 under Ministerial Statement 782.
		The Gidji Gold Processing Plant was granted environmental approval under Part IV of the EP in May 1988 under Ministerial Statement 28, and subsequently in September 1989 under Ministerial Statement 77. Following decommissioning of the roasters in 2015, which effectively removed sulphur dioxide point source emissions from the site, KCGM were granted Ministerial Statement 1032 in May 2016.
		Northern Stars KCGM mine site currently manages potential environment impacts associated with the Fimiston Operation in accordance with the following Environmental Management Plans:
		1. Fimiston Air Quality Management Plan, approved by DWER June 2016. 2. Noise and Vibration Monitoring and Management Plan, approved by DWER September 2016.
		Waste rock characterisation studies have determined that approximately 80% of the waste rock sourced from the Fimiston Open Pit is Golden Mile Dolerite. The remaining waste rock is composed primarily of Paringa Basalt (14%) and the Black Flag Shale (BFS) (4.5%). The studies have concluded that the Golden Mile Dolerite and Paringa Basalt units are classified as non acid forming (NAF). The ore zone of the BFS is potentially long lag PAF, with the risk diminishing towards the mine waste zones as the sulphur content decreases. The risk of acid rock drainage formation in the Fimiston WRDs is very low to low, due to the large amount of Golden Mile Dolerite containing neutralisation potential in the dumps, and the relatively low sulphur content of waste rock. Further, net acid generation and associated metals leaching would only be possible after very prolonged exposure, and such exposure is unlikely given current waste management practices of blending and encapsulation of BFS material within the WRDs.
Infrastructure	The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.	KCGM Fimiston operations, including Mt Charlotte and the open pit are located adjacent to the City of Kalgoorlie-Boulder, while Gidji processing plant is located 17km north of Kalgoorlie-Boulder. Access to the operations is provided by well-maintained sealed public and private roads. Majority of employees reside in Kalgoorlie-Boulder and commute to site daily. Normal communication channels, satellite and land-based facilities are available.
		Potable water for the KCGM operations is supplied from the Water Corporation Kalgoorlie water supply system. Non-potable water requirements are sourced from bores fields up to 28km away from the mine site. Makeup water for the Fimiston and Gidji processing plants is supplied from bore fields, water recovered and recycled from the operations, pit dewatering as well as some water sourced from recycled or treated effluent.
		Electricity is provided by the state electricity grid and Parkeston Power Station. A combination of KCGM owned and Newmont Power owned lines feed all KCGM operations from Parkeston Power Station or direct from the grid. Sources of fuel, such as diesel, gasoline etc are readily available at competitive pricing from local suppliers, as there are multiple operating plants in the Kalgoorlie area.
Costs	The derivation of, or assumptions made, regarding projected capital costs in the study.	Mine development capital cost based on historical performance on site and life-of-mine forward planning. Plant and equipment capital are based on site experience and the LOM plan

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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	The methodology used to estimate operating costs.	All overhead costs and operational costs are projected forward based on historical data and cost forecasting methods.
	Allowances made for the content of deleterious elements.	No allowances made.
	The derivation of assumptions made of metal or commodity price(s), for the principal minerals and co-products.	Single commodity pricing for gold only, using a long-term gold price of AUD $2000/oz, 2.5% WA state Government Royalty, as per KCGM corporate guidance
	The source of exchange rates used in the study.	All rates considered in Australian Dollars (AUD) as per KCGM corporate guidance.
	Derivation of transportation charges.	Historic performance.
	The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.	Historic performance.
	The allowances made for royalties payable, both Government and private.	All State Govt. and third-party royalties are built into the cost model.
Revenue factors	The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc.	All revenue based on a gold price of AUD $2,000/oz.
	The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.	Corporate guidance.
Market assessment	The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.	All product is sold direct at spot market prices.
	A customer and competitor analysis along with the identification of likely market windows for the product.	Not relevant for gold.
	Price and volume forecasts and the basis for these forecasts.	Not relevant for gold.
	For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.	Not relevant for gold.
Economic	The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.	All costs assumptions are made based on historical performance from the mine and current economic forecast seen as representative of current market conditions.
	NPV ranges and sensitivity to variations in the significant assumptions and inputs.	Sensitivities assessed at varying gold prices.
Social	The status of agreements with key stakeholders and matters leading to social licence to operate.	Agreements are in place and are current with all key stakeholders.
Other	To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:	No issues foreseen.
	Any identified material naturally occurring risks.	Mercury occurs naturally in the gold bearing ore that is mined from the Fimiston Open Pit. The mercury is present primarily as tellurides, which are minerals composed of several metals in association with the element tellurium (Te). The telluride minerals containing mercury that are present in the Fimiston Open Pit include Coloradoite, also known as mercury telluride (HgTe), and Cuprian Coloradoite ((Hg, Cu)Te). Telluride minerals are rare but widely distributed through the Golden Mile lodes and generally represents less than 0.00014% of the ore mined from the Fimiston Open Pit and the Mt Charlotte Underground Mine. Mercury is also present in the waste rock material mined from the Fimiston Open Pit (typically 0.00001%).
		An investigation by KCGM in 2006 shows that the distribution of tellurides (including Coloradoite) within the Golden Mile lodes is consistent and there is no evidence to suggest that the concentration of mercury in the materials mined from the Fimiston Open Pit will increase or decrease over time.
	The status of material legal agreements and marketing arrangements.	No issues foreseen.
	The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the Reserve is contingent.	No issues foreseen.
Classification	The basis for the classification of the Ore Reserves into varying confidence categories.	Ore Reserves classifications are derived from the underlying Resource model classifications – i.e. Measured Resource material is converted to either Proved or Probable Reserves, with Indicated Resource material converting to Probable Reserve.

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Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The results appropriately reflect the Competent Persons view of the deposit.
	The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).	None.
Audits or reviews	The results of any audits or reviews of Ore Reserve estimates.	This ore reserve has been prepared and peer reviewed internally within Northern Star Resources.
Discussion of relative accuracy/ confidence	Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the Reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.	Confidence in the model and Ore Reserve Estimate is considered high based on current mine and reconciliation performance.
	The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.	Ore reserves are best reflected as global estimates.
	Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.	Other than dilution and recovery factors described above, no additional modifying factors applied. There is high confidence in these models as the areas are well known and well drilled.
	It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	

KCGM: Mt Percy – 31 March 2024

Section 1 Sampling Techniques and Data

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

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.	The sampling database for the KCGM Mineral Resource estimation has been collected over the last 115 years. The data has been collected by many different operations, using varying techniques. Assay information quality also varies with detection limit and quality: generally, the quality appears to be inversely proportional to the age of the samples. For this reason, assay information collected prior to 1984 is not used in the interpolation of element grades. All information collected prior to involvement by Northern Star Resources and Saracen Minerals in 2019 is hereafter referred to as historical data. Only historical data that is deemed as having acceptable and traceable location and assay information has been included in the Mineral Resource estimation dataset for Mt Percy. For Mineral Resource estimation the Mt Percy deposits are sampled in majority by diamond drilling (DD) reverse circulation (RC) and underground face chip samples.

Hole Type	No. of Collars	Total Meters	No. of Samples
Diamond	5,063	818,393	727,687
RC	4,290	274,608	179,584
Underground Face Chips	763	6,017	6,265
Total Number of Drillholes	10,116	1,099,018	913,536

Criteria	JORC Code explanation	Commentary
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	For DD samples, down hole depths are recorded by the drillers on core blocks. This is checked and compared to the measurements of the core by the geologist during core mark-up prior to logging, to prevent incorrect logging and sampling errors. Sample intervals are then marked on the core by a geologist, to honour geological boundaries. Sample interval lengths vary from 0.3m and 1.3m (NQ). DD core is orientated, measured and then sampled by cutting the core in half longitudinally using an "Almonte" diamond saw. Cutting was along orientation lines. The same half of the core is always selected for each sample interval, placed in numbered calico bags that contain a bar code, scanned into the database and submitted to the laboratory for analysis. The other half of the core is left in the core tray which is stamped for identification, stored and catalogued. Routine 'field duplicates' to assess sample representivity are not performed on diamond core as these are not considered to be true field duplicates.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
		RC samples were homogenised by riffle or cone splitting prior to sampling and then submitted for assay as 1m or 2m samples. Face chip sampling is performed by geologists using industry standard face sampling protocols. Certified standard samples, ranging in grades from 0.542 g/t Au to 34.99 g/t Au, purchased from OREAS, are inserted at the rate of one in 40 samples. The results are reviewed on a per batch basis and the entire batch of samples is reanalysed if the result is greater than three standard deviations (SD) from the expected result. All drill collars are surveyed by using a total station theodolite or total GPS.
	Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.	Historical sample preparation and assay procedures are variable due to the duration of historical work and the numerous companies involved. All historical sampling accepted for use in the Mineral Resource estimates are considered to have been collected by acceptable practices. Current sample preparation and assay procedures employed by KCGM are considered as following industry standard practice. All assay determinations are conducted by internationally recognised laboratories. The primary laboratory, Bureau Veritas, meets ISO 9001:2000. Samples are oven dried until a constant mass is achieved. All samples are then processed through an Essa Jaw Crusher or a Boyd Crusher to 90% < 3 mm. The crushed sample is then pulverised for 4 minutes in an LM5 pulveriser for a product of 90% passing < 75 µm. Approximately 250 - 300g of the pulp is retained and a 40g charge weight for fire assay is extracted from the pulp packet. Samples are tested for sulphides and flux adjusted, flux is added at a ratio of 1:4. Samples are fired, hammered and cupelled. Prills placed in tubes, dissolved on hotplates and analysed using AA finish with over range dilutions. Sample preparation for Sulphur determination follows the same process as for Gold, with assaying taking place using the LECO method. Sample preparation for Silver determination follows the same process as for Gold, with assaying taking place using Four Acid Digest with an ICP MS finish.
Drilling techniques	Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc.).	DD core is mostly NQ diameter with some BQ, HQ and LTK60 diameter core. Where possible diamond core was orientated using a spear, Ballmark™, Ezimark™, ACE multi electronic tool or Reflex ACTIIIRD tool. Grade control drilling undertaken prior to mining in the existing pits at Mt Percy was Reverse Circulation.
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed.	For DD, all recovery is recorded by the drillers on core blocks. This is checked and compared to the measurements of the core by the geologist and entered as interval into the hole log. Any issues are communicated back to the drilling contractor. Recovery is generally very high, in excess of 95%, and there have been no significant sample recovery problems. Historic DD core stored on site shows excellent recovery. A limited number of drill holes have intersected historical workings, this is recorded on the core block as well as on driller's plods and is recorded in the database. Where possible drilling continues beyond the void. RC drilling sample weights were recorded for selected sample intervals and monitored for fluctuations against the expected sample weight. If samples were below the expected weight, feedback was given promptly to the RC driller to modify drilling practices to achieve the expected weights
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	For DD and RC, drilling contractors adjust the rate of drilling and method if recovery issues arise. Minor loss occurs when drilling through fault zones. Areas of potential lower recovery are generally known before hand and controlled drilling techniques employed to maximise recovery.
	Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	No specific study has been carried out on recovery and grade. As recoveries are generally very high (95%+) it is assumed that the potential for bias due to variable sample recovery is low.
Logging	Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.	All core and RC chips were logged by geologists with lithology, mineralisation, structure, alteration, veining and specific gravity were recorded. Quantitative measures such as structural measurements, intensity of alteration, percentage of mineralisation and vein intensity were also recorded. Geotechnical measurements on DD core include RQD, Recovery, and Fracture Frequency. For selected holes joint sets, infill, infill thickness and roughness were also geotechnically measured. All mineralised intersections are logged and sampled. Logging is entered in acQuire using a series of drop-down menus which contain the appropriate codes for description of the rock.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	Geology logging is qualitative in nature with visual estimates made of mineralisation percentages for core. Structural and geotechnical logging is quantitative in nature. All core is photographed wet as standard practice. Historically some core may have also been photographed dry. Underground faces are logged and sampled to provide both qualitative and quantitative data. All faces are washed down and photographed before sampling is completed.
	The total length and percentage of the relevant intersections logged.	100% of the drill core and RC chips are logged.
Sub-sampling techniques and sample preparation	If core, whether cut or sawn and whether quarter, half or all core taken.	DD core is sampled by sawn half-core on intervals controlled by geological domaining represented by mineralisation, alteration and lithology. In general, grade control holes are routinely full core sampled. Mineralised intersections are sampled with a maximum and minimum length of 1.3m and 0.3m, respecting lithological or alteration contacts. The down hole depth of all sample interval extents are recorded.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	Historic RC samples were homogenised by riffle or cone splitting prior to sampling, however it was not recorded whether they were sampled wet or dry.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	Sample preparation follows industry standard practice. Samples are oven dried until a constant mass is achieved. All samples are then processed through an Essa Jaw Crusher or a Boyd Crusher to 90% < 3 mm. The crushed sample is then pulverised for 4 minutes in an LM5 pulveriser for a product of 90% passing < 75 µm. Approximately 250 - 300 g of the pulp is retained and a 40g charge prepared.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	Coarse grind checks at the crushing stage (3mm) are carried out at a ratio of 1:40 samples with 90% passing required. Pulp grind checks at the pulverising stage (75 µm) are carried out at a ratio of 1:40 samples with 90% passing required. Laboratory duplicate samples are taken for coarse crush (3mm) and pulverising (75 µm) stages at a ratio of 1:50 samples. Repeat assays are carried om 5% of prepared pulp samples.
	Measures taken to ensure that the sampling is representative of the in-situ material collected, including for instance results for field duplicate / second-half sampling.	Quarter core sampling of diamond core is occasionally undertaken for check assays, however routine field duplicates are not performed on diamond core as these are not considered to be true field duplicates. Umpire sampling is performed monthly, where 10% of the samples are sent to the umpire lab for processing.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	The sample and size (3kg to 4kg) relative to the particle size (>90% passing 75um) of the material sampled is a commonly utilised practice for effective sample representation for gold deposits within the Eastern Goldfields of Western Australia
Quality of assay data and laboratory tests	The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.	Fire assay analysis is undertaken and this is considered to be a total assay method. Monthly and more detailed Quarterly QAQC reports are prepared to check for any bias or trends with conclusions discussed with the laboratory management. Holes that do not pass QAQC are not used for Mineral Resource estimation.
	For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.	No geophysical tools were used to determine any element concentrations.
	Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.	Sampling and assaying QAQC procedures include: - Periodical resubmission of samples to primary and secondary laboratories - Submittal of independent certified reference material - Sieve testing to check grind size - Sample recovery checks. - Unannounced laboratory inspections Standard control samples and blanks purchased from certified commercial suppliers are inserted at a ratio of 1:40. The results are reviewed on a per batch basis and batches of samples are re-analysed if the result is greater than three standard deviations from the expected result. Any result outside of two standard deviations is flagged for investigation by a geologist and may also be re-assayed. Blanks are inserted into the sample sequence at a nominal ratio of 1:40. The insertion points are selected at random, except where high grade mineralisation is expected. In these cases, a Blank is inserted after the high-grade sample to test for contamination. Results greater than 0.2 g/t are investigated, and re-assayed if appropriate. New pulps are prepared if anomalous results cannot be resolved. When visible gold is observed in core, a barren flush is required. Laboratory performance was monitored using the results from the QA samples mentioned above. This was supplemented by the internal QA samples used by the laboratories, which included pulp duplicates and CRMs The QA studies indicate that accuracy and precision are within industry accepted limits.
Verification of sampling and assaying	The verification of significant intersections by either independent or alternative company personnel.	All significant and anomalous intersections are verified by a Senior Geologist during the drill hole validation process.
	The use of twinned holes.	No twinned holes were drilled for this data set. Re-drilling of some drillholes has occurred due to issues downhole (e.g. deviation). These have been captured in the database as an 'A' and have been logged and sampled as well as the original hole.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	All data are stored and validated within the site acQuire database. Data import into the database is controlled by documented standard operating procedures, and by a set of validation tools included in acQuire import routines. Electronic copies of all primary location, logging and sample results data are filed for each hole. Assay results are received in csv format and loaded directly into the database by the supervising geologist who then checks that the results have inserted correctly. Holes that cannot be accurately validated or do not meet the requirements of MTP QAQC are excluded prior to Mineral Resource estimation.
	Discuss any adjustment to assay data.	No adjustments are made to the diamond or RC assay data. During Mineral Resource estimation, face chip sample assays are calibrated by an average factor of 0.5 due to a sampling bias (in general, the full structure/orebody width not exposed in underground faces) to better correlate with diamond and RC assay data. No adjustments are made to the raw assay data in the database.
Location of data points	Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.	Planned holes are marked up by the KCGM surveyors in the Mt Charlotte mine grid. All drill hole collar positions were surveyed. All recent DD holes were surveyed down hole by various methods including single shot down hole camera, EMS (Electronic Multi Shot) method or in-rod gyroscopic survey tools. Holes are typically surveyed at 15m and 30m intervals down hole thereafter.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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		QAQC is performed on the speed of running, and also on the misclose rate for each gyroscopic survey. Where issues are identified, a single survey run can be chosen as preferred with the remaining data ignored. This data is converted to csv format and imported into the AcQuire database where it is validated by the project geologist.
		Any poor surveys are re-surveyed. If survey data was missing or quality was suspect and not replaced by more recent drilling, affected data was not used in estimation.
	Specification of the grid system used.	Mt Percy models are completed on the Mt Charlotte Grid. This is a rotated grid 38.4° from MGA 94
	Quality and adequacy of topographic control.	The topography surface wireframe is generated from an annual flyover survey completed by Fugro Australia Land PTY LTD with +/- 15cm resolution.
Data spacing and distribution	Data spacing for reporting of Exploration Results.	Drill hole spacing varies through the mine depending on the mineralisation style. For stockwork ore bodies drill spacing is nominally 16mE x 60mN down to 8mE x 30mN. For lode-style ore bodies, drill spacing is nominally 50mE x 50mN down to 12.5mE x 12.5mN
	Whether the data spacing, and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.	The data spacing in the ore lodes at Mt Percy is considered sufficient to support the definition of Mineral Resources as applied under the 2012 JORC Code.
	Whether sample compositing has been applied.	No sample compositing has been applied to the database. For grade estimation, the datasets are composited to 1m intervals prior to grade estimation. This aligns with the most common sample length taken.
Orientation of data in relation to geological structure	Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.	Orientation of drilling varies throughout the area, historic RC grade control was generally orientated across the lithology. However, this does not optimally intercept the vein orientation for stockwork orebodies. All recent drilling is specifically orientated to intercept the vein sets at an optimum angle.
	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.	Currently, the orientations drilled at Mt Percy are not considered to introduce any bias. Ongoing exploration drilling in the area will be used to geostatistically test any bias introduced by drilling orientation. If any holes are found to introduce a bias to the estimation they will then be flagged during drill hole validation process they will be excluded from the Mineral Resource estimation datasets.
Sample security	The measures taken to ensure sample security.	All core is kept within the site perimeter fence on the Mining Lease M26/353 and M26/359 and M26/131. Samples are dispatched and/or collected by an offsite delivery service on a regular basis. Each sample batch is accompanied with a:
		- Job number
		- Number of Samples
		- Sample Numbers (including standards and duplicates)
		- Required analytical methods
		- A job priority rating
		A Chain of Custody is demonstrated by both Company and Bureau Veritas in the delivery and receipt of sample materials.
		Any damage to or loss of samples within each batch (e.g. total loss, spillage or obvious contamination), is reported to the Company in the form of a list of samples affected and detailing the nature of the problem(s).
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	Sampling performed by KCGM staff and contractors is reviewed weekly by senior KCGM geology personnel including task observations and inspections. Data is reviewed regularly by senior KCGM geology personnel and low confidence data is excluded from the estimate. Audits and inspections of the commercial assay lab are completed monthly by the QA/QC geologist.

Section 2 Reporting of Exploration Results
(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	The tenement portfolio is located on land owned by the State of Western Australia on Crown reserves or vacant Crown land. Northern Star Pty Ltd (Northern Star) manages the tenement portfolio for the KCGM operations. The portfolio comprises of 384 granted tenements which is a combination of Miscellaneous (75) and Prospecting Licenses (70), and General Purpose (115) and Mining Leases (122). The tenements cover a total area of approximately 49,000 hectares extending in a north-south direction over a distance of approximately 45km, centred on the Super Pit.
		There are two registered Native Title Claims that incorporate the KCGM leases. Claimant groups include the Maduwongga people (WC2017/001) and Marlinyu Ghoorlie (WC2017/007). These claims are currently before the tribunal for the Determination.
	The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.	No known impediments exist, and the tenements are in good standing.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	In the 1970s, the goldfield was controlled by three companies: Kalgoorlie Mining Associates (KMA), Kalgoorlie Lake View (the majority owner of KMA), and North Kalgurli Mines. In 1974, all operations on the Golden Mile had ceased, with the exception of the highly mechanized Mt Charlotte Underground Mine. Modern day surface mining commenced in 1983 in the Kemlo Pit followed by the Croesus and Eclipse pits, and the Central and Paringa pits in 1985. Mt Percy was mined previously between 1989 and 1995 by the West African Gold Recovery Company. KCGM was formed in 1989 to run the operation on behalf of its owners Homestake Gold of Australia Ltd (Homestake) and GMK, a subsidiary of Normandy Mining Limited. By 1992, all labour intensive, high cost underground mining of narrow zones stopped in the Main, Croesus, Chaffers, Lake View, and Perseverance shafts. Fimiston underground production ceased in 1994. In 2001, Homestake merged with Barrick to form Barrick Gold Australia, thereby becoming a 50% owner of KCGM. In 2002, Newmont acquired Normandy Mines Limited, thereby becoming a 50% owner of KCGM. In 2019, Saracen and Northern Star acquired the operation from Barrick and Newmont. In 2020, Northern Star announced a merger of equals and the operation is now wholly owned by Northern Star Resources Exploration drilling is ongoing from underground to extend the known mineral resources.
Geology	Deposit type, geological setting and style of mineralisation.	The Golden Mile deposit occurs in the Kalgoorlie Terrane, within the southern portion of the NNW trending Archaean Norseman-Wiluna Greenstone Belt. The greenstone belt has been multiply deformed and regionally metamorphosed to grades varying from lower greenschist to amphibolite grade (Swager, 1997). The stratigraphy of the Kalgoorlie Terrane consists of a lower mafic-ultramafic volcanic sequence overlain by a thick sequence of clastic sedimentary rocks and intermediate to felsic volcaniclastic rocks (Swager, 1997). Younger sedimentary basins, occurring along major faults or synclines, unconformably overly the greenstone sequence (Swager, 1997). Granitic intrusions occurring within the Norseman-Wiluna Greenstone Belt are divided into two categories: pre-folding and post-folding (Witt and Davy, 1997). The post-folding intrusions are further subdivided as syn-tectonic and late tectonic. The stratigraphy covered by the KCGM tenements consists of a basal ultramafic unit called the Hannan Lake Serpentinite. This ultramafic unit is overlain successively by the high magnesian Devon Consols Basalt, Kapai Slate, tholeiitic Paringa Basalt and the Black Flag sediments. Differentiated zones of dolerite and gabbro texture occur within the mafic sequence. The Golden Mile Dolerite, hosting the bulk of the Golden Mile and Mount Charlotte gold mineralisation, is a strongly differentiated layered gabbro, approximately 700m in thickness. The Golden Mile Dolerite is situated conformably between the Paringa Basalt and the Black Flag sediments. This entire stratigraphic sequence is intruded by numerous porphyry dykes of intermediate to felsic composition. Mineralisation at Mt Percy consists of both lode and stockwork mineralisation similar to Fimiston and Mt Charlotte Mineralisation. The Mt Charlotte style gold mineralisation, which accounts for the bulk of the economic gold ore of the Mt Percy deposit, is predominantly associated with pyrite in carbonate alteration haloes around quartz veins, with a minor proportion as relatively coarse free gold within the veins, commonly close to their margins. The veins vary in width from a few millimetres to a maximum of about two metres but are commonly between two centimetres and 50 cm wide. The vein spacing varies from 20 cm to tens of metres but is typically from 50 cm to two metres in areas mined as ore. Quartz is the dominant vein-fill mineral; accessory vein minerals include calcite, ankerite, scheelite, pyrite, pyrrhotite, and gold.
Drill hole Information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: o easting and northing of the drill hole collar o elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar o dip and azimuth of the hole o down hole length and interception depth o hole length.	Refer to the drill hole information table in the Appendix of this report for significant assay results from KCGM for each lode represented throughout the report. All mineralised intercepts are shown in the table.
	If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	Exclusion of the drill information will not detract from the understanding of the report.
Data aggregation methods	In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.	All reported assay results have been length weighted to provide a true intersection width where possible. All reported assay results within Mt Charlotte style stockwork mineralisation are reported using downhole widths, due to the nature of the mineralisation and orientation of the drill holes, true width calculations are not possible or are misleading.
	Where aggregate intercepts incorporate short lengths of high-grade results and longer lengths of low-grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.	Intercepts are aggregated based on underground and open pit reporting criteria. Cut off grades are based on assumed mining grades. Open pit lode mineralised zones were interpreted using a nominal cut-off grade (COG) of 0.5g/t with a maximum internal dilution of 5 meters. Open pit stockwork mineralised zones were interpreted using a nominal cut-off grade (COG) of 0.5g/t with a maximum internal dilution of 5 meters. Where a stand out higher grade zone exists within the broader mineralised zone, the higher grade interval is reported also.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	No metal equivalent values have been used for the reporting of these exploration results.
	These relationships are particularly important in the reporting of Exploration Results.	Estimated true widths have been calculated for intersections of the known ore zones, based on existing knowledge of the nature of these structures.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
Relationship between mineralisation widths and intercept lengths	If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.	Both the downhole width and estimated true width have been clearly specified when used.
	If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').	Where mineralisation orientations are known, downhole lengths are reported.
Diagrams	Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported. These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	Appropriate plans and section have been included in this report.
Balanced reporting	Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	Both high and low grades have been reported accurately, clearly identified with the drill hole attributes and 'From' and 'To' depths.
Other substantive exploration data	Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	No other material exploration data has been collected for this area.
Further work	The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).	Further exploration and resource definition is planned to test for extensions and increase the confidence in the existing resource.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Appropriate diagrams accompany this release.

Section 3 Estimation and Reporting of Mineral Resources
(Criteria listed in section 1, and where relevant in section 2, also apply to this section).

Criteria	JORC Code explanation	Commentary
Database integrity	Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.	The data used for generating this resource estimation was extracted from Northern Star's acQuire database management system stored on a secure SQL server. The Company employs database administrators to manage the database. Where possible, raw data is loaded directly into the database, with adjustments such as survey transformations occurring within the database, so any changes/adjustments are fully traceable. Extensive validation is built into the acQuire database to ensure data integrity and user access logs are maintained for all fields in the dataset. Data validation tools and sign off facilities to record data cross-checking are used.
	Data validation procedures used.	Data that is captured in the field is entered into templates which are checked on import into the acQuire database for errors. Assay jobs are dispatched electronically to the lab to minimise the chance of data entry errors. Assay results from the lab are received in CSV format and are checked for errors on import into the database. Data is regularly validated using the mining software. The data validation process is overseen by the Database Administrator. Errors are corrected where possible. When not possible the data is flagged as confidence "0" or "1" in the database and the database is re-exported. This data will not be used in the estimation process.
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	The Competent Person is a full time employee of KCGM and is based in Kalgoorlie and has full access to ensure integrity across all geological disciplines. The Senior Geologist – Resources for this model undertook a site visit.
	If no site visits have been undertaken indicate why this is the case.	Site visits have been undertaken.
Geological interpretation	Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.	Confidence in the interpretation for each deposit area included within the Mt Percy model is dependent on amount and quality of data available, geological setting, and style of mineralisation. The resource categories assigned to the model directly reflect the confidence in the geological interpretation that is built using local, structural, mineral, and alteration geology obtained from mapping, logging, drill results, geochemical and geophysics.
	Nature of the data used and of any assumptions made.	The geological interpretation of the Mt Percy Project area has considered all available geological information including local geology, structural deformation events, and relationship to neighbouring mineralised deposits. Rock types, mineral, alteration, and vein assemblages from diamond drill core and RC chips were all used to help define the mineralised domains and regolith boundaries.

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ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
		Fault models were generated from in pit and surface mapping, diamond drilling, historic data, and geophysics.
	The effect, if any, of alternative interpretations on Mineral Resource estimation.	The domain wireframes defining the mineralised zones are considered to reflect the current geological interpretations based on the style of mineralisation (lode, stockwork or oxide). Alternative interpretations were historically in place that reflected a predominantly higher grade underground mining approach reflective of a lower gold price.
	The use of geology in guiding and controlling Mineral Resource estimation.	The estimation domains have been constructed using all available geological information (as stated above). Terminating/offsetting structures have been honoured, and in general, domains maintain geological homogeneity as they are modelled with respect to the host stratigraphy. Mineralisation style and grade distribution are also considered in the domaining strategy.
	The factors affecting continuity both of grade and geology.	Mineralisation and grade continuity is predominantly affected by rock type, structural setting within the stratigraphy, and mineralisation style. Mineralisation styles at Mt Percy are a combination of: • Mt Charlotte style stockwork veining (variable vein density, north plunging quartz veins, gold associated with quartz-ankerite-pyrite-siderite vein halos). • Fimiston lode style veining (steep dipping north-south quartz veins with ankerite-sericite-siderite-gold-silver telluride halos). • Dispersed mineralisation within the oxide and transitional regolith profiles. Mineralisation at Mt Percy is hosted within the Golden Mile Dolerite, Paringa Basalt, Williamstown Dolerite, Hannans Lake Serpentinite, and Devon Consuls basalt. The style of mineralisation varies between these rock types and position within the stratigraphy.
Dimensions	The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.	The Mt Percy Project covers an area of 2km N-S x 1.5km E-W x 850m vertical. Within the project area on a deposit scale the project can be broken into: • Hannans North (1200mN x 450mE x 550mZ) which consists of Fimiston style subvertical lodes within the Golden Mile Dolerite U8 layer. Mineralisation is bound to the north by the Lamington fault and approximately to the South by the Mystery fault. • Union Club (800mN x 300mE x 700mZ) which is a combination of Charlotte style stockwork and Fimiston style subvertical lodes running subparallel to the Kapai Slate in the Devon Consols Basalt and Williamstown Dolerite. • Mystery (1200mN x 250mE x 450mZ) which consists of stockwork/vein hosted mineralisation in felsic-intermediate porphyries that intrude the Hannans Lake Serpentinite. Mineralisation typically is most intense along the contacts of the porphyries. Mineralisation is bound to the North by the Mystery fault and to the South by the Charlotte fault. • Sir John (450mN x 220mE x 250mZ), mineralisation here is similar to Mystery, stockwork veins hosted in felsic-intermediate porphyries hosted within the Hannans Lake Serpentinite and the Devon Consols Basalt. • Milanese (600mN x 500mE x 200mZ) is a stockwork domain located dominantly North of the Mystery fault hosted in the Golden Mile Dolerite. There is also a component of oxide mineralisation. • Golden Goose (750mN x 300mE x 500mZ) is characterised by Charlotte style stockwork mineralisation within the Golden Mile Dolerite U8 layer. Mineralisation is bound to the South by the Charlotte fault. • Golden Dream (750mN x 200mE x 150mZ) is dominantly oxide mineralisation over the contact between the Hannans Lake Serpentinite and the Golden Mile Dolerite. Mineralisation is bound to the South by the Charlotte fault and to the North by the Mystery fault.
Estimation and modelling techniques	The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.	All geological and mineralisation domains were created within Leapfrog Geo version 2022.1.1. Grade estimation was completed using Datamine Studio RM version 1.12. Geostatistical analyses were performed in Supervisor software, version 8.15. Mineralisation is domained based on geological continuity and style. Lode wireframes are created using a validated drill database from which all RAB, air core, and erroneous drill holes have been removed. All remaining diamond, RC, and face samples are flagged with a domain identifier and composited to 1m with 0.3m minimum sample. Residual samples are distributed across adjacent component intervals. Composites are analysed for population outliers by domain and topcut proximal to population disintegration. Many of the lodes exhibit bi/multi-model grade populations. These internal populations are controlled by grade indicators based on inflexion points in domain log probability plots from which indicator variograms are created. Categorical indicator kriging (CIK) is then used to sub-domain lodes with mixed populations. The block model used in the CIK estimation has blocks set at 1x5x2m to ensure sub-domain complexity is maintained then optimised and re-blocked to the parent block size of 5x10x5m. This model is then used to back flag the composite file with the defined sub-domain identifiers. Multiple Indicator Kriging (MIK) on a 5x10x5m block size was used to estimate several of the stockwork style ore bodies due to factors of drilling density, mineralisation style, and multiple mixed data populations. Variography is created for all domains and sub-domains with sufficient sample data. Output variograms are utilised in kriging neighbourhood analysis (KNA) to generate optimum parent block sizes and estimation parameters. Domains and sub-domains are estimated using ordinary kriging utilising the estimation parameters defined in the KNA as inputs. Grade is estimated into parent blocks only and all kriging quality metrics and search pass values are output.
	The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.	The Mineral Resource Estimation is checked against the previous block model estimations.
	The assumptions made regarding recovery of by-products.	No assumptions are made on recovery of by-products.
	Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).	No other elements have been estimated.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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	In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.	The model has been created using a parent cell size of 5m (East- West) x 10m (North-South) x 5m (vertical) optimised using kriging neighbourhood analysis. Sub-cells have been used at a resolution of 1m x 1m x1m to ensure high resolution at ore boundaries. The search distances are dictated by the range of each individual variogram but typically equate to 1-1.5 times the current resource definition spacing. A 3 pass nested search strategy is employed with the first pass always set to the full range of the variogram. The second pass is set at 2 times the variogram range with the final pass set at a factor large enough to ensure all blocks comprising the domain are estimated.
	Any assumptions behind modelling of selective mining units.	No assumptions have been made regarding the modelling of selective mining units for this Mineral Resource Estimation.
	Any assumptions about correlation between variables.	No assumptions have been made regarding the correlation between variables for this Mineral Resource Estimation.
	Description of how the geological interpretation was used to control the Resource estimates.	Mineralisation is partitioned into estimation domains relative to stratigraphic position, structural orientation, recorded lithology, and specific alteration assemblage. The geological interpretation is initially created from drill data and later calibrated with mapping of open pit and underground exposures. Domains are estimated individually with search geometry and variography controlled by lode orientation and grade continuity respectively. Variogram major search directions are aligned with geologically interpreted high grade shoot trends. Categorical indicator kriging has been utilised to define sub-domains in lodes with mixed grade populations to limit the spread of high-grade mineralisation. Dynamic anisotropy has been employed on lodes exhibiting excessive undulation. Boundary analysis has been conducted on key lodes indicating hard boundaries should be maintained across domain and sub-domain contacts.
	Discussion of basis for using or not using grade cutting or capping.	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. Top cuts are not used on the domains estimated with MIK, rather the median of the highest grade bin is used instead of the mean. This effectively limits the influence of extreme 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.	A number of statistical and visual measures are used to validate the accuracy of the estimation. Volume variance between the wireframe domains and block model domains are assessed. A visual inspection of input composites is compared to the estimated block model in section for each domain to ensure a robust correlation. The mean grade of the block model is compared to the naïve and declustered mean grades of the composites by domain with any variance greater than 10% investigated. Swath plots are created by domain and sub-domain in the X, Y, Z, strike, and cross strike directions and viewed holistically to vector into any problematic areas. Kriging efficiency, and slope results are reviewed by domain/sub-domain to give an indication of the quality of the estimate.
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, these have been derived from current mining costs and parameters at $2,500/oz.
Mining factors or assumptions	Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.	The open pit mineral resource inventory assumes open pit extraction and is reported within an AUD$2,500/oz pit optimisation shell generated using current mining parameters and constraints. Heritage sites occur near the open pit resources, these have been reviewed and have negligible impact on the open pit resource optimisation.
Metallurgical factors or assumptions	The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	The prediction of the metallurgical performance of the Mt Percy is based on historical information that shows good recovery performance. Extensive multielement data is collected during drilling and metallurgical test work is carried out on all resources within the project area. Predicted mineralogy is expected to show a strong correlation to that experienced during historic operations.
Environmental factors or assumptions	Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a green fields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	Waste rock characterisation has been conducted on the deposit with no environmental issues identified except dispersive oxidised material and waste dump construction plan in place to manage. Tailings from the deposit are stored in an appropriate licensed tailings facility and closure plan in place.
Bulk density	Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.	The bulk densities for the Mt Percy Resource were determined from 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.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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	The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc.), moisture and differences between rock and alteration zones within the deposit.	Ore zones predominantly exist in fresh non-porous material, so additional measures to reduce moisture intake during the water displacement method is unnecessary at this stage.
	Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	An average of density measurements collected for each lithological type has been uniformly applied to the modelled geological units. This includes the primary fresh lithologies as well as the weathered oxide and transitional zones.
Classification	The basis for the classification of the Mineral Resources into varying confidence categories.	The Mt Percy resource is classified as Indicated, Inferred, or Unclassified using boundary strings for each domain. The strings are created based on a combination factors, primarily drill spacing and geological confidence. Estimation metrics such as search pass, kriging efficiency, and slope of regression are also considered. Only material which has already been mined has been classified as Measured. Indicated material is assigned if drill spacing is between 12.5x12.5m and 25x25m for lode ore bodies and is between 8x30m and 16x30m for stockwork ore bodies, populated in search pass either 1 or 2, established grade and geological continuity, positive kriging efficiency and >50% slope of regression. Inferred material is drill spacing between 25x25m and 50x50m for lode ore bodies and is between 16x30m and 16x60m for stockwork orebodies with established geological and grade continuity. All other mineralisation is assigned an Unclassified/Potential resource category.
	Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).	All relevant factors have been taken into account and are validated through rigorous QAQC of the drillhole database, geological knowledge, and interpretation of the Mt Percy Project. Thorough model validations and reviews ensure the integrity of the final estimation and the grade and tonnage numbers.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The reviewing process allows the Competent Person to assess and sign off on the model.
Audits or reviews	The results of any audits or reviews of Mineral Resource estimates.	All geological interpretations and mineral resource estimates have been subjected to internal reviews that meet high industry standards. Northern Star has adopted a standardised approach to internal reviews of geological interpretation, domain models, and resource estimation parameters and reporting. The Mt Percy model has been subject to these reviews and any major recommendations were reviewed and implemented as appropriate. At the completion of resource estimation KCGM undertake an extensive review of the model that covers: • Model inventory and comparisons to previous and budget models. • 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 – swath plots, visual checks, volume comparisons, composite to model metal comparisons. In the final stages the model and resource categorisation are all discussed and scrutinized by the geological and mine planning teams.
Discussion of relative accuracy/ confidence	Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the Resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.	The Mineral Resource has been reported in accordance with the guidelines of the 2012 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. KCGM uses a standard approach to resource estimation and the procedure requires the systematic completion of the KCGM Resource Estimation Document that is thoroughly investigated and assessed in the Model review process, as stated above.
	The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.	The statement relates to a global estimate.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	No detailed production or reconciliation data is available.

Pogo: Pogo Underground Mine – 31 March 2024

Section 1: Sampling Techniques and Data

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

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.	The Pogo deposits (Liese, North Zone, East Deeps, South Pogo, Fun Zone, Central Zone and Hill 4021) were sampled using diamond and reverse circulation drill holes (DD, RC) completed from both surface and underground campaigns drilled between 1994 and 2024. A total of 12,895 DD holes for 6,499,372 feet (1,980,912 m) and 125 underground RC holes for 24,939 feet (7,601 m) were drilled to inform the Mineral Resource estimate.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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		Other sampling methods employed in sampling the Pogo vein systems include production drill chip sampling (sludge sampling) and daily underground face chip sampling. The dataset used to generate Liese, North Zone, Fun Zone, East Deep and South Pogo Mineral Resource estimate included 12,027 channel samples with lengths 1ft – 5ft. Sludge samples were excluded from the dataset used to generate the Mineral Resource estimate.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	Diamond and face channel sampling are sampled based on geological and mineralisation boundaries identified by the geologists during logging and mapping. Diamond sampling intervals are set at a minimum sample size of 1.0ft (0.3m) and a maximum sampled interval of 4ft (1.2m). Underground RC drilling is sampled on regular 5ft intervals (1.5 m). Face channel sampling, used in the Fun Zone, Liese, South Pogo, East Deeps and North Zone Mineral Resource estimate, are spray-marked then sampled on 1ft to 5ft lengths across the entire width of the vein (where practicable). Material is also sampled either side in non-vein material contiguous with the veins. The sampling lengths are measured and plotted on face mapping with assays once received for record keeping and validation.
	Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g., 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g., submarine nodules) may warrant disclosure of detailed information.	Industry standard sampling methods are used at Pogo. DD core, is the predominant sampling method, supplemented to a lesser extent with underground RC chips. All drill core is comprehensively logged and intervals for sampling selected based on geological and mineralogical observations. Where practicable, samples are not collected across lithological or mineralisation boundaries. Sampling protocols at Pogo vary dependent on the purpose of the drill hole: ▪ Exploration Core Drilling: Holes drilled for non-resource conversion purposes are cut using an Almonte core saw and half core submitted for analysis. The non-assayed portion of the core is stored on-site for a period of five years. ▪ Infill DD drilling for defining or converting Resources to a higher confidence category are whole core sampled, with the non-assayed portion of the core disposed of. ▪ Production RC (UG): RC Chips are split directly off the rig via the inner return tube through a rotating cone splitter to yield ~3kg sub-samples from 5ft sample lengths. ▪ Sludge-hole drilling: Sludge holes are drilled by an underground long hole rig and collected from open holes into buckets on 2.5ft intervals, with each interval washed out with water prior to sampling. ▪ Face-channels: The channel sample lines are always perpendicular to the ore body orientation. Sample intervals are determined by geology, including lithology contacts, mineralisation, alteration, or structure. The sampled mineralisation showed strong correlation with diamond drilling and provided a greater data density for the estimate. For NQ core samples, minimum sample size of 2.0ft (0.6 m) and a maximum sampled interval of 4ft (1.2m). For HQ drill core that is whole core sampled, samples are collected at a minimum interval of 4 inches (0.1m) and a maximum of 2.0ft (0.6m). When the HQ samples are half-core cut, the maximum sample is extended to 4ft (1.2m). For fire assay analysis samples are crushed to 85% passing 2mm. A 250g split is taken of all sample types, including sludge hole samples, which is then pulverised to 90% passing 75 µm. A 30g sub-sample of the pulp sample is then selected for fire assay, followed by atomic absorption spectroscopy (AAS) with a gravimetric finish. The on-site lab utilises fire assay with gravimetric finish (FAGF). For PhotonAssay analysis samples are crushed to 70% passing 2mm to produce a ~500g sample for analysis.
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 has been carried out from both surface and underground. Underground drilling is completed predominantly using NQ2 (50.6mm core diameter) or BQ (36.4mm core diameter) holes, however larger HQ (63.5mm diameter core) and PQ (85.0mm core diameter) holes are completed for long exploration drill holes or when poor ground conditions are encountered. Surface drill holes are typically collared using PQ / HQ diameter and reduced to NQ2/NQ2 where necessary. Underground RC drilling is completed using a 4.5-inch diameter face sampling hammer. RC samples are collected directly from the inner return tube on the rig, via a rotating cone splitter to produce a ~3kg sub sample from 5ft sample lengths. Core drilled between 2009 and 2017 was generally not oriented. Since 2018, orienting of exploration drill holes and select production drill programs using the Reflex Act III tool was introduced. Face channel sampling is spray-marked for the channel line and vein contacts. The vein and surrounding material are then sampled on 1ft – 5ft lengths by scaling material using a rock hammer or scaling bar onto a tarp, with the material then collected into a sample bag. The sampling lengths are measured and plotted on face mapping with assays once received for record keeping and validation. The following table provides details on the quantity and types of drill core drilled by year at the Pogo deposit as of 31 December 2024

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Feet Drilled by Hole Type

Year	BQ	BQTQ	HQ	HQ/NQ	MCR	NQ	NQ/BQ	NQ2	PHB	PHD	PHJL	PQ	RC	Unknown	Total
unknown			34,002					4,385	215					82,708	121,310
1994															-
1995						1,374								1,985	3,359
1996						2,011								11,090	13,101
1997														19,143	19,143
1998	1,175					2,000								46,219	49,394
1999	3,333			1,519										90,095	94,947
2000		25,927		1,104		45,646		11,455						2,113	86,245
2001						30,773								2,112	32,885
2002						31,594									31,594
2003						16,890									16,890
2004						46,274								1,056	47,330
2005						34,773		22,622							57,395
2006						38,341	4,016	12						269	42,638
2007								35,885							35,885
2008			6,826					99,857	80					999	107,762
2009								105,277						3,267	108,544
2010							240	101,434						13,908	115,582
2011						855		162,367						9,497	172,719
2012			28,888			3,620		154,904	470	680		1,503		12,130	202,195
2013			96,202			19,655	409	147,351	1,272	5,622				8,844	279,355
2014			81,471		275	96,723	681	103,888	393	6,362					289,793
2015			153,492			76,271		114,327	156	2,876					347,122
2016			109,920			1,189		135,385	371	540	50				247,455
2017			67,917			1,318		162,143	371	42					231,791
2018			146,244					241,502	540	710					388,996
2019			107,104					462,889					22,410	190,673	783,076
2020			134,165					496,273							630,438
2021			123,396					660,389							783,785
2022			73,132			1,444		622,326							696,902
2023			50,291					715,763							766,054
2024			17,404					211,935							229,339
Total	4,508	25,927	1,230,454	2,623	275	450,751	5,346	4,772,368	3,868	16,832	50	1,503	22,410	496,108	7,033,023

Criteria	JORC Code explanation	Commentary
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed.	Core recovery is recorded for all DD holes. Recovery is measured and recorded as a percentage calculated from measured core verses drilled intervals. All data is saved in AcQuire software. In general, recovery is high through mineralised zones due to the competent nature of the quartz vein. In structurally complex zones, recoveries and core loss results vary. Core preparation and geotechnical logging procedures are in place for the continual assessment of results.
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	Core is processed at the Pogo core processing facility. For DD holes, contractors adjust their rate of drilling and method if recovery issues arise. All recovery is recorded by the drillers on core blocks. This is checked and compared to the measurements of the core by the geological team. Any issues are communicated back to the drilling contractor and supervising geologist.
	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.	Recent studies are showing a correlation between grade and core RQD, core recovery. Average grades are higher in core with lower RQD. Area of core loss can exhibit lower grades. More detailed studies are in progress to determine the overall effect.
Logging	Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.	Core logging is carried out by a qualified geologists in accordance with Pogo Mine's core logging procedures manual. Data recorded includes, but is not limited to, lithology, structure, alteration assemblages, vein type, sulphide mineralogy, geotechnical parameters (recovery and RQD) and the presence of visible gold. Drill core was logged electronically using Rockware Logplot 7 software and on the AcQuire database system. Logging and sampling are carried out according to Pogo Mine protocols and are consistent with industry standards.

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ABN: 43 092 832 892

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Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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		Logging is to a sufficient level of detail to support appropriate Mineral Resource estimation and mining studies.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	Drill logging is both qualitative and quantitative in nature. Every core tray is photographed wet.
	The total length and percentage of the relevant intersections logged.	All drill holes are logged in full.
Sub-sampling techniques and sample preparation	If core, whether cut or sawn and whether quarter, half or all core taken.	Diamond core drilled for resource definition and grade control is whole core sampled. Core drilled for exploration purposes is cut in half onsite using an industry standard Almonte core saw.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	Underground RC drilling in 2019 used a 4.5-inch diameter face sampling hammer. RC samples were collected directly from the inner return tube on the rig, via a static cone splitter to produce a ~3kg sub sample from 5ft sample lengths.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	Currently Pogo drill core preparation and analysis is performed by MSA labs (as of April 2023). Samples are transported to the primary prep and analysis facility at Prince George, BC, Canada, with secondary prep facilities at Langley and Terrace, BC, Canada. Sample preparation involves crushing to 70% passing 2mm then filling a ~500g jar for photon analysis. Up to 2023 sample preparation and assaying of Pogo drill core was performed by Bureau Veritas (BV). Pogo sent core samples to BV Fairbanks for sample preparation and pulp was sent to the BV laboratory in Reno, Nevada or Vancouver, British Columbia for fire assay. Typically, gold assays and multi-element assays were completed in Vancouver. Sample preparation includes drying, crushing to 70% passing 2mm, splitting of a 200g subsample and pulverising to 85% passing 75µm. All sample preparation and assaying of Pogo face channel samples and select grade control program drill core is performed at the on-site Pogo lab. Sample preparation includes drying the face channel samples, (weight range of 2 to 7 lb), crushing to 70% passing 2mm, splitting of a 250g subsample, and pulverising to 85% passing 75µm. The sample preparation techniques are considered appropriate for the style of mineralisation.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	Pogo Mine uses an industry standard QAQC programme involving standards, blanks and field duplicates which are introduced in the assay batches at an approximate rate of one control sample per eight normal samples. Repeat analysis of crush and pulp samples (for all sample types) occurs at an incidence of 1 in 40 samples. QC results are analysed immediately upon return of a sample batch and reported to management monthly. Overall results demonstrate no significant QAQC issues with the analytical laboratory and no systematic bias observed. Protocols are in place to deal with QAQC results that fail. In addition to Pogo QAQC, the analytical laboratory is ISO certified and conducts rigorous internal QAQC checks. Internal QAQC reports provided to Pogo personnel do not indicate any issues with the quality of the analysis provided.
	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 Duplicates (i.e., other half of cut core) and RC drilling field duplicates have not been routinely assayed. 'Duplicate' underground face channel samples are taken in the quartz zones in the face in conjunction with the primary face sample by collecting a larger amount of material and manually splitting it between two sample bags at every 14ft advance of the production face.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Duplicate sample results correlate well, hence sample sizes are acceptable to accurately represent the gold mineralisation at Pogo Mine. Sample sizes are appropriate and correctly represent the style and type of mineralisation.
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.	The samples are analysed using industry standard analytical techniques. Historically, underground holes were analysed for gold by a 30g fire assay with a gravimetric finish. In holes drilled for exploration purposes, gold content is determined by 30g fire assay with atomic absorption finish (AAS). Since 2019, all underground holes were analysed using the AAS method. Exploration and underground results analysed by fire assay with the AAS finish returning > 10ppm (0.292 oz/ton) gold are re-assayed by fire assay with gravimetric finish. Select samples are assayed for forty-five elements multi-acid digestion and ICP-MS/ES finish. The current PhotonAssay analytical technique was adopted following a study in May of 2022 where Pogo Operations supplied a suite of 49 samples Chrysos to investigate the applicability of the PhotonAssay method for the determination of Au in materials from an ore sorting project. The samples were analysed on the PhotonAssay unit (MAX-5) operating in Perth, Western Australia. All samples were measured in their entirety by splitting across multiple PhotonAssay jars, and subsequently by fire-assay to extinction, allowing both the mean grade and sampling uncertainties to be estimated. PhotonAssay measurements performed on 3 mm, 2 mm and 75 µm material show excellent internal agreement. Similarly excellent agreement is observed between PhotonAssay measurements and fire-assay to extinction analyses performed by Intertek, demonstrating that PhotonAssay is consistent with classical analysis methods. Results from this comparative analysis showed that measuring 1 crushed PhotonAssay jar at a 3 mm particle top size achieves better relative performance and smaller measurement errors than a single 50 g fire-assay performed on pulverized ore. Overall, the results demonstrate that PhotonAssay provides a highly effective alternative to fire-assay for the Pogo materials. PhotonAssay offers improved measurement precision, simplified sample preparation and elimination of pulverization. The technique is considered total and appropriate for the style of mineralisation under consideration.
	For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.	No geophysical tools were used in this Resource estimate.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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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.	Commercially prepared certified reference materials (CRM's), inhouse standards, non-certified blanks and duplicates are randomly inserted into the sample stream at an incidence of 1 in 20. The Pogo Mine uses Certified reference Materials (CRMS) sourced from GEOSTAT Laboratories and OREAS laboratories. Blanks are also produced in-house and are generated from commercially sourced marble material and crushed to nominal 2mm size and inserted into sample bags prior to including into the laboratory submittal. Silica sand is also used as a blank. Monitoring of QA/QC results is performed by the resource geologists upon importing the individual assay certificates into the drill hole database. When failures occur, the resource geologists notify the geologist responsible for the drill hole or the core processing facility supervisor. Failed standards are generally followed up by re-assaying a second 30g pulp sample of samples between the failed standard and the next sequenced standard by the same method at the primary laboratory. Re-assays are dependent on grade above 0.03 opt. The laboratory QAQC protocols used include repeat analysis of crush and pulp samples at an incidence of 1 in 40 samples, screen tests (percentage of crush sample passing a 1mm mesh and pulverised sample passing a 75µm mesh) and undertaken on 1 in 40 samples. QAQC data is reported monthly, quarterly, and yearly.
Verification of sampling and assaying	The verification of significant intersections by either independent or alternative company personnel.	Significant intersections are routinely inspected by alternative company personnel. Core photographs of significant intersections reviewed to ensure mineralised zones are consistent with known Pogo mineralisation styles.
	The use of twinned holes.	No purpose drilled twinned holes have been complete at Pogo.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	All diamond core is logged in detail. Logging takes place at the core processing facility. Core logging (geological and geotechnical) was historically completed using Logplot 7 software. Since Northern Star acquisition, data capture has transitioned to the AcQuire database and logging systems. The core logging procedures manual provides guidance to the user. All Pogo data is stored as in industry-standard AcQuire database. Validation protocols are built into the importation process to ensure data integrity.
	Discuss any adjustment to assay data.	The first gold assay is almost always utilised for any Resource estimation. Exceptions occur when evidence from re-assaying dictates. A systematic procedure utilising several re-assays is in place to determine when the final assay is changed from the first gold assays.
Location of data points	Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.	Drill rigs are aligned using the Minnovare azimuth aligner Gyrocompass. Underground collar locations are surveyed after completion of the drill hole using a Leica TS15 and TS16 survey station. On surface, collar locations are surveyed using a Leica RTK-GPS survey station. Downhole surveys for underground drill holes are collected at 100ft downhole from the collar and every 100ft thereafter, with the gyro tool recording a dip and azimuth measurement every 10ft. Historically, a Reflex® EZ-Trac multi-shot survey instrument or Trushot digital multi-shot survey tool was used, and currently a DeviCo Devi-gyro survey instrument is used. Surface drill holes are surveyed at 100ft from the collar and every 200ft thereafter, except in areas of overburden, where the first Downhole survey is at 200ft. A final survey is taken at the end of all drill holes. Deviation at the initial survey is checked against plan and the hole is redrilled if there is excessive deviation (>3%). Mine workings have been routinely surveyed since commencement of the underground. However from 2019 a progressive drift error in the survey control points in the mine was identified. This is currently being rectified with extensive re-traversing and localised analysis and adjustment of drill collar positions to the corrected survey controls as part of the GC modelling process. Interpretations will be updated as drill collars are adjusted
	Specification of the grid system used.	The grid system used is the North American Datum of NAD83 (NAD83) AKSP-3.
	Quality and adequacy of topographic control.	High quality LiDAR topographic mapping is utilised at Pogo.
Data spacing and distribution	Data spacing for reporting of Exploration Results.	Drill hole spacing is highly variable. Well-drilled areas are tested by drilling on approximately 45ft by 45ft patterns, extending out to 240ft at the peripheries of the deposits.
	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 drill hole spacing, is generally based on a 60ft x 60ft up to a maximum of 120ft x 120ft for reserves. Resources are based on 120ft x 120ft up to a maximum of 240ft x 240ft drill spacing. The data spacing, and distribution is considered sufficient to support the reporting of Indicated and Inferred Mineral Resources.
	Whether sample compositing has been applied.	No compositing was applied prior to submission of samples for analysis.
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.	Where practicable, the drilling was designed to intersect the mineralisation as perpendicular as possible to the dominant vein geometries. In some circumstances, the lack of drill positions resulted in holes that were oblique to the mineralisation.
	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.	The drill orientation to mineralised structures biases the number of samples per drill hole. It is not thought to make a material difference in the Resource estimation. As the opportunity arises, better angled holes are infill drilled.
Sample security	The measures taken to ensure sample security.	Chain of custody is managed by Pogo Mine personnel. All core samples are received intact and in their entirety in their core trays at the Company's secure core processing facility. All sampling and work on the samples is carried out within the confines of this secure facility.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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		All samples are selected, whole core or cut and bagged in tied pre-numbered calico bags and placed in large heavy duty plastic totes with a sample submission sheet.

Samples are transported via road by a third-party ground transport contractor to the sample preparation facility in Prince George, BC, Canada. Upon receipt, any issues with sample condition are reported via email to Pogo personnel.

All sample submissions are documented, and all assays are returned via email.

Sample pulp splits from the Pogo Site Lab and Bureau Veritas Lab are stored at the Pogo mine site, and the sample jars from the MSA Lab is currently stored at their Prince George facility. |
| Audits or reviews | The results of any audits or reviews of sampling techniques and data. | In March 2018, Sumitomo Metal Mining Pogo LLC (SMM Pogo) commissioned Mine Technical Services Ltd. (MTS) to complete a review audit of standard procedures currently in use at the Pogo Mine in Central Alaska. Drilling, logging, sampling, analytical, QA/QC, database, modelling, density, ore control, resource estimation, mine planning, metallurgy and reconciliation procedures were audited.

While minor recommendations for improvement were made, sampling techniques and data were generally found to be well-considered and consistent with industry good practise.

Northern Star Resources personnel completed validation of the database for internal consistency and any obvious errors prior to preparation of the Mineral Resource estimate, which incorporates results acquired prior to 2024. Northern Star have completed validation checks of all data reported in this release. Checks were completed for overlapping intervals, sample intervals extending beyond the hole depth, from > to intervals, and missing from or to values. All issues were rectified. Various other potential issues such as missing surveys, missing sample data, and missing intervals etc. were also identified and corrected. |

Section 2: Reporting of Exploration Results
(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	The total tenement area comprising the Pogo project consists of 1,251 state mining claims (17,079 ha) in addition to the mine lease claim (641 ha) and the mill site lease (1,385 ha). The Pogo operation is 100% owned by Northern Star Resources. There are no known royalties on the area.
	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 Pogo tenure is in good standing and secure. Pogo is a fully permitted and operational mine and there are no foreseen permitting issues that will prevent development of the resource or any future exploration activities.
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	The first modern-day exploration was conducted in the Pogo area by WGM Inc, in 1981, where strong gold-arsenic-tungsten anomalies were identified in stream sediment samples collected from the Liese Creek area during regional reconnaissance surveys. WGM staked mining claims over the area.

In 1991, the area was incorporated into the Stone Boy Joint Venture, which consisted of large claim groups focused on the Chena, Salcha and Goodpaster River basins. As part of the Stone Boy JV, exploration was conducted by WGM and financed by Sumitomo Mining Metal Corporation Ltd. and other companies (that later withdrew) as part of an earn-in agreement. Regional grid-based soil sampling was completed between 1991 and 1994, with three diamond drill holes funded by the Japan Oil Gas and Metals National Corporation drilled in 1994 to test a prominent gold-in soil anomaly. Based on successful anomalism returned in the initial three holes, a further 13 were drilled in the Liese Creek area in 1995, one of which was the discovery hole for the Liese vein system. This intercept graded 22.7ft at 1.838opt (6.92m @ 63.0gpt). In 1997, Sumitomo signed an agreement with Teck Resources Ltd. to acquire a 40% interest in the Pogo claims and assumed operatorship of the project in 1998.

Further surface definition drilling was completed between 1998 and 2004, with the mining operation commencing in 2006. |
| Geology | Deposit type, geological setting and style of mineralisation. | The Project is in the Tintina Mineral Belt, which is a 200 km-wide, 1,200 km-long arc, broadly bounded by the Tintina-Kaltag fault systems to the north and the Denali-Fairwell fault systems to the south. The region contains numerous economic deposits of gold in addition to copper, lead, zinc, silver and tungsten deposits.

The lithological units in the Pogo deposit area are dominantly high-grade metamorphic rocks intruded by later felsic to intermediate intrusive units. Key metamorphic rocks include biotite feldspar gneiss, augen gneiss and mafic schist derived from both sedimentary and igneous protoliths. Metamorphic mineral assemblages observed consist of quartz, feldspar, biotite, chlorite, muscovite, sillimanite, andalusite and garnet. The 50km long Goodpaster batholith (granite-tonalite-diorite) is the dominant intrusive complex in the district. Locally small felsic to intermediate stocks and dykes are present.

The principal mineralisation is hosted in biotite-quartz-feldspar paragneiss and orthogneiss, although all other lithologies are cut. Where the veins cross intrusives, they tend to split and become stockwork zones.

Gold at Pogo is predominantly hosted within laminated quartz veins ranging in thickness from <0.5m to >10m. Mineralised veins contain around 3% sulphides (arsenopyrite, pyrite, pyrrhotite, loellingite, chalcopyrite, bismuthinite, sphalerite, galena, molybdenite, tetradymite, maldonite) and a variety of Bi-Pb-Ag sulphosalts.

The Pogo gold deposit is an example of a Reduced Intrusive Related Gold Deposit (RIRGD), characterised by a low sulphide content, (typically <5%) and a reduced ore mineral assemblage, that typically comprises pyrite and lacks primary magnetite or hematite. In brief, these deposits typically have the following characteristics: |

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
		▪ Mineralisation occurs as sheeted vein deposits or stockwork assemblages and often combines gold with variably elevated Bi, W, As, Po, Py, Mo, Te, and/or Sb, but low concentrations of base metals. ▪ Restricted and commonly weak proximal hydrothermal alteration ▪ Spatially and temporally related to reduced intrusions of intermediate to felsic composition.
Drill hole Information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: o easting and northing of the drill hole collar o elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar o dip and azimuth of the hole o down hole length and interception depth o hole length	Drill results with all relevant information is attached to the release.
	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.	Excluded material will not materially affect the understanding of this report
Data aggregation methods	In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g., cutting of high grades) and cut-off grades are usually Material and should be stated.	All reported assays have been length weighted to provide an intersection width. Where lower grade stockwork veining and/or barren material is present between sheeted veins, length weighted calculations may include such mineralized material intervals.
	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 assay results have been top cut for the purpose of this report
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	Not applicable, no metal equivalent values are 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.	Both the downhole width and estimated true widths have been clearly stated when used. True width intersections are estimated using trigonometry calculations of the vein angle to the core axis (Estimated true thickness = intercept length X sin (vein angle to core axis)).
	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').	Downhole lengths are reported where lode geometry is unknown.
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.	Diagrams have been included in the body of the announcement.
Balanced reporting	Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	Both high and low grades have been reported accurately, clearly identified with the drill hole attribute and 'From' and 'To' depths
Other substantive exploration data	Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	Nil
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).	Further extensional and definition drilling is planned for FY2025 from both underground and surface positions.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Diagrams have been included in this announcement.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Section 3: Estimation and Reporting of Mineral Resources
(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Database integrity	Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.	Historically, geologic logs, saved in Logplot 7 format were imported directly using GeoLogger. GeoLogger, a Microsoft® Access application developed by GEMS for use by Pogo, imports samples, geologic logs and down-hole surveys into the drill hole database. Collar surveys have been entered directly into the database in the header table by the geologist responsible for the drill hole. Down-hole surveys were recorded on slips of paper into GeoLogger and a geologist marked the survey as acceptable. The data entry procedures for samples, geologic logs, and down-hole surveys are well documented in the Pogo logging manual. Post-acquisition in 2018, all data was transitioned to an Acquire database. A comprehensive audit and validation were undertaken upon transitioning between the historic database and the AcQuire database. Downhole surveys are recorded directly to the Devi cloud by the driller, where they are accessed by the geologist for upload into the AcQuire database. All sampling and logging data is digitally entered into a tablet then transferred to AcQuire. There are checks in place to avoid duplicate holes and sample numbers. Where possible, raw data is loaded directly to the database from lab, logging and survey derived files. The data entry procedures and use of templates minimise the chance of the data being corrupted.
	Data validation procedures used.	Drill intersection information used in the preparation of this release has been validated by the Competent Person. Validation included, but was not limited to, review of the database, core photographs, QAQC results and review of the assay certificates. Intervals were manually checked to ensure they truly reflect the mineralised zones. In addition, all data was validated based on comprehensive site data validation procedures.
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	The Competent Person for this resource report has conducted multiple site visits. The resource models and background data has been produced by personnel with extensive onsite experience.
	If no site visits have been undertaken indicate why this is the case.	Extensive site visits have been undertaken over the years by the Pogo competent person.
Geological interpretation	Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.	The interpretation of the deposit was carried out using a systematic approach to ensure continuity of the geology and estimated mineral resource using Leapfrog software. Of the seven major zones five project areas were updated to support the Mineral Resource estimate, namely Liese, North Zone, South Pogo, East Deep and Fun Zone. The Central Zone interpretation was updated for drill targeting purposes, though additional drilling is required and the current Mineral Resource Estimation estimate remains unchanged. Hill 4021 Mineral Resource estimate also remains unchanged , no new information was added in 2023/2024. The confidence in the geological interpretation is reasonable although on a local scale there remains a degree of uncertainty due to the structurally complex nature of the orebody. The confidence is supported by information from 17 years of underground operations.
	Nature of the data used and of any assumptions made.	All available geological data was used in the interpretation including backs and face mapping, historic rib mapping, drilling and oxidation surfaces. Gold grades have been used to assist in the interpretation of the mineralisation. The Hill 4021 interpretation used surface mapping in conjunction with the drill data.
	The effect, if any, of alternative interpretations on Mineral Resource estimation.	Alternative interpretations are possible for the less continuous lenses at each deposit. On a global scale this will have minimal impact on the Mineral Resource estimate. A higher confidence exists in the more significant continuous lenses which are often supported by mining history.
	The use of geology in guiding and controlling Mineral Resource estimation.	The structural framework, which is relatively well-known after many years of mining, has guided interpretation. In addition, drill core logging, and development mapping have been used to create 3D constrained wireframes of lithology.
	The factors affecting continuity both of grade and geology.	Mineralisation is hosted in quartz veins – which have filled dilational zones within the brittle host rock sequence. Main mineralising systems are variably truncated or offset by meso to macro scale faulting which is evidenced in the multiple lode interpretation for each of the main mineralised systems within the Pogo deposit. Mineralisation also occurs as a stockwork zones. Continuity of the veins (geological continuity) and stockwork is governed by structural deformation porosity and interaction with lithological units. The mineralisation displays a moderate nugget component with significant short-range grade variability.
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.	Liese – The generally shallowly north-westerly dipping Mineral Resource extends approximately 1,300 m in a north-easterly direction along strike and 1,300 m down dip. Eastern Deeps – The shallow to moderately north-westerly dipping Mineral Resource extends approximately 530 m in a north-easterly direction along strike, and 600 m down dip. North Zone – The steeply east dipping Mineral Resource extends approximately 950 m in a northerly direction along strike, and 970 m down dip. A flatter component, dipping west, extends 250m by 190m. South Pogo – The moderately north-westerly dipping Mineral Resource extends approximately 1100 m in a north-easterly direction along strike, and 760 m down dip. Fun Zone – the generally moderate to steep-westerly dipping Mineral Resource extends approximately 880 m in a westerly direction across strike, 650 m in a northerly direction across-strike and 915 m down dip.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
		Central Zone – The moderate to steep north-westerly dipping Mineral Resource extends approximately 750 m in a north-easterly direction along strike, and 500 m down dip.
		Hill 4021 – the Hill 4021 prospect consists of two zones of stacked, shallowly dipping mineralised structures with combined extents approximately 1,900 m in a north-westerly direction along strike and 500 m down dip
Estimation and modelling techniques	The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.	Domains are set by grouping lodes as dictated by their structural setting, geological mineralisation, and statistical characteristics. The raw data is subdivided into domains based on geological controls and further analysed for correlation and similarity using statistics. The purpose of this analysis is to determine further domaining of the data for estimation purposes (be combining groups of lodes). Vein wireframes were used to select drill hole samples. Samples from within the mineralisation wireframes were used to conduct a sample length analysis. Regularised downhole compositing (from hanging wall to footwall) of drill-hole samples is exclusively used, composite lengths are 2.5ft. Composite lengths are decided based on the prominent width of mineralised lodes within the areas, the sample length population, and to maintaining sufficient variability for CIK estimate. Detailed exploratory data analysis is carried out on each deposit, using Supervisor software. The estimation technique used is dictated by the dataset. Most of the Mineral Resource is estimated using ordinary kriging (OK). Categorial Indicator Kriging (CIK) is employed on several major veins in Liese, South Pogo, Fun Zone and North Zone mine areas. A minor proportion of the Mineral Resource is estimated using inverse distance (ID^2). Vulcan software was used for data compilation, domain wireframing, calculating and coding composite values, estimating and reporting. Maximum distance of extrapolation from data points was statistically determined and varies by domain. Block model volumes were compared to wireframe volumes to validate sub-blocking. Where OK and ID^2 estimates were used, treatment of extreme high grades was dealt with by using a cap grade strategy.
	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 current Mineral Resource estimate is an update to the previous Mineral Resource estimate of March 2023. The current estimate accounts for both mining depletion and the addition of extensional and infill drilling. Reconciled historical production from underground operations is comparable with new estimate.
	The assumptions made regarding recovery of by-products.	None, not applicable.
	Estimation of deleterious elements or other non-grade variables of economic significance (e.g., sulphur for acid mine drainage characterisation).	Graphite present in parts of the North Zone resource is associated with geotechnical and processing issues. To manage these risks, the presence of graphite in the North Zone of the Pogo resource has been logged and modelled as separate lithological domains. No other deleterious elements that are material to the resource estimate are known to occur throughout the Pogo deposit.
	In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.	The block sizes in relation to the average sample spacing are summarised below. • Liese – 15 Y by 15 X by 5 Z (feet) block. Drill spacing 14 to 200 feet. Mean approx. forty feet. Face-channel samples were taken on 14ft advances of the production face and as close to normal as possible to the apparent dip-plane of veins within the production face. • East Deep – 15 Y by 15 X by 5 Z (feet) block. Drill spacing 15 to 200 feet. Mean approx. forty feet. • North Zone – 15 Y by 15 X by 5 Z (feet) block size Drill spacing highly variable from 10 to 300 feet. Mean approx. sixty feet. Face-channel samples were taken on 14ft advances of the production face and as close to normal as possible to the apparent dip-plane of veins within the production face. • South Pogo – 15 Y by 15 X by 5 Z (feet) block size. Drill spacing highly variable from 10 to 240 feet. Mean approx. sixty feet. Face-channel samples were taken on 14ft advances of the production face and as close to normal as possible to the apparent dip-plane of veins within the production face. • Fun Zone – 15Y by 15 X by 5 Z (feet) block. Drill spacing 10 to 200 feet. Mean approx. sixty feet. Face-channel samples were taken on 14ft advances of the production face and as close to normal as possible to the apparent dip-plane of veins within the production face. • Central Zone – 15 Y by 15 X by 5 Z (feet) block size. Drill spacing highly variable from 30 to 200 feet. Mean approx. eighty feet. • Hill 4021 – 50 x 50 x 15 ft. Drill spacing highly variable from 60 ft to 600 ft.
	Any assumptions behind modelling of selective mining units.	A 6ft minimum mining width for underground environment is 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.	Drill hole sample data was flagged using lode codes generated from the mineralisation interpretations, which were completed with due consideration of the structural framework and lithological controls at Pogo. Low grades can form part of the mineralisation interpretation. Mineralisation boundaries were treated as hard boundaries and grade estimations are constrained by the interpretations.
	Discussion of basis for using or not using grade cutting or capping.	A review of grade outliers was undertaken for each deposit to ensure that extreme grades are treated appropriately during grade interpolation. Although extreme grade outliers within the grade populations of variables are real, they are potentially not representative of the volume they inform during estimation. If these values are not cut, they have the potential to result in significant grade over-estimation on a local basis. The cutting strategy was considered and applied as follows: • Disintegration analysis of log Histogram, mean-CV and log-probability plots for values beyond a lognormal distribution. • Contained metal plots: assessment of contribution of the highest values on the quantity of metal in an estimate. • Outlier analysis: removal of outliers and analysis of impact on the CV of domain. • Interrogation of disintegration point of run length composites.

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Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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		The top cut is selected for each domain utilising the above strategies and compared against Nearest Neighbour estimations to assess sensitivity of selected top cut grades and associated risk. Metal estimated in the resource models is reconciled with production models of like areas to determine the appropriateness of the high-grade treatment on the assays. Final top cuts are then applied on a lode by lode basis.
		Capping of high grades is done on the final sample composites.
	The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.	Block model validation was completed using visual methods in section and 3D with comparisons made between the input raw drill hole data, composites and blocks, and numerical validation methods, such as histogram, log-probability and swath plots. The validation showed the strong conditional bias predicted from the estimation approach, but the block model estimates appropriately reflect the composites, showing a reasonable local 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.	Updated for 2024 The Mineral Resources have been reported at a diluted cut-off of 3.1g/t Au (0.10 oz/short ton) (compared to 4.1 g/t Au/0.12 oz/short ton used in 2023) inside simulated Mineable Shape Optimiser (MSO) shape at a minimum width of 6ft.
		Hill 4021 surface component is reported inside a maxipit optimised shell at a cut-off of 1.4 g/t (0.045oz/short ton), the 4021 underground component is based on MSO run at 30ft x 30ft x 6 ft and 3.1 g/t (0.10oz/short ton) reported below the Whittle 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.	Underground resources are reported using a minimum mining width of 6ft, with no dilution added on hanging wall or footwall. MSO runs are used to identify potential mineable sections within the Mineral Resource for reporting. The results from this process are further assessed regarding their reasonable prospects for eventual economic extraction
Metallurgical factors or assumptions	The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	All Pogo UG ore is treated at the Pogo milling facilities. These facilities are currently designed to handle approximately 1.45 million short tons of feed per annum. The plant has the capability to treat both partially refractory and free milling ores, through both gravity and flotation circuit and associated fine grind circuit (including carbon-in-pulp (CIP) gold recovery). The plant consists of grinding, gravity, flotation, fine grind, CIL, elution, electrowinning and smelting circuits. Gold recovery is based on currently achieved metallurgical parameters. There are no indications in the available data that metallurgical factors change in the material estimated in this Mineral Resource model.
Environmental factors or assumptions	Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a green fields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	Pogo is an operating mine that is fully permitted in accordance with United States federal laws and regulations in addition to Alaskan state laws and regulations. Waste and residual process material is used as either components in rockfill, paste fill or stored on the dry stack tailings facility. There is currently adequate storage capacity at site that would enable waste disposal of the material that potentially may be generated by extraction of future economic material in the Mineral Resource estimate.
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.	A density of 2.68g/cm^3, or 0.084 short ton/ft^3 was used for the mineralisation.
		The density value has been based on a study of the average lithological densities across the mine site completed in 2023. This study consisted of a detailed statistical analysis of 24,675 measurements that have been recorded from each of the main mineralised zones. These values agree with over 10 years production 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.	Bulk density measurements are taken daily using the water displacement technique. One bulk density measurement is taken for each lithology in every hole every day. An attempt is made to collect a bulk density measurement from every mineralised zone, each lithology and weathering states represented in drill hole core. For transitional and oxidised material the sample is placed in a zip-log bag, or wrapped in cling film before employing the standard water displacement technique.
	Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	Individual bulk densities are applied in accordance with specific lithologies, mineralisation, and weathering states.
Classification	The basis for the classification of the Mineral Resources into varying confidence categories.	Measured Resources are defined by drilling at a maximum of 60ft x 60ft, exposure of mineralisation by development (or open pit) and established grade and geological continuity.
		Indicated Resources are defined by drilling which is predominantly 60ft x 60ft and may range up to 120ft x 120ft maximum. Lodes classified as Indicated are supported by a minimum of 6 face chip or diamond drill hole samples.
		Inferred Resources are defined on a nominal 120ft x 120ft drilling pattern and may range up to 240ft x 240ft. Resources based on less than 120ft x 120ft spaced drilling, but which have a low level of confidence in the geological interpretation may also be classified as inferred.
	Whether appropriate account has been taken of all relevant factors (i.e., relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).	Appropriate account has been taken of all relevant criteria including data integrity, data quantity, geological continuity, grade continuity and estimation quality.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The Mineral Resource estimate appropriately reflects the Competent Person's views of the deposit.
Audits or reviews	The results of any audits or reviews of Mineral Resource estimates.	In June 2022, NSR commissioned Cube Consulting Pty Ltd to complete a technical review of the Mineral Resource Estimate of the Liese Deposit. While minor recommendations for improvement were made, risk associated with the interpolation processes followed by NSR at Pogo were considered low. All other Pogo Mineral Resource estimates follow a similar methodology.
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 estimate has been classified in accordance with the JORC Code, 2012 Edition using a qualitative approach. All factors that have been considered have been adequately communicated in Section 1 and Section 3 of this Table.
	The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnage, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.	The statement relates to global estimates of tonnes and grade.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	Comparisons with previous Mineral Resource estimates and global reconciliation between historic mine production and the Resource estimate indicated the model is robust.

Section 4: Estimation and Reporting of Ore Reserves
(Criteria listed in section 1, and where relevant in sections 2 and 3, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.	All areas under assessment were based on updated MY2024 resource model. The basis of the conversion were mine designs combined with economic and technical analysis to level of detail typically expected of a preliminary feasibility study or higher.
	Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.	The Mineral Resources are reported inclusive of the Ore Reserve.
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	Site visits have been undertaken by the Competent Person.
	If no site visits have been undertaken indicate why this is the case.	Site visits undertaken.
Study status	The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.	Life of mine planning with associate economic model has been used to assess the mineral resource. This planning is informed by current operational considerations, design guidelines and detailed budget modelling of operating and capital costs. The mine designs combined with economic and technical analysis and consideration of other modifying factors were completed to a level of detail typically expected of a preliminary feasibility study or higher.
	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.	Pogo is a currently operating mine. The mine planning from which the reserve estimate is developed is based detailed engineering and budgeting to a pre-feasibility study level or better. Only the economic portion of the resource model informs the reserve estimate.
Cut-off parameters	The basis of the cut-off grade(s) or quality parameters applied.	Budget costs and physicals form the basis for cut-off grade calculations. Mill recovery estimates are informed by historical recoveries achieved. The cut-off grade is determined by budgeted costs associated with ore development, production, processing and associated administration costs. Detailed financial assessment is completed on all mining areas.
Mining factors or assumptions	The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e., either by application of appropriate factors by optimisation or by preliminary or detailed design).	Mineral Resource is converted to Ore Reserve after completing a detailed design and associated technical and financial assessment.
	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.	Current mining methods used at the Pogo operation have been used in the reserve estimation process.
	The assumptions made regarding geotechnical parameters (e.g., pit slopes, stope sizes, etc.), grade control and pre-production drilling.	Design parameters vary between areas of the mine. Stoping is generally based on 45 foot (14m) sublevels with stope strike used to limit to a stable hydraulic radius. Paste is used to fill mined areas. This method is currently in operation.

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Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
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E: info@nsrltd.com
W: www.nsrltd.com

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| Criteria	JORC Code explanation	Commentary
	The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).	Stope optimisation (Mineable Shape Optimiser - MSO) is used for assessing parts of the Pogo resource. Key factors include a minimum mining width of 1.83m (6ft), minimum footwall angle of 42 degrees and a cut-off grade of 5.1g/tonne (0.15oz/ton). Detailed stope designs are used where MSO is deemed not appropriate. Further assessment of the MSO results taking into account ore tunnel development and capital design is conducted to optimise the value of the Ore Reserve estimate.
	The mining dilution factors used.	Dilution is included in the mine stope designs and largely accounts for the geometry of the resource, mining method and the constraints of the equipment being utilised. A further dilution factor is then applied to account for over-break. This factor is based on historical assessment and reconciliation work. In some areas where there is increased geotechnical risk, or the geometry of the resource warrants it the dilution factor has been increased in line with historical results.
	The mining recovery factors used.	Detailed stope and mine design accounts for, to a large extent, the estimated recoverability of the resource. A further stope recovery factor of 96% has been applied to reconcile with what has historically been achieved at the mine.
	Any minimum mining widths used.	A minimum mining width of 6ft has been applied to all stopes. A minimum 42 degree stope footwall angle is applied to ensure ore recovery.
	The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.	Designed stopes with greater than 50% inferred or unclassified metal ounces are excluded from the reported reserve. Material classed as inferred or unclassed in the resource model that is included in the reserve shapes makes up less than 2% of the estimate and thus is not considered material to the estimate.
	The infrastructure requirements of the selected mining methods.	Infrastructure in place, currently an operating mine.
Metallurgical factors or assumptions	The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.	All Pogo UG ore is treated at the Pogo milling facilities. These facilities are currently designed to handle approximately 1.45 million short tons of feed per annum. The plant has the capability to treat both partially refractory and free milling ores via gravity and flotation circuit and associated fine grinding (including carbon-in-pulp (CIP) gold recovery). The plant consists of grinding, gravity, flotation, fine grind, CIL, elution, and electrowinning circuits.
	Whether the metallurgical process is well-tested technology or novel in nature.	Milling experience gained over plus 10 years operation.
	The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.	Milling experience gained over plus 10 years operation.
	Any assumptions or allowances made for deleterious elements.	No assumption made.
	The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody.	Milling experience gained over plus 10 years operation.
	For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?	Not applicable.
Environmental	The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.	Pogo operations are currently compliant with all legal and regulatory requirements. All government permits and licenses and statutory approvals are granted.
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.	All current site infrastructure is suitable to the proposed mining plan.
Costs	The derivation of, or assumptions made, regarding projected capital costs in the study.	Mine development capital cost based on expected performance on site and life-of-mine forward planning. Plant and equipment capital form part of the budget process and approved by the NSR board.
	The methodology used to estimate operating costs.	All operating costs are estimated through first principals modelling, or quotes from reputable contractors and evaluated against current performance.
	Allowances made for the content of deleterious elements.	No allowances made.
	The derivation of assumptions made of metal or commodity price(s), for the principal minerals and co-products.	A gold price is based on corporate guidance.
	The source of exchange rates used in the study.	The reserve assessment is completed in US currency and thus not sensitive to exchange rates.
	Derivation of transportation charges.	Historic performance.
	The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.	Historic performance.
	The allowances made for royalties payable, both Government and private.	All royalties are built into the cost model.

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Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
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E: info@nsrltd.com
W: www.nsrltd.com

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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.	US$1,500/oz gold.
	The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.	Corporate guidance.
Market assessment	The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.	All gold is sold directly to market. There are no specific marketing considerations that are relevant to the sale of gold.
	A customer and competitor analysis along with the identification of likely market windows for the product.	Not Applicable.
	Price and volume forecasts and the basis for these forecasts.	Corporate guidance.
	For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.	Not Applicable.
Economic	The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.	An NPV assessment is not used to assess the economics of the reserve. Existing and forecast costs have been projected forward in the operating budget model. On this analysis the reserve has a sufficient margin to warrant mining.
	NPV ranges and sensitivity to variations in the significant assumptions and inputs.	The use of conservative assumptions and margins ensures the reserve is not sensitive to fluctuation in key the determinants of its economic viability.
Social	The status of agreements with key stakeholders and matters leading to social licence to operate.	Agreements are in place and are current with all key stakeholders.
Other	To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:	
	Any identified material naturally occurring risks.	No Issues.
	The status of material legal agreements and marketing arrangements.	No Issues.
	The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.	Pogo operations are currently compliant with all legal and regulatory requirements. All government permits and licenses and statutory approvals are granted.
Classification	The basis for the classification of the Ore Reserves into varying confidence categories.	Ore Reserve estimate classifications are derived from the underlying Resource model confidence classifications with additional assessment. In general, material modelled as Measured is converted to either Proved or Probable Reserves, with indicated material converting to Probable Reserve. Ore Reserve estimates have been classed according to the majority of ounces in the relevant resource class contained with the reserve mine design shape.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The results accurately reflect the competent persons view of the deposit.
	The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).	Nil.
Audits or reviews	The results of any audits or reviews of Ore Reserve estimates.	The Reserve has been internally reviewed in line with Northern Star Resource governance standard for Reserves and Resources. Reserve mine designs and associated production estimates are reviewed against actual mining and milling performance in order to determine appropriate mining factors.
Discussion of relative accuracy/ confidence	Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.	When taking into account the basis of the estimate compared with the mine performance the confidence in the modelling and associated Ore Reserve Estimate is considered high.
	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.	Although detailed designs and assessment have been used to identify those parts of the resource model that informs the reserve estimate, given the nature of estimating gold resources the Ore Reserve estimate should be considered largely global in nature.
	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.	Pogo is a profitable operating mine and thus there is confidence in the modifying factors (considerations) relevant to the reserve estimate.

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PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
	It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	Mine performance has been used in the generation of modifying factors applied to develop a Reserve.

POGO RESOURCE

Plan view of the Pogo deposit and drill hole collars with development shown. Units are shown in feet. Grid is 2,000ft squares.
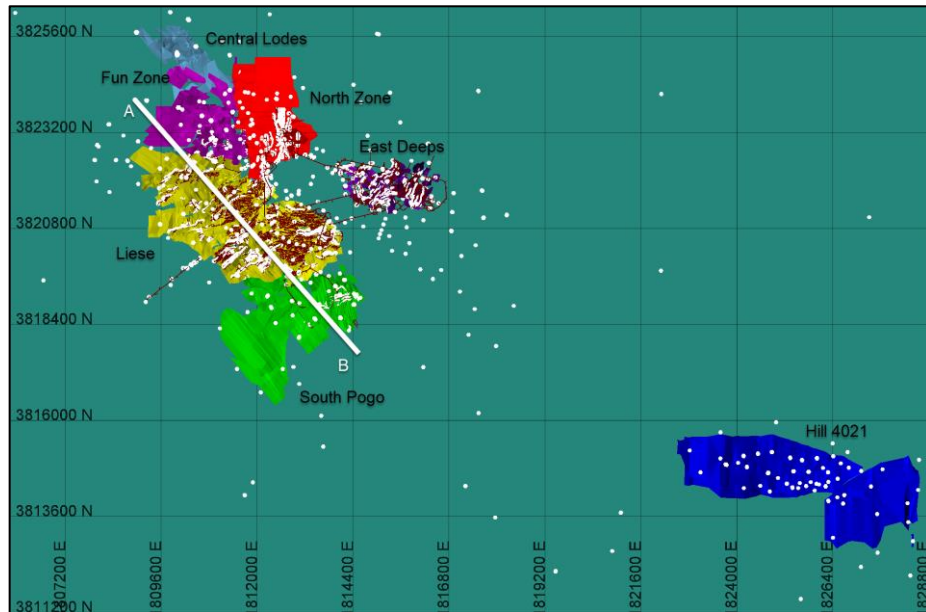
Representative cross section through the Pogo deposit. Existing development is shown in brown. Topography shown in blue.
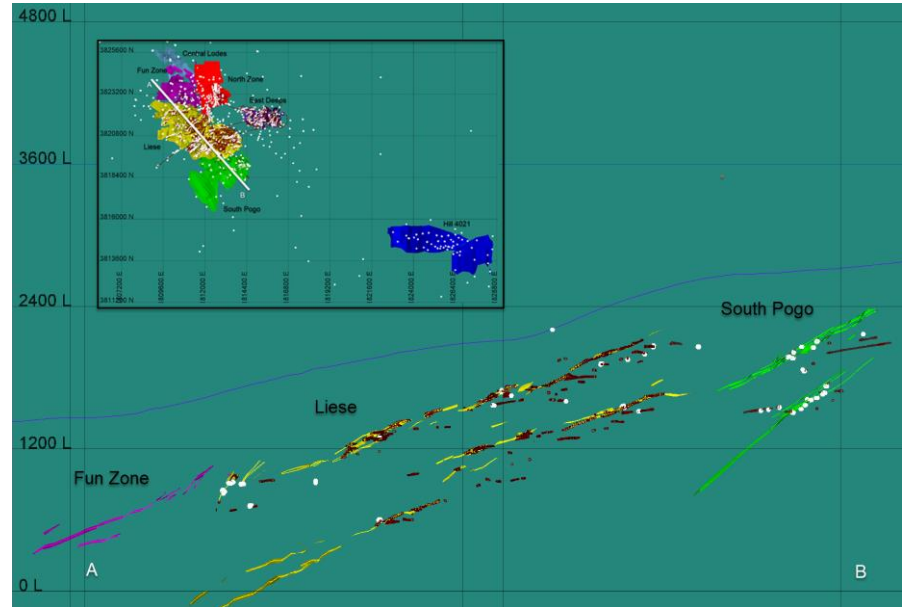
Pogo: Goodpaster – 31 March 2024

Section 1 Sampling Techniques and Data
(Criteria in this section apply to all succeeding sections.)

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.	The Goodpaster prospect was predominantly sampled from HQ diamond drill hole core (DD) completed from surface drill campaigns between 2011 and 2022.

Northern Star Resources Limited
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Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	Geological and mineralisation boundaries are identified by professional geologists; such boundaries are not crossed for sampling purposes. Diamond core sampling intervals are set at a minimum sample width of 0.5ft (0.15m) and a maximum sampled interval of 5ft (1.52m). Sampled intervals are measured and plotted once they are received for record keeping and validation. Gold and multi-element assays are plotted against core logs into their designated sample intervals.
	Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g., 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g., submarine nodules) may warrant disclosure of detailed information.	All drill core is comprehensively logged; intervals for assay sampling are selected based upon geological and mineralogical observations by professional geologists. Assay samples are not normally collected across lithological or mineralisation boundaries. Sampling protocols at Pogo vary dependent on the purpose of the drill hole: Exploration Core Drilling: Drill core is cut using an Almonte core saw. Half-cut core is submitted for analysis. The non-assayed portion of the core is stored on-site. For NQ2 core samples, minimum sample size of 0.5ft (0.15m) and a maximum sampled interval of 5ft (1.52m). When HQ samples are half-core cut, the maximum sample is extended to 5ft (1.52m). Quartz vein, fault zones, silica flooding, quartz stockwork zones and strongly altered host rocks are sampled. The adjacent five feet (1.52m) above and below mineralised zones are also sampled. Samples are crushed to 70% passing 2mm. A 250 gm sub-split is taken which is then pulverised. A 30 gm sub-sample of all sample types is then selected for fire assay with an atomic absorption spectroscopy (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.).	Diamond core drilling has been carried out only from the surface at Goodpaster. Surface drill holes are typically collared using PQ / HQ diameters and are rarely reduced to NQ2 only where necessary. Core drilled between 2009 and 2017 was generally not oriented. Since 2018, orienting of all exploration drill holes using the Reflex Act III tool has been undertaken.
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed.	Core recovery is recorded for all drilled holes. Recovery is measured to the tenth of a foot (~3cm) and was historically recorded in the Recovery tab using Rockware Logplot 7 software. In general, recoveries are excellent (well above 95% core recovered) and no significant issues with core loss are known.
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	Core is measured, cut, sampled and bagged for shipments at Pogo's core processing facility. Drill contractors adjust their rate of drilling and method if recovery issues arise. All recovery footages are recorded by the drillers on core blocks. Blocks are checked and compared to the measurements of the core by geologists. Discrepancies are reviewed with the drilling contractor.
	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.	Goodpaster Project has no known relationship between sample recovery and grade. Overall recoveries are excellent and no significant issues with core loss are apparent.
Logging	Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.	Core logging is carried out in accordance with Pogo Exploration core logging procedures. Data recorded includes lithology, structure, alteration assemblages, oxide/sulphide mineralogy, geotechnical parameters (recovery and RQD), and the presence of visible gold. And associated minerals. Drill core is logged electronically using Rockware Logplot 7 software and since 2019 the AcQuire database system has been utilized. Logging and sampling are consistent with industry standards. Lithology is measured to the tenth of a foot (~3cm) scale marked from the closest core block. Rock codes are specific to this project. Logs are completed in sufficient levels of detail to support current Mineral Resource estimation and mining practices.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	Drill logging is both qualitative and quantitative in nature. Every core tray is photographed wet.
	The total length and percentage of the relevant intersections logged.	All drill holes are logged in full, from start to finish of the hole. All intersections are logged.
Sub-sampling techniques and sample preparation	If core, whether cut or sawn and whether quarter, half or all core taken.	Core drilled for exploration purposes is cut in half onsite using industry standard Almonte core saws.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	Core drilling only at Goodpaster
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	All sample preparation and assaying of Goodpaster drill core is undertaken by Bureau Veritas (BV) and/or Australian Laboratory Services (ALS). Pogo sends drill core to Fairbanks, Alaska with pulps sent to the BV laboratories in Reno, Nevada or Vancouver, British Columbia or ALS laboratories Vancouver, British Columbia for assay. Industry standard chain of command paperwork is maintained. Typically, gold assays are completed in Reno or Vancouver and the multi-element assays are completed in Vancouver or at another ALS laboratory. Sample preparation includes drying, crushing to 70% passing 2 mm, splitting of a 250 gm subsample, and pulverising to 85% passing 75 µm. Sample preparation techniques are appropriate for the Pogo intrusion-related style of mineralisation.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	Pogo Mine uses an industry standard QAQC programme involving standards, blanks and field duplicates, Standards are introduced in the assay batches at a rate of three control samples per twenty half- core samples.

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Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
		QC results are analysed immediately upon return of a sample batch and reported to management monthly. Overall results show no significant QAQC issues with the analytical laboratory. No systematic bias observed. Protocols are in place to manage failed QAQC results.
		In addition to Pogo QAQC, both analytical laboratories are ISO certified and conduct rigorous internal QAQC checks. Internal QAQC reports are provided to Pogo personnel. These reports do not indicate any systematic issues with the quality of the analysis provided.
	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 duplicates are submitted when half core is taken to ensure that the sampling is representative of the in-situ material being collected.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Duplicate sample results correlate well, hence sample sizes are considered to accurately represent the gold mineralisation at Pogo Mine.
		Sample sizes are appropriate and correctly represent the style and type of gold mineralisation.
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.	Core samples are analysed using industry standard analytical techniques. In holes drilled for exploration purposes, gold content is determined by a 30 gm fire assay with an atomic absorption finish (AAS).
		Exploration results analysed by fire assay with the AAS finish returning > 10 ppm (0.292 oz/ton) gold are re-assayed by fire assay with a gravimetric finish.
		Select samples, generally one in every five holes drilled, are assayed for forty-five elements multi-acid digestion and ICP-MS/ES finish.
		The technique is considered appropriate for the style of mineralisation under consideration.
	For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.	No geophysical tools were used to estimate resources in this release.
	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.	Quality control samples are inserted into the sample stream. A mixture of both Certified Reference Materials and certified standards, blanks and duplicates are inserted randomly. However, Pogo Exploration aims to achieve an insertion rate of approximately three in every twenty core samples.
		The Pogo Mine both generates its own in-house blank certified standards and uses Certified Reference Materials (CRMS) sourced from OREAS Laboratories. Blank standards are prepared with a round-robin assay approach to determine values and acceptable limits. Commercially purchased sand is also used as blank material.
		Monitoring of QA/QC results is performed by the exploration and/or resource geologists upon importing the individual assay certificates into the drill hole database. When failures occur, the exploration and/or resource geologists notify the geologist responsible for logging the drill hole or the core processing facility supervisor.
Verification of sampling and assaying	The verification of significant intersections by either independent or alternative company personnel.	Significant intersections are routinely inspected by senior company personnel. Core photographs of significant intersections reviewed to ensure mineralised zones are consistent with known Pogo mineralisation styles.
	The use of twinned holes.	No twinned holes have been completed at Goodpaster Project.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	All diamond core is logged in detail.
		Logging takes place at the core processing facility.
		Core logging was historically completed using Logplot 7 software. Since Northern Star's Pogo acquisition in 2018, data capture has transitioned to the modern AcQuire database and logging systems.
		All Pogo data is stored in an industry-standard AcQuire database. Validation protocols are built into the importation process to ensure data integrity.
	Discuss any adjustment to assay data.	No adjustments were made to the assay data.
Location of data points	Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.	Drill rigs are aligned using the Reflex TN14 Gyrocompass. On surface, collar locations are surveyed using a Leica RTK-GPS survey station.
		Surface drill holes are surveyed every 200 ft. A final survey is taken at the end of all drill holes. Deviation from the initial survey is checked against plan and the hole is redrilled if there is excessive deviation (>5%). There are no mine workings in the area
	Specification of the grid system used.	The grid system used is the North American Datum of NAD83 (NAD83) AKSP-3.
	Quality and adequacy of topographic control.	High quality LiDAR topographic mapping is utilised at Pogo.
Data spacing and distribution	Data spacing for reporting of Exploration Results.	Drill hole spacing is highly variable. Well-drilled areas are tested by drilling on approximately 80 meter-spaced patterns, extending or contracting where the geology demands definition. The Goodpaster drilled deposit area contains drill spacing up to a maximum of 300m.
	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 current Goodpaster drill spacing of approximately 80m by 80m or less, is deemed suitable to report Inferred Gold Resource.
	Whether sample compositing has been applied.	No compositing was applied prior to submission of samples for analysis.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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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.	Where practicable, drilling was designed to intersect the mineralisation as perpendicular as possible to the dominant vein and structural geometries. In some circumstances, terrain obstacles resulted in drill positions that were oblique to the mineralisation.
	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.	The Competent Person believes that no bias has been introduced to the data, as no single potentially bias inducing orientation dominates in any given area.
Sample security	The measures taken to ensure sample security.	Chain of custody is managed by Pogo Mine personnel. All core samples are received intact and in their entirety in their core trays at the Company's secure core processing facility. All sampling and work on core samples is carried out within the confines of this secure facility.
		Pogo uses pre-numbered sample ticket books for sample numbers. The drill hole number, sample interval, and date are recorded on each ticket and the tear-off ticket is labelled with the sample interval and stapled onto the core box.
		Core is placed in bags with the sample number marked in permanent marker and the bar code stapled to the bag.
		After sampling is complete, sample bags are scanned and placed into rice bags (poly weave bags) labelled with the drill hole number and the sample sequence, ready for submission to the laboratory. Bags are sealed with a zip-tie.
		Samples are transported in totes (bulka bags) via road to sample preparation facilities in Fairbanks, Alaska. Upon receipt, any issues with sample conditions are reported to Pogo Mine and Exploration personnel.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	In March 2018, Sumitomo Metal Mining Pogo LLC (SMM Pogo) commissioned Mine Technical Services Ltd. (MTS) to complete a review audit of standard procedures currently in use at the Pogo Mine in Central Alaska. Drilling, logging, sampling, analytical, QA/QC, database, modelling, density, ore control, resource estimation, mine planning, metallurgy and reconciliation procedures were audited.
		While minor recommendations for improvement were made, sampling techniques and data were generally found to be well-considered and consistent with industry good practise.

Section 2 Reporting of Exploration Results
(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	The total tenement area comprising the Pogo Project consists of 1,250 state mining claims (20,623 ha) in addition to the mine lease claim (777 ha) and the mill site lease (1,385 ha). The Pogo operation is 100% owned by Northern Star Resources, purchased in Aug 2018. There are no known royalties on the Goodpaster area subject the resource reported in this release.
	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.	Detailed legal due diligence completed as part of the Pogo acquisition demonstrates that the tenure is in good standing and secure. Pogo is a fully permitted and operational mine, and there are no foreseen permitting issues that will prevent development of the resource or any future exploration activities.
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	The first modern-day exploration was conducted in the Pogo area by WGM Inc, in 1981, where strong gold-arsenic-tungsten anomalies were identified in stream sediment samples collected from the Pogo and Liese Creeks during regional reconnaissance surveys. WGM staked mining claims over the area.
		In 1991, the area was incorporated into the Stone Boy Joint Venture, which consisted of large claim groups focused on the Chena, Salcha and Goodpaster River basins. As part of the Stone Boy JV, exploration was conducted by WGM and financed by Sumitomo Mining Metal Corporation Ltd. and others (that later withdrew) as part of an earn-in agreement. Regional grid-based soil sampling was completed between 1991 and 1994, with three diamond drill holes funded by the Japan Oil Gas and Metals National Corporation drilled in 1994 to test a prominent gold-in soil anomaly. Based on strong gold grades returned in the initial three holes, a further 13 holes were drilled in the Liese Creek are in 1995. One hole was the discovery hole for the Liese vein system. The intercept graded 22.7ft at 1.838opt (6.92m @ 63.0gpt). In 1997, Sumitomo signed an agreement with Teck Resources Ltd. to acquire a 40% interest in the Pogo claims; Teck Corp assumed operatorship of the project in 1998.
		Further surface definition drilling was completed between 1998 and 2004; mining operations commenced in 2006.
Geology	Deposit type, geological setting and style of mineralisation.	The Project is located in the Tintina Mineral Belt, a 200 km-wide, 1,200 km-long arc, broadly bounded by the Tintina-Kaltag fault systems to the north and the Denali-Fairwell fault systems to the south. This region contains numerous economic deposits of gold in addition to copper, lead, zinc, silver and tungsten deposits.
		The lithological units in the Pogo deposit area are dominantly high-grade metamorphic rocks later intruded by felsic to intermediate plugs and sills. Key metamorphic rocks include biotite feldspar gneiss, augen gneiss and mafic schist derived from both sedimentary and igneous protoliths. Metamorphic mineral assemblages observed consist of quartz, feldspar, biotite, chlorite, muscovite, sillimanite, andalusite and garnet. The 50km long Goodpaster batholith (granodiorite composition) is the dominant intrusive complex north of the Pogo gold district.
		Principal gold mineralisation is hosted in biotite-quartz-feldspar paragneiss and orthogneiss, although any lithology can host gold mineralisation. Post-metamorphic intrusions are rarely significant hosts.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
		Gold at Pogo occurs predominantly within thrust faults where quartz veins ranging in thickness from <0.5m to >10m. Mineralised veins contain plus/minus 3% sulphides (arsenopyrite, pyrite, pyrrhotite, loellingite, chalcopyrite, bismuthinite, sphalerite, galena, molybdenite, tetradymite, maldonite) and a variety of Bi-Pb-Ag sulphosalts. High-angle faults often host strong gold grades as well.

The Pogo gold deposit is considered to be an example of a Reduced Intrusive-Related Gold Deposit (RIRGD), characterised by a low sulphide content, (typically <5%) and a reduced ore mineral assemblage. It typically contains pyrite and arsenopyrite but lacks primary magnetite or hematite. In brief, these deposits typically have the following characteristics:
▪ Mineralisation occurs as sheeted vein deposits or stockwork assemblages and often combines gold with variably elevated Bi, W, As, and Te, but contains low concentrations of base metals
▪ Restricted and commonly weak proximal hydrothermal alteration
▪ Spatially and temporally related to reduced intrusions of intermediate to felsic composition. |
| Drill hole Information | A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:
o easting and northing of the drill hole collar
o elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar
o dip and azimuth of the hole
o down hole length and interception depth
o hole length | No drilling information is being released |
	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.	No drilling information is being released
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 drilling information is being released
	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 drilling information is being released
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	Not applicable - given metal equivalent values are not being 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.	No drilling information is being released
	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').	No drilling information is being released
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 drilling information is being released
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.	No drilling information is being released
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.	Nil
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).	Opportunity remains for further surface exploration diamond drilling on the Goodpaster vein system.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Appropriate diagrams and maps of future extensions and work are available in the appropriate ASX announcements.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Section 3 Estimation and Reporting of Mineral Resources
(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Database integrity	Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.	Historically, geologic logs, saved in Logplot 7 format were imported directly using GeoLogger. GeoLogger, a Microsoft® Access application developed by GEMS for use by Pogo, imports samples, geologic logs and down-hole surveys into the drill hole database. Collar surveys have been entered directly into the database in the header table by the geologist responsible for the drill hole. Down-hole surveys were recorded on slips of paper into GeoLogger and a geologist marked the survey as acceptable. The data entry procedures for samples, geologic logs, and down-hole surveys are well documented in the Pogo logging manual. Post-acquisition in 2018, all data was transitioned to an AcQuire database. A comprehensive audit and validation were undertaken upon transitioning between the historic database and the AcQuire database. All sampling and logging data is digitally entered into a tablet then transferred to AcQuire. There are checks in place to avoid duplicate holes and sample numbers. Where possible, raw data is loaded directly to the database from lab, logging and survey derived files. The data entry procedures and use of templates minimise the chance of the data being corrupted.
	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 for this resource report has not visited site. The geological interpretation, estimation and background data has been produced by personnel with extensive onsite experience.
	If no site visits have been undertaken indicate why this is the case.	Site visits undertaken.
Geological interpretation	Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.	The Goodpaster deposit is immediately adjacent to Pogo and is thought to be part of the same mineralised system. This has resulted in geological understanding accumulated through >15 years of mining at Pogo heavily influencing and enhancing the Goodpaster interpretation. The geological interpretation is based off extensive geological and structural logging of 174 diamond drill holes intercepting the lode horizons. The resource categories assigned to the model directly reflect the confidence in the geological interpretation. While confidence in the geological interpretation is reasonable on a deposit scale, locally there remains a degree of uncertainty due to the structurally complex nature of the orebody and the relatively broad drill spacing.
	Nature of the data used and of any assumptions made.	The geological interpretation of Goodpaster 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 logged from diamond drill core were all used to help define the mineralised domains and regolith boundaries.
	The effect, 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 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 to improve grade homogeneity and reduce variance. Individual domain geometry has been used to control search orientations via dynamic anisotropy which accounts for lode flexure and ensures appropriate samples are selected for estimation.
	The factors affecting continuity both of grade and geology.	Interpreted sub-parallel deposit scale thrust horizons and inter-linking faults control the extent of the Goodpaster mineralisation. Interplay between this structural architecture controls dilational positions and ultimately high-grade mineralisation. Brittle faulting is evident in most drill core however given the current broad drill spacing it is difficult to assess the local impact of these structures on lode orientation.
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.	Goodpaster is situated ~1,500m's (4,900ft) northwest of the nearest Pogo underground development. The deposit is laterally extensive occupying an approximate footprint of 1,830m's (6,000ft) by 760m's (2,500ft) with a width up to 550m's (1,800ft). Lode orientations are variable but broadly dip ~30° to 280° however conjugate orientations are common.
Estimation and modelling techniques	The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.	Mineralisation is domained based on geological continuity. All domain wireframes are created using Leapfrog software and all subsequent estimation is completed using Datamine software. Lode wireframes are intersected with a validated drill database, flagged with a domain identifier and composited to 2ft with 0.5ft minimum sample. Residual samples are distributed across adjacent component intervals. Composites are analysed for population outliers by domain with top cuts derived. The top cutting methodology is used to ensure that high grade values are not smeared into poorly supported areas and excessive metal is not cut from the dataset while maintaining an appropriate coefficient of variation for a robust kriged estimate.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
		Many of the principal lodes exhibit bi/multi-modal grade populations. These internal populations are controlled by sub-domaining of appropriate lodes using a Leapfrog numerical model. The original domains are used as a lateral extent and grade cut-offs derived from domain specific log probability plots. A probability threshold of 0.5 is used to partition all lodes.
		Due to limited sample data, variography is created on grouped domains exhibiting similar geology/geometry. Output variograms are utilised in kriging neighbourhood analysis (KNA) to generate optimum parent block sizes and estimation parameters. Search extents and orientations are controlled by variogram rotations, ranges, and DA.
		Domains and sub-domains are estimated using Ordinary Kriging (OK) utilising the estimation parameters derived from the KNA as inputs. Grade is estimated into parent blocks only and all kriging quality metrics and search pass values are output and reviewed. Dynamic anisotropy (DA) is used on all grade estimates due to common lode flexure. Dip and dip direction values are estimated into the domain model from mid-plane wireframes created for each individual lode. Hard boundaries are utilised between all domains and sub-domains supported by contact analysis.
	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 current Mineral Resource Estimate represents the second reported resource for the Goodpaster deposit. To ensure the validity of the OK estimate, visual and numerical comparison of block model vs sample grades, swath plots, and global change of support plots were utilised.
		The previous MRE underwent a series of rigorous check estimates utilising inverse distance, metal accumulation, and nearest neighbour methodology. These checks were also supplemented by conditional simulation and uniform conditioning on critical lodes. All check estimates demonstrated strong conformance to the primary OK values. Given little change occurred with the new interpretation, and the estimation methodology remained similar between the new and maiden model, it is assumed that the results from the initial MRE checks are still relevant.
	The assumptions made regarding recovery of by-products.	None, not applicable.
	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 30ft (East-West) x 60ft (North-South) x 30ft (vertical) optimised using kriging neighbourhood analysis. Sub-cells have been used at a resolution of 1ft x 2ft x 1ft 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 80x80m resource definition spacing. A 3-pass nested search strategy is employed with the first pass always set to the full range of the variogram. The second pass is set at 2 times the variogram range with the final pass set at a factor large enough to ensure all blocks comprising the domain are estimated.
	Any assumptions behind modelling of selective mining units.	No assumptions have been made regarding the modelling of selective mining units for this Mineral Resource Estimation.
	Any assumptions about correlation between variables.	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 geological features and structural architecture. 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. Numerical modelling 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 obvious flexure.
	Discussion of basis for using or not using grade cutting or capping.	A review of grade outliers was undertaken to ensure that extreme grades are treated appropriately during grade interpolation. Although extreme outliers within the grade populations of each domain are real, they are potentially not representative of the volume they inform during estimation. If these values are not cut, they have the potential to result in significant grade over-estimation on a local basis.
		The cutting strategy was considered and applied as follows:
		▪ Disintegration analysis of log histogram, mean-CV and log-probability plots for values beyond a lognormal distribution.
		▪ Contained metal plots: assessment of contribution of the highest values on the quantity of metal in an estimate.
		▪ Outlier analysis: removal of outliers and analysis of impact on the CV of 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.	Several statistical and visual measures are used to validate the accuracy of the estimation. Volume variance between the wireframe domains and block model domains are assessed. A visual inspection of input composites is compared to the estimated block model in section for each domain. The mean grade of the block model is compared to the naïve and declustered mean grades of the composites by domain with any variance greater than 10% investigated. Swath plots are created by domain and sub-domain in the X, Y, Z, strike and cross strike directions and viewed holistically to vector into any problematic areas. 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.	Tonnages are estimated on a dry basis.
Cut-off parameters	The basis of the adopted cut-off grade(s) or quality parameters applied.	The Mineral Resources have been reported at a diluted cut-off of 4.1g/t Au (0.12 oz/short ton) inside Mineable Shape Optimiser (MSO) solids at a minimum mining width of 6ft and 30x30ft stope dimensions.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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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.	Underground resources are reported using a minimum mining width of 6ft, with no dilution added on hanging wall or footwall. MSO runs are used to identify potential mineable sections within the Mineral Resource for reporting. The results from this process are visually assessed and manually refined to validate their reasonable prospects for eventual economic extraction.
Metallurgical factors or assumptions	The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	Goodpaster ore will be treated at the Pogo processing plant. These facilities are currently designed to handle approximately 1.2 million short tons of feed per annum. The plant has the capability to treat both partially refractory and free milling ores, through both gravity and flotation circuit and associated fine grind circuit (including carbon-in-pulp (CIP) gold recovery). The plant consists of grinding, gravity, flotation, fine grind, CIL, elution, electrowinning and smelting circuits. While there are no indications in the available data that metallurgical characteristics differ between Goodpaster and Pogo, exhaustive test work still needs to be completed.
Environmental factors or assumptions	Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a green fields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	The Goodpaster deposit is immediately adjacent to the currently operating Pogo mine. Pogo is fully permitted in accordance with United States federal laws and regulations in addition to Alaskan state laws and regulations. There is currently adequate storage capacity at site that would enable waste disposal of the material that potentially may be generated by extraction of future economic material in the Mineral Resource estimate.
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.	A density of 2.69g/cm3 (0.084 short ton/ft3) was used for the mineralisation and typically 2.76g/cm3 (0.086 short ton/ft3) for waste. The density values have been derived via analysis of >10,000 density measurements by location and lithology taken across the Pogo mine camp. Host rocks and density values assigned correlate well with those at the adjacent Pogo deposits where production tonnages are reconciled monthly. Bulk density measurements are calculated using the water displacement technique.
	The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc.), moisture and differences between rock and alteration zones within the deposit.	Ore zones predominantly exist in fresh nonporous material so additional measures to reduce moisture intake during the water displacement method is unnecessary at this stage.
	Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	Individual bulk densities are applied in accordance with specific lithologies, mineralisation, and weathering states.
Classification	The basis for the classification of the Mineral Resources into varying confidence categories.	The Goodpaster resource is classified as Inferred and Potential only, with categories assigned via boundary string by domain, based on a combination of physical and estimation quality metrics. These include drill spacing, search pass, kriging efficiency / slope / variance, grade, and geological continuity. Inferred material is assigned where drill spacing is <= 80x80m (260x260ft) and the lode has established geological continuity. All other mineralisation is assigned a Potential resource category. Only Inferred material is reported.
	Whether appropriate account has been taken of all relevant factors (i.e., relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).	Appropriate account has been taken of all relevant criteria including data integrity, data quantity, geological continuity, and grade continuity.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The Mineral Resource estimate reflects the Competent Person's views of the deposit.
Audits or reviews	The results of any audits or reviews of Mineral Resource estimates.	A rigorous process for review of geological modelling, estimation and reporting of mineral resources is currently in place that meets high industry standards. At the completion of resource estimation, Northern Star 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 – swath 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. Northern Star uses a methodical approach to resource estimation and the procedure requires the systematic completion of the NSR Resource Estimation Document that is thoroughly investigated and assessed in the Model review process, as stated above.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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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 statement relates to global estimates of tonnes and grade.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	The deposit is in the early stages of resource definition and has not yet been mined.

Kanowna Belle: Kanowna Belle Underground – 31 March 2024

Section 1 Sampling Techniques and Data
(Criteria in this section apply to all succeeding sections.)

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.	For Mineral Resource estimation the Kanowna Belle (KB) deposits are sampled in majority by diamond drilling (DD) from underground platforms. Reverse Circulation (RC) drilling makes up a small proportion of the data set and has been carried out at the Kanowna Belle deposit for delineation of open pit material. Face sampling data (where validated) has been included in the Resource Estimate. Historical data that is deemed as having acceptable and traceable location and assay information has been included in the Mineral Resource estimation datasets for KB.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	For DD samples, downhole depth is recorded by the drillers on core blocks. This is checked and compared to the measurements of the core by the geologist during core mark-up prior to logging to prevent incorrect logging and sampling errors. Sample intervals are then marked on the core by a geologist, to honour geological boundaries (i.e.,, lithology, mineral assemblage, veining percentage). Sample interval lengths vary from 0.3 m to 1.0 m (historically 1.3 m). RC samples were homogenised by riffle splitting prior to sampling and then submitted for assay as either 1 m intervals or 2-4 m composites. 2-4 m composites returning significant assay results were re-assayed using the individual 1 m samples. Field duplicates samples to assess representivity were carried out for most RC programs. Frequency of the duplicates varied from approximately 1:25 to 1:50 (based on information available for historic data). Face channel sampling is constrained within geological and mineralised boundaries with a minimum 0.2 m and maximum 1.0 m (historically 1.3 m) channel sample length. In some cases, smaller samples (0.1 m – 0. 2 m) have been taken to account for smaller structures in the face. The sample is taken across the grade line (1.5 m from floor) or perpendicular to the ore body. Face samples are taken by personnel trained and deemed competent to ensure sample representivity.
	Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g., 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g., submarine nodules) may warrant disclosure of detailed information.	Historical sample preparation and assay procedures vary considerably due to the many generations of data captured. All data used in the Mineral Resource estimate is considered to have been collected using industry accepted practices. Current sample preparation and assay procedures employed by Northern Star Resources are considered as following industry standard practice. All assay determinations are conducted by internationally recognised laboratories. The primary laboratories (MinAnalytical, Bureau Veritas and SGS) meet ISO 9001:2000. Underground face samples (FS) are taken by chip sampling across the face using a geological hammer, collecting the sample in a calico bag held in a steel frame. Wherever possible, the faces are sampled along a channel approx. 1.5 m above the floor RL. Face sample intervals are determined by alteration and or lithological contacts or in all other cases, a standard interval of 1 m (minimum sample length of 0.3 m to maximum sample length of 1.3 m). Exploration DD core is sawn half-core with one half sent for analysis and the other half retained. Grade Control DD core is whole core sampled and sent for analysis. Core selected for half core sampling is cut using an Almonte core saw then bagged in pre-determined sample ID calicos; sampling practices ensure that circa 99% of half core sample is collected.
Drilling techniques	Drill type (e.g., core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g., core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc.).	DD core is mostly NQ2 diameter with some BQ, HQ and LTK60 diameter core. Where possible diamond core was orientated using a spear, Ballmark™, Ezimark™, or ACE multi electronic tool. RC holes are either 5.5" or 5.25" diameter. For face sampling, a geological hammer was used with the sample collected directly into a calico sample bag
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed.	For DD, all recovery is recorded by the drillers on core blocks. This is checked and compared to the measurements of the core by the geologist. Any issues are communicated back to the drilling contractor. Recovery is generally very high (>95%) and there have been no significant sample recovery problems. Historic DD core stored on site shows excellent recovery.
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	For DD, drilling contractors adjust the rate of drilling and method if recovery issues arise. Minor loss can occur when drilling through major fault zones such as the Fitzroy Fault and Panglo Unconformity. Areas of potential lower recovery are identified on drill plans provided to the drilling contractor, and controlled drilling techniques are employed to maximise recovery. Where sample loss occurs internal to an ore zone, the drillhole is usually excluded from the estimate.
	Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	No specific study has been carried out on recovery and grade. As recoveries are generally very high (95%+) it is assumed that the potential for bias due to variable sample recovery is low.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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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.	All DD core was logged by geologists with lithology, mineralisation, structure, alteration, veining and specific gravity recorded. Quantitative measures such as structural measurements, intensity of alteration, percentage of mineralisation, thickness of veins and veins per metre were also recorded. Geotechnical measurements on DD core include RQD, Recovery, and Fracture Frequency. For selected holes joint sets, infill, infill thickness and roughness were also geotechnically measured. All mineralised intersections are logged and sampled. Logging is entered in Acquire using a series of drop-down menus which contain the appropriate codes for description of the rock. All underground faces are logged for lithology, alteration and mineralisation. Logging is captured on a face sample sheet underground which is then transferred to AcQuire. Faces are then entered into AcQuire using a series of drop-down menus which contain appropriate codes for description of the rock.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	Geology logging is qualitative in nature with visual estimates made of mineralisation percentages for core. Structural and geotechnical logging is quantitative in nature. All core is photographed wet as standard practice. Historically some core may have also been photographed dry. All underground faces are logged and sampled to provide both qualitative and quantitative data. All faces are washed down and photographed before sampling is completed.
	The total length and percentage of the relevant intersections logged.	The entirety of the drillhole is logged.
Sub-sampling techniques and sample preparation	If core, whether cut or sawn and whether quarter, half or all core taken.	Mineralised intersections are sampled with a minimum and maximum length of 0.3 m and 1.0 m respectively, generally to lithological or alteration contacts. DD core was orientated (where possible), measured and then sampled by cutting the core in half longitudinally using an "Almonte" diamond saw. The same half of the core is selected for each sample interval, placed in numbered calico bags and submitted to the laboratory for analysis. The other half of the core is left in the core tray which are stored and catalogued. Full core sampling is conducted on grade control holes where sufficient information is already available for the area should need arise.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	Development face samples are chipped directly off the face into a sample bag aiming for sample size of at least 2.5 kg. Samples are a maximum of 1.03 m in width and honour geological boundaries. Samples are taken as close to perpendicular across the mineralisation as practicable. In some cases, multiple sample orientations are used where there is more than one mineralised trend in the face. All RC samples are split using a rig-mounted cone splitter to collect a 3 - 4 kg sample from each 1 m interval. These samples were utilised for any zones approaching known mineralisation and from any areas identified as having anomalous gold. Outside known mineralized zones spear samples were taken over a 4 m interval for composite sampling.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	Samples during the reporting year has been sent to three different labs. Sample preparation techniques for each lab is described below. MinAnalytical/ALS: Photon assay testing is carried out through MinAnalytical/ALS. This process involves a coarse crush stage, crushing samples to < 3 mm. 500 g of crushed material is then placed into single-use sample jars. Using a robotic shuttle, high energy x-rays are then fired at the sample causing excitation of atomic nuclei allowing detection of gold content. Photon analysis allows sampling of larger amounts of sample material providing a true bulk reading of gold content. The process is chemical free and non-destructive, samples are retained at the lab for a period of two months. Intertek: Photon assay testing is carried out though Intertek. The coarse reject is delivered from ALS to Intertek where the samples are crushed to < 3 mm. 500 g of crushed material is then placed into single-use sample jars. Using a robotic shuttle, high energy x-rays are then fired at the sample causing excitation of atomic nuclei allowing detection of gold content
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	For fire assay samples, coarse grind checks at the crushing stage (3 mm) are carried out at a ratio of 1:25 samples with 90% of the sample volume reporting through the sieve required for a pass. Pulp grind checks at the pulverising stage (75 μm) are carried out at a ratio of 1:25 samples with 90% of the sample volume reporting through the sieve required for a pass. Laboratory duplicate samples are taken for coarse crush (3 mm) and pulverising (75 μm) stages at a ratio of 1:25 samples. Repeat assays are carried out at a ratio of 1:10 on prepared pulp samples. For photon assay samples, coarse grind checks at the crushing stage (3 mm) are carried out at a ratio of 1:25 samples by the robot. If the grind check is > 3mm, the robot stops, and samples are looped back through and re-crushed.
	Measures taken to ensure that the sampling is representative of the in-situ material collected, including for instance results for field duplicate / second-half sampling.	Quarter core sampling of diamond core is occasionally undertaken for check assays, however routine field duplicates are not performed on diamond core as these are not considered to be true field duplicates. For RC chips field duplicates are collected and analysed for significant variance to primary results.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	For fire assay, grind checks are performed at both the crushing stage (3mm) and pulverising stage (75 μm) requiring 90% of material to pass through the relevant size. No specific study has been carried out to determine optimum sub-sample size fractions. These material sizes are assumed to be acceptable for the mineralization style and material grain size present. For photon assay samples, grind checks are performed by the robot at the crushing stage (3mm). Multiple internal studies were conducted and determined at a particle size of 3mm, the effect of coarse grain gold on precision is acceptable. The minimal reduction in precision is offset by the ability to take a larger volume sample than traditional fire assay.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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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.	Fire assay analysis and Photon Assay analysis is undertaken, and these are total assay methods. Monthly, quarterly, and annual QAQC reports are prepared to check for any bias or trends with conclusions discussed with the laboratory management. Holes that do not pass QAQC are not used for Mineral Resource estimation.
	For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.	No geophysical tools were used to determine any element concentrations
	Nature of quality control procedures adopted (e.g., standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e., lack of bias) and precision have been established.	Sampling and assaying QAQC procedures include: • Periodical resubmission of samples to primary and secondary laboratories • Submittal of independent certified reference material • Sieve testing to check grind size • Sample recovery checks. • Unannounced laboratory inspections Standard control samples and blanks are inserted at a ratio of 1:20. The standard control samples are changed on a 3-month rotation. The results are reviewed on a per-batch basis and batches of samples are re-analysed if the result is greater than three standard deviations from the expected result. Any result outside of two standard deviations is flagged for investigation by a geologist and may also be re-assayed. Blanks are inserted into the sample sequence at a ratio of 1:20. The insertion points are selected at random, except where high grade mineralisation is expected. In these cases, a Blank is inserted after the high-grade sample to test for contamination. Results greater than 0.2 g/t are investigated, and re-assayed if appropriate. New pulps are prepared if anomalous results cannot be resolved. When visible gold is observed in core, a barren flush is required. Laboratory performance is monitored using the results from the QA samples supplemented by the internal QA samples used by the laboratories, which included pulp duplicates and CRMs. The QA studies indicate that accuracy and precision are within industry accepted limits.
Verification of sampling and assaying	The verification of significant intersections by either independent or alternative company personnel.	All significant and anomalous intersections are verified by a Senior Geologist during the drill hole validation process.
	The use of twinned holes.	No twinned holes were drilled for this data set. Redrilling of some drillholes has occurred due to issues downhole (e.g., bogged rods). These have been captured in the database as an 'A'. Re-drilled holes are sampled whilst the original drillhole is logged but not sampled.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	All data are stored and validated within the site Acquire database. Data import into the database is controlled by documented standard operating procedures, and by a set of validation tools included in Acquire import routines. Hard copies and electronic copies of all primary location, logging and sample results data are filed for each hole. Assay results are received in .csv format and loaded directly into the database by the supervising geologist who then checks that the results have inserted correctly. Holes that cannot be accurately validated or do not meet the requirements of Kanowna QAQC are excluded prior to Mineral Resource estimation.
	Discuss any adjustment to assay data.	No adjustments are made to this assay data.
Location of data points	Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.	Planned holes are marked up by the Mine Survey department using a total station survey instrument in the Mine Grid. All drill hole collar positions were surveyed. All recent DD holes were surveyed down hole by various methods including single shot down hole camera, EMS (Electronic Multi Shot) method or in-rod gyroscopic survey tools. Holes are typically surveyed at 15 m and 30 m intervals down hole thereafter. Since the 1st of June 2015, a true north seeking gyroscopic tool has been used to line up the rig and record a zero-metre survey. Since May 2019, all DD holes are surveyed down hole only using DeviFlex, generally every 50 m during drilling of the hole and again at 3 m intervals upon completion of the drillhole. QAQC is performed on the running speed and misclose rate for each gyroscopic survey. Where issues are identified, a single survey run can be given a higher priority in the database. This data is converted to .csv format and imported into the AcQuire database where it is validated by the Project Geologist. If survey data is missing or quality was suspect and not replaced by more recent drilling, affected data was not used in estimation.
	Specification of the grid system used.	A local grid system (KBMINE grid) is used. It is rotated anticlockwise 28.43 degrees to the MGA94 grid. Drill hole collars are located by the Mine Surveyors using a Laser system respective to the local mine grid and to the overall property in UTM or Australian grid coordinates.
	Quality and adequacy of topographic control.	Topographic control is not relevant to the underground mine, but relevant to the drillholes that define the open pit resource. In this case the topography is reconciled to the surface collar pickups.
Data spacing and distribution	Data spacing for reporting of Exploration Results.	Drill hole spacing is nominally 60 m x 60 m down to 20 m x 20 m in the main zones of mineralisation at the Kanowna Belle deposits. Secondary mineralised structures in the hanging wall and footwall of Kanowna Belle are typically narrower and less consistent so have a nominal drill spacing of <20 m x 20 m)

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
	Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.	The data spacings in the ore lodes at Kanowna Belle are considered sufficient to support the definition of Mineral Resources and Reserves as applied under the 2012 JORC Code. Appropriate geological and grade continuity have been demonstrated during the 20+ years of mining at the Kanowna Belle operations.
	Whether sample compositing has been applied.	No sample compositing has been applied. The datasets were composited to 1 m intervals prior to grade estimation. This aligns with the most common sample length taken.
Orientation of data in relation to geological structure	Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.	The majority of data is drilled perpendicular to the interpreted strike of the Kanowna Belle ore lodes however due to the repetition and stacked nature of the mineralised zones, actual drill intersections may be oblique to some of the non-targeted ore trends.
	If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.	Holes with orientations that are considered likely to introduce sampling bias are flagged during drill hole validation and are excluded from the Mineral Resource estimation datasets.
Sample security	The measures taken to ensure sample security.	All core is kept within the site perimeter fence on the Mining Lease M27/103. Samples are dispatched and/or collected by an offsite delivery service on a regular basis. Each sample batch is accompanied with a: • Job number • Number of Samples • Sample Numbers (including standards and duplicates) • Required analytical methods • A job priority rating A Chain of Custody is demonstrated by both Company and Laboratory in the delivery and receipt of sample materials. Any damage to or loss of samples within each batch (e.g., total loss, spillage, or obvious contamination), is reported to the Company in the form of a list of samples affected and detailing the nature of the problem(s).
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	The last external audit was conducted in 2009 with the conclusion that industry best practice was being followed. Standards and procedures have remained largely unchanged since this time. A review of sampling techniques, assay results and data usage was conducted internally by the Companies' Principal Resource Geologist during 2015 with no material issues found.

Section 2 Reporting of Exploration Results
(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	The Kanowna Belle mine and associated infrastructure is located on Mining Leases M27/92 and M27/103. Mining lease M27/92 (972.65 ha) was granted on March 14, 1988 and M27/103 (944.25 ha) was granted on January 12, 1989. Both leases were granted for periods of 21 years after which they can be renewed for a further 21 years. The Mining Leases and most of the surrounding tenement holdings are 100% owned by Northern Star (Kanowna) Pty Limited, a wholly owned subsidiary of Northern Star Resources Limited. The mining tenements are either located on vacant crown land or on pastoral leases.
	The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.	No known impediments exist, and the tenements are in good standing.
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	Kanowna was discovered in 1989 by Delta Gold, open pit mining occurred between 1993 and 1998 with underground operations beginning in 1998. In 2002, Delta Gold Limited and Goldfields Limited merged to form Aurion Gold Limited and Placer Dome Inc. (Placer Dome) subsequently acquired Aurion Gold Limited. In 2006 Barrick Gold Corporation acquired Placer Dome and in 2014 Northern Star acquired the operation from Barrick Gold. Exploration drilling is ongoing from underground to extend the known mineral resources.
Geology	Deposit type, geological setting and style of mineralisation.	Kanowna Belle is located within the Kalgoorlie Terrane, one of a number of elongate, broadly NNW-SSE striking structural-stratigraphic late Archaean greenstone terranes of the Eastern Goldfields of Western Australia. The Kanowna Belle gold mine is located close to the centre of the NNW-SSE trending, greenstone-dominated Boorara Domain, the eastern most subdivision of the Kalgoorlie Terrane. The Kanowna Belle deposit can be categorised as a refractory, Archean lode-gold type deposit. The orebody is comprised of several ore shoots, including the large Lowes Shoot, and several smaller lodes including Troy, Sims, Hilder, Hangingwall and Footwall shoots controlled by sets of structures of various orientations oblique to Lowes. 600m west of the main Lowes lode, are the Velvet and Joplin lodes, that are considered to be part of the KB mineralised system.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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		Lowes contains some 80% of known gold mineralization and strikes ENE, dips steeply SSW and plunges steeply SW. The Lowes shoot has a strike length of 500m, width between 5 m and 50 m and down-plunge extent greater than 1,250 m. The overall steep SE plunge is interpreted to reflect the intersection of D1 (ENE) and D2 (NW) structures.
		Kanowna Belle is one of the few known refractory pyritic orebodies in the Yilgarn Craton. Gold in the Kanowna Belle deposit occurs mostly as fine-grained (<10 µm) inclusions in pyrite or as very fine-grained gold located in arsenic-rich growth zones in pyrite. Typical ore assemblages contain 0.5% S to 1.5% S and 40 ppm As.
		The Kanowna Belle deposit is hosted by sedimentary volcanoclastic and conglomeratic rocks which are separated into hangingwall and footwall sequences by a major, steeply SSE dipping zone of structural disruption. This structure represents the product of at least three distinct stages of deformation, comprising the Fitzroy Mylonite, the Fitzroy Shear Zone and the Fitzroy Fault, which have produced clear structural overprinting relationships. Importantly, this structure has localised emplacement of the Kanowna Belle porphyry which hosts at least 70% of known mineralisation. Localisation of high grade mineralisation and most intense alteration around the composite structure emphasises its importance for acting as the major plumbing system for fluids.
		Formation of the Fitzroy Mylonite and Fitzroy Shear Zone are interpreted to have occurred during regional south-to-north D1 thrusting. A switch in far-field stress axes to the approximately ENE-WSW D2 orientation caused reactivation of the Fitzroy Shear Zone, resulting in sigmoidal folding of pre-existing structures and formation of a shallow lineation associated with sinistral transcurrent shearing. The Kanowna Belle porphyry cross-cuts fabrics associated with the D1 Fitzroy Mylonite and Fitzroy Shear Zone and is in turn overprinted by S2.
		In the vicinity of the Velvet and Joplin lodes, five types of intrusions have been identified - two types with Kanowna Belle Porphyry-like compositions, the Panglo Porphyry, hornblende porphyry and a lamprophyre dyke of intermediate composition. The latter is the principal host to gold mineralisation at Velvet, with Joplin mineralisation focused along structural features at the contact or within the Panglo Porphyry. The intrusions, intrude the thick-bedded, dacitic volcaniclastic breccia known as the Grave Dam Grit. Both lithological domains and the hanging wall intrusions are truncated to the west by an erosional unconformity at the base of the Panglo Basin. Polymictic conglomerate and coarse-grained lithic arenite units of the Panglo Basin are correlated with the ~2650 Ma Kurrawang Formation.
Drill hole Information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all material drill holes: o easting and northing of the drill hole collar o elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar o dip and azimuth of the hole o down hole length and interception depth o hole length.	A total of 7683 DD/ RC holes and 4120 face channels, and 42 sludge holes have been used in the mineral resource and are deemed to be material. All material data is periodically released on the ASX, each financial year.
	If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	Exclusion of the drill information will not detract from the understanding of the report.
Data aggregation methods	In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g., cutting of high grades) and cut-off grades are usually Material and should be stated.	All reported assay results have been length weighted to provide an intersection width. A maximum of 2 m of barren material between mineralised samples has been permitted in the calculation of these widths.
	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.	Where an intersection incorporates short lengths of high grade results these intersections will be reported in addition to the aggregate value.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	No metal equivalent values have been used for the reporting of these exploration results.
Relationship between mineralisation widths and intercept lengths	These relationships are particularly important in the reporting of Exploration Results:	True widths have been calculated for intersections of the known ore zones, based on existing knowledge of the nature of these structures.
	If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.	Both the downhole width and true width have been clearly specified when used.
	If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g., 'down hole length, true width not known').	Where mineralisation orientations are known, downhole lengths are reported.
Diagrams	Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported. These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	Appropriate maps and sections of any significant discoveries are included in the ASX announcements.
Balanced reporting	Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	Both high and low grades have been reported accurately, clearly identified with the drill hole attributes and 'From' and 'To' depths.

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Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
Other substantive exploration data	Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	No other material exploration data has been collected for this area.
Further work	The nature and scale of planned further work (e.g., tests for lateral extensions or depth extensions or large-scale step-out drilling).	The down dip, hangingwall extensions and the lateral continuation of the Kanowna Belle ore lodes will be drill tested from various underground drilling platforms as well as surface step out targets to test for ore continuity in the supergene position.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Appropriate diagrams and maps of future extensions and work are available in the appropriate ASX announcements.

Section 3 Estimation and Reporting of Mineral Resources

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

Criteria	JORC Code explanation	Commentary
Database integrity	Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.	Data used for generating the mineral resource estimates is stored in an Acquire database. The Company employs a database administrator to manage the database. Where possible raw data is loaded directly into the database, with adjustments such as survey transformations occurring within the database so that they are fully traceable. Extensive validation is built into the Acquire database to ensure data integrity and user access logs are maintained for all fields in the dataset. Data validation tools and sign off facilities to record data cross-checking are used.
	Data validation procedures used.	Checks carried out on the imported data include: • Collar details import checks - start and end dates are supplied, collar has location co-ordinate information, actual end of hole depth versus planned end of hole depth is within tolerance, cost code and location code information are supplied. • Survey details import checks – final survey record is within tolerance with respect to end of hole depth, a survey exits at 0 depth, grid transformations have been performed, no duplicate survey points with the same priority exist. • Geology details import checks - final lithology depth is within tolerance with respect to end of hole depth, structural measurement transformations have been performed, alteration/vein/mineralisation logging does not have overlaps and/or gaps. • Samples/Assay import checks – total sample metres match end of hole depth, no duplicate samples with the same priority exist, sample intervals are continuous, no assay values have negative values, dispatch return date is recorded, no 'not sampled' intervals with assay values, QAQC passed. • Geotechnical details import checks – logged information depths are within tolerance with respect to end of hole depth. • Bulk Density/SG details checks – logged information depths are within tolerance with respect to end of hole depth. Errors are corrected where possible. When not possible the data is Resource Flagged as "No" in the database and the database is re-exported. This data will not be used in the estimation process. In addition to being Resource Flagged as "Yes" or "No", drill holes are assigned a Data Class, which provides a secondary level of confidence in the data quality. Data Class (DC) values range from 0 to 3, with criteria summarised below: • DC 3 = Recent data; all data high quality, validated and all original data available. • DC 2 = Historic data; may or may not have all data in AcQuire or hard copy available but has proximity to recent drilling which confirms the dip, width, and tenor. Used to assist in classification. • DC 2 = Recent data; minor issues with data but not proximal to the ore zone. • DC 1 = Historic data; same criteria as DC 2 but cannot be verified with recent drilling. • DC 1 = Recent data; major issues with data proximal to the ore zone. • DC 0 = Historic data; no original information or new drilling in proximity to verify. Not used in Resource estimate.
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	The geological interpretations underpinning the Resource models were prepared by geologists working in the mine and in direct, daily contact with the ore body. The estimation of grades was undertaken by the Senior Resource Geologist on and off site. The Senior Resource Geologist and the Resource Superintendent, (Competent Persons for reviewing and signing off on estimations at Kanowna Belle), reviewed geological interpretations and had frequent contact with site-based staff to ensure interpretive integrity.
	If no site visits have been undertaken indicate why this is the case.	Site visits have been undertaken.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
Geological interpretation	Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.	Open pit and underground mining since 1993 have provided a large database of mapping and drill hole sampling, which has confirmed the geological interpretation to date. The interpretation of all Kanowna Belle and Velvet/Joplin (western hangingwall lodes) ore lode wireframes was conducted using all available geological data. Mapping, Sections, (commonly at 10 m spacing where drill density allows it), structural data and relevant logging characteristics are used to build Leap Frog ore domains across the KB deposit. Known age relationships between the ore domains defines the cross cutting and termination order of the domains within Leap Frog. These relationships are carried forward into the resource estimate. Wireframes were checked for unrealistic volumes and updated where appropriate.
	Nature of the data used and of any assumptions made.	All available geological data was used in the interpretation including mapping, drill holes, underground face channel data, IMAGO photo imagery of drillholes and structural measurements.
	The effect, if any, of alternative interpretations on Mineral Resource estimation.	Interpretations remain consistent with previous releases and there are no alternatives to this well understood ore system.
	The use of geology in guiding and controlling Mineral Resource estimation.	The underlying geological and structural framework controls gold endowment at the Kanowna Belle deposit. Ore lode interpretations were developed using all available geological data to honour the geological and structural framework and constrain the Mineral Resource estimations.
	The factors affecting continuity both of grade and geology.	Continuity can be affected by changes in lithology, dilation of structures, intersecting structures, vein density and proximity to the main mineralized structures.
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 near-surface weathered portion of the Kanowna Belle deposit shows significant gold depletion to at least 35 m above an undulating supergene "blanket" horizon. This mineralised supergene "blanket" had pre-mining plan dimensions of 600m strike x 250m across strike and a thickness of between 1 m and 10 m.
		The main Lowes shoot has a strike length of 500 m, width of 5 m to 50 m, and a down-plunge extent greater than 1,250 m.
		Hanging wall shoots have a maximum strike of 240 m, width of 2 m to 10 m and a current down plunge extent of no more than 800 m.
		Footwall shoots have a maximum strike of 240 m, width of 2 m to 20 m and a current down plunge extent of no more than 700 m.
		Velvet lodes have a strike length of 50-400 m, width of 2-30 m, and a down-plunge extent of approximately 500 m
		Joplin lodes have a strike length of 50-800 m, width of 0.5 m to 5m and a known down dip extent of 150-350 m
Estimation and modelling techniques	The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.	Grade estimation for Gold and Sulphur were completed using Datamine Studio RM software. Geostatistical analysis and variography were completed using Snowden's Supervisor software.
		The Kanowna Belle Resource Model consists of ore lodes and mineralised envelopes. The mineralised envelopes or halos have been included to provide a realistic estimate of grades sitting between and adjacent to currently interpreted ore lodes. The interpretation is based on the prevailing lithology and the predominant ore trends.
		Details on the estimation is summarised below:
		Each ore lode interpretation is considered a separate estimation domain for both Kanowna Belle and Velvet estimations. All estimations use hard domain boundaries. Estimations for Gold used Ordinary Kriging, unless otherwise stated. Where insufficient data is available some historic domains, that are inactive, are still estimated using Inverse Distance. Estimations use 1 m composites with top-cutting applied to Gold and Sulphur outlier values. CV values and other data statistics are used to support top cutting decisions. Histograms, log probability plots, mean and variance plots are used to decide top-cut values on a domain by domain basis. Search ellipse orientation is based on variogram rotations assessed for each domain. The orientations are determined by geological trends and the direction of major AU continuity. The search distance for each lode is ~67% of the total range of the variogram. The minimum and maximum samples and discretisation are determined by KNA for each domain. A multiple-pass estimation strategy is applied for estimations.
		For domains that exhibit mixed grade populations and high CV values, either 2 BIN or 3 BIN Categorical Indicator Kriging is used to estimate subdomains primarily to separate the waste or higher-grade populations from the median grade mineralisation. The COG thresholds for each bin is determined from the log probability plot, with the estimated probability determining the subdomains. Au is estimated, using hard boundaries into these subdomains as per the process outlined for the ore lodes.
		A mineralised envelope or halo was created as a numeric interpolant in Leapfrog. This was created at a cut-off grade of 0.3g/t. All valid data was used to define the halo geometry. Only Resource = Yes data which is not assigned to an ore domain is used in the estimation of the halo. Top cutting is used to remove outliers. The resource categories of the halo were assigned by estimation quality where a slope value>0.45 was allocated an inferred, (3) status. This criterion is achieved in areas of high sample density. All other areas are assigned a resource category of unclassified, (4).
		The maximum distance of extrapolation is half the drill distance that defines the inferred drill spacing.
	The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.	Comparative OK estimations are used and compared against 2-bin, 3-bin CIK for validation purposes.
	The assumptions made regarding recovery of by-products.	No assumptions are made on recovery of by-products.
	Estimation of deleterious elements or other non-grade variables of economic significance (e.g., sulphur for acid mine drainage characterisation).	Sulphur can be deleterious to the gold extraction process when it exceeds concentrations of 1.6 %. Samples are only sent for sulphur analysis assay if the assay sample returns a value than 2 m (true thickness) at 2 g/t or any sample greater than 10 g/t. Sulphur grade is estimated into domains grouped by region, and 10 m buffer zones. Where sulphur cannot be estimated by the first pass, the sulphur is left absent to ensure we do not put low sulphur in areas with no data.

Northern Star Resources Limited
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Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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	In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.	Block sizes vary depending on sample density. Due to the nature of the mineralisation, a 5 m x 5 m x 5 m parent block size is used and is supported by KNA. Sub-blocking to 0.5 m x 0.5 m x 0.5 m are implemented to adequately fill the domain shapes of the wireframes with resolution down to 0.2 m. Search ellipse dimensions were derived from the variogram model ranges with exact values dependent on the characteristics of the individual lodes. In general, the search distance ~67% of the total semi-variance of the variogram and are supported by KNA.
	Any assumptions behind modelling of selective mining units.	Selective mining units were not used during the estimation process.
	Any assumptions about correlation between variables.	All variables were estimated independently of each other. Density values were assigned to the rock model based on regolith and lithology type to ensure that variability is accounted from between different lithological units and weathering profiles.
	Description of how the geological interpretation was used to control the resource estimates.	Ore lodes and Halo are created using well collected and validated geological data honouring known geological, lithological and structural features. The ore lodes are used to define the high-grade mineralisation, whilst the halo captures the discontinuous mineralisation outside of the ore lodes. Each lode is considered as being a separate estimation domain. All estimations use hard domain boundaries. Where ore lodes display mixed populations 2 and 3 BIN CIK estimation is used to define internal subdomains which controls the volumes of waste and high grade populations.
	Discussion of basis for using or not using grade cutting or capping.	Top-cuts are applied to the composited sample data with the intention of reducing the impact of outlier values on the average grade. Top cuts are selected based on a statistical analysis of the data within ore domains and subdomains. A top cut (AU) and high-top cut (*_HC) variable is created. • AU (top cut gold) • AU_HC (high- top-cut gold) Capping is used to reduce the influence of composites which are outliers but considered to be representative of nuggets within the main population. These outliers are capped within the estimate to a distance of 1 parent block.
	The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.	After compositing and grade capping, a series of length and metal checks are completed to ensure the total length of the sample file is maintained and the metal loss due to grade capping can be quantified. Statistics are generated and analysed using Snowden Supervisor software for the raw, composited and top-cut and composited drill hole files to ensure the nature of the population has not been adversely affected by these processes. Statistical measures of kriging error, such as Kriging Efficiency and Slope of Regression, are used to assess the quality of the estimation for each domain. Differences between the declustered, top-cut composite data set and the average model grade must be within 10% (or a reasonable explanation given why this is not the case). Swath plots comparing declustered, top-cut composites to block model grades are prepared and visual checks summarising the critical model parameters. Visually, block grades are assessed against drill hole and face data.
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 underground mineral resource estimate has been reported at a 1.52 g/t cut off within 3.0 m minimum mining width (excluding dilution) MSO's using a $A2,500/oz gold price. The surface mineral resource estimate has been reported at a 0.5g/t cut off within an optimised shell using a $2500 gold price.
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.	No mining assumptions have been made during the resource wireframing or estimation process.
Metallurgical factors or assumptions	The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	All metallurgical assumptions are based on extensive operating history of the material through the Kanowna Belle processing facility.
Environmental factors or assumptions	Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a green fields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be	A "Licence to Operate" is held by the operation which is issued under the requirement of the "Environmental Protection Act 1986", administered by the Department of Environment (DoE). The licence stipulates environmental conditions for the control of air quality, solid waste management, water quality, and general conditions for operation. Groundwater Licences are held for water abstraction, including production bore field water use for mineral processing, and mine dewatering, in accordance with the Rights in Water and Irrigation Act 1914. These Licences are also regulated by DoE and are renewable on a regular basis. Kanowna Operations conduct extensive environmental monitoring

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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	reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	and management programs to ensure compliance with the requirements of the licences and lease conditions. An Environmental Management System is in place to ensure that Northern Star employees and contractors exceed environmental compliance requirements. The Kalgoorlie operations are fully permitted including groundwater extraction and dewatering, removal of vegetation, mineral processing, and open pits. Kalgoorlie Operations have been compliant with the International Cyanide Management Code since 2008. Compliance with air quality permits is particularly important at Kanowna because of the roaster operation and because there are three facilities in the Kalgoorlie region emitting SO_2 gas. Kanowna has a management program in place to minimize the impact of SO_2 on regional air quality and ensure compliance with regulatory limits.
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.	A thorough investigation into average density values for the various lithological units at Kanowna Belle and Velvet were completed and the mean densities by lithology were coded into the database. Where there were no measurements for a specific lithology a default of 2.77 t/m^3 was applied. Density values were assigned to the rock model based on regolith type and rock type to ensure that variability is accounted from between different lithological units and weathering profiles.
	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 in-situ competent rock mass does not exhibit significant 'vugs' or voids.
	Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	Assumptions on the average bulk density of individual lithologies are based on 22,000 bulk density measurements at Kanowna Belle. Assumptions were also made based on regional averages, on the default densities applied to oxide (2.1 t/m^3), soil (1.8 t/m^3) and transitional (2.52 t/m^3) material, due to lack of detailed measurements in these zones.
Classification	The basis for the classification of the Mineral Resources into varying confidence categories.	Classification is based on a series of factors including: • Geologic grade continuity • Geological confidence • Density of available drilling • Statistical evaluation of the quality of the kriging estimate • Confidence in historical data • The presence of face channel data • Data Class of the drill holes
	Whether appropriate account has been taken of all relevant factors (i.e., relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).	All relevant factors have been given due weighting during the classification process. Given changes in geology and mineralisation style across the Kanowna Belle deposit, measured, indicated and inferred criteria will change across domains. Continuous, more homogenous mineralisation with broader drill spacing will have less restrictive classifications compared to mineralisation that is less continuous and more heterogeneous. The latter requires much closer spaced drilling to reach an inferred or better classification.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The resource model methodology is appropriate and reflects the Competent Persons' view of the deposit.
Audits or reviews	The results of any audits or reviews of Mineral Resource estimates.	All resource models have been subjected to internal peer reviews.
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 and confidence of the mineral resource model is reflected in the assigned Mineral Resource classifications.
	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 Kanowna Belle MRE is a global estimate.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	The year-to-date mill call factor data shows good conformance of the model with reconciliations of +2%, +2% and +4% respectively for tonnes, grade and ounces.

Section 4 Estimation and Reporting of Ore Reserves
(Criteria listed in section 1, and where relevant in sections 2 and 3, also apply to this section.)

Criteria	JORC Code explanation	Commentary
	Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.	Northern Star Resources Limited (NSR) 2024 Mineral Resource.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.	The Mineral Resources are reported inclusive of the Ore Reserve.
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	Site visits have been undertaken by the competent person.
	If no site visits have been undertaken indicate why this is the case.	Site visits undertaken.
Study status	The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.	A minimum Pre-Feasibility level study is completed prior to converting an ore zone into Ore Reserve.
	The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.	Ore Reserves are re-optimised on a yearly basis taking the most up to date geological model, gold price and cost forecasts into account. The Ore Reserve methodology at Kanowna Belle is to complete a full mine design built from the latest block model using calculated cut-offs as a guide for designing stopes. Stope shapes are designed around material greater than the variable stoping cut off and evaluated using design software. Stope shapes generated are mineable stope shapes. Dilution is applied subsequently, based on historical stope performance. All design work is carried out with the software Deswik. The existing mine design provides the starting point for the Reserves. Planned stope geometry follows geotechnical design guidelines which have been in place for several years. The designs are evaluated for gold, sulphur and tonnes by Mineral Resource category bins. In this way, the Measured and Indicated portions of the design can easily be established. Design software is used as a flagging and calculation tool in the processing of ore Reserves. All stope shapes are assessed with local financial evaluations to determine if they are profitable.
Cut-off parameters	The basis of the cut-off grade(s) or quality parameters applied.	FY24 actual site costs and physicals form the basis of the cut-off grade calculations. • The applied AUD gold price is supplied by NSR corporate. • Mill recovery factors are based on test work and historical averages. Various cut-off grades are calculated including a fully costed and variably costed stoping cut-off grade. The variably costed stope cut-off is used as the basis for stope design. Kanowna Belle operates at numerous horizons in the mine from as shallow as 170m down to over 1,000m of depth. With depth, come additional costs associated with increased ground support and fill requirements.
Mining factors or assumptions	The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e., either by application of appropriate factors by optimisation or by preliminary or detailed design).	Mineral Resource is converted to Ore Reserve after completing a detailed mine design complete with a detailed financial assessment based on current operating costs. The Mineral Resource block model is the basis for design and evaluation.
	The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc.	Kanowna Belle underground mine is accessed via a portal within the open pit. The ore is accessed on a level spacing of 30m with development of footwall and ore drives to enable long hole open stoping. The mine is nominally subdivided vertically in mining blocks of 150 to 250 vertical metres. Ore is mined from the stopes and tipped into an ore pass system before being loaded into haul trucks to bring to surface. Stopes are nominally 30m vertically and 20m on strike. This may be increased or decreased depending on the local ground conditions. Once stopes are empty, they can be backfilled with paste reticulated from a surface paste plant. Where possible stopes are backfilled with waste to save haulage costs.
	The assumptions made regarding geotechnical parameters (e.g., pit slopes, stope sizes, etc.), grade control and pre-production drilling.	The mine design takes geotechnical constraints into account and is reviewed by geotechnical engineers prior to been finalised. Underground operations at Kanowna Belle are subject to mine seismicity. Kanowna Belle has a relatively high stress rock mass and a history of seismic events. The mining environment is controlled by adherence to a geotechnically favourable extraction sequence and by the application of appropriate ground support.
	The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).	This Table 1 applies to underground mining only. The 2024 Mineral Resource model was used for stope optimisation.
	The mining dilution factors used.	Dilution factors are updated annually and are based on the historical performance of each mining block and evaluation of the geotechnical block model. Average stope dilution is currently 15% for mining shapes with a width greater than 5m and 0.8m dilution by width for stopes below 5m width.
	The mining recovery factors used.	The recovery factor is reviewed and updated annually based on historical recovery at the site. Average stope recovery is currently 88% for mining shapes with a width greater than 5m and 90% for narrower shapes.
	Any minimum mining widths used.	For underground, a minimum mining width of 3.0m has been used.
	The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.	For underground, designed stopes with greater than 50% Inferred/Unclassified blocks are excluded from the reported Ore Reserve.

Northern Star Resources Limited
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Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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	The infrastructure requirements of the selected mining methods.	The Kanowna Belle mine infrastructure is developed and in place and includes mine dewatering pumps, compressed air supply, mine ventilation, and a small workshop on the 9860 level. Multiple vertical raises exist within the mine to assist with material storage and haulage. The main access ramp connects the mine to an adit in the Kanowna Belle open pit. The ramp is well maintained and is watered to reduce dust generation from the haul trucks. There is a radio communication system throughout the mine.
Metallurgical factors or assumptions	The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.	The Kanowna Belle plant is made up of crushing, grinding, gravity gold recovery, flotation, roasting, CIL, elution and gold recovery circuits. Ore is treated at the Kanowna Belle milling facilities. The Kanowna Belle Mill is designed to handle approximately 2.0 million tonnes of feed per annum. The plant has the capability to treat both refractory and free milling ores, through either using the flotation circuit and associated concentrate roaster circuit, including carbon-in-leach (CIL) gold recovery, or bypassing the flotation circuit and going directly to a CIL circuit designed to treat flotation tails. The plant campaigns both refractory and free milling ores every month. Ore Reserves are calculated using processing plant recovery factors that are based on test work and historical performance.
	Whether the metallurgical process is well-tested technology or novel in nature.	Milling experience gained since 2005, 18 years' continuous operation.
	The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.	Milling experience gained since 2005, 18 years' continuous operation.
	Any assumptions or allowances made for deleterious elements.	No assumption made.
	The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.	Milling experience gained since 2005, 18 years' continuous operation.
	For minerals that are defined by a specification, has the ore Reserve estimation been based on the appropriate mineralogy to meet the specifications?	Not applicable.
Environmental	The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.	The Kanowna Belle Mine is operated subject to the requirements of the Western Australian Mining Act 1978 and the Mines (Safety) Act, regulated by the Department of Mines, Industry Regulation and Safety (DMIRS) Mines Inspectorate. The Mining Leases covering the Kanowna Belle operation stipulate environmental conditions for operation, rehabilitation and reporting. A "Licence to Operate" is held by the operation which is issued under the requirements of the "Environmental Protection Act 1986". In 2019, Northern Star entered into an agreement with an external specialist contractor to transport arsenic trioxide to their new hazardous materials disposal facility, which is an open kaolin mine and complementary near-surface geological waste repository located near Kalgoorlie. The first shipment was successfully transported in November 2020.
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.	Access to the Kanowna Belle operation is provided by well-maintained public and private roads. Most employees reside in Kalgoorlie and commute to site daily. Normal communication channels, satellite and land-based facilities are available. Potable water for the Kanowna Belle operations is pumped from Kalgoorlie to a storage facility on site. Non-potable water requirements are sourced from bore fields up to 10 km away from the mine site. Makeup water for the Kanowna Belle process plant is supplied by pipeline from a bore field located in the Gidgi paleochannel approximately 15 km from the plant site with some water being sourced from abandoned pits. Electricity is provided by the state electricity grid. A 15 km long 33 kV line from Kalgoorlie provides all electricity requirements of the operations. Sources of fuel, such as diesel, gasoline, propane, etc., are readily available at competitive pricing from local suppliers, as there are multiple operating plants in the Kalgoorlie area.
Costs	The derivation of, or assumptions made, regarding projected capital costs in the study.	Capital costs are projected through an annual budget process.
	The methodology used to estimate operating costs.	After an underground design is completed the mining sequence and processing sequence are scheduled. The schedules are costed in detail using a combination of zero-based budgeting system and a schedule of rates supplied by the contractor for the underground operation. To ensure estimated costs are reasonable they are compared to historic operating costs.
	Allowances made for the content of deleterious elements.	No allowances made.
	The derivation of assumptions made of metal or commodity price(s), for the principal minerals and co-products.	The gold price is based on internal forecasts.
	The source of exchange rates used in the study.	Internal forecasts.
	Derivation of transportation charges.	Historic performance.
	The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.	Historic performance.
	The allowances made for royalties payable, both Government and private.	State Govt. 2.5% royalty is built into the cost model.

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PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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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.	A$2,000/oz gold price.
	The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.	Corporate guidance.
Market assessment	The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.	All product is assumed sold direct to the market.
	A customer and competitor analysis along with the identification of likely market windows for the product.	Not applicable.
	Price and volume forecasts and the basis for these forecasts.	Corporate guidance.
	For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.	Not applicable.
Economic	The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.	NPV is used during Pre-Feasibility and Feasibility studies as required. Economic assumptions such as discount rate and estimated inflation are finalised at the time of the study. NPV is not used in the annual Reserve optimisation.
	NPV ranges and sensitivity to variations in the significant assumptions and inputs.	Sensitivities have been used with gold price ranges of A$1,750 to A$2,250 per ounce.
Social	The status of agreements with key stakeholders and matters leading to social licence to operate.	Agreements are in place and are current with all key stakeholders.
Other	To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:	
	Any identified material naturally occurring risks.	No issues.
	The status of material legal agreements and marketing arrangements.	No issues.
	The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the Reserve is contingent.	No issues.
Classification	The basis for the classification of the Ore Reserves into varying confidence categories.	Ore Reserves include Proved (if any) and Probable classifications based off the underlying Resource model classifications whereby Measured Resource may convert to Proved or Probable, and Indicated material convert to Probable Reserve.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The results accurately reflect the Competent Persons view of the deposit.
	The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).	Nil.
Audits or reviews	The results of any audits or reviews of Ore Reserve estimates.	The Ore Reserves reporting processes has been subjected to an internal review by NSR Senior Technical personnel in April 2024.
Discussion of relative accuracy/ confidence	Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the Reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.	Confidence in the model and Ore Reserve Estimate is considered high based on current mine and reconciliation performance.
	The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.	Estimates are global but will be reasonably accurate on a local scale.
	Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.	Not applicable.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
	It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	Reconciliation results from past mining at Kanowna Belle has been considered and factored into the Ore Reserve assumptions where appropriate.

Kanowna Belle: Crossroads – 31 March 2024

Section 1 Sampling Techniques and Data

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

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 was completed using a Reverse circulation (RC) and HQ/NQ Diamond Drilling (DD).
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	RC samples were split using a rig-mounted cone splitter at 1m intervals to obtain a ~3kg sample for assay, a ~5kg sample for backup (e.g., duplicate in case of grade intersection) and a pile of dirt disposed on the ground. The 1m samples of ~3kg were immediately submitted for assay.
	Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.	Diamond core was transferred to core trays for logging and sampling. Half core samples were nominated by the geologist from the HQ diamond core, generally being around one metre in length, but with sample widths ranging between approximately 30cm and 120cm as dictated by the geology. Sample lengths varied because drill core samples were allocated to not cross significant geological boundaries. Full core samples were taken were necessary through the regolith material. Samples were taken to Genalysis Kalgoorlie for preparation by drying, crushing to <3mm, and pulverizing the entire sample to <75µm. 300g Pulps splits were then dispatched to Genalysis Perth for 50g Fire assay charge and AAS analysis. Samples were taken to ALS Kalgoorlie were photon analysis was performed on both the RC and DD samples. 250g Pulp samples were retrieved from secure onsite storage and sent to Genalysis Perth for 48 multi-element analysis using mixed acid digest with a Mass Spectroscopy (ICPMS) or Optical Emission Spectroscopy (ICPOES) 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.).	The majority of drillholes are 130-145mm reverse circulation drillholes but supplemented with a small proportion NQ diamond drillholes. The diamond drillholes were of NQ or NQ2 diameter in fresh rock; however, HQ or HQ3 triple tube drilling was used through the regolith, which includes the main mineralised zones.
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed.	Moisture content and RC drill recoveries were logged by the geologist or field assistant whilst drilling. These recoveries were based on visual estimation of the proportion of sample returned relative to a full one-metre sample. Diamond drilling recoveries were accounted for by recording core loss intervals measured in linear downhole metres to the nearest five centimetres.
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	RC drilling contractors adjust their drilling approach to specific conditions to maximize sample recovery. Sample recovery may be poor at the beginning of RC drill holes, this is normal for this type of drilling in the overburden. Good recovery is qualitative monitored and sample split weights are measured using scales and samples are kept dry in fresh rocks where possible. Partial resampling may be performed if holes show poor recovery and wet samples to assess if any grade had been impacted. This resampling may involve pick up of primary ~5kg field duplicate samples and rifle split of dirt piles sitting on the ground where the recovery of the primary field duplicate was insufficient. Diamond drilling, the contractors adjust their rate of drilling and method if recovery issues arise. All recovery is recorded by the drillers on core blocks. This is checked and compared to the measurements of the core by the geological team. Any issues are communicated back to the drilling contractor.
	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 relationship has been observed between recovery and grade.
Logging	Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.	All diamond core is logged for regolith, lithology, veining, alteration, mineralisation and structure. Structural measurements of specific features are also taken through oriented zones. RC sample chips are logged in 1m intervals for the entire length of each hole. Regolith, primary lithology, alteration, veining and mineralisation are all recorded for the chips.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	Most geological data that requires description is qualitative, and where measured, such as structural and geotechnical data is quantitative. Qualitative and quantitative logging of historic data varies in its completeness. RC chip trays and core trays are photographed at the end of the drilling program.
	The total length and percentage of the relevant intersections logged.	In all instances, the entire drill hole is logged.

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T: +61 8 6188 2100
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Criteria	JORC Code explanation	Commentary
Sub-sampling techniques and sample preparation	If core, whether cut or sawn and whether quarter, half or all core taken.	All regolith diamond core is fully sampled down to a depth where the core has been deemed competent enough to saw. All fresh diamond core is cut and half the core is taken for sampling. The remaining half is stored for later use. In some instances, entire core samples were used for Geotechnical and Metallurgical test work.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	All RC samples are split using a rig-mounted cone/riffle splitter to collect a 1m sample, averaging 3-4kg in size. Sample weights are recorded by the laboratory and recorded in company database. Moisture content of the sample is recorded and noted if wet samples are obtained.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	Some samples are submitted to laboratories for sample preparation in Kalgoorlie and analysis in Perth. Preparation of NSR samples was conducted at Genalysis, Minanalytical and ALS preparation facilities. Sample preparation commenced with sorting, checking, and drying at less than 110° C to prevent sulphide breakdown. Samples are jaw crushed to a nominal 3 mm particle size. If the sample is greater than 3 kg a Boyd crusher with rotary splitter is used to reduce the sample size to 3 kg at a nominal <3 mm particle size. Sample preparation commences with sorting, checking, and drying at less than 110°C to prevent sulphide breakdown. Samples are jaw crushed to a nominal 6 to15mm particle size or smaller. If the sample is greater than 3kg a Boyd crusher with a rotary splitter is used to reduce the sample size to less than 3kg (typically 1.5kg) at a nominal <3mm particle size. The entire crushed sample (if less than 3kg) or sub-sample is then pulverized to 85% to 90% passing 75µm, using a bowl pulveriser. 300g Pulp subsamples are then taken with an aluminium scoop and stored in labelled pulp packets. The photon assay technique was introduced at Crossroads in 2023. This process involves crushing samples to < 3 mm. 500 g of crushed material is then placed into single-use sample jars. Using a robotic shuttle, high energy x-rays are then fired at the sample causing excitation of atomic nuclei allowing detection of gold content. Photon analysis allows sampling of larger amounts of sample material providing a true bulk reading of gold content. The process is chemical free and non-destructive, samples are retained at the lab for a period of two months.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	Grind checks are performed at both the crushing stage (3mm) and pulverising stage (75µm), requiring 85% to 90% of material to pass through the relevant size. Procedures are used to guide the selection of sample material in the field. Standard procedures are used for all processes within the laboratory.
	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 duplicates were taken for RC samples at a rate of 1 in 50
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Sample sizes are considered 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.	For the more recent photon samples, a 500g pot of crushed material was placed in a sample jar and was analysed using photon analysis. For fire assay, a 50g assay charge is used with a lead flux, dissolved in the furnace. The pill is totally digested by HCl and HNO3 acids before Atomic absorption spectroscopy (AAS) determination for gold analysis. A 0.5g charge is used for multi-element analyses and the sample is digested using aqua regia, perchloric acid and hydrofluoric acid before analysis using Inductively Coupled Plasma Spectroscopy with Mass Spectroscopy (ICPMS) or Optical Emission Spectroscopy (ICPOES).
	For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.	No geophysical tools were used to determine any element concentrations.
	Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.	Certified reference materials (CRMs) are inserted into the sample sequence randomly at a rate of 1 per 20 samples to ensure correct calibration. Values outside of 3 standard deviations are investigated and re-assayed with a new CRM if deemed neccissary. Blanks are inserted into the sample sequence at a rate of 1 per 20 samples, this is random, except where high-grade mineralization is expected. Here, a Blank is inserted after the high-grade sample to test for contamination. Failures above 0.2g/t are followed up, and re-assayed where required. New pulps are prepared if failures remain. Field Duplicates are taken for all RC samples (1 in 50 samples). No Field duplicates are submitted for diamond core. Barren flushes are regularly inserted after anticipated high gold grades.
Verification of sampling and assaying	The verification of significant intersections by either independent or alternative company personnel.	All significant intersections are verified during the drill hole validation process and signed off by the Competent person.
	The use of twinned holes.	No Twinned holes were drilled for this data set
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	Geological logging is directly entered into a robust database (acQuire) Assay files are received in csv format and loaded directly into the database via an importer object by the project's responsible geologist. All data is validated by inbuilt validation functions.
	Discuss any adjustment to assay data.	No adjustments are made to this assay data.
Location of data points	Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.	Drillhole collars from 2008 onwards were picked up by differential GPS in the MGA94 Zone 51 map grid. Earlier drillholes were mostly picked up by theodolite on a local exploration grid (if not also by DGPS) and later referenced back to the MGA94 map grid. The lack of QAQC data for the older (pre-2008) collar locations prompted a field check of a random selection of older holes as part of the 2013 resource estimate. The older drillholes were all found to be at the location reported in the Acquire database within the ~5m precision of a hand-held GPS.

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Subiaco WA 6904

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		Post 2008 all drillholes had digital magnetic downhole surveys at least every thirty metres, with greater than ten percent of those confirmed by a gyroscopic downhole survey.
		Many pre-2008 holes were not surveyed but rather the downhole trace projected as straight from the setup angle. Given that the depth to mineralisation is generally quite shallow, estimates based on an abnormally large downhole deviation show that the desurveyed mineralisation intercepts will all be within two metres of the actual position. This uncertainty is greater than that desired, but not significant enough to materially affect the resource estimate.
		A topographic survey was conducted in 2011, by Cardno-Spectrum Surveys. This survey was used to create the topographic surface of the block model and all drillholes were projected to this surface to provide a consistent, reliable elevation for the drill data.
		In 2023, an additional drone flight was completed by an external contractor of the project area for up to date collar positioning data.
	Specification of the grid system used.	Collar coordinates are recorded in MGA94 Zone 51 and all collars picked up using the local grid were verified in the field and converted to MGA94 Zone 51
	Quality and adequacy of topographic control.	The Differential GPS returns reliable elevation data with an appropriate level of precision for resource drilling.
Data spacing and distribution	Data spacing for reporting of Exploration Results.	Drillhole spacing across the area is variable and dependent on the interpreted geometries of geology and mineralisation at individual prospects.
	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.	Only exploration results are being reported. The data spacing and distribution is considered sufficient to support the resource and reserve estimates.
	Whether sample compositing has been applied.	No compositing has been applied to these exploration results, although composite intersections are reported.
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.	All drilling was oriented as close to perpendicular as practicable to the interpretation of mineralisation orientation.
	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 sampling bias is considered to have been introduced by the drilling orientation.
Sample security	The measures taken to ensure sample security.	Prior to laboratory submission samples are stored by Northern Star Resources and previous companies in a secure yard. Once submitted to the laboratories they are stored in a secure fenced compound and tracked through their chain of custody and via audit trails
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	No audits of the sampling techniques or data have been conducted for this project. All recent NSR sample data has been extensively QAQC reviewed internally

Section 2 Reporting of Exploration Results
(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	All drill holes mentioned in this report are located within tenements M24/462, M24/640 and M27/497. Tenements M24/462 and M24/640 fall with Ascent Capital Royalty. M27/497 is part of a JV with Zebina Minerals Pty Ltd (XX) and Northern Star Resources ASX: NST (YY%) as of December 31st, 2019. The tenement is located approximately 18km NE of Kalgoorlie WA.
	The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.	No known impediments exist, and the tenement is in good standing
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	The prospect referred to in this report is a project generated by Northern Star based on work previously undertaken by several different companies. Historic work includes RAB/AC/RC/DD programs.
Geology	Deposit type, geological setting and style of mineralisation.	The Crossroads deposit is located in the Boorara domain of the Kalgoorlie Terrane (Norseman-Wiluna greenstone belt) on the southern closure of the shallow SSE plunging Scotia-Kanowna Anticline. The core of the anticline is occupied by monzogranite that is interpreted to underlie the northern portion of the tenement block M24/462. The Scotia stratigraphy comprises a sequence of komatiite to thoeliitic basalts with interflow black shale horizons that form a basal greenstone sequence around the nose of the anticline. The greenstone sequence has been intruded by a suite of porphyritic and granitic bodies.
		To the west, the greenstone sequence is unconformably overlain by Panglo Basin sediments. Outcrop of the basal greenstone unit is truncated by the NW-SE trending Panglo Unconformity that separates the basalts from the sediments. The Panglo Basin sequence forms an essentially linear belt that is seemingly unaffected (post-dates) by D2 folding and felsic intrusions associated with emplacement of the Scotia Kanowna Dome. The basin broadly fines from conglomerates and sandstones in the north and east, through a central package of siltstone and sandstone, into an upper stratigraphy dominated by black shales. The dominant rock type at Crossroads is basalt, of variable composition (tholeiitic and high magnesium basalts), which has been intruded by a suite of dacitic porphyries associated with the Scotia monzogranite. To the southwest, the moderately south dipping Panglo unconformity juxtaposes younger siltstones from the Panglo Basin Sequence against the greenstone unit.

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E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
		The Crossroads supergene mineralisation is a collection of horizontal mineralised surfaces stretching along 2.8 km of strike in the direction 125°-310°. That strike follows the strike of the Panglo Unconformity, the base of a late Archaean sedimentary sequence. In the underlying basalt and felsic intrusives host a shear zone approximately ten metres below, and parallel to, the unconformity. The shear zone comprises two principal high strain zones that are weakly mineralised and are believed to be the primary source of the supergene gold
Drill hole Information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: o easting and northing of the drill hole collar o elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar o dip and azimuth of the hole o down hole length and interception depth o hole length.	No exploration results are being released
	If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	Exclusion of the drill information will not detract from the understanding of the report.
Data aggregation methods	In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.	No exploration results are being released
	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 being released
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	No exploration results are being released. No metal equivalent values have been used in previous reporting of exploration results relevant to the Crossroads project.
Relationship between mineralisation widths and intercept lengths	These relationships are particularly important in the reporting of Exploration Results.	No exploration results are being released
	If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.	No exploration results are being released
	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').	No exploration results are being released
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 being released
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.	No exploration results are being released
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 exploration results are being released
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).	Future work at the prospect will be likely in the form of grade control 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.	Appropriate diagrams and maps of future extensions and work are available in the appropriate ASX announcements.

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E: info@nsrltd.com
W: www.nsrltd.com

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Section 3 Estimation and Reporting of Mineral Resources
(Criteria listed in section 1, and where relevant in section 2, also apply to this section).

Criteria	JORC Code explanation	Commentary
Database integrity	Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.	Data used for generating the mineral resource estimates is stored in an acQuire database. The Company employs a database administrator to manage the database. Where possible raw data is loaded directly into the database, with adjustments such as survey transformations occurring within the database so that they are fully traceable. Extensive validation is built into the Acquire database to ensure data integrity and user access logs are maintained for all fields in the dataset. Data validation tools and sign off facilities to record data cross-checking are used. Barrick / NSR drill holes were validated by compiling a hardcopy of all relevant data on a hole-by-hole basis with a coversheet for each. As each piece of information was checked against the information in the database the relevant section of the coversheet was signed off by the person who completed that check. All holes since 2008 were validated by compiling a hardcopy of all relevant data. As each piece of information was checked against the information in the database the relevant section of the coversheet was signed off by the person who did that check. The hole was then flagged as 'validated' in the database. Older holes could only be validated by checking their consistency with more recent drilling.
	Data validation procedures used.	Checks carried out on the imported data include: • Collar details import checks - start and end dates are supplied, collar has location co-ordinate information, actual end of hole depth versus planned end of hole depth is within tolerance, cost code and location code information are supplied. • Survey details import checks – final survey record is within tolerance with respect to end of hole depth, a survey exits at 0 depth, grid transformations have been performed, no duplicate survey points with the same priority exist. • Geology details import checks - final lithology depth is within tolerance with respect to end of hole depth, structural measurement transformations have been performed, alteration/vein/mineralisation logging does not have overlaps and/or gaps. • Samples/Assay import checks – total sample meters match end of hole depth, no duplicate samples with the same priority exist, sample intervals are continuous, no assay values have negative values, dispatch return date is recorded, no 'not sampled' intervals with assay values, QAQC passed. • Geotechnical details import checks – logged information depths are within tolerance with respect to end of hole depth. • Bulk Density/SG details checks – logged information depths are within tolerance with respect to end of hole depth. • Errors are corrected where possible. When not possible the data is resource flagged as "No" in the database and the database is re-exported. This data will not be used in the estimation process. It has been accepted that historic holes may be missing information such as start and end date, assay method and collar pick up method. Historic hole location was visually confirmed where possible or using recent drilling as confirmation. In addition to being Resource Flagged as "Yes" or "No", drill holes are assigned a Data Class, which provides a secondary level of confidence in the data quality. Data Class (DC) values range from 0 to 3, with criteria summarised below: • DC 3 = Recent data; all data high quality, validated and all original data available. • DC 2 = Historic data; may or may not have all data in AcQuire or hard copy available but has proximity to recent drilling which confirms the dip, width, and tenor. • Recent data: minor issues with data such as QAQC fail but away from the ore zone. • DC 1 = Historic data; same criteria as DC 2 but cannot be verified with recent drilling, i.e., too far away, or dissimilar dip, width and/or tenor to recent drilling. Not to be used in Resource estimate. • DC 0 = Historic data; no original information or new drilling in proximity to verify. Not to be used in Resource estimate.
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	The model interpretation was competed by site-based personnel, and this was handed over to the corporate resource geology team to complete the grade estimate. Grade estimation was completed by Senior Geologist – Resources, part of Corporate Technical services team. Principal Geologist – Resources, is a competent person for reviewing and signing off on estimations maintained a presence throughout the process. Historical regional drill core as well as recent regional drill core was inspected during the visits. Historic and current geological data, such as mapping and modelling, were reviewed and scrutinised
	If no site visits have been undertaken indicate why this is the case.	The competent person has undertaken several site visits to the region.
Geological interpretation	Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.	There is a high level of confidence in the geological context of mineralisation with a good spatial relationship between the horizontal supergene 'blankets' and the fresh-rock source. The interpretation of all the Crossroads ore lode wireframes was conducted using the implicit modelling function in Leapfrog Geo. Wireframes were checked for unrealistic volumes and updated where appropriate. During modelling process, every attempt was made to consistently honour host lithologies to ensure homogeneity of geological domains is preserved. Each lode was treated as a separate geological domain for estimation purposes. Discrete lode modelling was assisted by existence of reasonable geological and grade continuity across most mineralised horizons, with an arbitrary cut of grade of 0.3g/t to guide the interpretation and to ensure that most of the mineralised material is captured within the appropriate mineralised envelopes.
	Nature of the data used and of any assumptions made.	All available geological data was used in the interpretation including mapping, drill holes, underground face channel data, 3D photogrammetry and structural measurements.

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		Much of the regolith logging was of inadequate quality to constrain the depth and position of the supergene mineralisation surfaces so a grade-based constraint was used to interpret the exact position of the mineralised surface in the drillholes. This grade constraint was not a strictly applied cut-off grade but more so a selection of intervals within the drillhole showing elevated gold grades and a lateral consistency with surrounding drillholes.
	The effect, if any, of alternative interpretations on Mineral Resource estimation.	Given that supergene mineralisation is known to be flat lying there was little room for alternate interpretations. A thicker or thinner mineralised surface could be interpreted based on higher or lower grade constraints when defining individual intercepts. The nominal (as previously stated the interpretation was not based on a grade criterion alone) grade for defining the mineralised surfaces was 0.3g/t which encapsulated the vast majority of metal in the system.
		The Crossroads supergene mineralisation is a collection of horizontal mineralised surfaces stretching along 2.8 km of strike in the direction 125°-310°. That strike follows the strike of the Panglo Unconformity, the base of a late Archaean sedimentary sequence. In the underlying basalt and felsic intrusives host a shear zone approximately ten metres below, and parallel to, the unconformity. The shear zone comprises two principal high strain zones that are weakly mineralised and are believed to be the primary source of the supergene gold. These low-grade shears were modelled as part of this estimate, but do not constitute part of the reported resource.
	The use of geology in guiding and controlling Mineral Resource estimation.	The shear hosted surfaces were evident from veining and strong shear fabrics in the RC chips or core. The supergene mineralisation surfaces appear to have been controlled by palaeowater table levels. This style of mineralisation has resulted in extremely good spatial continuity at the scale of drilling, but poor grade continuity.
	The factors affecting continuity both of grade and geology.	Continuity can be affected by changes in lithology, dilation of structures, intersecting structures, vein density and proximity to the main mineralised structures.
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 current interpretation includes 21 mineralised domains; made up of nine sub-horizonal supergene domains, ten sub-vertical lode-style domains and two residual domains (CR9998 in the fresh rock and CR9999 in the oxide/transitional profile). Domain changes; previous model contained one additional domain (CR2003) which was subsequently incorporated into the current CR1004 interpretation. Finally, the previous model did not include any residual domains. Mineralisation has a strike of +2.5km, is approximately 800m in cross-strike, and covers a vertical extents of nearly 300m at its deepest point.
Estimation and modelling techniques	The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.	Grade estimation for Gold was completed in Datamine Studio RM software. Geostatistical analysis and variography were completed using Snowden's Supervisor v8.14 software.
		Each ore lode interpretation is considered as being a separate domain for estimation. All estimations use hard domain boundaries. The waste was given a default 0.001 g/t.
		Estimates use 1m composites with grade capping or top cutting applied to Au outlier values. Outlier analysis was completed using a combination of histograms, log probability plots, mean and variance plots, cumulative metal plots and change in CV of composite to determine top cutting values on a domain-by-domain basis.
		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) was used to sub-domain ten lodes with mixed populations. All remaining domains were estimated using ordinary kriging (OK). The domain block model contained parent block sizes of 10m (X) x 10m (Y) x 5m (Z) and sub-blocks set to 1m (X) x 1m (Y) x 1m (Z). 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.
		Search ellipse orientation and distances (major, semi-major and minor) were based on variogram rotations and variogram ranges on a domain-by-domain basis.
	The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.	The final estimates are compared to the previous model estimate.
	The assumptions made regarding recovery of by-products.	No assumptions are made and only gold is defined for estimation.
	Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).	No deleterious elements detected or estimated. However high clay content has been identified in the channel mineralisation.
	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 (X) x 10m (Y) x 5m (Z) and optimised using kriging neighbourhood analysis. Sub-cells have been used at a resolution of 1m (X) x 1m (Y) x 1m (Z) to ensure high volume resolution at ore boundaries. Search ellipse dimensions were derived from the variogram model ranges with exact values dependent on the characteristics of the individual lodes. Up to a three-pass nested search strategy is employed, generally with the first pass 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.	Selective mining units were not used during the estimation process.
	Any assumptions about correlation between variables.	All variables were estimated independently of each other.
	Description of how the geological interpretation was used to control the Resource estimates.	Both mineralised lodes and lithology wireframes were generated using implicit modelling function in Leapfrog Geo.
		An arbitrary cut-off grade of 0.3g/t was used to define mineralised envelopes during modelling process. Each lode is considered as being a separate estimation domain. All estimations use hard domain boundaries.
	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.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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	The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.	After compositing and grade capping, a series of length and metal checks are completed to ensure the total length of the sample file is maintained and there is no metal loss in the compositing process. 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.	A relevant cut-off based on economic parameters was applied.
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.	No mining assumptions have been made during the resource wireframing or estimation process. To best capture "reasonable prospects of eventual economic extraction", the mineral resource is reported within an optimised pit shell at $2,500.
Metallurgical factors or assumptions	The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	Metallurgical test work conducted in 2009 (AMTEC limited Report No. A11762, 2009) returned recoveries of greater than 95% for crossroads supergene mineralisation samples. Slow settling dispersive clays was identified as a potential issue with Crossroads Ore in the 2009 Mining Proposal (Mining Proposal Crossroads Stage 1 Open Pit September 2009) it was proposed that this issue would be mitigated at the Kanowna Belle mill by blending of Crossroads feed with other ore source.
Environmental factors or assumptions	Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a green fields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	A "Licence to Operate" is held by the operation which is issued under the requirement of the "Environmental Protection Act 1986", administered by the Department of Environment (DoE). The licence stipulates environmental conditions for the control of air quality, solid waste management, water quality, and general conditions for operation. Groundwater Licences are held for water abstraction, including production bore field water use for mineral processing, and mine dewatering, in accordance with the Rights in Water and Irrigation Act 1914. These Licences are also regulated by DoE and are renewable on a regular basis. Kanowna Operations conduct extensive environmental monitoring and management programs to ensure compliance with the requirements of the licences and lease conditions. An Environmental Management System is in place to ensure that Northern Star employees and contractors exceed environmental compliance requirements. The Kalgoorlie operations are fully permitted including groundwater extraction and dewatering, removal of vegetation, mineral processing, and open pits. Kalgoorlie Operations have been compliant with the International Cyanide Management Code since 2008. Compliance with air quality permits is particularly important at Kanowna because of the roaster operation and because there are three facilities in the Kalgoorlie region emitting SO2 gas. Kanowna has a management program in place to minimize the impact of SO2 on regional air quality and ensure compliance with regulatory limits.
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 measurements have been taken within the Crossroads project area by various previous owners of the project, however those measurements are sparse and are, in most cases, spurious hence resulting in low confidence data set. The current model has used broader lithology types to code density (mafic, ultramafic, sediments and porphyry) rather than the more accurate rock types (e.g. arenite, shale, upper basalt, DCB, etc). A larger more representative density dataset is required to confirm modelled lithology density values (including density values by weathering horizon) to build a more accurate density model.
	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.	No or minimal voids are encountered in the ore zones. The methods used for measuring the historic dry bulk densities are unknown. Given the reconciliation of the historic values with the few collected by Northern Star Resources it is assumed that the historic bulk density values are reasonable but lacking. Northern Star Resources routinely dries samples and weathered porous or clay rich samples are coated in paraffin wax prior to the collection of dry bulk density measurements using the water displacement method.
	Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	Assumptions on the average bulk density of individual lithologies are based off historic reports. SG measurements will be required before mining to assess if these values are appropriate.
Classification	The basis for the classification of the Mineral Resources into varying confidence categories.	Classification is based on a series of factors including: • Geologic grade continuity • Geological confidence • Density of available drilling • Statistical evaluation of the quality of the kriging estimate • Confidence in historical data

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
		• Data Class of the drillholes
	Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity, and distribution of the data).	All relevant factors have been given due weighting during the classification process.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The resource model methodology is appropriate, and the estimated grades reflect the Competent Persons' view of the deposit.
Audits or reviews	The results of any audits or reviews of Mineral Resource estimates.	While no formal external review or audit has been conducted on the Crossroads model, Northern Star Resources has adopted a process for geological modelling, estimation and reporting of mineral resources that meets high industry standards. Detailed internal peer reviews at both the end of the interpretation and estimation stages takes place prior to the release of a model.
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 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 Crossroads Resource model is a global estimate.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	No reconciliation factors are applied to the resource post-modelling.

Section 4 Estimation and Reporting of Ore Reserves
(Criteria listed in section 1, and where relevant in sections 2 and 3, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.	The Mineral Resource estimate for the Crossroads Project was used as a basis for the conversion to the Ore Reserve estimate reported and was compiled by Northern Star Resources (NSR).
	Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.	Mineral Resources are reported inclusive of ore Reserves.
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	Site Visits have been undertaken by the competent person.
	If no site visits have been undertaken indicate why this is the case.	Site visits undertaken.
Study status	The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.	A minimum Pre-Feasibility level study is completed prior to converting an ore zone into ore Reserve.
	Criteria	Ore Reserves have been calculated by generating detailed mining shapes for the proposed open pits. A series of nested optimised pit shells were generated using Whittle software, an analysis of the shells was completed to select one which was then used to complete a detailed pit design to closely resemble the selected whittle shell. The Whittle optimisation used parameters generated from NSR technical personnel and technical consultants. A detailed mine schedule and cost model has been generated using an excel spreadsheet model. Appropriate ore dilution and recoveries have been applied within the excel spreadsheet model. The processing parameters have been based on metallurgical test work and actual costs of the Kanowna Belle Processing Plant. The current study level demonstrates high confidence that the project can achieve the mine plan and be operated in a technically sound and economically viable manner.
Cut-off parameters	The basis of the cut-off grade(s) or quality parameters applied.	The pit cut-off grade has been calculated based on the key input components (processing, recovery, and administration) Forward looking forecast costs and physicals form the basis of the cut-off grade calculations. The AUD gold price as per corporate guidance. Mill recovery factors are based on metallurgical test work.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
Mining factors or assumptions	The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design).	Mineral Resource is converted to Ore Reserve after completing a detailed mine design complete with a detailed financial assessment. A series of nested optimised pit shells were generated using Whittle software, an analysis of the shells was completed to select one which was then used to complete a detailed pit design to closely resemble the selected whittle shell. The Whittle optimisation used costs and inputs derived from current operational data, contractors, and independent consultant recommendations.
	The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc.	The selected mining method for the Crossroads deposit is bench mining open pit. The proposed open pit cutback will be mined using conventional open pit mining methods (drill, blast, load and haul) utilising similar class excavators and trucks used in other NSR open pit mining operations. This method is used widely in mines across Western Australia and is deemed appropriate given the nature of the ore body.
	The assumptions made regarding geotechnical parameters (e.g. pit slopes, stope sizes, etc.), grade control and pre-production drilling.	Independent Geotechnical Consultants Dempers & Seymour Pty Ltd completed a geotechnical study for the Crossroads project. Recommended wall angles were applied to the Whittle optimisation and subsequent detailed pit designs. The Grade control method to be employed at the Crossroads project will use Reverse circulation drilling to obtain samples.
	The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).	
	The mining dilution factors used.	A mining dilution factor of 10% at zero grade has been applied for the reporting of Reserve physicals.
	The mining recovery factors used.	A mining recovery factor of 90% has been applied reporting of Open pit Reserve physicals.
	Any minimum mining widths used.	A minimum operating width of 25m has been adopted for the primary excavation fleet.
	The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.	Inferred material has not been included within this Reserve estimate (treated as waste) but has been considered in LOM planning. The amount of inferred material has no impact on the sensitivity of the project.
	The infrastructure requirements of the selected mining methods.	Infrastructure required for the proposed Crossroads project have been accounted for and included in all work leading to the generation of the Ore Reserve estimate. Ore from the Project will be processed through the Kanowna Belle Processing Plant at the Kanowna Belle operation; hence no processing infrastructure is required. Required infrastructure will be established at Crossroads and will include Offices, workshops and associated facilities, dewatering pipeline, Waste Rock Storage Dump; and ROM Pad.
Metallurgical factors or assumptions	The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.	Material will be trucked and processed in the existing Kanowna Belle Processing Plant. The facility is made up of crushing, grinding, gravity gold recovery, flotation, roasting, CIL, elution and gold recovery circuits. and has the capability to treat both refractory and free milling ores. Ore Reserves are calculated using processing plant recovery factors that are based on test work and historical performance.
	Whether the metallurgical process is well-tested technology or novel in nature.	Well tested, the existing Kanowna Belle Processing Plant has been operating for over 15 years.
	The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.	Based on metallurgical test work carried out and milling experience gained through processing similar ore material through the Kanowna Belle processing facility. The metallurgical recoveries for the project were set at 92% for oxide, 92% for transitional, 92% for fresh rock, which corresponds with metallurgical test work undertaken.
	Any assumptions or allowances made for deleterious elements.	There has been no allowance for deleterious elements. Test work indicates there are no deleterious elements.
	The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.	Based on metallurgical test work carried out and milling experience gained through processing similar material through the Kanowna Belle processing facility.
	For minerals that are defined by a specification, has the ore Reserve estimation been based on the appropriate mineralogy to meet the specifications?	Not applicable, gold only.
Environmental	The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.	The Crossroads operation will utilise the existing Kanowna Belle Processing Plant for processing and TSF storage facilities that lay on granted mining leases. Heritage, flora and fauna studies have been completed. Waste rock characterisation and hydrological studies have been completed. Mining proposal and mine closure planning has been assessed and approval by DEMIRS.
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 Crossroads Project is located 12km west of Kanowna Belle and is considered an extension of the Kanowna Belle Mine Site. The Crossroads operation will require minimum infrastructure given close proximity to well established Kanowna Belle operation. A new haul road will be constructed to connect Crossroads to existing NSR haul roads. Minor infrastructure will be established at Crossroads to support the project. Access to the Kanowna Belle operation is provided by well-maintained public and private roads. Employees reside in Kalgoorlie and commute to site daily.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
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 were not included in the optimised parameter inputs but included in the financial modelling.
	The methodology used to estimate operating costs.	A capital and operating cost model has been developed in Excel and has been used to complete a life of mine cash flow estimate. The estimation of Open pit mine operating costs was based on a dry-hire mining, contract drilling, and contractor maintenance operation using first principles to determine equipment productivities and associated operating hours to generate mine schedules. Provided contract pricing were than applied to the schedule to calculate all unit costs.
	Allowances made for the content of deleterious elements.	Nil allowance, none expected based on metallurgical test work.
	The derivation of assumptions made of metal or commodity price(s), for the principal minerals and co-products.	Single commodity pricing for gold only, using a gold price of AUD$2,000 per ounce as per corporate guidance
	The source of exchange rates used in the study.	Corporate guidance.
	Derivation of transportation charges.	Transportation costs for ore haulage from Crossroads to Kanowna Belle have been based on current NSR contractor quotes. Transportation costs also include an allowance haul road maintenance and dust suppression.
	The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.	Processing costs are based on actual plant processing costs. This cost component has been used to determine the cut-off grades as well as applied to the operating cash flow estimate.
	The allowances made for royalties payable, both Government and private.	WA State Government royalty of 2.5%. Private royalty of 2%. Private royalty of $10/ounce. Private royalty of $1/tonne processed.
Revenue factors	The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc.	All financial analysis and gold price have been expressed in Australian dollars and no direct exchange rates have been applied. Revenue factors within the whittle optimisation process were used. A revenue factor shell was selected and used to complete a detailed pit design. A gold price of AUD$2,000 per ounce has been used in the optimisation of the Crossroads Project.
	The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.	Corporate guidance.
Market assessment	The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.	Gold doré from the mine is to be sold at the Perth mint.
	A customer and competitor analysis along with the identification of likely market windows for the product.	Not Applicable.
	Price and volume forecasts and the basis for these forecasts.	Not Applicable.
	For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.	Not Applicable.
Economic	The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.	The Ore Reserve estimate is based on a financial model that is reflective of current operational costs and contract conditions. All inputs from mining operations, processing, transportation and sustaining capital as well as contingencies have been scheduled and evaluated to generate a full life of mine cost model.
	NPV ranges and sensitivity to variations in the significant assumptions and inputs.	Sensitivities were conducted on metal price fluctuations of AUD$2,000 ± $250 per ounce. Due to the current short life, the project is not seen as highly sensitive to cost inputs.
Social	The status of agreements with key stakeholders and matters leading to social licence to operate.	Agreements are in place and are current / under negotiation with all key stakeholders including traditional landowner claimants.
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.	None
	The status of material legal agreements and marketing arrangements.	None
	The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the Reserve is contingent.	No issues. Mining proposal and mine closure planning has been assessed and approval by DEMIRS.
Classification	The basis for the classification of the Ore Reserves into varying confidence categories.	The classification of Open Pit Ore Reserves has been carried out in accordance with the JORC code 2012.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The results appropriately reflect the Competent Persons view of the deposit.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
	The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).	No Measured Mineral Resource contributes to Probable Ore Reserves.
Audits or reviews	The results of any audits or reviews of Ore Reserve estimates.	The Reserve has been internally reviewed in line with Northern Star Resources governance standard for Reserves and Resources.
Discussion of relative accuracy/ confidence	Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the Reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.	The design, schedule and financial model on which the Crossroads Ore Reserve is based has been completed to a "pre-feasibility study" standard, with a corresponding level of confidence.
	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.	All modifying factors have been applied to design mining shapes on a global scale.
	Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.	Not applicable.
	It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	Not applicable.

Kanowna Belle: Six Mile – 31 March 2024

Section 1 Sampling Techniques and Data
(Criteria in this section apply to all succeeding sections.)

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.	Samples were obtained using reverse circulation (RC) drilling and HQ diamond drilling (DD).
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	For 2014, RC samples were split using a rig-mounted cone splitter on 1m intervals to obtain a sample for assay. 4m Composite spear samples were collected for the entirety each hole. The 1m split samples were then taken for any composite sample that returned an assay grade >0.1gpt. The 1m splits were also taken for composite samples either side of the anomalous composite.
		For 2015, RC drilling the 1m cone-split sample was submitted for assay for all intervals.
		For DD drilling, half core samples were submitted for assay. Holes were sampled at a nominal 1m sample interval, although this was varied to match geological criteria. The minimum sample size used is 0.3m.
	Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.	Samples were taken to Genalysis Kalgoorlie for preparation by drying, crushing to <3mm, and pulverising the entire sample to <75μm. 300g pulp splits were then dispatched to Genalysis Perth for fire assay 50gm charge and AAS finish analysis.
		Anticipated high grade zones were analysed by 1kg Leachwell or triplicate fire assay analysis.
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.).	RC drilling is completed using a 5.75" drill bit, downsized to 5.25" at depth.
		Historically, RAB, Aircore, RC and DD holes have been drilled in the area. Historic DD in the area has been conducted in NQ2 diameter (50.5mm).
		Recent DD core was drilled in HQ diameter and oriented using the Reflex ACT Core orientation system.
	Method of recording and assessing core and chip sample recoveries and results assessed.	Core is measured and any determined loss recorded in the database. RC samples are routinely weighed to assess recovery.

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ABN: 43 092 832 892

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Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
Drill sample recovery	Measures taken to maximise sample recovery and ensure representative nature of the samples.	RC drilling contractors adjust their drilling approach to specific conditions to maximise sample recovery. Moisture content and sample recovery is recorded for each RC sample. No recovery issues were identified during 2014-2015 RC drilling. For diamond drilling the contractors adjust their rate of drilling and method if recovery issues arise. All recovery is recorded by the drillers on core blocks. This is checked and compared to the measurements of the core by the geological team. Any issues are communicated back to the drilling contractor.
	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 bias has been noted.
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.	RC chips were sieved, washed and logged. RC sample chips are logged in 1m intervals for the entire length of each hole. Regolith, lithology, alteration, veining and mineralisation are all logged separately for each metre. Where possible, quantitative measures are used such as percentage values for individual minerals or vein types. All DD holes were logged to end of hole for regolith, lithology, alteration, veining and mineralisation. Where possible, quantitative measures are used such as percentage values for individual minerals or vein types. Quantitative structural measurements were also taken.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	All logging is quantitative where possible and qualitative elsewhere. A photograph is taken of every core tray.
	The total length and percentage of the relevant intersections logged.	RC sample chips are logged in 1m intervals for the entire length of each hole. Regolith, lithology, alteration, veining and mineralisation are all recorded.
Sub-sampling techniques and sample preparation	If core, whether cut or sawn and whether quarter, half or all core taken.	For DD highly oxidized saprolite, full core samples were submitted for assay as the sample deteriorates significantly upon cutting. Once competent core is reached, sampling switches to half core sampling.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	All RC samples are split using a rig-mounted cone splitter to collect a 1m sample 3-4kg in size. These samples were submitted to the lab from any zones approaching known mineralisation and from any areas identified as having anomalous gold. Outside of mineralised zones, spear samples were taken over a 4m interval for composite sampling.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	The sample preparation is considered appropriate.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	Field duplicates were taken for RC samples at a rate of 1 in 20. For the composite samples the spearing process was repeated from the opposite side of the green bag. For 1m split samples, the full rig sample was passed through a riffle splitter to provide a duplicate. For 2015 RC drilling, the duplicate was taken from the cone splitter. No duplicate sampling of core (sending the remaining half core sample) has been conducted as the geological value of the core is considered higher than the need to duplicate sample.
	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.	Sample preparation was conducted at Genalysis Kalgoorlie, commencing with sorting, checking and drying at less than 110°C to prevent sulphide breakdown. Core samples are jaw crushed to a nominal -6mm particle size. If the sample is greater than 3kg, a Boyd crusher with rotary splitter is used to reduce the sample size to less than 3kg (typically 1.5kg) at a nominal <3mm particle size. The entire crushed sample (if less than 3kg) or sub-sample is then pulverised to 90% passing 75µm, using a Labtechnics LM5 bowl pulveriser. For fire assay, 300g pulp subsample is taken with an aluminium scoop and stored in labelled pulp packets. For Leachwell, 1kg of pulped sample is taken.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Grind checks are performed at both the crushing stage(3mm) and pulverising stage (75µm), requiring 90% of material to pass through the relevant size.
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 50g Fire assay charge is used with a lead flux, dissolved in the furnace. The prill is totally digested by HCl and HNO3 acids before Atomic absorption spectroscopy. Repeatability of sub-samples was outside acceptable limits with 2014 DD drilling indicated the presence of coarse gold within cm scale stockwork veining as the likely cause for the poor repeatability. In order to improve assay repeatability test work analysing 1kg samples using the Leachwell technique with AAS finish, was completed on coarse bulk reject sample from 2014 RC and DD drilling. Leachwell is not to "total" technique but is considered to approximate the cyanide extractable gold that would be recovered in routine metallurgical processes. The initial conditions involved a 12-hour bottle roll. A fire assay on the Leachwell tails was completed to assess how effective the method had been in extracting the gold. The initial test work indicates a slightly longer bottle roll is required to leach the coarse gold. Additional test work utilizing a 24hr bottle roll is planned. Leachwell was not available for 2015 Diamond Drilling so a triplicate fire assay was sued for zones with anticipated coarse gold. The average was then taken as the final sample grade.
	For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.	No geophysical tools were used to determine any element concentrations.
	Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.	Certified reference materials (CRMs) are inserted into the sample sequence randomly at a rate of 1 per 20 samples to ensure correct calibration. Any values outside of 3 standard deviations are re-assayed with a new CRM. blanks are inserted into the sample sequence at a rate of 1 per 20 samples. This is random, except where high grade mineralisation is expected. Here, a Blank is inserted after the high-grade sample to test for contamination. Failures above 0.2gpt are followed up, and re-assayed. New pulps are prepared if failures remain. Field Duplicates are taken for all RC samples (1 in 20 sample). No Field duplicates are submitted for diamond core.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
Verification of sampling and assaying	The verification of significant intersections by either independent or alternative company personnel.	All significant intersections are verified by another Northern Star geologist during the drill hole validation process, and later by a Competent person to be signed off.
	The use of twinned holes.	No twinned holes were drilled for this data set.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	Geological logging is entered directly into an Acquire database. Logs are exported to csv files. A hardcopy and electronic copy of this csv file is then stored. Assay files are received in csv format and loaded directly into the database by the Project Geologist. A geologist then checks that the results have inserted into the database correctly. Hardcopy and electronic copies of these are also kept. No adjustments are made to this assay data.
	Discuss any adjustment to assay data.	No adjustments made to assay data.
Location of data points	Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.	Planned holes are pegged using a Differential GPS (DGPS) by field assistants. During drilling, single-shot magnetic surveys are taken every 30m to ensure the hole remains close to design. This is performed by the driller using the Globaltech Pathfinder DS1 survey system and checked by the supervising geologist. A final survey is taken once the end of hole is reached. For 2014 DD drilling, each hole was gyroscopic surveyed to verify the single shot surveys.
	Specification of the grid system used.	The final collar is picked up after hole completion by Differential GPS in the MGA 94 Zone 51 grid.
	Quality and adequacy of topographic control.	Topographic control is through an airborne survey conducted in 2009 by Survey Graphics mapping consultants using airborne DGPS (Differential Global Positioning System). Alternative frames were orthorectified using a 30m DEM within the mapping area and a 50m DEM outside the mapping area, captured using photogrammetry. This topographic control has been verified by the DGPS pickup of numerous hole collars.
Data spacing and distribution	Data spacing for reporting of Exploration Results.	No exploration results reported.
	Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.	The data spacing is considered appropriate. Drill hole spacing across the area greatly varies. Up to 100m below surface, spacing is typically 40m x 40m which is reduced at depth where few drill holes intersect ore.
	Whether sample compositing has been applied.	No compositing has been applied during sampling.
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.	No sampling bias is considered to have been introduced by the drilling orientation.
	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 are various mineralised orientations at Six Mile, including porphyry contacts and stockwork lodes, with two main shear orientations; NW-trending shears dipping steeply (70-80°) to the SW and ENE trending shears dipping steeply (70-80°) to the South. Many of the drill holes in the Six Mile area have been drilled at poor orientations to these structures due to poor understanding of the geology prior to the recent interpretation. Wherever this has occurred, it is clearly noted in the report. These holes are only suitable as an exploration tool for further targeting and are unlikely to be used in any future Resource.
Sample security	The measures taken to ensure sample security.	Prior to laboratory submission samples are stored by Northern Star Resources' in a secure yard. Once submitted to the laboratories, they are stored in a secure fenced compound and tracked through their chain of custody and via audit trails.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	An internal review of RC sampling has been conducted to determine if the low repeatability is due to coarse gold, poor sampling or both. A number of steps have been taken to improve the primary sampling including the fitting of an additional arm and spirit level to the cone splitter to ensure it is kept straight and training drill offsiders in sample theory to help ensure a more consistent sample.

Section 2 Reporting of Exploration Results
(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	All holes mentioned in this report are located within on Mining Lease M27/63, held by The Kanowna Mines Ltd, a wholly owned subsidiary of Northern Star Resources.
	The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.	No known impediments exist and the tenements are in good standing.
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	Western Mining Corporation (WMC) commenced exploration in the Six Mile AREA in 1983. Early exploration consisted of costeans, followed by RC drilling. A Resource of 119,482 tonnes @ 3.2gpt was calculated and mining began in 1986. Mining ceased in 1988 due to reconciliation issues. In the mid 1990's, 3 DD holes were drilled by WMC to test for mineralisation below the main pit, although assay results were poor. The current location of the core is unknown.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
		Delta Gold acquired the tenement in 2000 and drilled 20 RC holes and 1 DD hole below the existing pit. This allowed a Resource to be calculated of 2.6 million tonnes @ 2.1gpt.
		Placer Dome subsequently acquired the tenement through their takeover of Aurion Gold in 2002 and conducted no exploration until the Barrick takeover in 2004.
		Barrick Gold conducted channel sampling of the pit walls in 2007 followed by 2 DD holes in 2008 with limited success.
Geology	Deposit type, geological setting and style of mineralisation.	The Six Mile deposit is situated within the Boorara domain of the Kalgoorlie Terrane, part of the Norseman-Wiluna Greenstone Belt. The Scotia-Kanowna dome, a D2 granodiorite pluton, intrudes a Boorara domain sequence of lower basalt, komatiites, upper basalt and felsic volcanics
		The Six Mile area is dominated by massive chlorite-amphibole basalt with at least two phases of quartz feldspar porphyry intrusion. Two main shear orientations exist within the pit. NW-trending and ENE-trending. Mineralisation occurs within quartz-carbonate veins hosted by these discrete shears
		Stockwork mineralisation is hosted within the basalt in proximity to shallow to moderately dipping lodes. Mineralisation also exists on the Footwall and Hangingwall of porphyry contacts. The Main Fletcher Porphyry hosts consistent low-grade mineralisation, and a supergene lode exists in the Main Pit zone.
Drill hole Information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: o easting and northing of the drill hole collar o elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar o dip and azimuth of the hole o down hole length and interception depth o hole length.	Too many holes to practically list the complete dataset, the long section and plan reflect the hole positions used for previous estimation stated. No exploration results reported.
	If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	Exclusion of the drill information will not detract from the understanding of the report.
Data aggregation methods	In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.	No exploration results reported
	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 reported.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	No exploration results reported.
Relationship between mineralisation widths and intercept lengths	These relationships are particularly important in the reporting of Exploration Results:	No exploration results reported.
	If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.	No exploration results 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').	No exploration results reported.
Diagrams	Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	Appropriate plans and section have been included in this report.
Balanced reporting	Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	No exploration results reported.
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 further relevant work has been carried out at the Six Mile project.
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).	Following the reinterpretation of the Six Mile project, and the creation of a new geological model, a Resource modelling exercise was undertaken. It is envisaged that further drilling will be undertaken to increase the confidence in the area and convert the Inferred Resource to Indicated, as well as increasing the size of the reportable Resource.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Appropriate diagrams and maps of future extensions and work are available in the appropriate ASX announcements.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Section 3 Estimation and Reporting of Mineral Resources
(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Database integrity	Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.	All data collected and drilled by Northern Star Resources 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 rigor 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 is exported to ASCII files before importation into Resource modelling software, no manual editing is undertaken on any data during the export/import process.
	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 (where available) 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.
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 the region. Historical regional drill core as well as recent regional drill core was inspected during the visits. Historic and current geological data, such as mapping and modelling, were reviewed and scrutinised. Multiple site visits undertaken by geologists supervising the drilling programs and preparing the geological interpretation.
	If no site visits have been undertaken indicate why this is the case.	Previous work was well documented and personnel who completed the work no longer employed the company for site-based handover.
Geological interpretation	Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.	There is reasonable confidence in the geological interpretation based on observations made from within existing open pits, drill core, rock chips and well recorded documentation covering the greater Six Mile project area. Geological logging includes both contemporary and historic data. The Six Mile open pit provided hard evidence of the host geology, structural setting and mineralisation style. Two main mineralisation trends were well documented. From this, the main geological features are exposed and are believed to be well understood. Geological features not exposed are solely supported by drill data.
	Nature of the data used and of any assumptions made.	Collar survey QAQC campaign is required to enhance the confidence in some of the drill collar heights (collar RL position).
	The effect, if any, of alternative interpretations on Mineral Resource estimation.	The current interpretation is the preferred of two parallel interpretations. The previous model identified ten prospective steeply dipping shear zones; six within the Main pit and four within the Fletcher pit. The structures were interpreted to be ENE (Main pit) and NNW trending (Fletcher pit), in addition to these, a flat lying ore zone (supergene) and pod of mineralisation was also identified in Main pit. In total the previous model contained a total of 14 mineralised domains. The current interpretation includes 125 mineralised domains (note that 18 were excluded from the estimation as they were based solely on RAB data which was not used to inform grade). The major change, aside from 125 versus 14 mineralised domains, is the dominance of a flat lying to shallowly dipping mineralised architecture compared to the previously interpreted series of steeply dipping mineralised domains.
	The use of geology in guiding and controlling Mineral Resource estimation.	Wireframes of the interpreted geology have been used to constrain mineralisation.
	The factors affecting continuity both of grade and geology.	Grade continuity is affected by a high component of coarse gold distributed throughout the mineralisation. Geological structures are complex interplay of structure and intrusive bodies.
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 Six Mile resource is comprised of the Greater Six Mile project area. The project area includes the historically explored footprint of Six Mile, Red Bernales, Jackson West – Domino, Essington and New Caledonia prospects. Mineralisation extends to approximately 500m below surface with a strike length of approximately 2km. Mineralised horizons vary in thickness between 2.6m and 15m, with an average thickness of around 3.0m.
Estimation and modelling techniques	The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.	All wireframes are constructed in Leapfrog, which are used as hard boundaries for the estimations. Datamine was used for the estimation of the White Hope / Hansel Mundy resource. Drill holes were composited into 1m intervals down hole within each interpreted domain. The average grade and total length of the composite data was compared against the average grade and total length of the un-composited data to check the compositing process. The distribution of composite lengths was checked to ensure that the majority of the composites were close to the targeted length. The six major Six Mile domains were estimated using categorical indicator kriging (CIK), with all remaining domains estimated using ordinary kriging (OK).
	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 estimated grades were assessed against sample grades and, where applicable, previous estimates.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
	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).	No deleterious elements estimated in the model.
	In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.	Grades were estimated into 15m (X) x 15m (Y) x 15m (Z) for all domains. These are deemed appropriate for the majority of the resource, where drill / sample spacing ranges from 10m to +50m. Due to the scale of the project area sample spacing was highly variable. Parent blocks have been sub-celled to 1m(X) by 1m(Y) by 1m(Z) 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 size 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.	Selective mining units were not used during the estimation process.
	Any assumptions about correlation between variables.	No assumptions made.
	Description of how the geological interpretation was used to control the Resource estimates.	Mineralisation wireframes are created within the geological shapes based on drill core logs, core photos, rock chips and pit mapping.
	Discussion of basis for using or not using grade cutting or capping.	Top cuts were applied to the sample data based on a statistical analysis of the data and vary by 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.	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 swath 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.	Tonnages are estimated on a dry basis.
Cut-off parameters	The basis of the adopted cut-off grade(s) or quality parameters applied.	A relevant cut-off based on economic parameters was applied.
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 Greater Six project comprises prospects that are amenable to mining by both open pit and underground methods. Currently there are no mining activities at either project, however historic mining across the project area is well documented. Detailed discussions on future mining methods for Six Mile are ongoing. To best capture "reasonable prospects of eventual economic extraction", the mineral resource is reported within an optimised pit shell at $2,500.
Metallurgical factors or assumptions	The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	Metallurgical recovery factors have been developed based on extensive experience processing similar material from the Kanowna area.
Environmental factors or assumptions	Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a green fields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be	The utilisation of existing Kanowna Belle (and/or KCGM) infrastructure will minimise the impact of development of the project.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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	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.	A larger local density dataset is required to confirm local density values, including values specific to the weathering profile. This should be acquired from any existing local databases and future drill programs.
	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. Given the reconciliation of the historic values with the few collected by Northern Star Resources it is assumed that the historic bulk density values are reasonable but lacking. Northern Star Resources routinely dries samples and weathered porous or clay rich samples are coated in paraffin wax prior to the collection of dry bulk density measurements using the water displacement method.
	Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	Bulk densities are applied to domains for the ore zone and by oxidation state. However, as mentioned above, the local density dataset is lacking with a future, rigorous, density sampling campaign to be completed.
Classification	The basis for the classification of the Mineral Resources into varying confidence categories.	The mineral resource has been classified based on a series of factors including: - Geologic grade continuity. - Density of available drilling. - Statistical evaluation of the quality of the kriging estimate.
	Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).	All 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 Northern Star Resources.
	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.	While no formal external review or audit has been conducted on the Six Mile model, Northern Star Resources has adopted a process for geological modelling, estimation and reporting of mineral resources that meets high industry standards. Detailed internal peer reviews at both the end of the interpretation and estimation stages takes place prior to the release of a model.
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 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 estimate is considered to be robustly estimated on a global scale for material classified as Inferred.
	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.	Global estimate, with local variation to be expected.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	No production data to compare.

Kanowna Belle: Woodline - 31 March 2024

Section 1 Sampling Techniques and Data

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

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.	Reverse circulation drilling was used to obtain 1m samples from which 2kg (Delta Gold holes) or 3kg (Barrick/NSR holes) was pulverised to produce a 50g charge for fire assay. For the Delta Gold holes, less prospective zones or wet zones were sampled with 5m composites that were assayed with aqua-regia digest and AAS finish on a 50g charge. All composite intervals returning greater than 0.01g/t Au were subsequently re-sampled from 1m intervals retained in plastic bags, dried, riffle split, and then treated as above. Diamond drill core was half-core sampled on a nominal 1m sample length and was pulverised to produce a 50g charge for fire assay. For the Delta gold holes, less prospective zones sampled by V-cut in 4 m intervals and then treated as above. Any significant anomalous composite intervals were re-sampled by taking all core from the remaining hemisphere of the V-cut as 1m samples and then treated as above.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	Sample intervals are marked on the core by a geologist typically every 1m or less to honour geological boundaries. Sample interval lengths vary from 0.3m to 1.2m (NQ). The same half of the core was selected for each sample interval, placed in numbered calico bags, and submitted to the laboratory for analysis. The other half of the core was left in the core tray, which was stamped for identification, stored, and catalogued.
	Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.	Assaying is by fire assay with a 40 or 50g charge and AAS analysis for gold. All sampling data is entered onto logging sheets or tablet computer and entered into the central Acquire database.
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.).	Most drill holes are 130-145 mm reverse circulation and supplemented with a small proportion NQ diamond drill holes. The diamond drill holes were of NQ or NQ2 diameter in fresh rock; however, some HQ3 triple tube drilling was used through the regolith, which includes the main mineralised zones.
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed.	Diamond drilling recoveries were accounted for by recording core loss intervals measured in linear downhole metres to the nearest five centimetres. All diamond core was dried before sample preparation making the original moisture of the sample irrelevant to sample and assay integrity. For Barrick/NSR RC drill holes: RC drill recoveries were logged by the geologist or field assistant whilst drilling. These recoveries were based on a visual estimation of the proportion of sample returned relative to a full one metre sample. Moisture was logged as wet, moist, or dry where wet means all or part of the sample was a slurry, moist means the material was wet enough to clump together and therefore not split effectively through a riffle or cone splitter and dry was any sample that was sufficiently free of moisture to properly run through a riffle or cone splitter. For Delta Gold RC drill holes: Drilling reports show that moisture and recovery for RC drill holes was noted through the drilling campaign and sampling techniques modified accordingly, however this information is not contained within the Northern Star drill database, so no analysis of this data is possible.
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	Where recovery data is available, that data shows that 96% of samples have sufficient recovery to be considered a representative sample.
	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.	Where moisture data is available, that data shows that 4% of samples were wet and therefore may not be representative. A negligible proportion of samples were moist (samples where there may be a small effect on the reliability of the gold grade of the sample).
Logging	Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.	All diamond drill core was logged by geologists where lithology, mineralisation, structure, alteration, veining and regolith fields were recorded. Quantitative measures such as structural measurements, intensity of alteration, percentage of mineralisation, thickness of veins and veins per metre were also recorded. Geotechnical measurements on diamond drill core include RQD (rock quality designation), recovery, and fracture frequency. Photographs are taken of each core tray when wet and where available are stored on the online cloud-based database Imago. All mineralised intersections are logged and sampled. All core and chips have been logged to the detailed exploration logging scheme of Delta Gold/Barrick/Northern Star (i.e., a single logging scheme that has evolved with only minor changes over time). Selected diamond core has been geotechnically logged as required.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	Logging is qualitative and all core is photographed, and half core retained in archive for future reference. Visual estimates are made for mineralisation percentages for core.
	The total length and percentage of the relevant intersections logged.	100% of the drill core and RC chips are geologically logged.
Sub-sampling techniques and sample preparation	If core, whether cut or sawn and whether quarter, half or all core taken.	All diamond drill core was sawn or cut longitudinally and one half submitted to the laboratory. Diamond drill core is sampled by sawn half-core on intervals controlled by geological domaining represented by mineralisation, alteration, and lithology. A selected number of grade control holes were full cored. Mineralised intersections are sampled with a maximum and minimum length of 1.2 m and 0.2 m, respecting lithological or alteration contacts. The down hole depth of all sample interval extents is recorded.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	All RC drill samples were either cone or riffle split on the drill rig and that sample was then submitted to the laboratory.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	For Barrick/NSR drill holes: Sub sampling:

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
		Laboratory Sample Preparation – Diamond drillholes: Drill core samples submitted to the laboratory are crushed to a nominal 6mm in a jaw crusher (no grind checks used for this step) and then pulverised to 90% passing 75µm in an LM5 puck mill. Samples too large (>3kg) for the LM5 mill are first crushed in a Boyd crusher to 90% passing 3mm and the sub-sampled to less than 3kg with a rotary splitter.
		Laboratory Sample Preparation - RC: Samples are pulverised to 90 % passing 75 µm in an LM5 puck mill. Samples too large (>3kg) for the LM5 mill are first jaw-crushed to 90% passing 3mm and then sub-sampled to less than 3kg with a rotary splitter.
		For the crushing and pulverising steps above grind checks are conducted on a 1 in 25 samples basis to confirm effectiveness.
		Field Duplicates: Field duplicates were taken on a one-in-twenty samples basis for RC drilling with a second split of the 1m sample to provide a second, nominally 3kg, sample to be processed identically to all original samples.
		Diamond core did not have duplicate samples taken.
		Laboratory Splits: A second pulp 250-300g was taken from the LM5 mill on a 1 in 50 samples basis and processed identically to other samples for the remainder of the assay workflow.
		The specific details of the sub-sampling techniques and sample preparation for the Delta Gold holes is not well documented but is believed to be somewhat resemble the methods described above.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	Most holes have all intervals sampled. Approximately 80% of the latest round of RC drilling (WDRC17*** and WDRC18***) were not sampled over the top 30m, as results from previous drilling campaigns have demonstrated to be barren.
	Measures taken to ensure that the sampling is representative of the in-situ material collected, including for instance results for field duplicate / second-half sampling.	Quarter core sampling is often undertaken as a check.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Grind checks are performed at both the crushing stage (3mm) and pulverising stage (75µm) requiring 90% of material to pass through the relevant size.
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 one metre samples were assayed with a 50g charge weight with an AAS (atomic absorption spectroscopy) finish. This method is considered to report the total gold content of the sample.
		Delta Gold composite samples were assayed with aqua-regia digest and AAS finish on a 50g charge.
		Laboratory Checks: The laboratories used were required to routinely repeat a fire assay from the pulp for 1 in 20 samples.
		Laboratory Repeats: Higher grade samples (above a nominal 1g/t cut-off) were re-assayed from the original pulp until the result was deemed repeatable, by the laboratory.
		Delta Gold reports document the use of company supplied standard material and that the results were acceptable, being within 10% of the accepted value, but the exact details of the protocol(s) are not described, and the QA data is not available.
	For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.	No geophysical tools were used to determine any element concentrations.
	Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.	Sampling and assaying QAQC procedures include: • Periodical resubmission of samples to primary and secondary laboratories (minimum >5 %). • Submittal of independent certified reference material • Sieve testing to check grind size • Sample recovery checks. • Unannounced laboratory inspections For Barrick / NSR drill holes, commercially produced, certified standards were submitted to the laboratory on a 1 in 20 basis. Ground Bunbury Basalt (similar in appearance to an RC sample from mafic rocks), of a gold concentration known to be below normal ppm detection limits (but not certified), was submitted in the sample stream on a 1 in 50 basis to be processed identically to all original samples. Primary laboratory Bureau Veritas meets ISO 9001:2000. MinAnalytical labs are NATA accredited for compliance with ISO/IEC17025:2005
Verification of sampling and assaying	The verification of significant intersections by either independent or alternative company personnel.	The significant intercepts of the Woodline area are considered to be verified on the basis that the project has been drilled with different methods by different teams from two different parent companies over twenty years and has returned results that are consistent with each other and demonstrate continuity of grade and thickness of mineralisation.
		All recent assay data (all Barrick/NSR assay data), has been directly imported into the digital database directly from laboratory reports, eliminating any potential for typographical errors.

Northern Star Resources Limited
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Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
	The use of twinned holes.	Five RC holes were drilled in 2017 attempting to replicate the long high-grade intercepts in earlier RAB drilling. While high grade was intercepted, the new holes did not replicate the downhole length. Trenching data (TR), Rotary Air Blast (RAB) and Air core (AC) hole types were not used in the grade estimation, however, were used in the geological interpretation.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	All assay data adheres to Kanowna QAQC standards and is further validated by a qualified person before it can be used in the Resource estimation process. All data is stored in the site Acquire database with hard copies of all logging and sample results filed for each hole. Assay files are received in csv format and loaded directly into the database by the supervising geologist who then checks that the results have inserted correctly. Hardcopy and electronic copies of these are also kept.
	Discuss any adjustment to assay data.	Assay adjustment: Stored in the NSR Acquire database are various 'priorities' of sampling. This does not reflect the quality of sample but is due to the combining of two historic databases. A series of holes have assays in both priorities with one defaulting to zero, and the other actual grades. Samples were adjusted outside of the AcQuire database to only contain real assays.
Location of data points	Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.	Newer drill hole collars were picked up by differential GPS in the MGA94 Zone 51 map grid. Earlier drill holes were mostly picked up by theodolite on a local exploration grid and later referenced back to the MGA94 map grid. Prior to use, all pre-2017 collars were adjusted vertically to match the 2012 Lidar surface, 2017 drilling RLs were within 10cm or the Lidar surface. All recent drill holes were surveyed downhole by various methods; including a single shot downhole camera, EMS (Electric Multi Shot) method, or in-rod gyroscopic survey tools. Holes are typically surveyed at 15m and 30m intervals down hole thereafter. Data from electronic tools was imported directly into the digital database from electronic data files to avoid typographical errors. Survey Adjustment: Stored in the NSR Acquire are various types of survey azimuths. Due to the combining of two historic databases, and inconsistent conversion to MGA grid resulted in bearings that were not plausible. Some holes use "OLD BRG" some "MGA BRG", with discrepancies showing mainly in collar shot (gets adjusted depending on what grid is nominated in the collar file, but this is unreliable) Azimuths for 64 holes were adjusted outside of the AcQuire database.
	Specification of the grid system used.	MGA 94
	Quality and adequacy of topographic control.	A digital terrain model was commissioned from Cardno-Spectrum Surveys in 2017 for the purpose of this Resource estimate.
Data spacing and distribution	Data spacing for reporting of Exploration Results.	The drilling delineating the sub-horizontal paleo channel mineralisation is at approximately 10mx10m spacing. The subvertical mineralised structures hosted basalt/porphyry shear contact, are sparsely drilled at approximately 40x40m or less.
	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.	This drill spacing is considered appropriate for an indicated resource classification for this deposit.
	Whether sample compositing has been applied.	No sample compositing has been applied. The datasets were composited to 1m intervals prior to grade estimation. This aligns with the most common sample length taken.
Orientation of data in relation to geological structure	Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.	Most of the drilling is oriented between 55° and 60° dip on an azimuth roughly perpendicular to the strike of the controlling porphyry dyke. This drill orientation adequately tests both the sub-horizontal paleo channel and supergene surfaces and the sub-vertical porphyry-related surfaces without introducing a sampling bias.
	If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.	Holes with orientations that are considered likely to introduce sampling bias are excluded from the estimation during the validation process.
Sample security	The measures taken to ensure sample security.	All core is kept within the site perimeter fence on the Mining Lease M27/103. Samples are dispatched and/or collected by an offsite delivery service on a regular basis. Each sample batch is accompanied with a: • Job number • Number of Samples • Sample Numbers (including standards and duplicates) • Required analytical methods • A job priority rating

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Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
		A Chain of Custody is demonstrated by both Company and Bureau Veritas in the delivery and receipt of sample materials.
		Any damage to or loss of samples within each batch (e.g., total loss, spillage, or obvious contamination), is reported to the Company in the form of a list of samples affected and detailing the nature of the problem(s).
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	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 listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	The Woodline deposit is on mining Lease M27/37 which is 100% owned by Northern Star Resources and held in good standing. A gazetted, but disused, road passing through the prospect is in the process of being either closed or degazetted so that mining may proceed.
	The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.	No known impediments exist, and the tenements are in good standing.
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	All Resource quality drilling (RC and Diamond) on the Woodline prospect has been undertaken by the one company operating the Kanowna Belle Gold Mine, albeit with a succession of different parent companies having ownership of that operation (Delta Gold, Aurion Gold, Placer Dome, Barrick Gold and now Northern Star Resources).
Geology	Deposit type, geological setting and style of mineralisation.	The Woodline deposit encompasses two distinct mineralisation styles. The primary mineralisation is mineralisation is associated with a felsic dyke that has intruded a shear zone passing through a basalt sequence. The intrusive has elevated gold grades of the order of 0.2 g/t throughout, with high grade zones on the sheared margins associated with pervasive sericite-albite alteration and fine disseminated pyrite. Syn- or post- intrusion shearing has also produced a narrow but laterally continuous quartz-ankerite-chlorite-arsenopyrite-pyrite vein with high gold grades that roughly follows the sheared intrusive margin. Supergene processes have laterally dispersed gold away from the primary source at the base of weathering to create the lowermost sub-horizontal mineralised surface. Other supergene surfaces occur at the base of channels of transported sands. Alluvial gold in the base of the channels, which are nested on top of each other, is believed to have nucleated the precipitation of supergene gold mobilised from the primary source by weathering processes.
Drill hole Information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: o easting and northing of the drill hole collar o elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar o dip and azimuth of the hole o down hole length and interception depth o hole length.	All of the drill hole data were used directly or indirectly for the preparation of the resource estimates described in the resource report.
	If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	Exclusion of the drill information will not detract from the understanding of the report.
Data aggregation methods	In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.	No exploration results are being released
	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 being released
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	No metal equivalent values have been used for the reporting of these exploration results.
	These relationships are particularly important in the reporting of Exploration Results.	No exploration results are being released

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PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
Relationship between mineralisation widths and intercept lengths	If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.	No exploration results are being released
	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').	No exploration results are being released
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 being released
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.	No exploration results are being released
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 2012 SAM (sub-audio magnetics) geophysical survey over the Woodline Prospect was targeting the larger-scale exploration potential of the area and as such is not relevant to the local scale of this Resource estimate.
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).	Data coverage is already quite dense, up to 10m x 10m in places, and any future drilling should be guided by an open pit optimisation that can identify areas where that optimisation is sensitive to local grade estimates or added geological complexity. Additional drilling is recommended for delineating any anomalous grade shoots hosted within subvertical structures at depth.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Appropriate diagrams and maps of future extensions and work are available in the appropriate ASX announcements.

Section 3 Estimation and Reporting of Mineral Resources
(Criteria listed in section 1, and where relevant in section 2, also apply to this section).

Criteria	JORC Code explanation	Commentary
Database integrity	Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.	Data used for generating the mineral resource estimates is stored in an Acquire database. The Company employs a database administrator to manage the database. Where possible raw data is loaded directly into the database, with adjustments such as survey transformations occurring within the database so that they are fully traceable. Extensive validation is built into the Acquire database to ensure data integrity and user access logs are maintained for all fields in the dataset. Data validation tools and sign off facilities to record data cross-checking are used. Barrick / NSR drill holes were validated by compiling a hardcopy of all relevant data on a hole-by-hole basis with a coversheet for each. As each piece of information was checked against the information in the database the relevant section of the coversheet was signed off by the person who completed that check.
	Data validation procedures used.	Checks carried out on the imported data include: • Collar details import checks - start and end dates are supplied, collar has location co-ordinate information, actual end of hole depth versus planned end of hole depth is within tolerance, cost code and location code information are supplied. • Survey details import checks – final survey record is within tolerance with respect to end of hole depth, a survey exits at 0 depth, grid transformations have been performed, no duplicate survey points with the same priority exist. • Geology details import checks - final lithology depth is within tolerance with respect to end of hole depth, structural measurement transformations have been performed, alteration/vein/mineralisation logging does not have overlaps and/or gaps. • Samples/Assay import checks – total sample meters match end of hole depth, no duplicate samples with the same priority exist, sample intervals are continuous, no assay values have negative values, dispatch return date is recorded, no 'not sampled' intervals with assay values, QAQC passed. • Geotechnical details import checks – logged information depths are within tolerance with respect to end of hole depth. • Bulk Density/SG details checks – logged information depths are within tolerance with respect to end of hole depth.

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Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
		• Errors are corrected where possible. When not possible the data is resource flagged as "No" in the database and the database is re-exported. This data will not be used in the estimation process. It has been accepted that historic holes may be missing information such as start and end date, assay method and collar pick up method. Historic hole location was visually confirmed where possible or using recent drilling as confirmation.
		In addition to being Resource Flagged as "Yes" or "No", drill holes are assigned a Data Class, which provides a secondary level of confidence in the data quality. Data Class (DC) values range from 0 to 3, with criteria summarised below:
		• DC 3 = Recent data; all data high quality, validated and all original data available.
		• DC 2 = Historic data; may or may not have all data in AcQuire or hard copy available but has proximity to recent drilling which confirms the dip, width, and tenor. Used to assist in classification or
		Recent data: minor issues with data such as QAQC fail but away from the ore zone.
		• DC 1 = Historic data; same criteria as DC 2 but cannot be verified with recent drilling, i.e., too far away, or dissimilar dip, width and/or tenor to recent drilling. Not to be used in Resource estimate.
		• DC 0 = Historic data; no original information or new drilling in proximity to verify. Not to be used in Resource estimate.
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	Both geological interpretations underpinning this resource model and subsequent grade estimation were completed by Senior Geologist – Resources, part of Corporate Technical services team. Principal Geologist – Resources, is a competent person for reviewing and signing off on estimations maintained a presence throughout the process.
	If no site visits have been undertaken indicate why this is the case.	Previous work was well documented and personnel who completed the work no longer employed the company for site-based handover.
Geological interpretation	Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.	There is a reasonable level of confidence in the interpretation of the fresh-rock and lower-most supergene mineralisation surfaces. There is good support with the increased drilling, for the interpretation of the paleochannel surface(s) from drill hole logging data and the lateral continuity of these surfaces is reasonable. The spatial interpretation of these surfaces and general geological context is supported by a detailed study of the genesis of mineralisation in a similar nearby prospect (Golden Valley and Moonlight paleochannel deposits).
	Nature of the data used and of any assumptions made.	All available geological data was used in the interpretation including mapping, drill holes, structural measurements and previous interpretations and reports.
	The effect, if any, of alternative interpretations on Mineral Resource estimation.	During modelling process, every attempt was made to consistently honour host lithologies to ensure homogeneity of geological domains is preserved. Each lode was treated as a separate geological domain for estimation purposes. Discrete lode modelling was assisted by existence of reasonable geological and grade continuity across most mineralised horizons, which contrasts with previous April 2020 model update, which tended to include wider zone of mineralization into the modelled envelopes using a lower cut of grade of 0.2g/t.
		Distinct broad geological and/or grade domains have been identified within Woodline/Fenceline project area:
		• 3000 series lodes: Flat lying low to medium grade alluvium hosted lodes which sit above the paleochannel HW contact
		• 1000 series lodes: Flat lying low to medium grade lodes located on the contact between alluvium and Paleochannel HW contact
		• 2000 series lodes: Flat lying low to medium grade lodes located on the contact between transitional/Fresh rock and Paleochannel FW contact
		• 4000 series lodes: Subvertical low grade fresh rock hosted lodes situated along porphyry and basalt. The fresh rock ore lodes are based on veining and increased shearing along a basalt-porphyry contact. All ore lodes are booleaned to the top of fresh rock surface
		For the current interpretation, a lower cut-off grade of 0.5 g/t was used to guide the interpretation and to ensure that most of the mineralised material is captured within the appropriate mineralised envelopes.
	The use of geology in guiding and controlling Mineral Resource estimation.	Interpretations and confining wireframes are developed using the geology related to the mineralised lodes. This includes lithology, alteration, veining, structure, and mineralisation. This data is sourced from geological logging of drill holes and mapping. The 2017-2018 drilling focused heavily on identifying/defining the Woodline Paleochannel.
	The factors affecting continuity both of grade and geology.	Continuity can be affected by expected variations in local deposition within the larger paleochannel.
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.	Average dimensions of the Woodline paleochannel hosted mineralisation cover approximately 1000m of strike length, 450m lateral width and with average thickness of the paleochannel oxide package at 80m.
		Basalt-porphyry shear hosted contact (fresh-rock) mineralisation is modelled over 1100m of strike extent and with a dip extent of between 50m and 250m depending on the extent of drilling, with the individual mineralised surfaces within that zone between one and two metres wide.
Estimation and modelling techniques	The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.	Grade estimation for Gold was completed in Datamine Studio RM software. Geostatistical analysis and variography were completed using Snowden's Supervisor v9 software.
		The Woodline Resource Model consists of 14 ore lodes with a waste box surrounding these. The waste was given a default 0.001 g/t.
		Each ore lode interpretation is considered as being a separate domain for estimation. All estimations use hard domain boundaries.
		Estimates use 1m composites with grade capping or top cutting applied to Au outlier values. Outlier analysis was completed using a combination of histograms, log probability plots, mean and variance plots, cumulative metal plots and change in CV of composite to determine top cutting values on a domain-by-domain basis.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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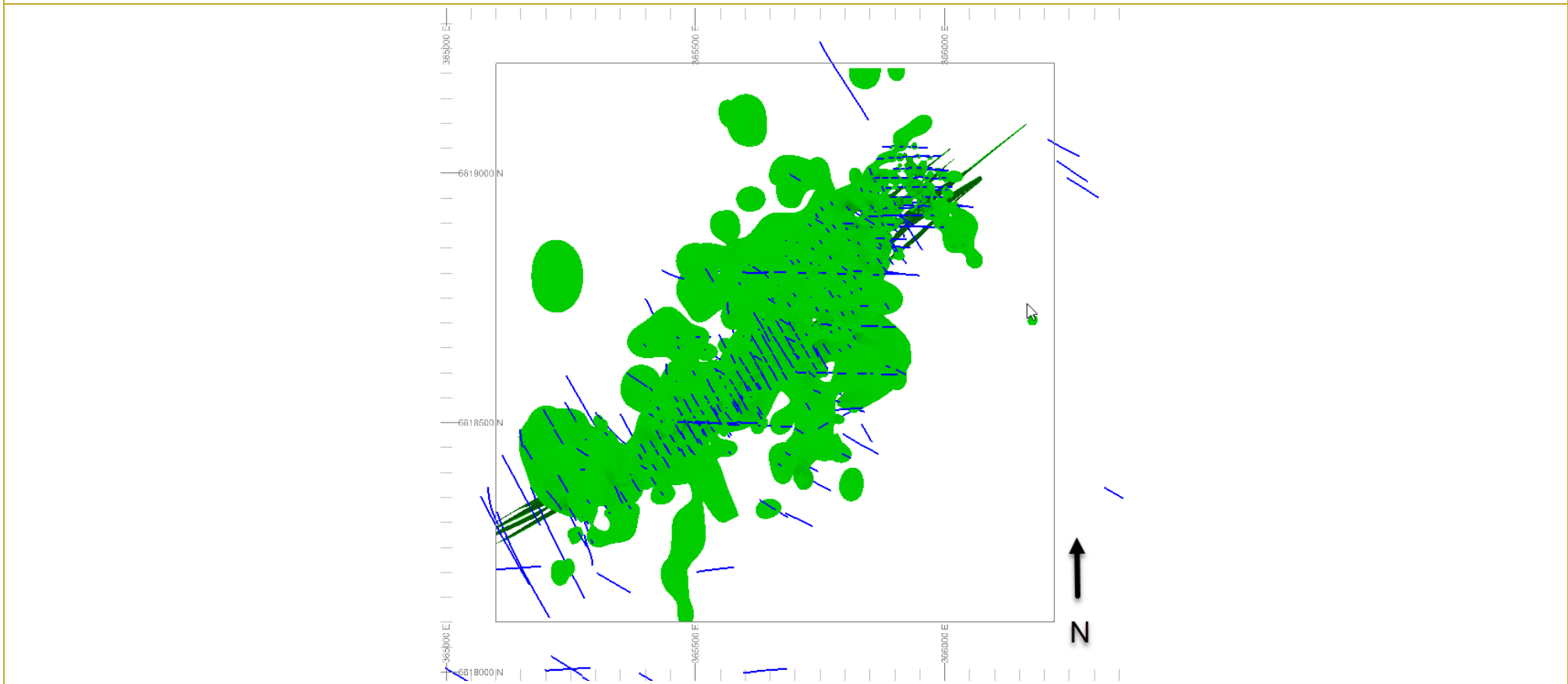| Criteria	JORC Code explanation	Commentary
		Several principal lodes exhibit bimodal or mixed grade populations. These internal populations are controlled by grade indicators derived from inflexion points in domain log probability plots from which indicator variograms are created. Categorical indicator kriging (CIK) is then used to sub-domain lodes with mixed populations. The block model used in the CIK estimation has blocks set at 2 x 2 x 1m 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. Search ellipse orientation and distances (major, semi-major and minor) were based on variogram rotations and variogram ranges on a domain-by-domain basis. A multiple-pass (three pass) estimation strategy was applied to all domains for grade estimations. Minimum and maximum samples for first pass search are 4 and 20 respectively, 4 and 20 for the second pass and 2 and 20 for the third pass.
	The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.	Comparative OK estimates without CIK subdomaing are available. The final estimates are compared to the previous model estimate, completed in April 2020.
	The assumptions made regarding recovery of by-products.	No assumptions are made and only gold is defined for estimation.
	Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).	No deleterious elements detected or estimated. However high clay content has been identified in the channel mineralisation.
	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 2m x 2m x1m to ensure high volume resolution at ore boundaries. Search ellipse dimensions were derived from the variogram model ranges with exact values dependent on the characteristics of the individual lodes. A three-pass nested search strategy is employed, generally with the first pass 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.	Selective mining units were not used during the estimation process.
	Any assumptions about correlation between variables.	No assumptions made.
	Description of how the geological interpretation was used to control the Resource estimates.	Both mineralised lodes and lithology wireframes were generated using implicit modelling function in Leapfrog Geo. An arbitrary cut-off grade of 0.5g/t was used to define mineralised envelopes during modelling process. Each lode is considered as being a separate estimation domain. All estimations use hard domain boundaries.
	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.	After compositing and grade capping, a series of length and metal checks are completed to ensure the total length of the sample file is maintained and there is no metal loss in the compositing process. 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.	Blocks above the pit optimization shell have been reported above 0.5 g/t using a $2500/oz gold price assumption.
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.	No mining assumptions have been made during the resource wireframing or estimation process. To best capture "reasonable prospects for eventual economic of extraction", the mineral resource was reported within an optimised pit shell at $2250 at a 0.53g/t cut off for the open pit resources.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
Metallurgical factors or assumptions	The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	Metallurgical test work results show that the mineralisation is amendable to processing through the Kanowna Belle treatment plant, however high clay content has been identified in the channel mineralisation. Ore processing throughput and recovery parameters were estimated based on limited metallurgical sampling.
Environmental factors or assumptions	Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a green fields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	A "Licence to Operate" is held by the operation which is issued under the requirement of the "Environmental Protection Act 1986", administered by the Department of Environment (DoE). The licence stipulates environmental conditions for the control of air quality, solid waste management, water quality, and general conditions for operation. Groundwater licenses are held for water abstraction, including production bore field water use for mineral processing, and mine dewatering, in accordance with the Rights in Water and Irrigation Act 1914. These licenses are also regulated by DoE and are renewable on a regular basis. Kanowna Operations conduct extensive environmental monitoring and management programs to ensure compliance with the requirements of the licences and lease conditions. An Environmental Management System is in place to ensure that Northern Star employees and contractors exceed environmental compliance requirements. The Kalgoorlie operations are fully permitted including groundwater extraction and dewatering, removal of vegetation, mineral processing, and open pits.
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 Specific Gravity (SG) measurements have been recorded within the Woodline model area. There are, however, references to SG measurements in historic reports, which were used in previous models, completed in September 2019, and April 2020 respectively. These same values were hardcoded into the most recent resource model based on the oxide surfaces as listed below: • Transported: 1.8 t/m3 • Oxide: 1.8 t/m3 • Transitional: 2.0 t/m3 • Fresh rock: 2.8 t/m3
	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.	No/minimal voids are encountered in the ore zones.
	Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	Assumptions on the average bulk density of individual lithologies are based off historic reports. SG measurements will be required before mining to assess if these values are appropriate.
Classification	The basis for the classification of the Mineral Resources into varying confidence categories.	Classification is based on a series of factors including: • Geologic grade continuity • Geological confidence • Density of available drilling • Statistical evaluation of the quality of the kriging estimate • Confidence in historical data • Data Class of the drillholes
	Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).	All relevant factors have been given due weighting during the classification process.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The resource model methodology is appropriate, and the estimated grades reflect the Competent Persons' view of the deposit.
Audits or reviews	The results of any audits or reviews of Mineral Resource estimates.	All resource models completed within Technical Services group have been subjected to internal peer reviews.
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 and confidence of the mineral resource model is reflected in the assigned Mineral Resource classifications.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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	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 Woodline Resource model is a global estimate.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	No reconciliation factors are applied to the resource post-modelling.

Plan view of Woodline deposit with wireframes displayed as green solids and drillholes displayed as blue strings

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PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Section 4 Estimation and Reporting of Ore Reserves
(Criteria listed in section 1, and where relevant in sections 2 and 3, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.	The Mineral Resource estimate for the Woodline - Fenceline Project used as a basis for the conversion to the Ore Reserve estimate reported was compiled by Northern Star Resources (NSR).
	Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.	Mineral Resources are reported inclusive of ore Reserves.
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	Site Visits have been undertaken by the competent person.
	If no site visits have been undertaken indicate why this is the case.	Site visits undertaken.
Study status	The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.	A minimum Pre-Feasibility level study is completed prior to converting an ore zone into ore Reserve.
	The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.	Ore Reserves have been calculated by generating detailed mining shapes for the proposed open pits. A series of nested optimised pit shells were generated using Whittle software, an analysis of the shells was completed to select one which was then used to complete a detailed pit design to closely resemble the selected whittle shell. The Whittle optimisation used parameters generated from NSR technical personnel and technical consultants. A detailed mine schedule and cost model has been generated using an excel spreadsheet model. Appropriate ore dilution and recoveries have been applied within the excel spreadsheet model.
Cut-off parameters	The basis of the cut-off grade(s) or quality parameters applied.	The pit cut-off grade has been calculated based on the key input components (processing, recovery, and administration) Forward looking forecast costs and physicals form the basis of the cut-off grade calculations. The AUD gold price as per corporate guidance. Mill recovery factors are based on metallurgical test work.
Mining factors or assumptions	The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design).	Mineral Resource is converted to Ore Reserve after completing a detailed mine design complete with a detailed financial assessment. A series of nested optimised pit shells were generated using Whittle software, an analysis of the shells was completed to select one which was then used to complete a detailed pit design to closely resemble the selected whittle shell. The Whittle optimisation used costs and inputs derived from current operational data, contractors, and independent consultant recommendations.
	The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc.	The selected mining method for the Woodline - Fenceline deposit is of a bench mining open pit method. The proposed open pit would be mined using conventional open pit mining methods (drill, blast, load and haul) utilising 200 t class excavators and 140t trucks This method is used widely in mines across Western Australia and is deemed appropriate given the nature of the ore body.
	The assumptions made regarding geotechnical parameters (e.g. pit slopes, stope sizes, etc.), grade control and pre-production drilling.	Independent Geotechnical Consultants Dempers & Seymour Pty Ltd completed a geotechnical study for the Woodline - Fenceline project. Recommended wall angles were applied to the Whittle optimisation and subsequent detailed pit designs. The Grade control method to be employed at the Woodline – Fenceline project will use Reverse circulation drilling to obtain samples.
	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.
	The mining dilution factors used.	A mining dilution factor of 10% of zero grade has been applied for the reporting of Reserve physicals.
	The mining recovery factors used.	A mining recovery of 95% has been applied.
	Any minimum mining widths used.	A minimum operating 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 has not been included within this Reserve estimate (treated as waste) but has been considered in LOM planning. The amount of inferred material has no impact on the sensitivity of the project.
	The infrastructure requirements of the selected mining methods.	Infrastructure required for the proposed Woodline - Fenceline project have been accounted for and included in all work leading to the generation of the Ore Reserve estimate.

Northern Star Resources Limited
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Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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		the infrastructure in place at the nearby Kanowna Belle underground operations will be shared with the project. Additional facilities required include Offices, workshop, dewatering pipeline, Waste Rock Storage Dump, and ROM Pad.
		Ore from the Project will be processed through the Kanowna Belle Gold Mine Processing Plant at the Kanowna Belle operation; hence no processing infrastructure is required.
Metallurgical factors or assumptions	The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.	Material will be trucked and processed in the existing Kanowna Belle Gold Mine Processing Plant, is made up of crushing, grinding, gravity gold recovery, flotation, roasting, CIL, elution and gold recovery circuits.
		The milling facilities are designed to process approximately 2.0 million tonnes per annum. The plant has the capability to treat both refractory and free milling ores, through either a flotation circuit and associated concentrate roaster circuit (including carbon-in-leach (CIL) gold recovery or bypassing the flotation circuit and going directly to a CIL circuit designed to treat flotation tails. The plant campaigns both refractory and free milling ores every month. Ore Reserves are calculated using processing plant recovery factors that are based on test work and historical performance.
	Whether the metallurgical process is well-tested technology or novel in nature.	Well tested technology.
	The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.	Based on metallurgical test work carried out and milling experience gained through processing similar ore material through the Kanowna Belle processing facility.
		The metallurgical recoveries for the project were set at 92% for oxide, 92% for transitional, 92% for fresh rock, which corresponds with metallurgical test work undertaken.
	Any assumptions or allowances made for deleterious elements.	There has been no allowance for deleterious elements. Test work indicates there are no deleterious elements.
	The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.	Based on metallurgical test work carried out and milling experience gained through processing similar material through the Kanowna Belle processing facility.
	For minerals that are defined by a specification, has the ore Reserve estimation been based on the appropriate mineralogy to meet the specifications?	Not applicable, gold only.
Environmental	The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.	All ore from the Woodline-Fenceline Project will be trucked to the Kanowna Belle Processing Plant for processing.
		The Kanowna Belle Mine is operated subject to the requirements of the Western Australian Mining Act 1978 and the Mines (Safety) Act, regulated by the Department of Mines, Industry Regulation and Safety.
		The Mining Leases covering the Kanowna Belle operation stipulate environmental conditions for operation, rehabilitation, and reporting. A "Licence to Operate" is held by the operation which is issued under the requirements of the "Environmental Protection Act 1986".
		Kanowna Belle holds groundwater licence GWL 62498-6 which includes the Woodline Project mining tenements.
		There are no native title issues. Heritage surveys have been completed in the proposed project area. There are no heritage sites identified that impact on the designed pits or associated infrastructure.
		Flora & Fauna and hydrogeological studies have been completed.
		Soil characteristics studies have been completed.
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 Woodline-Fenceline Project is located 6km north of Kanowna Belle and will be operated from the Kanowna Belle Mine Site.
		2.5km of new haul road will be constructed to connect Woodline to existing NSR haul roads. The new section of haul road is on NSR 100% owned mining tenements.
		Minor infrastructure will be established at Woodline to support the project.
		Access to the Kanowna Belle operation is provided by well-maintained public and private roads. Employees reside in Kalgoorlie and commute to site daily.
		Potable water for the Kanowna Belle operations is pumped from Kalgoorlie to a storage facility on site. Non-potable water requirements are sourced from bore fields up to 10 km away from the mine site. Makeup water for the Kanowna Belle process plant is supplied by pipeline from a bore field located in the Gidgi paleochannel approximately 15 km from the plant site with some water is sourced from abandoned pits.
		Electricity is provided by the state electricity grid.
Costs	The derivation of, or assumptions made, regarding projected capital costs in the study.	Capital costs relating to the establishment, mobilisation and topsoil stripping were not included in the optimised parameter inputs but included in the financial modelling.
	The methodology used to estimate operating costs.	A capital and operating cost model has been developed in Excel and has been used to complete a life of mine cash flow estimate.
		The estimation of Open pit mine operating costs was based on a dry-hire mining, contract drilling, and contractor maintenance operation using first principles to determine equipment productivities and associated operating hours to generate mine schedules. Provided contract pricing were than applied to the schedule to calculate all unit costs.
	Allowances made for the content of deleterious elements.	Nil allowance, none expected based on metallurgical test work.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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	The derivation of assumptions made of metal or commodity price(s), for the principal minerals and co-products.	Single commodity pricing for gold only, using a gold price of A$2,000 per ounce as per NST corporate guidance
	The source of exchange rates used in the study.	Corporate guidance.
	Derivation of transportation charges.	Transportation costs for ore haulage from Woodline - Fenceline to Kanowna Belle have been based on current NSR contractor quotes. Transportation costs also include an allowance haul road maintenance and dust suppression.
	The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.	Processing costs are based on actual plant processing costs. This cost component has been used to determine the cut-off grades as well as applied to the operating cash flow estimate.
	The allowances made for royalties payable, both Government and private.	WA State Government royalty of 2.5%.
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.	All financial analysis and gold price have been expressed in Australian dollars and no direct exchange rates have been applied. Revenue factors within the whittle optimisation process were used. A revenue factor shell was selected and used to complete a detailed pit design. A gold price of A$1,850 per ounce has been used in the optimisation of the Woodline - Fenceline Project. 2.5% WA State Government royalty.
	The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.	Corporate guidance.
Market assessment	The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.	Gold doré from the mine is to be sold at the Perth mint.
	A customer and competitor analysis along with the identification of likely market windows for the product.	Not Applicable.
	Price and volume forecasts and the basis for these forecasts.	Not Applicable.
	For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.	Not Applicable.
Economic	The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.	The Ore Reserve estimate is based on a financial model that is reflective of current operational costs and contract conditions. All inputs from mining operations, processing, transportation and sustaining capital as well as contingencies have been scheduled and evaluated to generate a full life of mine cost model.
	NPV ranges and sensitivity to variations in the significant assumptions and inputs.	Sensitivities were conducted on metal price fluctuations of A$2,000 ± $250 per ounce. Due to the current short life, the project is not seen as highly sensitive to cost inputs.
Social	The status of agreements with key stakeholders and matters leading to social licence to operate.	Agreements are in place and are current with all key stakeholders including traditional landowner claimants.
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.	None
	The status of material legal agreements and marketing arrangements.	None
	The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the Reserve is contingent.	No issues.
Classification	The basis for the classification of the Ore Reserves into varying confidence categories.	The classification of Open Pit Ore Reserves has been carried out in accordance with the JORC code 2012.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The results appropriately reflect the Competent Persons view of the deposit.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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	The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).	No Measured Mineral Resource contributes to Probable Ore Reserves.
Audits or reviews	The results of any audits or reviews of Ore Reserve estimates.	The Reserve has been internally reviewed in line with Northern Star Resources governance standard for Reserves and Resources. There have been no external reviews of this Ore Reserve estimate.
Discussion of relative accuracy/ confidence	Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the Reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.	The design, schedule and financial model on which the Woodline - Fenceline Ore Reserve is based has been completed to a "pre-feasibility study" standard, with a corresponding level of confidence.
	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.	All modifying factors have been applied to design mining shapes on a global scale.
	Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.	Not applicable.
	It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	Not applicable.

Kanowna Belle: Red Hill - 31 March 2024

Section 1 Sampling Techniques and Data

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

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.	A combination of sample types was used to collect material for analysis including surface diamond drilling (DD) and surface reverse circulation drilling (RC). All RAB holes were excluded from the estimate. Where sufficient diamond drill holes were present, some RC holes were excluded due to inadequate survey and assay methods. Sampling is by both diamond drilling (DD) and Reverse Circulation (RC) drilling completed by both NSR and previous operators. Diamond core was placed in core trays for logging and sampling. Samples intervals are defined by the geologist to honour geological boundaries. Diamond core samples are mainly HQ and NQ(2) and vary between 0.3 m and 1.2 m (NQ2) or between 0.2 m and 1 m (HQ). For NSR RC samples were split using a rig-mounted cone splitter on 1m intervals to obtain a sample for assay. Reverse circulation drilling was used to obtain 1m samples from which 2 kg (Delta Gold holes) or 3 kg (Barrick/NSR holes) was pulverised to produce a 50 g charge for fire assay. For the Delta Gold holes, less prospective zones or wet zones were sampled with five metre composites that were assayed with aqua-regia digest and AAS finish on a 50 g charge. All composite intervals returning greater than 0.01 Au g/t were subsequently re-sampled from one metre intervals retained in plastic bags, dried, riffle split, and then treated as above.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	RC samples were split using a rig-mounted cone splitter on 1 m intervals to obtain a sample for assay. Core is aligned and measured by tape, comparing back to downhole core blocks consistent with industry practice. RC metre intervals are delineated with painted markers on the drill rig mast to determine metres drilled. Bulk sample rejects are left on the sample pad to verify metres drilled for the hole.
	Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.	RC sampling was split using a rig mounted cone splitter to deliver a sample of approximately 3 kg. Selected sampling intervals of DD drill core were sampled in their entirety (full-core) for non-competent regolith intervals and cut in half for competent 'fresh-rock' material using an automated core saw, where the mass of material collected will vary on the hole diameter and sampling interval. All samples were delivered to a commercial laboratory for assaying. Until 2022, samples were assayed using a variety of techniques including fire assay, aqua regia and leachwell analysis. From July 2022 all samples are assayed using PhotonAssay analysis. For fire assayed results, samples are oven dried until a constant mass is reached. All samples are then processed through an Essa Jaw Crusher or a Boyd Crusher to 90% < 3 mm. The crushed sample is then pulverised in an LM5 pulveriser for a product of 90% passing < 75 μm. Approximately 250 - 300g of the pulp is retained and a 40g charge weight for fire

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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		assay is extracted from the pulp packet. Samples are tested for sulphides and flux adjusted, flux is added at a ratio of 1:4. Samples are fired, hammered and cupelled. Prills are placed in tubes, dissolved on hotplates and analysed using AA finish with over-range dilutions used as required. For Photon assaying, the sample Is crushed to 85% passing 2mm then split with a 500g sub sample taken for analysis. Visible gold is observed in the core and coarse gold is characteristic.
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.).	Both RC and Diamond Drilling techniques were used to drill the Red Hill deposit. Surface diamond drill holes were completed using HQ (63.5 mm) and NQ2 (50.7 mm) coring. Core is orientated using the Reflex ACT Core orientation system. RC Drilling was completed using a 5.75" drill bit, downsized to 5.25" at depth. 3 RC pre-collars were drilled followed by NQ2 diamond tails. Pre-collar depth was determined in the drill design phase depending on the target been drilled and production constraints. Historical drilling has been conducted using RC and Diamond HQ (63.5 mm). Core was oriented using methods current for the period.
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed.	For DD drilling, any core loss is recorded on the core block by the driller. This is then captured by the logging geologist and entered as interval into the hole log. RC drill recoveries were logged by the geologist or field assistant whilst drilling based on a visual estimation of the proportion of sample returned relative to a full one metre sample. Moisture was logged as wet, moist or dry where wet means all or part of the sample was a slurry, moist means the material was wet enough to clump together and therefore not split effectively through a riffle or cone splitter and dry was any sample that was sufficiently free of moisture to properly run through a riffle or cone splitter.
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	RC drilling contractors adjust their drilling approach to specific conditions to maximize sample recovery. For diamond drilling the contractors adjust their rate of drilling and method if recovery issues arise. All recovery is recorded by the drillers on core blocks. This is checked and compared to the measurements of the core by the geological team. Any issues are communicated back to the drilling contractor to rectify.
	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.	Recovery was excellent for diamond core and no relationship between grade and recovery was observed. Average recovery for the project is 98%.
Logging	Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.	All diamond core is logged for regolith, lithology, veining, alteration, mineralisation, and structure. Structural measurements of specific features are also taken through oriented zones. RC sample chips are logged in 1m intervals for the entire length of each hole. Regolith, lithology, alteration, veining, and mineralisation are all recorded. All logging codes for regolith, lithology, veining, alteration, mineralisation, and structure is entered into the AcQuire database using suitable pre-set dropdown codes to remove the likelihood of human error. All core and chips have been logged to the detailed exploration logging scheme of Delta Gold/Placer Dome/Barrick/Northern Star (i.e. a single logging scheme that has evolved with only minor changes over time).
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	All core logging is qualitative with mineralised zones assayed for quantitative measurements. Every core tray is photographed wet.
	The total length and percentage of the relevant intersections logged.	In all instances, the entire drill hole is logged.
Sub-sampling techniques and sample preparation	If core, whether cut or sawn and whether quarter, half or all core taken.	Diamond core is cut using an automated core saw. In most cases, half the core is taken for sampling with the left half being stored for later reference. Full core sampling may be undertaken in the regolith where the core cutting process could introduce sampling bias, or where data density of half core stored is sufficient for auditing purposes.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	All RC samples are split using a rig-mounted cone splitter to collect a 1 m sample weighing 3-4 kg. All samples are intended to be delivered from the rig sampling system in a dry condition though in some cases elevated sample moisture is unavoidable. If RC samples are consistently delivered with unacceptable moisture content then the hole will be ended. Moisture content is recorded for every sample to enable downstream QAQC analysis.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	Preparation of NSR samples was conducted at Genalysis, Minanalytical and ALS preparation facilities. Sample preparation commenced with sorting, checking, and drying at less than 110° C to prevent sulphide breakdown. Samples are jaw crushed to a nominal 3 mm particle size. If the sample is greater than 3 kg a Boyd crusher with rotary splitter is used to reduce the sample size to 3 kg at a nominal <3 mm particle size. For fire assay, leach well assay the entire crushed sample (if less than 3 kg) or sub-sample is then pulverized to 90% passing 75 μm, using a Labtechnics LM5 bowl pulveriser. 300 g Pulp subsamples are then taken with an aluminium scoop and stored in labelled pulp packets for fire assay. Leach well samples had a 1000 g or 400 g pulp sub samples collected. The sample preparation is considered appropriate for the deposit. The photon assay technique was introduced at Red Hill in 2022. This process involves crushing samples to < 3 mm. 500 g of crushed material is then placed into single-use sample jars. Using a robotic shuttle, high energy x-rays are then fired at the sample causing excitation of atomic nuclei allowing detection of gold content. Photon analysis allows sampling of larger amounts of sample material providing a true bulk reading of gold content. The process is chemical free and non-destructive, samples are retained at the lab for a period of two months.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	Procedures are used to guide the selection of sample material in the field. Standard procedures are used for all processes within the laboratory. For fire assay samples, grind checks are performed at both the crushing stage (3mm) and pulverising stage (75 µm), requiring 90% of material to pass through the relevant size. For photon assay samples, coarse grind checks at the crushing stage (3 mm) are carried out at a ratio of 1:25 samples by the robot. If the grind check is > 3mm, the robot stops, and samples are looped back through and re-crushed.
	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 duplicates were taken for RC samples on a ratio of 1 in 20. Umpire sampling programs are carried out on an ad-hoc basis. For photon assay, 2% of all samples over 0.1g/t Au will be submitted to an umpire laboratory.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	The sample sizes are considered appropriate for the material been 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 50 g fire assay charge is used with a lead flux in the furnace. The prill is totally digested by HCl and HNO3 acids before Atomic Absorption Spectroscopy (AAS) determination for gold analysis. FA is considered to report total gold content of the sample. One in twenty samples in historical resource drilling were mat split to produce 250g to 1kg screen fire assays in addition to the 400g Leachwell sample. The photon assay technique was introduced at Red Hill in 2022. The primary samples are analysed through ALS. For preparation, samples are oven dried at 105 degrees until dry (2+ hours, longer for sludge samples). Hygroscopic tests are performed using a cold spatula. All samples are fed into a robot where the remaining sample preparation is automated. The robot weighs the samples, crushes the sample through the Boyd crusher to <3 mm. The crushed sample is then split through the smart linear splitter which calculates how to split each individual sample to achieve the 500g quotient. The 500g jar is analysed using PAA finish.
	For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.	No geophysical tools were used to determine any element concentrations.
	Nature of quality control procedures adopted (e.g., standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.	Certified reference materials (CRMs) are inserted into the sample sequence randomly at a rate of 1 per 20 samples to ensure correct calibration. Any values outside of 3 standard deviations are investigated and, where appropriate, the relevant batch of samples are re-assayed with a new CRM. The decision to re-assay takes into account the geology, the expected grade and the actual grades present in the assay results. In the event of CRM failure, any decision not to re-assay must be confirmed with the Supervising Geologist and a justification must be recorded in QAQC comments in the drillhole database. Blanks are inserted into the sample sequence at a rate of 1 per 20 samples. The insertion points are selected at random, except where high grade mineralisation is expected. In these cases, a blank is inserted after the high-grade sample to test for contamination. Results for blanks greater than 0.2 g/t are investigated, with affected samples re-assayed if appropriate. New pulps are prepared if anomalous results cannot be resolved. Barren flushes are regularly inserted after anticipated high gold grades. No field duplicates were submitted for recent diamond core samples. Laboratory performance was monitored using the results from the QA samples mentioned above. This was supplemented by the internal QA samples used by the laboratories, which included pulp duplicates, screen tests and CRMs. Laboratory preparation duplicates (check samples) are required at a rate of 1 per 20 samples, where 2 separate pulps are prepared from a singular submitted sample, using identical preparation techniques. The QA studies indicate that accuracy (CRMs) and precision (duplicates and repeats) are within industry accepted limits. Multiple reviews of QA processes were undertaken by previous operators for feasibility studies and grade control during mining and any QA issues identified were resolved at the time.
Verification of sampling and assaying	The verification of significant intersections by either independent or alternative company personnel.	All significant intersections are verified by another Northern Star geologist during the drill hole validation process, and later by a Competent person to be signed off.
	The use of twinned holes.	Re-drilling of some of the drillholes has occurred due to issues downhole (e.g. bogged rods). These have been captured in the database as an 'A'. Re-drilled holes are sampled whilst the original drillhole is logged but not sampled.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	Geological logging and sampling are directly recorded into AcQuire. Assay files are received in both csv and pdf formats, and both are filed in the company's cloud storage. Csv files are then loaded directly into the drillhole database using an AcQuire importer object which includes a QAQC form. Assay results must be manually approved by a geologist following QAQC review before the results are stored in the database assay table.
	Discuss any adjustment to assay data.	No adjustments are made to this assay data. Leachwell and fire assay results are too incompatible to allow sensible factoring of Leachwell to match fire assays (or vice versa).
Location of data points	Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.	Under NST a planned hole is pegged using a Differential Global Positioning System (DGPS) by the field assistants. The final collar is picked up after hole completion by field assistants with a DGPS rover unit in the MGA 94_51 grid. During drilling single-shot surveys are conducted every 30 m to ensure the hole remains close to design. This was performed using the Reflex Ez-Trac system prior to 2022, which measures the gravitational dip and magnetic azimuth, results were uploaded directly from the Reflex software export into the Acquire database. From 2022, driller operated north-

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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		seeking gyroscopic 'Champ' in-rod survey instruments supplied by Axis were used for both the 30m single shot surveys as well as 'end-of-hole' surveys which increase measurement frequency to every 10 metres for In and Out runs. All survey data is validated by the geologists.
		All historical drilling was surveyed by EDM theodolite in either AMG84 or Redhill local grid. Locations for older holes were either estimated or surveyed by EDM theodolite in AMG66 coordinates. All coordinates have been transformed to MGA 94 Zone 51. All holes with estimated coordinates are located in the 'Nemesis' area to the south of the project area.
		Holes drilled by Delta were down hole surveyed by Gyro or digital electronic multi shot tools. Diamond tails were surveyed by single shot Eastman camera at 30m intervals.
		Many older holes, (North Ltd. holes), were surveyed by electronic multishot or Eastman Camera. However, a significant proportion were non-surveyed and were assumed to run straight at designed orientations. Many holes with some down-hole survey measurements were not surveyed to full depth. Quality of the historical down hole surveys vary with ~400 of the 624 holes at the project surveyed with a down hole gyroscope (reference and north seeking) whilst the other drill holes rely on magnetic based azimuth systems.
	Specification of the grid system used.	Collar coordinates and survey azimuth are recorded in MGA94_51.
	Quality and adequacy of topographic control.	Quality topographic control has been achieved through Lidar data and survey pickups during drilling.
Data spacing and distribution	Data spacing for reporting of Exploration Results.	Drill hole spacing across the area varies from approximately 10 m to 170 m 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.	The data spacing and distribution is considered sufficient to support the resource and reserve estimates.
	Whether sample compositing has been applied.	Core is sampled to geology; sample compositing is not applied until the estimation stage.
		Historical RC drilling utilised 4m RC composite samples, replaced by 1m samples in mineralised zones though it is unknown at what grade threshold the 1m sub-samples were analysed for. Compositing of the data to 1m was used in the estimate.
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 orientation of the historically mined Red Hill and Nemesis deposits are well known and suggests the drilling direction originally undertaken by NSR during resource definition drilling was appropriate to the orientation of mineralisation.
	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.	The dominant vein orientation is shallowly dipping and no sampling bias is considered to have been introduced by the drilling orientation.
Sample security	The measures taken to ensure sample security.	Prior to laboratory submission samples are stored by Northern Star Resources in a secure yard. Once submitted to the laboratories they are stored in a secure fenced compound, tracked through their chain of custody and via audit trails.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	No recent audits have been undertaken of the data and sampling practices at this stage.
		All recent NSR sample data has been extensively QAQC reviewed both internally and externally.

Section 2 Reporting of Exploration Results
(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	All holes mentioned in this report are located within the M27/57, M27/164, M27/127 and M27/287 tenements, which is owned by Kanowna Mines PTY LTD a wholly owned subsidiary of Northern Star Resources. The Red Hill Pit has been backfilled with tailings from the Kanowna Belle Mill. M27/57 is subject two Royalty agreements, the parties to the first are Kanowna Mines and Dioro Exploration (Northern Star South Kalgoorlie). The parties to the second agreement are Vox Royalty Corp and Kanowna Mines (Northern Star). M27/164 has a partial royalty to Oxford Credits Corporation Pty Ltd however this royalty does not extend over the area of drilling that is the subject of this release.
	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. Part of the Nemesis area is included within the historical Kanowna Town site.
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	Gold discovered in October 1893 with a 2 m wide outcrop of quartz veining with underground mining continuing into the early 1900s and continued intermittently until the 1980's.
		Systematic exploration of the prospect was initiated by Sabminc NL and North Limited in 1994 with Delta Gold acquiring and consolidating the Red Hill tenements in 2000 which culminated in 2,714 holes prior to mining Red Hill open pit in 2001.
		Mining continued until 2007 with Red Hill – Nemesis project producing 356,980 ounces.
		Barrick Gold held tenure of the project from 2006 up to 2014 with limited exploration.
		Early 2014 saw Northern Star Resources purchase the Kanowna camp from Barrick Gold which initiated a review of the project due to its close proximity to Kanowna Belle Mine and Mill infrastructure.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
Geology	Deposit type, geological setting and style of mineralisation.	Red Hill mineralisation is hosted within felsic porphyritic intrusions located within the Talbot Formation of the Boorara Domain. Intrusive porphyries occupy a structural corridor which trends 060 degrees and extends approximately 4 kilometres to the north east of the Kanowna Belle Gold Mine. In total, Red Hill is viewed as a bulk 'stockwork' mineralised porphyry dominated by flat to shallow dipping quartz vein sets. In detail, gold mineralisation at Red Hill is hosted within the Red Hill porphyry stock by three phases of mineralisation; Gold hosted in the altered rock mass provides background grades of the order of 0.3g/t, gold hosted in early quartz-carbonate and quartz-carbonate-pyrite veins In the order of mm to several cm wide, and the dominant phase of gold hosted in late stage planar, shallowly dipping quartz veins occur on a scale of mm to several m wide. Visible free gold is commonly observed within the latter and these veins are estimated to contribute 60% of the contained gold at Red Hill. Gold mineralisation in the 'Nemesis' Domain is dominated by three styles; Gold hosted in breccias, gold hosted in steep east-west trending quartz-pyrite veins and pyrite Stringers and gold hosted in late stage planar flat dipping quartz veins like those observed at Red Hill. The majority of mineralisation is free milling.
Drill hole Information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: o easting and northing of the drill hole collar o elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar o dip and azimuth of the hole o down hole length and interception depth o hole length.	A detailed summary of the drilling completed since November 2023 can be found in the appendix of this report. Holes drilled prior to November 2023 which are material to the understanding of these exploration results have been previously reported in detail.
	If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	Exclusion of the drill information will not detract from the understanding of the report.
Data aggregation methods	In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g., cutting of high grades) and cut-off grades are usually Material and should be stated.	No top-cutting is applied when reporting intersection results. All reported assay results are reported as down hole width. Exploration intercepts have been determined based on geological characteristics such as vein frequency and alteration and grade distribution. Due to the highly variable style of mineralisation these intervals may include zones of relatively low grades.
	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.	Where an intersection incorporates short lengths of high grade results these intersections will be reported in addition to the aggregate value. These will typically take the form of ##.#m @ ##.##g/t including ##.#m @ ##.##g/t.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	No metal equivalent values have been used for the reporting of these exploration results.
Relationship between mineralisation widths and intercept lengths	These relationships are particularly important in the reporting of Exploration Results. If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.	Down hole widths have been quoted.
	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 mineralisation is stockwork with a series of northerly dipping veins within a porphyry host unit.
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.	Due to the geometry of the ore body, only down hole widths have been quoted. Where possible, drilling has been oriented to intercept the vein sets at a high angle. This gives a good approximation of the width intercepted relative to the subvertical ore body, but does not provide information on lateral extent.
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.	The reported results have been selected to show significant zones of mineralisation encountered whilst not excluding the zones where the overall tenor of mineralisation is lower.
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.	Both high and low grades have been reported accurately, clearly identified with the drill hole attributes and 'From' and 'To' depths.
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 other material exploration data has been collected for this area.
	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 drilling will continue to test the current resource area for bulk potential below the Red Hill pit during FY2024 and FY2025.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Section 3 Estimation and Reporting of Mineral Resources
(Criteria listed in section 1, and where relevant in section 2, also apply to this section).

Criteria	JORC Code explanation	Commentary
Database integrity	Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.	The data used for generating this resource estimation was extracted from Northern Star's acQuire database management system stored on a secure SQL server. The Company employs database administrators to manage the database. Where possible, raw data is loaded directly into the database, with adjustments such as survey transformations occurring within the database, so any changes/adjustments are fully traceable. Data entry is validated using extensive procedures built into acQuire. Data validation tools and sign off facilities to record data cross-checks are used. Data for multiple drillholes at Red Hill was also cross-checked against original WAMEX reports to validate spatial accuracy with regards to collar coordinates and survey values.
	Data validation procedures used.	Prior to data export from AcQuire the following validation procedures are carried out on new data (acquired post-Northern Star Resources ownership): • Collar details import checks - start and end dates are supplied, collar has location co-ordinate information, actual end of hole depth versus planned end of hole depth is within tolerance, cost code, and location code information are supplied. • Survey details import checks – final survey record is within tolerance with respect to end of hole depth, a survey exists at 0 m depth, grid transformations have been performed correctly, no duplicate survey points with the same priority exist. • Geology details import checks - final lithology depth is within tolerance with respect to end of hole depth, structural measurement transformations have been performed, alteration/vein/mineralization logging does not have overlaps and/or gaps. • Samples/Assay import checks – total sample meters match end of hole depth, no duplicate samples with the same priority exist, sample intervals are continuous, no assay values have negative values, dispatch return date is recorded, no 'not sampled' intervals with assay values, QAQC passed. • Bulk Density/SG details checks – logged information depths are within tolerance with respect to end of hole depth. Errors are corrected where possible. When not possible the data is resource flagged as "No" in the database and the database is re-exported, this data will not be used in the estimation process. All recent drilling has been validated where possible and assigned Resource Flag "Yes" if high confidence exists. Due to the large volume of historical data (pre-NSR ownership) it was not possible to re-validate all holes and channels to the current Kalgoorlie Operations standard (assigning Resource Flag and Data Class). Where historical data had failed previous validation measures a Resource Flag of "No" was applied. To ensure a level of relative confidence in the data is represented based on the above approach, Data Class has also been assigned to all Resource Flagged data, based on the below criteria (used across the Kalgoorlie Operations): • DC 3 = Recent data; all data high quality, validated, and all original data available. • DC 2 = Historic data; may or may not have all data in AcQuire or hard copy available but has proximity to recent drilling which confirms the dip, width, and tenor. • DC 2 = Recent data; minor issues with data but not proximal to the ore zone. • DC 1 = Historic data; same criteria as Data Class 2 but cannot be verified with recent drilling, i.e., too far away or too dissimilar dip, width and/or tenor to recent drilling. Not used in Resource estimate. • DC 0 = Historic data; no original information or new drilling in proximity to verify. Not used in Resource estimate. The database used for estimation has been checked visually for errors in new and historic data. Each data point snapped to during the wireframing process was assessed for its location, sampling, and logging validity. Errors detected during visual validation were corrected where possible. All data that failed the visual validation was recorded and excluded from the estimation process prior to compositing. Only holes which match the criteria of Resource Flag = Yes and Data Class = 2 or 3 are exported and used for compositing and for the resource estimate.
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	The Competent Person for this resource report has not visited site. The geological interpretation and background data has been produced by personnel with extensive onsite experience.
	If no site visits have been undertaken indicate why this is the case.	The Senior Geologist - Resources, the Geology Superintendent - Resources, and the Group Geology Manager – Resources (a Competent Person for reviewing and signing off on estimations at Kanowna Belle) have reviewed geological interpretations and had frequent online contact with site-based staff to ensure interpretive integrity.
Geological interpretation	Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.	The geological interpretation underpinning the Red Hill resource models was prepared by geologists working in NSR's Kalgoorlie Growth team. These geologists have conducted Resource Targeting drill programs at Red Hill and are intimate with the geology of the Red Hill deposit. Confidence in the geological interpretation is high in areas with dense data spacing and recent orientated diamond drill data. There is a high level of confidence in the geological interpretation of the Red Hill Porphyry where the existing pit is located and within the material classified as Indicated and Inferred below and around the existing pit. This is supported by recently acquired drill information. The confidence in the Nemesis interpretation is moderate and requires additional drill data with orientated core and structural measurements to improve the geological confidence in this area. The Nemesis area has high variability of porphyry position, geometry, and poor gold grade relationship between sections, and uncertainty of the geological information from the historic drilling. Confidence in the overall geological interpretation decreases in areas with widely spacing drill holes and where historic data dominates.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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	Nature of the data used and of any assumptions made.	All available geological data was used in the creation of the geological interpretation for Red Hill, this includes new drill data, down-hole structural data, historic drill data, surface fact maps, core logs including lithology, vein, and alteration intervals. In-pit mapping is unavailable, as are some of the grade control drilling data sets. Efforts have been made to recover this data from previous operators of the deposit, however, the request is still pending.
	The effect, if any, of alternative interpretations on Mineral Resource estimation.	No alternative interpretations were used to conduct the mineral resource estimate. Alternative interpretations for the mineralisation were considered at the geological modelling/interpretation stage of the project and the most robust geological interpretation was used for resource estimation.
	The use of geology in guiding and controlling Mineral Resource estimation.	The main estimation domains have been created based primarily on geology, and incorporate lithological logging as well as surface fact maps, downhole structural data, and vein logging data. Several of the subsidiary estimation domains are created using grade shells in order to capture mineralisation which doesn't have clear geological continuity. Plans are in place to capture additional drill data with structural information in these areas.
	The factors affecting continuity both of grade and geology.	Continuity can be affected by changes in lithology, alteration assemblages, dilation of structures, intersecting structures, vein density, and proximity to the main mineralized structures. The Red Hill Porphyry is continuous over the length of the deposit and has a high degree of geological continuity. Within the , the main controls on mineralisation continuity are lithology, alteration, vein orientation and quantity of veins. Higher tenor of mineralisation within the porphyry is correlated with silica-sericite alteration and higher vein percentages.
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 main mineralised structure, the Red Hill Porphyry domain, is sub-vertical in nature and is continuous over ~ 1000 m strike length, ~ 200 m plan width, and supported by drill data down to an RL of ~ -150 m which is ~ 500 m below surface. The wireframe continues to an RL of -350 m for targeting purposes. Mineral Resources are not reported below the -150 m RL due to lack of data below this 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, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.	All geological and mineralisation domains were created using Leapfrog Geo software, version 2023.2.1. Grade estimation for gold was completed using Datamine Studio RM software, version 2.0.66.0. Geostatistical analysis and variography were completed using Snowden's Supervisor software, version 8.15.1.1. The estimate for Red Hill consists of two porphyry domains (modelled using the Leapfrog Geo Intrusion tool), two vein domains (modelled using the Leapfrog Geo Vein tool), and three grade shells (modelled using the Leapfrog Geo Indicator Interpolant tool). Settings for the Intrusions, Veins, and Indicator Interpolants have been chosen to reflect the geological interpretation, to ensure volumes and geometries are consistent with the data, and to provide a geologically reasonable result. The grade shell domains have been included to provide a realistic estimate of grades sitting in areas of low geological confidence and of grades sitting adjacent to the currently interpreted ore domains which are based primarily on geology. The Nemesis grade shell was created at a 0.3 g/t cut off and a 0.45 iso value. Due to higher geological confidence and sufficient drill spacing in some areas, the Nemesis grade shell domain has both Inferred and some Indicated material classified. The Indicated is only in areas near the Red Hill porphyry and where drill spacing and domain continuity support this higher confidence material. The Red Hill 'residual' was created at a 0.5 g/t cut off and a 0.5 iso value and orientated to align with the main Red Hill vein set. The White Feather Reward 'residual' was created at a 0.5 g/t cut off and a 0.4 iso value. These two 'residual' domains contribute less than 0.2 % of the total volume of the mineralised domains and remain completely Unclassified due to low geological confidence. Domain wireframes were intersected with the valid drill database, flagged with a domain identifier, and composited to 1 m with a 0.2 m minimum sample width. Residual samples are distributed equally across adjacent intervals within the domain. Composites were analysed per domain for population outliers and top cuts proximal to population disintegration were applied. The estimation techniques used for each domain are summarised below: The Red Hill Porphyry domain was estimated together using Multiple Indicator Kriging (MIK), this method was selected in order to adequately deal with the mixed population of data and multiple styles of mineralisation within the porphyry. The Red Hill residual was grouped with the Red Hill porphyry for estimation as it represents the continuation of the same mineralisation out into the surrounding country rock. The White Feather Porphyry and the larger White Feather Vein domain were estimated using CIK. This was to manage the mixed grade populations within the wireframes and to sub-domain out high- and low-grade zones. Sub-domaining on a geological basis was not possible with the limited amount of data available in these areas. The remaining domains, the smaller of the two White Feather Veins, the Nemesis grade shell, and the White Feather residual grade shell, were all estimation using OK. Maximum distance of extrapolation from data points was 300 m, however, resource categories were applied and areas with a drill spacing of > ~ 80 x 80 m remained Unclassified. Grade is estimated into parent blocks only. Dynamic anisotropy is not used.
	The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.	Comparison with previous estimates has been used as a cross-check. Detailed mine production records are unavailable.
	The assumptions made regarding recovery of by-products.	No assumptions were made, and the only element estimated was gold.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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	Estimation of deleterious elements or other non-grade variables of economic significance (e.g., sulphur for acid mine drainage characterisation).	No deleterious elements were estimated in this model.
	In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.	The block size of 10 m x 10 m x 5 m used for this model reflects the proposed open pit mining method with grade control drill spacing. This block size in appropriate in areas with more closely spaced drill data and higher confidence but not so appropriate in areas away from concentrated drill data. Sub-blocks were 1 m x 1 m x 1 m which is appropriate to consider narrow areas of the vein domains and the smaller volumes of the grade based and residual domains.
	Any assumptions behind modelling of selective mining units.	No selective mining units were assumed in the estimate.
	Any assumptions about correlation between variables.	No elements other than gold have been estimated.
	Description of how the geological interpretation was used to control the Resource estimates.	The wireframes from the stratigraphy model and the mineralisation domain model were applied to the Datamine block model and the mineralisation domain wireframes were used as constraints on the estimation. Geology was used as a guide for the orientation of continuity within the main Red Hill Porphyry domain. Recently captured high confidence structural data were used to conduct stereonets analysis of vein orientations which were then used to guide the continuity of the resource estimation for the Red Hill and the White Feather Porphyry domains.
	Discussion of basis for using or not using grade cutting or capping.	The influence of high-grade samples in the composited data has been reduced by top-cutting (capping) where required. Top-cutting was not used for the MIK estimation, rather the median of the highest grade bin was used instead of the mean, effectively limiting the influence of very high grades. For all other domains, a top-cut analysis was carried out on the composited gold values using histograms, log probability plots, mean variance plots, and cumulative metal plots to determine where a break in the grade population occurred for each domain. Where the high grades were deemed to be sufficiently anomalous for that grade population, a traditional 'hard' top-cut was applied. A top-cut (AU) and a non-top-cut (AU_UNCUT) variable were created. Comparative statistics for the two variables were created and used to compare the pre and post top-cut values for e.g., mean and variance.
	The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.	The assignment of composites to domains was visually validated in section view in Datamine RM Studio. Drillholes are checked for correct flagging by comparing them to the wireframes and the blocks are checked against the input drillhole file as well as the input wireframes for correct flagging and filling. A volume comparison between the blocks and wireframes is run to ensure there are no major variance in volumes between the wireframes and the block model. The composited and top-cut statistics are generated and analysed to ensure the length of the composited data and the amount of metal contained in the composited data is consistent with the pre-composited data. After grade estimation, the grade block model is visually validated against the composited samples and is validated statistically by comparing the volume weighted block grades to the declustered, top-cut sample grades. For global validation, grade variable statistics are generated and analysed using Snowden's Supervisor software and plotted as swath plots in X, Y, and Z orientations. The naive and declustered mean sample grades are compared to the block grades.
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 Mineral Resource Estimate has been reported at a 0.5 g/t cut-off grade within a pit shell optimised at an AU$2,500 gold price.
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.	Domain modelling and estimation is geared towards being appropriate for an open pit mining method, however, the style of mineralisation supports the domaining and estimation strategy regardless of possible mining method. The possible mining methods and economics account for the removal of tailings material within the existing pit shell.
Metallurgical factors or assumptions	The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	No metallurgical assumptions have been made during the estimation and reporting process.
Environmental factors or assumptions	Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a green	Future mining at the project will likely necessitate the removal of process tailings currently stored in within the previously mined pit. The relocation of the tailings to an alternate storage point will require baseline environmental studies and engineering design to support regulatory approval. The mining project itself will require the routine baseline environmental assessments and scoping studies which will proceed following the development of mine plan designs. Baseline assessments include but are not limited to: Flora & fauna surveys, heritage surveys, waste and soil characterisation studies, groundwater assessments and surface water

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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	fields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	modelling. The baseline information is used to support regulatory approval (Clearing Permit, Mining Proposal, Mine Closure Plan, Part-V Licencing, Works Approval and Groundwater Abstraction Licencing).
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.	Average bulk densities for in situ material were determined based on the mean of measurements taken from drill core. A local dataset of 1,672 measurements is available. Measurements in recent drill holes were taken as dry measurements, at ~ 10 - 20 m spaced intervals down hole. Samples taken were representative measurements of the different major geological units. The geological model wireframes and regolith model wireframes were flagged back to the bulk density dataset. Density values were then averaged based on combined lithology / regolith material type and assigned to the block model to ensure that variability between different lithological units and parts of the weathering profiles is considered.
	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 in situ competent rock mass does not exhibit significant vugs or voids.
	Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	The weathering profile at Red Hill is relatively shallow therefore regional assumptions for default densities within the oxide and transitional material were not appropriate. The determined values for the oxide and transitional material have been based on a small number of local measurements. However, the oxide and transitional material represent only 2 % and 4 % respectively of the total volume of mineralised material within the resource model area.
Classification	The basis for the classification of the Mineral Resources into varying confidence categories.	The resource classification has been applied to the mineral resource estimate based on a series of factors, primarily confidence in the geological interpretation and drill data spacing. Grade and geological continuity, and data class (measure of data confidence and integrity) were also taken into consideration.
	Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).	All relevant factors have been given due weighting during the classification process.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The application of resource classifications is appropriate and reflects the view of the Competent Person.
Audits or reviews	The results of any audits or reviews of Mineral Resource estimates.	All geological interpretations and mineral resource estimates have been subjected to internal reviews. Northern Star has adopted a standardised approach to internal reviews of geological interpretation, domain models, and resource estimation parameters and reporting. The Red Hill model has been subject to these reviews and any recommendations were reviewed and implemented as appropriate. The previous iteration of the Red Hill Mineral Resource estimate was also sent for external peer review and risk analysis. This review found no fatal flaws and considered both the geological interpretation and Mineral Resource estimate to be low risk.
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. Northern Star uses a standard approach to resource estimation and the procedure requires the systematic completion of the Northern Star 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 of tonnes and grade.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	Detailed production data is not available from previous operators of the Red Hill deposit. An attempt has been made to compare the current model with the global reported mined tonnes and ounces. A request for detailed production information from the previous operator is still pending.

Section 4 Estimation and Reporting of Ore Reserves
(Criteria listed in section 1, and where relevant in sections 2 and 3, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.	The Mineral Resource estimate for the Red Hill Project used as a basis for the conversion to the Ore Reserve estimate reported was compiled by Northern Star Resources (NSR).
	Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.	Mineral Resources are reported inclusive of ore Reserves.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	Site Visits have been undertaken by the competent person.
	If no site visits have been undertaken indicate why this is the case.	Site visits undertaken.
Study status	The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.	A minimum Pre-Feasibility level study is completed prior to converting an ore zone into ore Reserve.
	The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.	Ore Reserves have been calculated by generating detailed mining shapes for the proposed open pits. A series of nested optimised pit shells were generated using Whittle software, an analysis of the shells was completed to select one which was then used to complete a detailed pit design to closely resemble the selected whittle shell. The Whittle optimisation used parameters generated from NSR technical personnel and technical consultants. A detailed mine schedule and cost model has been generated using an excel spreadsheet model. Appropriate ore dilution and recoveries have been applied within the excel spreadsheet model.
Cut-off parameters	The basis of the cut-off grade(s) or quality parameters applied.	The pit cut-off grade has been calculated based on the key input components (processing, recovery, and administration) Forward looking forecast costs and physicals form the basis of the cut-off grade calculations. The AUD gold price as per corporate guidance. Mill recovery factors are based on metallurgical test work.
Mining factors or assumptions	The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design).	Mineral Resource is converted to Ore Reserve after completing a detailed mine design complete with a detailed financial assessment. A series of nested optimised pit shells were generated using Whittle software, an analysis of the shells was completed to select one which was then used to complete a detailed pit design to closely resemble the selected whittle shell. The Whittle optimisation used costs and inputs derived from current operational data, contractors, and independent consultant recommendations. Ore Reserves have been calculated by generating detailed mining shapes for the proposed pit design. Open pit planned and unplanned dilution (waste material that is located within the minable shape) has been modelled within the mining shapes
	The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc.	The selected mining method for the Red Hill deposit is a bench mining open pit method. The proposed open pit would be mined using conventional open pit mining methods (drill, blast, load and haul) utilising 250 t class excavators and 180t trucks. This method is used widely in mines across Western Australia and is deemed appropriate given the nature of the ore body.
	The assumptions made regarding geotechnical parameters (e.g. pit slopes, stope sizes, etc.), grade control and pre-production drilling.	Geotechnical study was completed by an independent Geotechnical Consultant for the Red Hill project. Recommended wall angles were applied to the Whittle optimisation and subsequent detailed pit designs. The Grade control method to be employed at the Red Hill project will use Reverse circulation drilling to obtain samples.
	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.
	The mining dilution factors used.	A mining dilution factor of 10% of zero grade has been applied for the reporting of Reserve physicals.
	The mining recovery factors used.	A mining recovery of 95% has been applied.
	Any minimum mining widths used.	A minimum operating 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 has not been included within this Reserve estimate (treated as waste) but has been considered in LOM planning. The amount of inferred material has no impact on the sensitivity of the project.
	The infrastructure requirements of the selected mining methods.	Infrastructure required for the proposed Red Hill project have been accounted for and included in all work leading to the generation of the Ore Reserve estimate. The infrastructure in place at the nearby Kanowna Belle underground operations will be shared with the project. Additional facilities required include Offices, workshop, dewatering pipeline, Waste Rock Storage Dump, and ROM Pad. Ore from the Project will be processed through the Fimiston Processing Plant at the KCGM operation; hence no processing infrastructure is required.
	The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.	Material will be trucked and processed in the Fimiston Processing Plant, made up of crushing, grinding, gravity gold recovery, flotation, UFG, CIL, elution and gold recovery circuits.

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ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Metallurgical factors or assumptions		The plant has the capability to treat both refractory and free milling ores through a flotation circuit and associated concentrate ultra-fine grinding circuit. Ore Reserves are calculated using processing plant recovery factors that are based on test work and historical performance.
	Whether the metallurgical process is well-tested technology or novel in nature.	Well tested technology.
	The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.	Based on metallurgical test work carried out and milling experience gained through processing similar ore material through the Fimiston processing facility. The metallurgical recoveries for the project were set at 88% for oxide, 88% for transitional, 88% for fresh rock, which corresponds with metallurgical test work undertaken.
	Any assumptions or allowances made for deleterious elements.	There has been no allowance for deleterious elements. Test work indicates there are no deleterious elements.
	The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.	Based on metallurgical test work carried out and milling experience gained through processing similar material through the Fimiston processing facility.
	For minerals that are defined by a specification, has the ore Reserve estimation been based on the appropriate mineralogy to meet the specifications?	Not applicable, gold only.
Environmental	The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.	All required Environment studies and Statutory Government Approvals including works approvals and clearing permit are ongoing. A Mining Proposal and Mine Closure Plan will be submitted at later stage in appropriate manner for the operation to recommence. All ore from the Red Hill Project will be trucked to the Fimiston Processing Plant for processing. There are no known native title issues. Heritage surveys have previously been completed in the proposed project area. There are no known heritage sites identified that impact on the designed pits or associated infrastructure.
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 Red Hill Project is located 3km west of Kanowna Belle and will be operated from the Kanowna Belle Mine Site. Minor upgrades to existing haul roads connecting Red Hill to Kanowna Belle will be required. Minor infrastructure will be established at Red Hill to support the project. Access to the Kanowna Belle operation is provided by well-maintained public and private roads. Employees reside in Kalgoorlie and commute to site daily. Potable water for the Kanowna Belle operations is pumped from Kalgoorlie to a storage facility on site. Other water requirements are available from nearby bore fields.
Costs	The derivation of, or assumptions made, regarding projected capital costs in the study.	Capital costs relating to the establishment, mobilisation, topsoil and pre-striping were not included in the optimised parameter inputs but included in the financial modelling.
	The methodology used to estimate operating costs.	A capital and operating cost model has been developed in Excel and used to complete a life of mine cash flow estimate. The estimation of Open pit mine operating costs was based on a dry-hire mining, contract drilling, and contractor maintenance operation using first principles to determine equipment productivities and associated operating hours to generate mine schedules. Provided contract pricing were than applied to the schedule to calculate all unit costs.
	Allowances made for the content of deleterious elements.	Nil allowance, none expected based on metallurgical test work.
	The derivation of assumptions made of metal or commodity price(s), for the principal minerals and co- products.	Single commodity pricing for gold only, using a gold price of AUD$2,000 per ounce as per NSR corporate guidance.
	The source of exchange rates used in the study.	Corporate guidance.
	Derivation of transportation charges.	Transportation costs for ore haulage from Red Hill to Fimiston have been based on current NSR contractor rates. Transportation costs also include an allowance haul road maintenance and dust suppression.
	The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.	Processing costs are based on estimated plant processing costs. This cost component has been used to determine the cut-off grades as well as applied to the operating cash flow estimate.
	The allowances made for royalties payable, both Government and private.	WA State Government royalty of 2.5% and a total of 3.5% third party royalty 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.	All financial analysis and gold price have been expressed in Australian dollars and no direct exchange rates have been applied. Revenue factors within the whittle optimisation process were used. A revenue factor shell was selected and used to complete a detailed pit design. A gold price of AUD$2,000 per ounce has been used in the optimisation of the Red Hill Project. WA State Government royalty and Private royalties.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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	The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.	Corporate guidance.
Market assessment	The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.	Gold doré from the mine is to be sold at the Perth mint.
	A customer and competitor analysis along with the identification of likely market windows for the product.	Not Applicable.
	Price and volume forecasts and the basis for these forecasts.	Not Applicable.
	For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.	Not Applicable.
Economic	The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.	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.	Sensitivities were conducted on metal price fluctuations of A$2,000 ± $250 per ounce. Due to the current short life, the project is not seen as highly sensitive to cost inputs.
Social	The status of agreements with key stakeholders and matters leading to social licence to operate.	Agreements are in place and are current with all key stakeholders including traditional landowner claimants.
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 within the operation and will be managed by the construction of appropriate water diversion bunds to provide safe and risk-free work environment.
	The status of material legal agreements and marketing arrangements.	None
	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 Environment studies and Statutory Government Approvals including works approvals and clearing permit are ongoing. A Mining Proposal and Mine Closure Plan will be submitted at later stage in appropriate manner for the operation to recommence.
Classification	The basis for the classification of the Ore Reserves into varying confidence categories.	The Ore Reserve Estimate classification for Bannockburn has been in accordance with the JORC code 2012. Ore Reserve Estimate is 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.	The results appropriately reflect the Competent Persons view of the deposit.
	The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).	No Measured Mineral Resource contributes to Probable Ore Reserves.
Audits or reviews	The results of any audits or reviews of Ore Reserve estimates.	The Reserve has been internally reviewed in line with Northern Star Resources governance standard for Reserves and Resources. There have been no external reviews of this Ore Reserve estimate.
Discussion of relative accuracy/ confidence	Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the Reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.	The design, schedule and financial model on which the Red Hill Ore Reserve is based has been completed to a "pre-feasibility study" standard, with a corresponding level of confidence.
	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.	All modifying factors have been applied to design mining shapes on a global scale.

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Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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	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.	Not applicable.
	It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	Not applicable.

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Section 1 Sampling Techniques and Data
(Criteria in this section apply to all succeeding sections.)

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.	A combination of sample types was used to collect material for analysis including underground diamond drilling (DD), surface diamond drilling (RC), face channel (FC) and sludge (SL) sampling. **Type** / **# Holes** / **Total Meters** / **# Samples** Diamond drilling / 2,684 / 525,276 / 325,679 RC drilling / 3,018 / 152,473 / 139,985 Face Sample / 8,094 / 37,989 / 47,076 Sludge Sample / 5,401 / 23,052 / 23,535 Total / 19,197 / 738,789 / 536,275
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	Diamond drill-core (DD) is geologically logged and then sampled according to geology (minimum sample length of 0.3 m to maximum sample length of 1.0 m), where consistent geology is sampled, a 1 m length is used for sampling the core. Historic sampling had a maximum length of 1.2. RC sampling is from a 5½" face sampling hammer, three-tier riffle splitter (approximately 5 kg sample), split to a 12.5% fraction (approximately 3kg) or to a 12% fraction via a rig-mounted cone splitter. All residual material is retained on the ground in rows of 10 or 20 samples. Four metre composites are obtained via representative scoop / spear sampling of the one metre residual bags which are retained until required for re-split analysis (samples returning Au >0.2ppm) or eventual disposal. Historical RC drilling is assumed to employ similar practices.
	Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g., 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g., submarine nodules) may warrant disclosure of detailed information.	Underground face samples (FS) are taken by chip sampling across the face using a geological hammer, collecting the sample in a calico bag held in a steel frame. Wherever possible, the faces are sampled along a channel approx. 1.5 m above the floor RL. Face sample intervals are determined by alteration and or lithological contacts or in all other cases, a standard interval of 1 m (minimum sample length of 0.2 m to maximum sample length of 1.0 m). Sludge sampling (SL) is done routinely during underground development for grade control and ore direction purposes. Samples are collected at 1 m intervals from jumbo and production drill rig fines. Exploration DD core is sawn half-core with one half sent for analysis and the other half retained. Grade Control DD core is whole core sampled and sent for analysis. Core selected for half core sampling is cut using an Almonte core saw then bagged in pre-determined sample ID calicos; sampling practices ensure that circa 99% of half core sample is collected.
Drilling techniques	Drill type (e.g., core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g., core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc.).	DD is used for either testing / targeting deeper mineralised systems or to define the orientation of the host geology. Many of the holes drilled from surface had RC pre-collars generally to a depth of between 60 – 120 m, followed by a diamond tail. These diamond tails have been drilled at NQ2 size with minor HQ sized core. Diamond holes collared from underground are drilled at NQ2 size for the entire length. All diamond holes were surveyed during drilling with downhole cameras, and then at end of hole using a downhole gyro/DeviFlex tool at regular intervals (1-10 m). Drill hole collars were surveyed by onsite mine surveyors. RC drilling is used predominantly for defining and testing for near-surface mineralisation and utilises a face sampling hammer with the sample being collected on the inside of the drill-tube. RC drill holes utilise downhole single or multi shot cameras. Drill hole collars were surveyed by onsite mine surveyors.
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed.	RC drilling contractors adjust their drilling approach to specific conditions to maximize sample recovery. Moisture content and sample recovery is recorded for each RC sample. No recovery issues were identified during RC drilling programs. Recovery was poor at the very beginning of each hole, as is normal for this type of drilling in overburden. Limited information is available on the drill sample recovery of historic drilling. DD drilling contractors measure each individual run prior to pulling the inner tube. If the full run cannot be drilled out, the remaining meterage is calculated by measuring with a tape measure, the remaining tube and back calculating the stickup off the steel tube length. This drill length is measured against the recovered core from the run. Where there is a

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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		discrepancy, core blocks are used to annotate the calculated core loss, and whether the loss is due to poor recovery or intersected voids (noted by a loss of water pressure during the drilling process).
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	Representation is assured through qualified geologists identifying intervals for sampling which are related directly to observed geology.
	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 defined relationship exists between sample recovery and grade. Nor has sample bias due to preferential loss or gain of fine or coarse material been noted.
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.	Northern Star surface and underground diamond drillholes are all oriented and have been logged in detail for geology, veining, alteration, mineralisation, and orientated structure. Core has been logged in enough detail to allow for the relevant mineral resource estimation techniques to be employed. Surface core is photographed both wet and dry and underground core is photographed wet. All photos are stored on the companies' servers, with the photographs from each hole contained within separate folders. Development faces are mapped and logged geologically for each sample interval. Development faces are photographed whilst sampling. RC chips are geologically logged. Sludge drilling is logged for lithology, mineralisation, and vein percentage. All holes are logged in their entirety.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	All logging is quantitative where possible and qualitative elsewhere. A photograph is taken of every core tray.
	The total length and percentage of the relevant intersections logged.	In all instances, the entire drill hole is logged to a level of detail to support the Mineral Resource estimate.
Sub-sampling techniques and sample preparation	If core, whether cut or sawn and whether quarter, half or all core taken.	NQ2 and HQ diameter core is sawn in half core using a diamond-blade saw, with one half of the core consistently taken for analysis. The unsampled half of diamond core is retained for check sampling if required. Smaller sized core (LTK48 and BQ) are whole core sampled HBJ staff collect the sample in pre-numbered calico sample bags which are then submitted to the laboratory for analysis. Delivery of the sample is by a contractor.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	RC samples are collected at 1 m intervals with the samples being riffle split through a three-tier splitter. The samples are collected by the RC drill crews in pre-numbered calico sample bags which are then collected by Northern Star staff for submission.
	For all sample types, the nature, quality, and appropriateness of the sample preparation technique.	Upon delivery to the laboratory, the sample numbers are checked against the sample submission sheet. Sample numbers are recorded and tracked by the laboratory using electronic coding. Sample preparation techniques are considered appropriate for the style of mineralisation being tested for – this technique is industry standard across the Eastern Goldfields.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	Procedures are available to guide the selection of sample material in the field. Standard procedures are used for all process within the laboratory. For fire assay samples, coarse grind checks at the crushing stage (3 mm) are carried out at a ratio of 1:25 samples with 90% passing required. Pulp grind checks at the pulverising stage (75 µm) are carried out at a ratio of 1:25 samples with 90% passing required. Laboratory duplicate samples are taken for coarse crush (3 mm) and pulverising (75 µm) stages at a ratio of 1:25 samples. Repeat assays are carried out at a ratio of 1:10 on prepared pulp samples. For photon assay samples, coarse grind checks at the crushing stage (3 mm) are carried out at a ratio of 1:25 samples by the robot. If the grind check is > 3mm, the robot stops, and samples are looped back through and re-crushed.
	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.	For RC chips field duplicates are collected and analysed for significant variance to primary results.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	For fire assay, grind checks are performed at both the crushing stage (3mm) and pulverising stage (75 µm) requiring 90% of material to pass through the relevant size. No specific study has been carried out to determine optimum sub-sample size fractions. These material sizes are assumed to be acceptable for the mineralization style and material grain size present. For photon assay samples, grind checks are performed by the robot at the crushing stage (3mm). Multiple internal studies were conducted and determined at a particle size of 3mm, the effect of coarse grain gold on precision is acceptable. The minimal reduction in precision is offset by the ability to take a larger volume sample than traditional fire assay.
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.	Only nationally accredited laboratories are used for the analysis of the samples collected at HBJ. Current sample preparation and assay procedures employed by Northern Star Resources are considered as following industry standard practice. All assay determinations are conducted by internationally recognised laboratories. For fire assay samples (pre-2020), the primary samples were analysed through Bureau Veritas, which met ISO 9001:2000 standards. For preparation, samples are oven dried until a constant mass is achieved. All samples are then processed through an Essa Jaw Crusher or a Boyd Crusher to 90% < 3 mm. The crushed sample is then pulverised for 4 minutes in an LM5 pulveriser for a product of 90% passing < 75 µm. Approximately 250g – 300g of the pulp is retained and a 40 gm catch weight for fire assay is extracted from the pulp packet. Samples are tested for sulphides and flux adjusted, flux is added at a ratio of 1:4. Samples are fired, hammered and cupelled. Prills placed in tubes, dissolved on hotplates, and analysed using AA finish with over-range dilutions.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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		For photon samples (2020 onwards), the primary samples are analysed through MinAnalytical and ALS. For preparation, samples are oven dried at 105 degrees until dry (2+ hours, longer for sludge samples). Hygroscopic tests are performed using a cold spatula. All samples are fed into a robot where the remaining sample preparation is automated. The robot weighs the samples, crushes the sample through the Boyd crusher to <3 mm. The crushed sample is then split through the smart linear splitter which calculates how to split each individual sample to achieve the 500 gm quotient. The 500 gm jar is analysed using PAA finish.
	For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.	No geophysical tools were used to determine any element concentrations.
	Nature of quality control procedures adopted (e.g., standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e., lack of bias) and precision have been established.	Sampling and assaying QAQC procedures include: • Periodical resubmission of samples to primary and secondary laboratories • Submittal of independent certified reference material • Sieve testing to check grind size • Sample recovery checks. • Unannounced laboratory inspections Standard control samples and blanks purchased from certified commercial suppliers are inserted at a ratio of 1:20. The results are reviewed on a per batch basis and batches of samples are re-analysed if the result is greater than three standard deviations from the expected result. Any result outside of two standard deviations is flagged for investigation by a geologist and may also be re-assayed. Blanks are inserted into the sample sequence at a ratio of 1:20. The insertion points are selected at random, except where high grade mineralisation is expected. In these cases, a blank is inserted after the high-grade sample to test for contamination. Results greater than 0.2 g/t are investigated, and re-assayed if appropriate. New pulps are prepared if anomalous results cannot be resolved. Laboratory performance was monitored using the results from the QA samples mentioned above. This was supplemented by the internal QA samples used by the laboratories, which included pulp duplicates and CRMs. The QA studies indicate that accuracy and precision are within industry accepted limits. There is limited information available on historic QA/QC procedures, the available data is generally accepted at face value. Where there are concerns of quality, Resource classification applied to the Mineral Resource takes this into account. The analytical techniques used are considered appropriate for the style of mineralisation being tested.
Verification of sampling and assaying	The verification of significant intersections by either independent or alternative company personnel.	All data used in the calculation of Mineral Resources and Ore Reserves are compiled in databases which are overseen and validated by senior geologists and database administrators.
	The use of twinned holes.	No specific twinned holes were drilled at HBJ. Re-drilling of some drillholes has occurred due to issues downhole (e.g., bogged rods). These have been captured in the database with an 'A' suffix. Re-drilled holes are sampled, whilst the original drill hole is logged, but not sampled.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	Primary data is collected and entered directly in acQuire. Inbuilt validation procedures prevent the input of simple errors. The information is stored in a SQL database server and verified.
	Discuss any adjustment to assay data.	All data used in the calculation of Mineral Resources and Ore Reserves are compiled in databases (underground and open pit) which are overseen and validated by project geologists. No adjustments have been made to any assay data.
Location of data points	Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.	Collar coordinates for surface RC and diamond drill-holes were generally determined by either RTK-GPS or a total station survey instrument. Underground drill-hole locations were all surveyed using a Leica reflector less total station. Recent surface diamond holes were surveyed during drilling with Axis down-hole north seeking Gyro-inclinometer and a full hole continuous survey competed at the end of the hole by Gyro-Inclinometer at 1 m - 10 m intervals. Historical holes not gyro-surveyed were surveyed using Eastman single shot cameras at 20 m intervals. RC drill-holes utilised down-hole single shot camera surveys spaced every 15 m to 30 m down- hole. Historical down-hole surveys for underground diamond drill-holes were taken at 15 m – 30 m intervals by Reflex single-shot cameras. Recent practice for down-hole surveys in underground diamond drilling utilises a DeviFlex survey tool whereas current practice utilises a DeviGyro survey tool. A true north seeking gyroscopic tool has been used to line up the rig and record a zero-metre survey. Downhole deviations recorded by the DeviGyro are back calibrated to the zero-metre survey. Completed collars are picked up by the mine survey department for location and to confirm starting bearing and inclination. QAQC is performed on the speed of running and the misclose rate for each gyroscopic survey. Where issues are identified, a single survey run can be chosen as preferred with the remaining data ignored. This data is converted to .csv format and imported into the acQuire database where it is validated by the project geologist
	Specification of the grid system used.	Data is captured predominately in local grid. Where required, conversion between local, magnetic and an MGA grid has been verified by the HBJ survey department and applied as a calculated field in acQuire.
	Quality and adequacy of topographic control.	Topographic control is generated from RTK GPS. This methodology is adequate for the resources in question.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
Data spacing and distribution	Data spacing for reporting of Exploration Results.	Drill spacing ranges from 20 m x 20 m grade control drilling to 80 m x 80 m at the extents of the resource. The majority of the Indicated Resource is estimated using a maximum drill spacing of 40 m x 40 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.	Interpretation of the area is well understood and is supported by the knowledge from open pit and underground operations. The data spacing and distribution is considered sufficient to support the resource and reserve estimates.
	Whether sample compositing has been applied.	No sample compositing has been applied.
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.	Drilling intersections are nominally designed to be as perpendicular to the orebody as far as underground infrastructure constraints / topography allows. Development sampling is nominally sampled perpendicular to mineralised structure.
	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 sampling bias is considered to have been introduced by the drilling orientation. Where drill holes have been particularly oblique, they have been flagged as unsuitable for resource estimation.
Sample security	The measures taken to ensure sample security.	Drill samples are picked up by a third-party transport service, who relay them to the independent laboratory contractor. Samples are stored securely until they leave site. Underground face and sludge samples are delivered daily directly to the Lab by company personnel.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	Site generated resources and reserves and the parent geological data is routinely reviewed by the Northern Star Corporate technical team.

Section 2 Reporting of Exploration Results
(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	State Royalty of 2.5% of revenue applies to all mining tenements but not to the 16 freehold titles (Location land) which host the majority of SKO's Resource inventory. There are several minor agreements attached to a specific tenements and locations with many of these royalty agreements associated with tenements with no current Resources and/or Reserves. Private royalty agreements are in place that relate to production from HBJ open pit at $10/ oz. In addition, a 1.75% NSR royalty is payable on the total gold ounces produced from the following resources: Shirl Underground, Bellevue, HBJ Open-pit, Mount Martin stockpiles and any reclaimed tailings. The South Kalgoorlie Operations consists of 35 Mining Leases and 19 Exploration and Prospecting Licences. The Project also includes 9 Miscellaneous Licences, 2 groundwater Licences and 16 Freehold Lots known as the Hampton "Exempted East Locations". The Area of the leases covers approximately 35,638 Hectares with a further 71,861 Hectares of Freehold Land.
	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.	All leases and licences to operate are granted and in the order of up to 21 years. There are no known impediments to continued operation.
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	The HBJ 'line of lode' is a 6 km zone of mineralisation that extends from Golden Hope in the south to Celebration in the north. The existing HBJ pit was mined for over 25 years producing approximately 1.6Moz Au and was owned by separate companies across the Location 48 and Location 50 tenement boundary. Gold was first discovered in the New Celebration area in 1919 and a short-lived gold rush ensued. Intermittent exploration for gold and nickel was undertaken by a variety of companies in the 1960s and 1970s. The rising gold price further rekindled interest in the area in the 1980s, and open-pit mining at New Celebration started in 1986 by a joint venture comprising Newmont Holdings Limited (subsequently Newcrest; 60%), Hampton Areas Australia Ltd., (25%) and Mt Martin Gold Mines (15%), which merged with Titan Resources in 1993. The New Celebration project includes the Hampton Boulder deposit. In June 2001 Hill 50 Gold agreed to purchase the New Celebration project from Newcrest Mining. In December 2001 Harmony Gold Mining acquired Hill 50 Gold, the transaction giving Harmony Gold Mining a 100% interest in the New Celebration project. The Jubilee deposit located south of the Hampton Boulder deposit was evaluated and mined by Hampton Areas Australia Ltd from 1984 to 1996 with open pit mining starting in 1987. New Hampton Goldfields (New Hampton) acquired the Jubilee deposit in 1996. In May 2001, Harmony Gold Mining acquired New Hampton, and combined the operations of New Hampton's Jubilee operations and associated small open pits with the New Celebration project into the South Kalgoorlie Operations (SKO). In 2007, Dioro Exploration NL (Dioro) acquired the SKO from Harmony Gold (Australia) Pty Ltd (Harmony) via its wholly owned subsidiaries, South Kal Mines Pty Ltd, New Hampton Goldfields Ltd and Aurora Gold (WA) Pty Ltd. The tenement package at SKO was then purchased by Avoca Resources in April 2010, which was subsequently acquired by Alacer Gold Corp. Pty Ltd in early 2011. Westgold Resources Limited acquired the SKO tenement holdings in October 2013 via the acquisition of Alacer Gold's Australian assets. In April 2018, Northern Star Resources acquired the SKO tenement holdings with the purchase of HBJ Minerals Pty Ltd from Westgold.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
Geology	Deposit type, geological setting, and style of mineralisation.	Stratigraphy for the Ora Banda and Kalgoorlie Domains is relatively well-known and comprises (from stratigraphically lowest) a lower basalt unit, komatiitic to high-magnesian basaltic rocks, an upper basalt unit and overlying felsic volcanic-sedimentary units. Conglomeratic and sandstone units unconformably overlie the upper felsic units adjacent to major shear zones. Layered mafic sills occur within various stratigraphic units and cross-cutting Proterozoic dykes also occur throughout the region. Metamorphic grade ranges from upper greenschist to upper amphibolite facies. The deformation history of the area is generally divided into four main phases, comprising north-directed thrusting with recumbent folding and stratigraphic repetition in D1. The second deformation (D2) resulted in north-northwest trending folds which are reflected in the dominant north-northwest trending fabric of the greenstone belts. Shortening continued during D3 with strike slip movement along northwest to north northwest trending shear zones and D4 brittle faulting. The HBJ orebodies form part of a gold mineralised system along the Boulder-Lefroy shear zone that is over 4 km long and includes the Celebration, Mutooroo, HBJ and Golden Hope open pit and underground mines. The HBJ orebodies are hosted within a steeply-dipping, north-northwest-striking package of mafic, ultramafic, and sedimentary rocks and schists that have been intruded by felsic to intermediate porphyries. The area is extensively deformed with numerous north-striking shear zones and dilation of the porphyry intrusions.
Drill hole Information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: o easting and northing of the drill hole collar o elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar o dip and azimuth of the hole o down hole length and interception depth o hole length.	Drillholes vary in survey dip from +47 to -90 degrees, with hole depths ranging from 4 m to 1205 m, with an average depth of 196 m. All validated drill hole data were used directly or indirectly for the preparation of the resource estimates described in the resource report. All material data including collar location, survey and assay data is periodically released on the ASX.
	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.	The exclusion of information is not material.
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.	Any reported assay results have been length weighted to provide an intersection width. A maximum of 2 m of barren material (considered < 2 g/t) between mineralized samples has been permitted in the calculation of these widths. Typically grades over 2 m @ 2.0 g/t are considered significant, however, where low grades are intersected in areas of known mineralisation these will be reported. No top-cutting is applied when reporting intersection results.
	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.	Where an intersection incorporates short lengths of high grade results these intersections will be reported in addition to the aggregate value.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	No metal equivalent values have been used for the reporting of these exploration results
Relationship between mineralisation widths and intercept lengths	These relationships are particularly important in the reporting of Exploration Results:	True widths have been calculated for intersections of the known ore zones, based on existing knowledge of the nature of these structures.
	If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.	Both the downhole width and true width have been clearly specified when used.
	If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g., 'down hole length, true width not known').	Both the downhole width and true width have been clearly specified when used.
Diagrams	Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	Appropriate plans and section have been included at the end of this Table.
Balanced reporting	Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	Both high and low grades have been reported accurately, clearly identified with the drill hole attributes and 'From' and 'To' depths.
Other substantive exploration data	Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	No other material exploration data has been collected for this area.
Further work	The nature and scale of planned further work (e.g., tests for lateral extensions or depth extensions or large-scale step-out drilling).	Ongoing surface and underground exploration activities will be undertaken to support continuing mining activities at Northern Star Operations

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ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Appropriate diagrams accompany this release.

Section 3 Estimation and Reporting of Mineral Resources

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

Criteria	JORC Code explanation	Commentary
Database integrity	Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.	The data used for the estimation was extracted from the Northern Star's acQuire database management system stored on a secure SQL server. Data exports are done automatically to ensure reproducibility. The Company employs a database administrator to manage the database. Data entry is validated using extensive procedures built in to acQuire. These procedures prevent numerical errors including, but not limited to, overlapping samples and azimuths greater than 360 degrees.
	Data validation procedures used.	Prior to data export from acQuire the following validation procedures are carried out on new data (Post-Northern Star Ownership) • Collar details import checks - start and end dates are supplied, collar has location co-ordinate information, actual end of hole depth versus planned end of hole depth is within tolerance, cost code and location code information are supplied. • Survey details import checks – final survey record is within tolerance with respect to end of hole depth, a survey exists at 0 depth, grid transformations have been performed, no duplicate survey points with the same priority exist. • Geology details import checks - final lithology depth is within tolerance with respect to end of hole depth, structural measurement transformations have been performed, alteration/vein/mineralization logging does not have overlaps and/or gaps. • Samples/Assay import checks – total sample meters match end of hole depth, no duplicate samples with the same priority exist, sample intervals are continuous, no assay values have negative values, dispatch return date is recorded, no 'not sampled' intervals with assay values, QAQC passed. • Bulk Density/SG details checks – logged information depths are within tolerance with respect to end of hole depth. Errors are corrected where possible. When not possible the data is resource flagged as "No" in the database and the database is re-exported, this data will not be used in the estimation process. All drilling and channel data has been validated where possible and assigned Resource Flag "Yes" if high confidence exists. To ensure a level of relative confidence in the data is represented based on the above approach, Data Class has also been assigned to all Resource Flagged data, based on the below criteria (used across Kal Ops): • DC 3 = Recent data; all data high quality, validated and all original data available. • DC 2 = Historic data; may or may not have all data in acQuire or hard copy available but has proximity to recent drilling which confirms the dip, width, and tenor. • DC 2 = Recent data; minor issues with data but not proximal to the ore zone. • DC 1 = Historic data; same criteria as DC 2 but cannot be verified with recent drilling, i.e., too far away or too dissimilar dip, width, and/or tenor to recent drilling. Not used in Resource estimate. • DC 1 = Recent data; major issues with data proximal to the ore zone. • DC 0 = Historic data; no original information or new drilling in proximity to verify. Not used in Resource estimate. The database used for estimation has been checked visually for errors in new and historic data. Each data point snapped to during the wireframing process was assessed for its location, sampling, and logging validity. Errors detected during visual validation were corrected where possible. All data that failed the visual validation was recorded and excluded from the estimation process prior to compositing.
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	The Competent Person has visited site regularly
	If no site visits have been undertaken indicate why this is the case.	The Competent Person has visited site regularly
Geological interpretation	Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.	The mineralisation has been modelled on structural (shear zone) and lithological controls. Where possible, consideration is given to ensure the wireframed data represents a single grade population. Where multiple populations cannot be visually discriminated, high- or low-grade subdomains are separated using categorical indicator kriging. The interpretation has used RC and diamond drilling as well as underground face sampling, mapping, and sludge sampling. The large scale (1.9 km long and ~40 m wide) and agreement between data sources provides confidence in the geological and grade continuity within the deposit. The geological model is continuously updated as mining and drilling progress.
	Nature of the data used and of any assumptions made.	Geological interpretation of the deposit was carried out using a systematic approach to ensure that the resultant estimated Mineral Resource figure is both sufficiently constrained, and representative of the expected sub-surface conditions.
	The effect, if any, of alternative interpretations on Mineral Resource estimation.	No alternative interpretations have been completed.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
	The use of geology in guiding and controlling Mineral Resource estimation.	In all aspects of resource estimation, the factual and interpreted geology was used to guide the development of the interpretation.
	The factors affecting continuity both of grade and geology.	Large scale continuity is affected by the orientation of the Boulder Lefroy Fault Zone and the resultant 'pinch-and -swell' of the mineralised lithologies and alteration.
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 HBJ resource extends over 3 km of strike and up to 1 km below surface with the individual lodes being up to 80 m wide, but often only several metres wide.
Estimation and modelling techniques	The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.	Estimation of gold grade and density has been completed on 70 individual mineralised domains using Datamine RM software. Geostatistical analysis and variography were completed using Snowden's Supervisor software.

Calibration of face chips was applied to ore lode 2205 only. There is a presence of a high face sample bias compared to the drillhole sample data. This sample bias has been calculated using QQ plots at 10% intervals at the composite stage.

Each mineralised domain was estimated separately with a hard boundary. Domain extents were defined by the wireframe extents. Each estimation domain dealt with extreme grade values by applying top-cuts and capping. Statistical analysis was completed for gold for each domain and subdomain. Maximum distance of extrapolation from data points was statistically determined through variography analysis and varies by domain.

Ordinary Kriging has been used as the interpolation method in all lodes with single populations except for where variographic analysis was not possible due to lack of data. In this instance, inverse distance squared was used as the interpolation method. Estimation was conducted on samples composited to 1 m. No compositing was done across domain boundaries.

Where multiple populations internal to the wireframe extents were identified during data analysis, categorical indicator kriging methodology was utilised to separate low- and high-grading subdomains. Each subdomain was estimated separately. |
	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 block model was depleted using surfaces / shapes generated by the HBJ Survey department. Validation of the models was completed by visual inspection, statistical comparisons with declustered sample composites, and comparison with previous estimates, with the final model achieving a satisfactory validation.
	The assumptions made regarding recovery of by-products.	No assumptions were made, and the only commodity estimated was gold.
	Estimation of deleterious elements or other non-grade variables of economic significance (e.g., sulphur for acid mine drainage characterisation).	Sulphur was estimated using OK in 4 domains. Sulphur was calculated using regression for the 1430 ore domain to respect the discrete nature of the Au subdomain estimate.
	In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.	A 1 m x 1 m x 1 m block dimension sub-celled to 0.1 m x 0.5 m x 0.5 m was used for categorical indicator kriging to ensure high resolution during the sub-domaining processes and to ensure the sub-domain volumes accurately reflects the wireframe volume.

Block size for Au estimation was determined by available supporting data and the degree of geological confidence. A 5 m x 5 m x 5 m block dimension was applied for areas of containing close spaced face sample data and/or drilling data. 10 m x 10 m x 10 m blocks were used outside of these areas. The blocks have been sub-celled to 0.1 m x 1 m x 1 m to ensure the model volume accurately reflects the wireframe volume.

All the varying block sizes are added together after being estimated individually.

Search ellipse orientation was taken directly from the variogram orientation for each domain/sub-domain. The search ellipse sizes were based on a combination of drillhole spacing and variographic analysis where the first search ellipse range was approximately two-thirds that of the variogram. Various minimum and maximum samples were used in the first search with a maximum of four samples per drill-hole allowed depending upon the domain. Three search passes were used each with increasing search ellipse sizes. |
| | Any assumptions behind modelling of selective mining units. | No selective mining units were assumed in this estimate. |
| | Any assumptions about correlation between variables. | Sulphur was calculated using regression for the 1430 ore domain to respect the discrete nature of the Au subdomain estimate. |
| | Description of how the geological interpretation was used to control the resource estimates. | Faults are modelled in Leapfrog Geo in the mineralisation model and are used to control domain extents. The Celebration Fault separates the two mineralisation styles observed in HBJ. The HW and FW of the Celebration Fault is modelled individually with lodes terminating against the fault where applicable. The Zodiac shears which overprint the HW mineralisation are used to guide the orientation of the NOZ HW lodes. Domains in both HW and FW are lithology controlled.

Densities are assigned to a base rock model which encompasses lithology, weathering, and depletion models. The weathering model was completed by flagging the surface drillholes to one of the following categories: Fresh, Transitional, or Oxide. The top of fresh rock (TOFR) surface is generated from the contact between the Fresh and Transitional material, whereas the bottom of complete oxidisation (BOCO) is generated from the contact between Transitional and Oxide material. The lithology model was creating using the NSR Discovery teams 2022 HBJ regional model rotated into the LOC 48 grid. The fault blocks within the active underground area (Celebration Fault and Mulga Fault) were updated with the same points and polylines which feed into the mineralisation model, keeping the faults consistent between models. The average density for each lithology is applied to each lithological unit. The regolith densities overprint the lithology where applicable. |
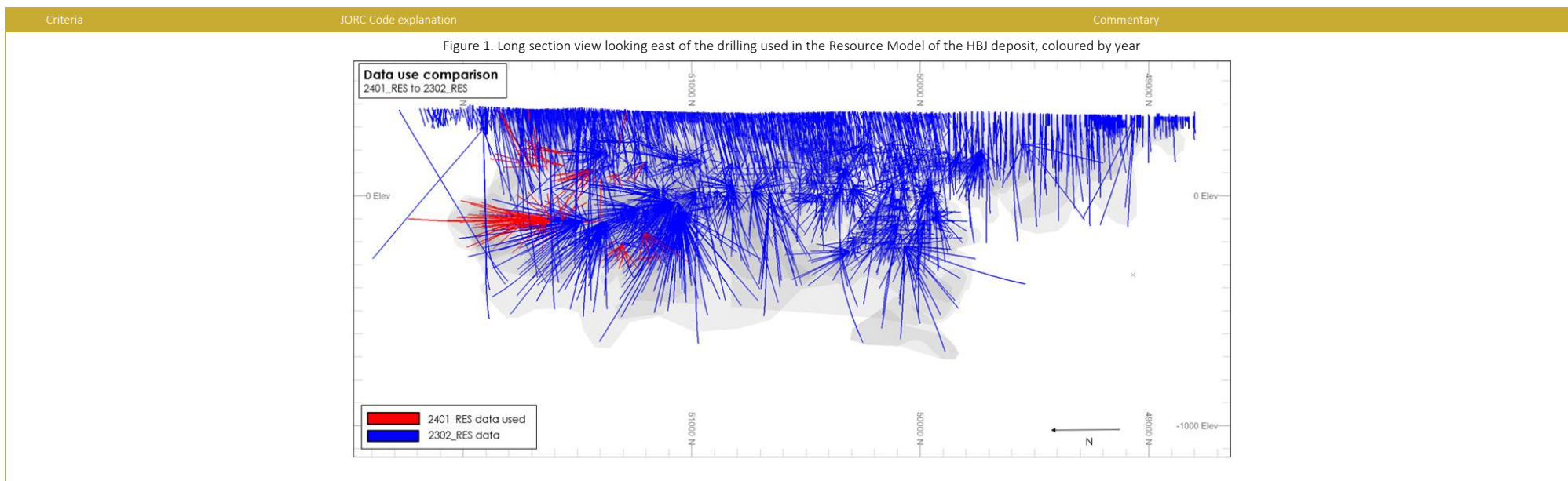
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T: +61 8 6188 2100
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E: info@nsrltd.com
W: www.nsrltd.com

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	Discussion of basis for using or not using grade cutting or capping.	The influence of high-grade samples in the composited data has been reduced by top-cutting and capping where required. Top-cut analysis was carried out on the composited gold values using histograms, log probability and mean-variance plots to ascertain where a break in the grade population occurred for each domain. Where the high grades were deemed to be significantly anomalous for that grade population, a traditional "hard" top-cut was applied. Where the break in sample population was small or appeared to be a result of population under-sampling, a capping "soft" top-cut was applied. During univariate estimation, the capping option allows values higher than the capping topcut to be estimated, but only at a search ellipse specified by the capping distance. This process allows blocks close to high grade samples to be estimated with the hard cut dataset but blocks outside this restricted range are estimated using the capped dataset. This limits the spread of very high grades but retains the high local value in these blocks, which more closely reflects the style of mineralisation. The decision to apply hard cuts, capping or combination of the two is determined based on the number of composites, grade population, level of under sampling in the tail of the histogram, mineralisation type and confidence in the lode interpretation.
	The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.	The flagging of drill holes and blocks is visually validated in section and plan view using Datamine Studio RM software. Drill holes are checked for correct flagging by comparing them to the base data wireframes and the blocks are checked against the input drill hole file as well as against the relevant wireframes for correct flagging and filling. After compositing and top-cutting statistics are generated and analysed using Snowden Supervisor software for the raw, composited, and top-cut drill hole files to ensure the nature of the population has not been adversely affected by these processes. After grade estimation the grade block model is visually validated in section and plan view using Datamine Studio RM software by comparing block grades to the input drill hole file grade (declustered and top-cut). For global validation, grade variable statistics are generated and analysed using Snowden Supervisor software by comparing the blocks statistics to the cell declustered input drill hole file statistics to ensure the estimation reasonably reflects the input data. For spatial validation trend plots of block grades by estimation methods along eastings, northings, and RL are completed for each domain and subdomain using Snowden Supervisor software. A visual validation of the new model vs the old model is undertaken to ensure no unjustifiable change has occurred. A comparison of tonnes and grade for each domain is made against previous models. Areas of significant variance from the previous model are further investigated.
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 mineral resource estimate has been reported at a 1.94 g/t cut off.
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.	No minimum mining assumptions have been made during the resource wireframing or estimation process.
Metallurgical factors or assumptions	The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	No metallurgical or recovery assumptions have been made during the mineral resource estimate. The current metallurgical recovery achieved from the processing of HBJ ores is used in the calculation of the cut-off Grade for Resource purposes.
Environmental factors or assumptions	Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a green fields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	No environmental assumptions have been made during the mineral resource estimate.
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.	For every diamond drill hole, at least one representative sample (20-30 cm length) for each lithology present is selected for specific gravity measurements.

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W: www.nsrltd.com

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		A base rock model was created in Datamine Studio RM using lithology volumes generated in Leapfrog. The average calculated density for each lithology is coded to its respective blocks. The regolith model also generated in Leapfrog is combined with the lithology model where default density values for the oxide (1.9 t/m^3) and transitional (2.1 t/m^3) are superimposed.
	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.	No/minimal voids are encountered in the ore zones and underground environment
	Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	Average bulk density of individual lithologies were taken from the previous estimate and compared against recent bulk density measurements made at HBJ to ensure their validity. Assumptions were also made based on regional averages, on the default densities applied to oxide (1.9 t/m^3) and transitional (2.1 t/m^3) material, due to a lack of data in these zones.
Classification	The basis for the classification of the Mineral Resources into varying confidence categories.	The resource classification has been applied to the mineral resource estimate based on the drilling data spacing, grade and geological continuity, data class (measure of data confidence and integrity), search pass, and kriging confidence (slope of regression).
	Whether appropriate account has been taken of all relevant factors (i.e., relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity, and distribution of the data).	The classification considers the relative contributions of geological and data quality and confidence, as well as grade confidence and continuity.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The classification reflects the view of the Competent Person.
Audits or reviews	The results of any audits or reviews of Mineral Resource estimates.	All resource models have been subjected to internal peer reviews.
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 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 of tonnes and grade.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	The mineral resource model is reconciled to production on an ongoing basis, which confirms that the global total of Measured, Indicated, and Inferred material is accurate. No reconciliation factors are applied to the resource estimates post-modelling.

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Figure 1. Long section view looking east of the drilling used in the Resource Model of the HBJ deposit, coloured by year

Section 4 Estimation and Reporting of Ore Reserves
(Criteria listed in section 1, and where relevant in sections 2 and 3, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral Resource Estimate for conversion to Ore Reserves	Description of the Mineral Resource Estimate used as a basis for the conversion to an Ore Reserve.	Northern Star MY2024 Resource.
	Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.	The Mineral Resources are reported inclusive of the Ore Reserve.
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	Site visits have been undertaken by the Competent Person.
	If no site visits have been undertaken indicate why this is the case.	Site visits undertaken.
Study status	The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.	Current operating mine; Feasibility Study.
	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.	Current underground Reserves are based on operating budget analysis – with a completed 3D design and mine schedule. Modifying Factors were additionally applied to these designs, based upon historical experience and host rock characteristics.
Cut-off parameters	The basis of the cut-off grade(s) or quality parameters applied.	Actual costs and physicals form the basis for Cut Off Grade calculations. Cut Off Grade are calculated at a $AUD2,000/oz Gold Price as per corporate guidelines. Mill recovery is calculated based on historical recoveries achieved.

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W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
		Various cut off grades are calculated including a fully costed cut-off grade (FCOG), variable cut-off grade (VCOG) and Mill cut-off grade (MCOG). The VCOG is used as the basis for stope design, with areas requiring significant development assessed by detailed financial analysis to confirm their profitability.
Mining factors or assumptions	The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e., either by application of appropriate factors by optimisation or by preliminary or detailed design).	Mineral Resource is converted to Ore Reserve after completing a detailed mine design and associated financial assessment.
	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.	Mining methodology is based on techniques currently in operation at SKO comprising of top-down long hole open stopes. Stope shape parameters have been based on historical data or expected stable hydraulic radius dimensions and are specific to the domain in which the stope is located.
	The assumptions made regarding geotechnical parameters (e.g., pit slopes, stope sizes, etc.), grade control and pre-production drilling.	Each mining area is assessed individually based on rock mass conditions, structures, and historical performance to generate a set of design assumptions for each zone. Level spacing ranges from 20-30m based on rock mass condition with stope strike lengths ranging from 10 – 25m. Pillars are maintained between stopes for stability purposes where voids are not pastefilled. Pillars are generally 5.0m in strike length, although in wider ore zones, pillar widths reach a maximum size of 9.0m.
	The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).	This Reserves Estimate applies to underground mining only. The latest 2024 Resource model was used to generate the Reserves.
	The mining dilution factors used.	Based on historical mine performance, mining dilution of 50% Rock dilution in the stopes in the lower SOZ, South Jubilee and Jubilee, 50% Rock dilution in the stopes in the Eastern Ultramafic Units of the NOZ, SOZ, COZ and South Jubilee and 10-20% Rock dilution in the stopes in the Western Lodes of the MUT, NOZ and COZ zones additional to minimum mining width is applied.
	The mining recovery factors used.	Mining recovery factor of 85-90% in the NOZ, COZ and MUT Western Lodes and 80% in all other areas of the mine is applied based on historical data.
	Any minimum mining widths used.	Minimum mining widths have been applied in the various mining methods. The only production style relevant to this constraint is 'narrow stoping' – where the minimum width is set at 3.0m.
	The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.	Designed stopes with greater than 50% inferred blocks are excluded from the reported Reserve. Stope designs with less than 50% Inferred material are included within the Reserve and make up 0.6% of the declared ounces.
	The infrastructure requirements of the selected mining methods.	Infrastructure in place, currently an operating mine.
Metallurgical factors or assumptions	The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.	South Kalgoorlie Operations ore is processed at Northern Star's Kanowna Belle plant which is located at 58 kms from the site. The plant has a nameplate capacity of 2 Mtpa. The HBJ host and mineralised domains have been processed through the SKO processing facility and more recently at Kanowna Belle plant.
	Whether the metallurgical process is well-tested technology or novel in nature.	A variable recovery factor is applied based on ore grade and ranges from 86% - 94% recovery. This is based on historical performance at the SKO plant and Kanowna Belle Plants, with a well understood metallurgical performance.
	The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.	Plus 10 years milling experience with HBJ ores at previously used SKO plant and 20 months at Kanowna Belle plant with same expertise and setup. Kanowna Plant has been operating since 2005 with all types of ores including SKOs ore.
	Any assumptions or allowances made for deleterious elements.	No deleterious elements are considered, as a long history of processing has shown this to be not a material concern.
	The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.	Over 20 years milling experience with HBJ ores.
	For minerals that are defined by a specification, has the ore Reserve estimation been based on the appropriate mineralogy to meet the specifications?	Not applicable.
Environmental	The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.	SKO operates in compliance with a number of environmental plans.
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.	All current site infrastructure is suitable to the proposed mining plan.
Costs	The derivation of, or assumptions made, regarding projected capital costs in the study.	Mine development capital cost based on historical performance on site and life-of-mine forward planning. Plant and equipment capital are based on site experience and the LOM plan.
	The methodology used to estimate operating costs.	Operating costs associated with the operation are based on schedule of rates from the current mining contractor on site.

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T: +61 8 6188 2100
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W: www.nsrltd.com

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	Allowances made for the content of deleterious elements.	No allowances made.
	The derivation of assumptions made of metal or commodity price(s), for the principal minerals and co-products.	Corporate guidance.
	The source of exchange rates used in the study.	Corporate guidance.
	Derivation of transportation charges.	Historic performance.
	The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.	Historic performance.
	The allowances made for royalties payable, both Government and private.	All royalties are built into the cost model.
Revenue factors	The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc.	AUD$ 2,000/oz Gold.
	The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.	Corporate guidance.
Market assessment	The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.	All gold is assumed sold directly to market at the nominated Corporate gold price.
	A customer and competitor analysis along with the identification of likely market windows for the product.	Not Applicable.
	Price and volume forecasts and the basis for these forecasts.	Corporate guidance.
	For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.	Not Applicable.
Economic	The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.	All costs assumptions are made based on historical performance from the mine and current economic forecast seen as representative of current market conditions.
	NPV ranges and sensitivity to variations in the significant assumptions and inputs.	Sensitivities have been used with gold price ranges of A$1,750 to A$2,250 per ounce.
Social	The status of agreements with key stakeholders and matters leading to social licence to operate.	Agreements are in place and are current with all key stakeholders.
Other	To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:	No Issues.
	Any identified material naturally occurring risks.	No Issues.
	The status of material legal agreements and marketing arrangements.	No Issues.
	The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the Reserve is contingent.	No Issues.
Classification	The basis for the classification of the Ore Reserves into varying confidence categories.	Ore Reserves classifications are derived from the underlying Resource model classifications – i.e., Measured Resource material is converted to Proved Reserves, while Indicated Resource material is converted to Probable Reserve.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The results accurately reflect the competent persons view of the deposit.
	The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).	Nil.
Audits or reviews	The results of any audits or reviews of Ore Reserve estimates.	The Reserve has been internally reviewed in line with Northern Star Resource governance standard for Reserves and Resources.
	Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the Reserve within	Confidence in the model and Ore Reserve Estimate is considered high based on current mine and reconciliation performance.

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Discussion of relative accuracy/ confidence	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.	Estimates are global but will be reasonably accurate on a local scale.
	Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.	Not applicable.
	It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	All currently reported Reserve calculations are considered representative on a local scale. Regular mine reconciliations occur to validate and test the accuracy of the estimates at SKO.

South Kalgoorlie: Hercules – 31 March 2024

Section 1 Sampling Techniques and Data

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

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 since 2019 undertaken by Northern Star at Hercules has consisted of diamond drilling (DD) and reverse circulation (RC) Historical methods conducted since 1988 have included, rotary air blast (RAB), air core (AC), reverse circulation (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 DD and RC drilling is carried out as specified within Northern Star sampling and QAQC procedures as per industry standard. DD core provide high quality representative samples for analysis. RC and DD core drilling was completed by previous holders to industry standard at that time (1988 - 2018).
	Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.	Diamond core (NQ, HQ or PQ sized) was transferred to core trays for logging and sampling. Half/full core samples were nominated by the geologist, generally being around 1 m intervals however, sample widths do vary due to geological boundaries, ranging between approximately 10 cm and 120 cm. RC samples were collected from the cyclone at 1m intervals via the use of a cone splitter that splits the samples into calico bags. Sample weights were typically 2 -3kg Samples were taken to ALS Kalgoorlie for preparation by drying, crushing to < 3 mm, and pulverizing the entire sample to < 75 μm. 300 g Pulp splits were taken and a 50 g sub sample were used for fire assay charge and AAS analysis. Historical DD and RC 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.).	Northern Star has completed 21 surface diamond holes (PQ/HQ or HQ3 triple tube through the regolith and NQ2 diameter in fresh rock) and 72 reverse circulation holes (Schramm T685 rig) at Hercules during mid 2019 - 2023. All DD holes were orientated once in fresh rock, using a Reflex Act IIII tool. Reverse circulation or mud-rotary pre collars were used in some holes.
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 > 95%. RC recoveries were recorded by the NSR field technician during drilling. Recovery percentages then imported into NSR database. No historical recoveries have been recorded.
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	All recovery is recorded by the drillers on core blocks. This is checked and compared to the measurements of the core by the geological team. Any issues are communicated back to the drilling contractor. RC recoveries were monitored by NSR field technicians and drill contractors. Lower recovery was returned during transported (1-10m), however, returning to >90% once in fresh rock. Sample moisture content also documented by NSR field technician (moist, wet, dry). Cyclone and sampling system cleaned at regular interval, especially after intersected clays within the first 10-20m of each hole. Any historical relationship is not known.

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W: www.nsrltd.com

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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.	No relationship has been observed between recovery and grade. 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.	All diamond core drilled by Northern Star were logged for regolith, lithology, veining, alteration, mineralisation and structure. Structural measurements of specific features were also taken through oriented zones (for DD core). Geotechnical logging was carried out on all diamond holes to record recovery, RQD, defect number, type, fill material, shape and roughness. Various SG measurements were taken. RC chips were sieved and washed in placed in chip trays. Chips were logged by qualified NSR geologist for regolith, lithology, veining, alteration, mineralisation and structure. RC chip trays are subsequently photographed via the Imago software.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	All recent core and chip samples are logged in full and samples are photographed in a wet state using Imago photographic software. Qualitative and quantitative logging of historical data varies in its completeness.
	The total length and percentage of the relevant intersections logged.	In all instances, the entire drill hole is logged.
Sub-sampling techniques and sample preparation	If core, whether cut or sawn and whether quarter, half or all core taken.	All regolith diamond core was fully sampled down to a depth where the core has been deemed competent enough to be sawn. The majority of the fresh diamond core were cut, and half the core taken for sampling, the remaining half stored for later use. Parts of the fresh core sections were full core sampled, due to the fissile nature, making it challenging to cut. No details available for historical core.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	Each RC hole was sampled at 1m intervals directly off a rig-mounted cone splitter into separate pre-numbered calico bags. Pre-numbered calico bags containing the samples were despatched to the laboratory for assay. Samples were predominantly dry, with moisture content recorded by the NSR field technician. No sampling methods recorded for historical RC holes.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	The sample preparation of diamond core and 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 historical 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.	No field duplicates were taken from the core samples. For reverse circulation drilling, an entire hole was duplicated at the rig, by attaching a secondary pre-numbered calico bag to the cone splitter, in addition to the primary bag. These duplicates are used for internal NSR QAQC. Details of field duplicates from historical RC and core is not known
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Sample sizes are considered 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.	Diamond core and reverse circulation chips 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 are total digest methods. Historical 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 at Hercules.
	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 materials (CRMs) are inserted into the sample sequence randomly at a rate of 1 per 20 samples to ensure correct calibration. Any values outside of 3 standard deviations are re-assayed with a new CRM. Standards were certified reference material prepared by Geostats Pty Ltd. Blanks are inserted into the sample sequence at a rate of 1 per 20 samples, this is random, except where high-grade mineralization is expected. Here, a Blank is inserted after the high-grade sample to test for contamination. Failures above 0.2g/t are followed up, and re-assayed. New pulps are prepared if failures remain. Field duplicates were submitted for RC samples but not for diamond core.
	The verification of significant intersections by either independent or alternative company personnel.	All significant intersections are verified by another Northern Star geologist during the drill hole validation process, and later by a Competent Person to be signed off
	The use of twinned holes.	No Twinned holes were drilled for this data set. However, diamond drilling was used to verify previous RC intercepts to much success.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
Verification of sampling and assaying	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	Geological logging is directly entered into a robust database (Acquire). Assay files are received in csv format and loaded directly into the database by the project's responsible geologist with an importer object.
	Discuss any adjustment to assay data.	No adjustments are made to this assay data.
Location of data points	Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.	Drillhole collars from 2019 onwards were picked up by differential GPS in the MGA94 Zone 51 map grid. Downhole surveys using the Axis Champ north seeking Gyroscopic continuous in-rod survey instrument taking readings every 18m (diamond drilling) or continuous IN/OUT at the end of hole (reverse circulation drilling) were taken from 2019 onwards. Previous holders' survey accuracy and quality is unknown
	Specification of the grid system used.	Collar coordinates are recorded in MGA94 Zone 51
	Quality and adequacy of topographic control.	Topographic control originally used site-based survey pickups in addition to a +/- 2m resolution DTM derived from 20cm stereo imagery.
Data spacing and distribution	Data spacing for reporting of Exploration Results.	Drillhole spacing across the area is variable.
	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.	Historical RAB and AC sampling was typically composited to 2 or 4m, most of the ore zone were sampled at 1m intervals
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.	All drilling was oriented as close to perpendicular as practicable to the interpretation of mineralisation orientation. They style of mineralisation is unknown and NSR are growing their understanding of the mineralisation.
	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 sampling bias is considered to have been introduced by the drilling orientation.
Sample security	The measures taken to ensure sample security.	For DD samples, prior to laboratory submission samples are stored by Northern Star Resources and previous companies in a secure yard. For RC samples, the calico bags are transported directly from the drill site to ALS Kalgoorlie at the conclusion of each drill hole by NSR personnel. Once submitted to the laboratories they are stored in a secure fenced compound and tracked through their chain of custody and via audit trails
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	Any significant gold assay results are validated against RC chips or DD core to correlate to geology. Internal QAQC reports are generated on an ongoing basis throughout the drill programs.

Section 2 Reporting of Exploration Results
(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	All drill holes mentioned in this report are located within M15/469, located approximately 25km SW of Kalgoorlie WA. The registered holder of Mining Lease M15/469 is Northern Star (South Kalgoorlie) Pty Ltd, a wholly owned subsidiary of Northern Resources Limited The Mining Lease has a 21-year life expiring on 27/11/2031 and is renewable for a further 21 years on a continuing basis The Mining Lease is subject to the Woolibar Compensation Agreement The Mining Lease is subject to the New Celebration 1998 Royalty (1.75% NSR) The Mining Lease is subject to the New Celebration 2001 Royalty ($10/oz every ounce of gold over 400,000oz) The Mining Lease is affected by the Marlinyu Ghoorlie registered native title claim There are no Heritage Sites located within the area of the Mining Lease. 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 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.	The prospect referred to in this report is a project generated by NSR based on work previously undertaken by several different companies, which includes RAB/AC/RC/DD programs.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
Geology	Deposit type, geological setting and style of mineralisation.	Mineralisation is confined to several zones with supergene horizons and primary mineralisation. Primary mineralisation occurs along a sediment amphibolite contact with quartz carbonate stringer veins and occasional areas of visible gold.
Drill hole Information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: o easting and northing of the drill hole collar o elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar o dip and azimuth of the hole o down hole length and interception depth o hole length.	A select group of Hercules intercepts are reported in this release with all details.
	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.	Historical AC/RAB drilling results were excluded, and the exclusion of the drill information will not detract from the understanding of the report.
Data aggregation methods	In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.	All significant intercepts have been length weighted with a minimum Au grade of 0.1g/t. 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 0.2m and maximum width of 2m for internal dilution. Where present, higher-grade values are included in the intercepts table, with assays > 10 gram-metres stated on a separate row with text stating "including".
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	No metal equivalent values have been used for the reporting of these exploration results
Relationship between mineralisation widths and intercept lengths	These relationships are particularly important in the reporting of Exploration Results.	The mineralisation consists of stockwork and sheeted vein arrays contained within a 20-30m wide mineralised envelope. The drill hole angles were predominantly orientated perpendicular to the mineralised envelope. Multiple vein orientations occur within the mineralised envelope, with both high and low angle to core axis intersections observed.
	If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.	All results are reported as downhole lengths
	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').	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.	Appropriate map and section are included in the body of this report.
Balanced reporting	Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	Intercepts >10 gram-metres are reported in the attached table and low grades have been illustrated in the Hercules cross section in the report.
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.	All material exploration data has been reported within the report body.
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).	Further infill and extensional DD drilling are planned to define and the extend the deposit along strike and down dip. To gain more understanding of this early-stage project.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Appropriate diagrams are included in the body of this report.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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South Kalgoorlie: Dawns Hope – 31 March 2024

Section 1 Sampling Techniques and Data
(Criteria in this section apply to all succeeding sections.)

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.	Historical drilling data included in the resource model: RC, diamond and RC-diamond tail drill holes drilled from 1997 – 2015 from various programmes, modern diamond drilling was carried out between 2019 – 2022. Not all the historical drilling programmes are documented, and several historic drill types are listed as 'unknown'.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	There is no historical data pertaining to the measures taken to ensure representivity
	Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.	RC Drilling: Samples were riffle split. The ore zones were sampled in meter intervals, and material from the collar to within approximately 15m of the target zone was sampled in 4m composites. Some composites returning an assay of 0.2 g/t or higher were then split into individual meters and assayed (late 1990s RC drill programs). RC grade control drill cuttings were extracted from the returned material by cyclone. The underflow from each 1 m interval is transferred to a rotating cone splitter, delivering approximately ~3 kg of the recovered material into calico bags for analysis. The residual material is retained on the ground near the hole. Wet samples are placed in a polyweave bags to facilitate moisture drainage, set aside to dry before being broken up and passed through a three-tier riffle splitter until the entire sample was split down to a ~3 kg sample or alternatively, taken as grabs and recorded as such. Historic information was assumed to have employed similar practices and is suitable for used in the Mineral Resource estimation process. Diamond Drilling: No detailed information on sampling or drilling techniques for the data exist. However, it is assumed that sampling followed industry standard practices for the time i.e. diamond drill-core is geologically logged and then sampled according to geology (minimum sample length of 0.3m to maximum sample length of 1.5m) – where consistent geology is sampled, a 1m length is used for sampling the core. The core is sawn half-core with one half sent off for analysis which involved pulverisation to produce either a 30g or 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.).	Best data pertaining to drilling techniques is mentioned above.
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed.	There is no historical data pertaining to the method of recording or assessing recoveries.
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	Representation is assured through qualified geologists identifying intervals for sampling which are related directly to observed geology.
	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 defined relationship exists between sample recovery and grade. Nor has sample bias due to preferential loss or gain of fine or coarse material been noted.
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.	The recent surface drill holes are all orientated and have been logged in detail for geology, veining, alteration, mineralisation, and orientated structure. Diamond core has been logged geologically.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	Logging is quantitative in nature.
	The total length and percentage of the relevant intersections logged.	Chip samples have been logged by qualified geologists to a level of detail to support the Mineral Resource estimate.
Sub-sampling techniques and sample preparation	If core, whether cut or sawn and whether quarter, half or all core taken.	Diamond Sampling: Half core niche sampling of drill core exhibiting mineralisation features. Samples are collected over intervals of 0.3-1.5m (generally).
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	RC Sampling: 1m lengths are split to a 12.5% fraction [approximately 3-5kg] via a three-tier riffle splitter or to a 12% fraction via a rig-mounted cone splitter. All residual material is retained on the ground in rows of 10 or 20 samples. Four meter composites are obtained via representative scoop sampling of the one meter residual piles, until required for re-split analysis [samples returning Au >0.2ppm] or eventual disposal. Historical RC sampling is assumed to be similar. RC grade control drill sub-samples are collected on 1m intervals via a rotating cone splitter, delivering approximately ~3kg of the recovered material into calico bags for analysis. The residual material is retained on the ground near the hole. Wet samples are placed in a polyweave bags to facilitate moisture drainage, set aside to dry before being broken up and passed through a three tier riffle splitter until the entire sample was split down to a ~3kg sample or alternatively, taken as grabs and recorded as such.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	QAQC is ensured during the sub-sampling stages process via the use of the systems of an independent NATA / ISO accredited laboratory contractor.
	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.	For RC chips field duplicates are collected and analysed for significant variance to primary results. The un-sampled half of diamond core is retained for check sampling if required.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
	Whether sample sizes are appropriate to the grain size of the material being sampled.	The sample size is considered appropriate for the grain size 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.	Recent quality control procedures include the use of standards, blanks and duplicates. Standards and duplicates are used to test both the accuracy and precision of the analytical process, while blanks are employed to test for contamination during the sample preparation stage. The analyses have confirmed the analytical process employed is adequately precise and accurate for use as part of the mineral resource estimation. For external laboratories, samples are dried at 90°C, then crushed to <3mm. Samples undergo full preparation where a 250g pulverised sub-sample of homogenised <75µm material is achieved. A 50g sample undergoes fire assay lead collection followed by flame atomic adsorption spectrometry [0.1ppm lower detection limit].
	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 historic information about use of geophysical tools is recorded.
	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.	All samples have been analysed via AS/NZS ISO 9001:2000 compliant laboratories. All assay data has built in quality control checks such as internal lab standards and blanks. There is limited other information available on historic QA/QC procedures. Metals X Ltd has generally accepted the available data at face value and carries out basic data validation procedures as each deposit within the mineral inventory is re-evaluated during the annual planning phase or as part of more detailed geological modelling and resource estimation ahead of any modification to reserves.
Verification of sampling and assaying	The verification of significant intersections by either independent or alternative company personnel.	All data used in the calculation of resources and reserves are compiled in databases, which are overseen and validated by senior geologists.
	The use of twinned holes.	No twinned drilling was conducted. However, Metals X considers the 10m x 10m grade control drill pattern at Dusk as an adequate substitution of a twinned drill hole program.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	The accuracy and precision of assay data is assessed via the use of field duplicates, sizing checks and the insertion of certified blanks and standard reference materials. Primary data is collected on paper or on tough book using a standard excel template. The information is imported into a SQL database server and verified.
	Discuss any adjustment to assay data.	No primary assays data is modified in any way.
Location of data points	Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.	Most of the historical collars are unspecified for location survey type. Modern collar coordinates for surface drill-holes were generally determined by RTK GPS or differential GPS. The recent down-hole surveys at Dusk were taken at 15 – 30m intervals by multi-shot camera. Downhole survey measurements from historic surface holes (generally deeper then ~30m) were surveyed downhole by a number of methods including multi-shot downhole EMS, single shot downhole survey and North-seeking gyro survey. It was assumed all historic collar information was picked up using methods suitable for calculation of mineral resources.
	Specification of the grid system used.	At the time this resource estimate was completed, both local and AMG/MGA datums were stored with the Maxwell's DataShed system.
	Quality and adequacy of topographic control.	No record of historic comments on topographic control.
Data spacing and distribution	Data spacing for reporting of Exploration Results.	Exploration and resource definition drilling over the area was conducted on drill spacing of generally 20 m x 20 m. The grade control drilling at Dusk has been based on drill spacing of 10 m x 10 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.	The data spacing and distribution is deemed sufficient to establish geological and grade continuity appropriate for the Mineral Resource estimation procedure and classifications applied.
	Whether sample compositing has been applied.	Data was composited to 1 m down-hole intervals.
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.	Drilling intersections are nominally designed to be normal to the orebody as far as topography allows.
	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.	It is not considered that drilling orientation has introduced an appreciable sampling bias.
Sample security	The measures taken to ensure sample security.	Samples were placed in prenumbered sample bags. The sample numbers were recorded on submission sheets and emailed to the laboratory. The samples were delivered to the laboratory and checked against the sample submission sheets. Sample numbers were recorded and tracked by the laboratory using electronic coding. In the case of discrepancies, the assaying was delayed until these are resolved by the supervising geologist.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	Resources and reserves were routinely reviewed by the Metals X Corporate technical team. This resource is currently under review by the Northern Star technical team.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Section 2 Reporting of Exploration Results
(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	Dawns Hope is situated within the Hampton Freehold Location 48 (EEL48), which is owned by GKL Properties Pty Ltd, a wholly owned subsidiary of Northern Star Resources Ltd This location falls within the Woolibar Pastoral Lease. EEL48 is subject to two royalties: the New Celebration Royalty, which is 1.75% NSR for precious metals and 1% NSR for other minerals, payable to Franco-Nevada Australia Pty Ltd, and the New Celebration 2001 Royalty, includes a Production Royalty of $10 per ounce payable in excess of 400,000 ounces, payable to Alcrest Royalties Australia.
	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.	There are no known impediments to continued operation.
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	The early history of Dawns Hope and Dusk is unknown, but it was the focus of mining activity during the Hampton Plains gold rush ~100 years ago. Initial modern exploration was undertaken by BP minerals and later by New Hampton who developed Dawns Hope into a large open pit operation during the late 1990's producing a total of 1Mt @ 2.7g/t for 88,365oz. Dusk was mined my Metals X in 2015 and produced 37kT @ 1.1g/t for 1,264oz.
Geology	Deposit type, geological setting and style of mineralisation.	The Dawns Hope and Dusk mineralisation is associated with the Boulder Lefroy fault system. The Dawn's Hope shear is a splay of the Boulder Lefroy fault system and forms the contact between the Kambalda ultramafics and basic volcanics and schists. A small porphyritic granitoid has intruded the geology, causing a kink in the shear and an associated extensional regime. Dawn Hope mineralisation is centred on the kink, while Dusk is located ~500m north of Dawn Hope along the Dawn's Hope shear zone. Mineralisation is hosted by most of the lithologies at Dawns Hope. The syenite has intruded the contact between the granitoid and ultramafic schists, and contains some very high-grade mineralisation. A splay of the syenite also occupies a splay of the shear that cuts into the granitoid body in the Dawns Hope central pit area. Mineralisation at Dusk is a continuation of the shear system. The key structural control in the area is the Dawns Hope shear, a N-S striking; steeply westerly splay from the Boulder-Lefroy Shear Zone that is the primary ore host at Dusk mineralisation. Other key structural controls are sub-parallel splays of the Dawns Hope shear that are responsible for mineralisation at the Western Lode and Daybreak.
Drill hole Information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: o easting and northing of the drill hole collar o elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar o dip and azimuth of the hole o down hole length and interception depth o hole length.	No drillhole information is being presented in this release.
	If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	Exclusion of information is not material.
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 drillhole information is being presented 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 drillhole information is being presented in this release.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	No drillhole information is being presented in this release.
Relationship between mineralisation widths and intercept lengths	These relationships are particularly important in the reporting of Exploration Results:	No drillhole information is being presented in this release.
	If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.	No drillhole information is being presented in this release.
	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').	No drillhole information is being presented 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 drillhole information is being presented in this release.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
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.	No drillhole information is being presented 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.	No drillhole information is being presented in this release.
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).	Further exploration at Dawns Hope is under review
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Appropriate diagrams and maps are available in the appropriate ASX announcements.

Section 3 Estimation and Reporting of Mineral Resources
(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Database integrity	Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.	Historically drillhole data was stored in a Maxwell's DataShed system based on the Sequel Server platform which was considered "industry standard". Since acquiring Dawns Hope, the data has been merged to the Northern Star's acQuire database and validated on merging. Data entry is validated using extensive procedures built in to acQuire. These procedures prevent numerical errors including, but not limited to, overlapping samples and azimuths greater than 360 degrees.
	Data validation procedures used.	The historical data passed through a validation approval system designed to pick up any significant errors before the information is loaded into the master acQuire database. The information is uploaded by a series of Sequel routines. The data used in the estimate was reviewed and validated. As new data was acquired it passed through a validation approval system designed to pick up any significant errors before the information was loaded into the master database. The information was uploaded by a series of Sequel routines and was performed as required. The database contains diamond drilling (including geotechnical and specific gravity data) and some associated metadata. By its nature this database was large in size, and therefore exports from the main database are undertaken (with or without the application of spatial and various other filters) to create a database of workable size, preserve a snapshot of the database at the time of orebody modelling and interpretation and preserve the integrity of the master database. Assay data was loaded directly from the laboratory CSV files into the database by a series of Sequel routines. No manual keying of data was required.
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	The CP has not visited site.
	If no site visits have been undertaken indicate why this is the case.	The Resource process has been closely overseen by company personnel who have visited the site. The competent person has reviewed the inputs and outcomes of the work, including engagement with persons familiar with the site,
Geological interpretation	Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.	Relatively recent mining of Dawns Hope and Dusk results in significant confidence in the current geological interpretation. Dusk mineralisation dips steeply towards the west within the Dawn's Hope Shear zone. Dawns Hope mineralisation dips steeply towards the west and the mineralisation is interpreted to be associated with a shear zone parallel to the Dawn's Hope shear zone. In all cases the local lithological, structural and grade from laboratory assays (i.e. >0.5 g/t Au) from the drill holes has been used to inform the interpretive process. At Dusk and Daybreak there is a lack of consistent visual proxies for mineralisation, making accurate ore delineation difficult.
	Nature of the data used and of any assumptions made.	Geological interpretation of the deposit was carried out using a systematic approach to ensure that the resultant estimated Mineral Resource figure is both sufficiently constrained, and representative of the expected sub-surface conditions. The geological interpretation has been reviewed.
	The effect, if any, of alternative interpretations on Mineral Resource estimation.	No alternative interpretations are currently considered viable.
	The use of geology in guiding and controlling Mineral Resource estimation.	Geological interpretation of the deposit was carried out using a systematic approach to ensure that the resultant estimated Mineral Resource figure was both sufficiently constrained, and representative of the expected sub-surface conditions. In all aspects of resource estimation, the factual and interpreted geology was used to guide the development of the interpretation.
	The factors affecting continuity both of grade and geology.	The Dawns Hope shear wraps around the eastern side of the Dawns Hope granite and is associated with numerous smaller splays that shoot around and through the granite

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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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.	Dawns Hope: Main Lode: ~400m along strike; 5-10m across strike; >200m below surface. Dusk: ~230m along strike; 1m to 5m across strike; ~75m below surface. Daybreak: ~125m along strike; 1m to 4m across strike; ~75m below surface. Dusk is located ~500m to the north of Dawns Hope. Daybreak is located ~100m to the east of Dusk mineralisation.
Estimation and modelling techniques	The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.	All wireframes are constructed in Leapfrog, which are used as hard boundaries for the estimations. Datamine was used for the estimation of the Dawns Hope resource. Ordinary kriging applied for estimation of most mineralisation domains. Categorical indicator kriging applied to 3 domains, where necessitated by mixed data populations. Average grade assigned to 2 other mineralisation domains where sample numbers were deemed insufficient for kriging. 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.	Checks of the models was completed by visual inspection, statistical comparisons with the final model achieving a satisfactory validation.
	The assumptions made regarding recovery of by-products.	NA
	Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).	NA
	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 10m (Y) by 10m (Z). These are deemed appropriate for the majority of the resource, where drill / sample spacing ranges from 10m to 40m. Parent blocks have been sub-celled to 1m(X) by 1m(Y) by 1m(Z) 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.
	Any assumptions behind modelling of selective mining units.	Open cut mining selectivity assumed.
	Any assumptions about correlation between variables.	NA
	Description of how the geological interpretation was used to control the resource estimates.	The domaining selection criteria was based on structural orientations and a nominal threshold of >0.5 Au g/t. In all aspects of resource estimation, the factual and interpreted geology was used to guide the development of the interpretation.
	Discussion of basis for using or not using grade cutting or capping.	Various top-cut values have been applied to the data dependent on domain. Data for some of the domains exhibit an increased degree of skewness and top cuts were applied to reduce the skewness of the distribution. The appropriateness of the top cuts was assessed for each domain utilising log-probability plots, mean and variance plots, histograms, and univariate statistics for the composite Au variable. The analysis was carried out in Snowden's Supervisor software package.
	The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.	Estimation results are routinely validated against primary input data, previous estimates, and mining output. The estimation is validated using the following: a visual interrogation, a comparison of the mean composite grade to the mean block grade for each domain, a comparison of the wireframe volume to the block volume for each domain, Grade trend plots, comparison to the previous resource estimate.
Moisture	Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.	Tonnage estimates are dry tonnes.
Cut-off parameters	The basis of the adopted cut-off grade(s) or quality parameters applied.	Interpretation cut-off ≥0.50g/t. The cut off grades used for the reporting of the Mineral Resources have been selected based on the style of mineralisation, depth from surface of the mineralisation and the most probable extraction technique.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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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.	No mining dilution or ore loss has been modelled in the Resource model or applied to the reported Mineral Resource. Open cut mining strategies have been applied to the mineral estimate, with work ongoing.
Metallurgical factors or assumptions	The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	Not considered for Mineral Resource. Applied during the Reserve generation process.
Environmental factors or assumptions	Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a green fields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	The significant operational history at SKO has allowed for a consistent set of environmental assumptions to be applied to the mineral resource deposits in the region.
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.	Where no drill core or other direct measurements are available, SG factors have been assumed based on similarities to other zones of mineralisation / lithologies or from historic production records. Interpreted top of fresh and bottom of complete oxidation surfaces are used to assign oxidation codes, and thus are assigned based on oxidation state.
	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.	Not available.
	Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	Downhole Surveys included as part of the program completed during 1996, tested for a number of density "indexes". One of the measurements taken was RHOB measured in grams/cubic centimetre. This is attested to be equivalent to Specific Gravity.
Classification	The basis for the classification of the Mineral Resources into varying confidence categories.	The criteria used to categorise the Mineral Resources include the robustness of the input data, the confidence in the geological interpretation including the predictability of both structures and grades within the mineralised zones, the distance from data, and amount of data available for block estimates within the respective mineralised zones.
	Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).	All relevant factors have been given due weighting during the classification process.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	This approach considers all relevant factors and reflects the Competent Person's view of the deposit.
Audits or reviews	The results of any audits or reviews of Mineral Resource estimates.	Resource estimates are peer reviewed by the Corporate technical team. No external reviews have been undertaken.
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 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 of tonnes and grade.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	Dawns Hope open pit operation was mined during the late 1990's producing a total of 1Mt @ 2.7g/t for 88,365oz. Dusk was mined my Metals X in 2015 and produced 37kT @ 1.1g/t for 1,264oz.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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South Kalgoorlie: Mount Marion – 31 March 2024

Section 1 Sampling Techniques and Data
(Criteria in this section apply to all succeeding sections.)

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.	Historically samples have been collected from numerous other styles of drilling at Mt Marion, including but not limited to Diamond, RC, RAB, air core, blast-hole, sludge drilling and face samples.
	Include reference to measures taken to ensure sample retrospectivity and the appropriate calibration of any measurement tools or systems used.	All diamond drill core was sampled as whole core, which is the site practice for core diameters of LTK60 or less (no larger core sizes were used in 2005-6). All holes were marked into metre intervals, logged and photographed before the intervals to be assayed were marked up and sampled. All sample intervals were recorded on paper prior to sampling to enable verification against the marked intervals on the core during sampling.
		Face samples were taken by chip sampling across the face using a geological hammer, collecting the sample in a calico bag held in a steel frame. Wherever possible the faces were sampled perpendicular to strike, starting in the upper hangingwall shoulder of the face and progressing downwards to the footwall side.
	Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.	Diamond: The sample interval for whole core ranged from 0.1 m to 1.3 m, with a standard interval of 1m. Core was sampled to lithological boundaries, and also to alteration boundaries at the geologist's discretion.
		RC Drilling: Sampling from a standard 5½" RC, three tier riffle splitter (approximately 5kg sample), split to a 12.5% fraction (approximately 3kg) or to a 12% fraction via a rig-mounted cone splitter. All residual material is retained on the ground in rows of 10 or 20 samples. Four-meter composites are obtained via representative scoop / spear sampling of the one-meter residual piles, until required for re-split analysis (samples returning Au >0.2ppm) or eventual disposal. Historical RC drilling is assumed to employ similar practices. An assumed 90% chip recovery (losses to fines) from RC drilling.
		Face Samples: A standard interval of 1m was used for all face sampling except for samples on lithological contacts, which were broken at the contact.
		Hsitorically, (from 2001) grade control drilling was carried out by sludge sampling with the jumbo. Approximately 4 kg samples were collected from every 0.9 m of drilling (i.e. 2 samples per drill rod) by a tub and bucket. After each interval the tub and bucket were flushed to minimise smearing of cuttings. In 2002 sludge sampling was replaced with Diamond drilling
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 throughout (1999) incorporated a nominal drill pattern of 12.5 m (along strike) x 15-20 m (vertical). Holes were planned in GUIDE using 3-D visualisation and utilising existing drill hole information (Hutchison, 1999b). Drill core was LTK60 (43mm core) drilled with a Pontil LM55/75 rig. Drill core was photographed and sampled on 1m or geologically defined intervals. Assaying was carried out by Amdel using standards, blind re-submissions and barren flushes (Hutchison, 1999b). Drillhole data was collected in an ACCESS database. Validation, extraction and interpretation was carried out in DATAMINE as each program was completed (Hutchison, 1999b)
		From 2002, drilling was carried out on a 40 x 40 pattern for extensional drilling and a 20 x 10 pattern for grade control drilling. Work was contracted to Major Pontil Pty Ltd. LTK60 extensional drilling was carried out using a Boart-Longyear LM75 electric drill rig, while a bobcat-mounted Boart-Longyear LM30 was used for the grade control drilling
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed.	Competent geology and whole core sampling assume material recoveries for diamond drilling. There is no data pertaining to RC recoveries.
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	Representation is assured through qualified geologists identifying intervals for sampling which are related directly to observed geology.
	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 defined relationship exists between sample recovery and grade. Nor has sample bias due to preferential loss or gain of fine or coarse material been noted.
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.	Diamond holes have been logged in detail for geology, veining, alteration, mineralisation and orientated structure. Core has been logged in enough detail to allow for the relevant mineral resource estimation techniques to be employed.
		Surface core is photographed both wet and dry and underground core is photographed wet. All photos are stored on the companies' servers, with the photographs from each hole contained within separate folders.
		Development faces are mapped geologically.
		RC, RAB and Air core chips are geologically logged.
		Sludge drilling is logged for lithology, mineralisation and vein percentage.
		Logging is quantitative in nature.
		All holes are logged completely, all faces are mapped completely.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	All logging is quantitative where possible and qualitative elsewhere. A photograph is taken of every core tray.
	The total length and percentage of the relevant intersections logged.	Chip samples have been logged by qualified geologists to a level of detail to support the Mineral Resource estimate.
	If core, whether cut or sawn and whether quarter, half or all core taken.	All diamond drill core was sampled as whole core, which is the site practice for core diameters of LTK60 or less (no larger core sizes were used in 2005-6).

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
Sub-sampling techniques and sample preparation	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	RC samples are collected at 1m intervals with the samples being riffle split through a three-tier splitter. The samples are collected by the RC drill crews in pre-numbered calico sample bags which are then collected by SKO staff for submission. Delivery of the sample to the laboratory is by a SKO staff member.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	Sample preparation techniques are considered appropriate for the style of mineralisation being tested for – this technique is industry standard across the Eastern Goldfields.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	Procedures are available to guide the selection of sample material in the field. Standard procedures are used for all process within the laboratory.
	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 duplicates are taken for diamond drill core samples at a rate of 1 in 30.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	The sample sizes are considered appropriate for 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.	Only nationally accredited laboratories are used for the analysis of the samples collected at Mt Marion A number of different labs were employed for assaying. Initially Amdel Laboratories were used as the primary lab, with ALS employed as a check laboratory. From 2003 until the end of mine, SGS acted as the primary lab, with Amdel employed as a check laboratory Initial assaying involved a cone crush to 3 mm followed by a 50/50 rotary split and pulverisation. At some point prior to February 2006, the method changed to a 3 mm jaw crush and where the sample was < 3.5 kg, the whole sample pulverised to 90% passing 75⬚m before fire assaying a 50 g sub-sample. Samples > 3.5 kg were jaw crushed to 3 mm and spilt to <3k/g, then pulverised and assayed.
	For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.	No geophysical tools were used to determine any element concentrations
	Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.	**Prior to September 1999:** Each drillhole or face sample batch was accompanied by one Geostats standard. Each standard was packaged in brown paper geochem bags on site and given a sequential number unrelated to its value (ie S00123). Sample pulps were recovered on an immediate job completion basis, re-numbered and re-submitted for third party checks, along with recovered quartz (barren) flush pulps. From September 1999, residue pulps and barren flush pulps of at least two batches per month, along with Newcrest standards, were submitted to ALS Kalgoorlie for check fire assaying and wet screening. Results were then graphed and included in a monthly QAQC report. **September 1999 -** Each batch was accompanied by two standards: one standard from the 0 to 5g/t range and the other with a value greater than 5g/t, to monitor the calibration of the two ranges used by Amdel ASS machine. The reported results of the standard from the lab are monitored constantly and any batch containing a standard that fails (> 2 standard deviations outside the test mean) is repeated with new standards submitted. The results of the standards are graphed and included in a monthly QAQC report. **2001-2005** For every twenty assays submitted, one was re-submitted to the primary lab as blind submissions. Pulp residues were also sent to the check lab for external third party re-assay. This was carried out on a routine basis, at least monthly. One per hundred samples were then sent to an umpire lab (usually ALS). **2005 - 2007** Random insertion of blanks and standards include a minimum of: (1) one assay pulp (Geostats) standard per job, or one pulp per 50 samplers where more than 50 samples are included in the job; and (2) one assay pill or blank submitted per 30 samples, where 5 different pills and a blank are used sequentially.The analytical techniques used are considered appropriate for the style of mineralisation being tested for – this technique is industry standard across the Eastern Goldfields. Sample re-assays were checked by Amdel on a quarterly basis, including re-assay of samples and assay pills and grind size checks. Results were reported in the appropriate monthly report.
Verification of sampling and assaying	The verification of significant intersections by either independent or alternative company personnel.	All data used in the calculation of resources and reserves are compiled in databases which are overseen and validated by senior geologists.
	The use of twinned holes.	Drill hole data is also routinely confirmed by development assay data in the operating environment.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	Diamond drilling information (collar details, surveys, assays and geological logging) was compiled manually in Microsoft Excel spreadsheets. These spreadsheets adhere to a site template so that information could be loaded directly into the Access drillhole database via Surpac simply by loading it as a CSV file. Face sampling information was loaded first into the SurFace database as the faces were processed, and then transferred into the mine drillhole database by means of an Access macro. Both the face sampling and drilling information was then checked visually on screen and on plots
	Discuss any adjustment to assay data.	All data used in the calculation of resources and reserves are compiled in databases (underground and open pit) which are overseen and validated by senior geologists.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
		No adjustments have been made to any assay data.
Location of data points	Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.	Collar coordinates for surface RC and diamond drill-holes were generally determined by either RTK-GPS or a total station survey instrument. All holes were surveyed by the diamond drillers using a single shot eastman camera at nominal 30m intervals, the SURTRON surveys were then compared to the single shot surveys. Although minor positional differences were noted, the single shot surveys were deemed sufficiently accurate and continued to be used until the end of mine. All extensional drill holes were surveyed down-hole. An initial measurement was taken at 15 m, then at 30 m intervals, with a final measurement taken at the end of each hole. Barminco used an Eastman single-shot camera, while Major Pontil used an electronic multi-shot camera. Grade control holes were surveyed at end of hole only. The surveyors also picked up collar dips and azimuths on the grade control holes using a staff inserted in the hole, with two reflectors mounted on the staff. In all cases, underground drillhole locations were all surveyed using a Leica reflectorless total station.
	Specification of the grid system used.	The orientation and size of the project determines if the resource estimate is undertaken in local or MGA 94 grid. Each project has a robust conversion between local, magnetic and an MGA grid which is managed by the SKO survey department.
	Quality and adequacy of topographic control.	Topographic control is generated from RTK GPS. This methodology is adequate for the resources in question.
Data spacing and distribution	Data spacing for reporting of Exploration Results.	Drill spacing ranges from 20m x 10m grade control drilling to 40x40 for extensional drilling and up to 100m x 100m at deeper levels of the resources. Resources are classified based on drill density and geologic 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.	Interpretations in this area are well understood and is supported by the knowledge from open pit and underground operations. The resource is classified on a combination of drill density and the number of samples used to estimate the resource blocks.
	Whether sample compositing has been applied.	Lode definition used the raw assay data at the relevant nominal cut off grade. Compositing was carried out at 2m intervals for estimation
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.	Drilling intersections are nominally designed to be as perpendicular to the orebody as far as underground infrastructure constraints / topography allows. Development sampling is nominally undertaken normal to the various orebodies. Where drilling angles are sub optimal the number of samples per drill hole used in the estimation has been limited to reduce any potential bias.
	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.	It is not considered that drilling orientation has introduced an appreciable sampling bias.
Sample security	The measures taken to ensure sample security.	For samples assayed at the on-site laboratory facilities, samples are delivered to the facility by Company staff. Upon delivery the responsibility for sample security and storage falls to the independent third party operators of these facilities. For samples assayed off-site, samples are delivered to a third party transport service, who in turn relay them to the independent laboratory contractor. Samples are stored securely until they leave site.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	Several reviews of the Mount Marion deposit has occurred post the acquirement of the deposit by NSR.

Section 2 Reporting of Exploration Results
(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	State Royalty of 2.5% of revenue applies to all tenements, although does not apply to the 16 freehold titles (which host the majority of SKO's Resource inventory). There are a number of minor agreements attached to a select number of tenements and locations with many of these royalty agreements associated with tenements with no current Resources and/or Reserves. A royalty is payable in the form of 1.75% of the total gold ounces produced from the following resources: Shirl Underground, Golden Hope, Bellevue, and any reclaimed tailings. The South Kalgoorlie Operations consists of 35 Mining Leases and 19 Exploration and Prospecting Licences. The Project also includes 9 Miscellaneous Licences, 2 groundwater Licences and 16 Freehold Lots known as the Hampton "Exempted East Locations". The Area of the leases covers approximately 35,638 Hectares with a further 71,861 Hectares of Freehold Land. Mt Marion is located on lease M15/717
	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.	All leases and licences to operate are granted and in the order of 2 and 21 years. There are no known impediments to continued operation.

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ABN: 43 092 832 892

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Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	Gold was first discovered in the New Celebration area in 1919 and a short-lived gold rush ensued. Intermittent exploration for gold and nickel was undertaken by a variety of companies in the 1960s and 1970s. The rising gold price further rekindled interest in the area in the 1980s, and open-pit mining at New Celebration started in 1986 by a joint venture comprising Newmont Holdings Limited (subsequently Newcrest; 60%), Hampton Areas Australia Ltd., (25%) and Mt Martin Gold Mines (15%), which merged with Titan Resources in 1993. The New Celebration project includes the Hampton Boulder deposit. In June 2001 Hill 50 Gold agreed to purchase the New Celebration project from Newcrest Mining. In December 2001 Harmony Gold Mining acquired Hill 50 Gold, the transaction giving Harmony Gold Mining a 100% interest in the New Celebration project.
		The Jubilee deposit located south of the Hampton Boulder deposit was evaluated and mined by Hampton Areas Australia Ltd from 1984 to 1996 with open pit mining starting in 1987. New Hampton Goldfields (New Hampton) acquired the Jubilee deposit in 1996. In May 2001, Harmony Gold Mining acquired New Hampton, and combined the operations of New Hampton's Jubilee operations and associated small open pits with the New Celebration project into the South Kalgoorlie Operations (SKO).
		In 2007, Dioro Exploration NL (Dioro) acquired the SKO from Harmony Gold (Australia) Pty Ltd (Harmony) via its wholly-owned subsidiaries, South Kal Mines Pty Ltd, New Hampton Goldfields Ltd and Aurora Gold (WA) Pty Ltd.
		The tenement package at SKO was then purchased by Avoca Resources in April 2010, which was subsequently acquired by Alacer Gold Corp. Pty Ltd in early 2011.
		Westgold Resources Limited acquired the SKO tenement holdings in October 2013 via the acquisition of Alacer Gold's Australian assets.
		In April 2018 Northern Star Resources acquired the SKO tenement holdings with the purchase of HBJ Minerals Pty Ltd from Westgold.
Geology	Deposit type, geological setting and style of mineralisation.	Stratigraphy for the Ora Banda and Kalgoorlie Domains is relatively well-known and comprise (from stratigraphically lowest) a lower basalt unit, komatiitic to high-magnesian basaltic rocks, an upper basalt unit and overlying felsic volcanic-sedimentary units. Conglomeratic and sandstone units unconformably overlie the upper felsic units adjacent to major shear zones. Layered mafic sills occur within various stratigraphic units and cross-cutting Proterozoic dykes also occur throughout the region. Metamorphic grade ranges from upper greenschist to upper amphibolite facies.
		The deformation history of the area is generally divided into four main phases, comprising north-directed thrusting with recumbent folding and stratigraphic repetition in D1. The second deformation (D2) resulted in north-northwest trending folds which are reflected in the dominant north-northwest trending fabric of the greenstone belts. Shortening continued during D3 with strike slip movement along northwest to north northwest trending shear zones and D4 brittle faulting.
		The Mount Marion deposit is located on the eastern side of the Coolgardie Domain within a flexure in the Karramindie Shear Zone. It is hosted within a sub-vertical sequence of meta- komatiites intercalated with metasediments that have been metamorphosed to amphibolite facies. Gold mineralisation occurs in a footwall and hangingwall lode, each ranging in thickness from 2 to 15m. The mineralisation plunges steeply to the west and is open at depth.
Drill hole Information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: o easting and northing of the drill hole collar o elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar o dip and azimuth of the hole o down hole length and interception depth o hole length.	No drillhole information is being presented in this release.
	If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	Exclusion of information is not material.
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 drillhole information is being presented 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 drillhole information is being presented in this release.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	No drillhole information is being presented in this release.
Relationship between mineralisation widths and intercept lengths	These relationships are particularly important in the reporting of Exploration Results:	No drillhole information is being presented in this release.
	If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.	No drillhole information is being presented in this release.
	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').	No drillhole information is being presented in this release.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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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.	No drillhole information is being presented in this 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.	No drillhole information is being presented 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.	There is no other substantive exploration data associated with this release.
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).	Further exploration of the Mt Marion deposit is under review
	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 diagrams attached; Mt Marion is due for a review.

Section 3 Estimation and Reporting of Mineral Resources
(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Database integrity	Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.	Historically the data was stored both manually (in archive) and electronically in the Harmony Australasian Management System (HAMS). Since acquiring Mt Marion, the data has been merged to the Northern Star's acQuire database and validated on merging. Data entry is validated using extensive procedures built in to acQuire. These procedures prevent numerical errors including, but not limited to, overlapping samples and azimuths greater than 360 degrees.
	Data validation procedures used.	The historical data passed through a validation approval system designed to pick up any significant errors before the information is loaded into the master acQuire database. The information is uploaded by a series of Sequel routines. The data used in the estimate was reviewed and validated.
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	The CP has not visited site.
	If no site visits have been undertaken indicate why this is the case.	The Resource process has been closely overseen by company personnel who have visited the site. The competent person has reviewed the inputs and outcomes of the work, including engagement with persons familiar with the site.
Geological interpretation	Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.	The lithological and structural model for the Mount Marion deposit is well understood as it is supported by the knowledge gained from open-pit and underground operations. The mineralisation is hosted along a dilational flexure within the lode gneiss with clearly defined contact mineralisation with the surrounding ultramafic lithologies. The lithological model is used as the basis for the mineralisation interpretation and has been derived from predominantly RC and Diamond drill-holes. The confidence of the geological controls on mineralisation is consistent with the resource classification applied to the deposit. No alternative interpretations have been devised for this deposit.
	Nature of the data used and of any assumptions made.	Geological interpretation of the deposit was carried out using a systematic approach to ensure that the resultant estimated Mineral Resource figure is both sufficiently constrained, and representative of the expected sub-surface conditions. The geological interpretation has been reviewed and validated.
	The effect, if any, of alternative interpretations on Mineral Resource estimation.	No alternative interpretations have been completed.
	The use of geology in guiding and controlling Mineral Resource estimation.	In all aspects of resource estimation, the factual and interpreted geology was used to guide the development of the interpretation.
	The factors affecting continuity both of grade and geology.	The mineralisation is hosted along a dilational flexure within the lode gneiss with clearly defined contact 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.	Mount Marion mineralisation extends to just under 1km in strike length, 800m in depth with the lodes varying in width from 3 – 15m. The mineralisation is steeply plunging resulting in a very small surface expression of the lodes. All mineralisation is open at depth.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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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. If a computer assisted estimation method was chosen include a description of computer software and parameters used.	The model was filled using the Ordinary Kriging technique, a proven and reliable method used at Mt Marion. The fill parameters, input, output and data checking files were all controlled using Interpolator, a Surpac add-on created by Cube Consulting. All processing and interpolation was completed using Surpac Vision 5.0-M. Model filling was conducted in 12 separate runs to allow each of the 4 domains to be filled at three different search ellipse ranges (i.e. 4 domains filling in three runs each). The longest range was filled first to interpolate values into the more distant, lower confidence blocks, and then over-written by the second-longest range and finally the shorter range fill for blocks in higher confidence areas closer to the drilling data. Assay interpolation was constrained using 3D models of mineralisation for each lode. All assay fill runs used a minimum of 5 samples and a maximum of 30 samples. For the longest range fill (lowest confidence level) the maximum search distance was factored by 3; for the middle interpolation the distances were factored by 2 and for the final fill the parameters were those contained in the table below. Discretisation points were set at 3, 3 and 3 for X, Y and Z directions. Assay data for all the ore zones were composited into 2m intervals with a minimum of 25% required for inclusion as a valid sample. The rejected residual data from the ends of the intervals was not re-weighted and included in the composite dataset. The extrapolation was controlled through the interpreted estimation domains which were limited to half the drill hole spacing within section and half the section spacing between sections. The global estimation was reviewed by NSR and the estimation parameters were deemed appropriate.
	The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.	Checks of the models was completed by visual inspection, statistical comparisons and comparison with reconciliation data, with the final model achieving a satisfactory validation.
	The assumptions made regarding recovery of by-products.	No assumptions have been made about the correlation between variables.
	Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).	No by-products or deleterious elements are estimated.
	In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.	Block size was generally selected to suit both the very well defined areas that have been grade controlled and the less well-defined areas that have been drilled on a 40x40m grid or less. A number of different block sizes were applied, depending on the data and author: block sizes applied included 20 x 20 x 4 and 10 x 10 x 2, both with minimum blocking to 5 x 5 x 1. The model was rotated to 24.99º in the z plane. Search ellipse dimensions were derived from the variogram model ranges.
	Any assumptions behind modelling of selective mining units.	Selective mining units were not used during the estimation process.
	Any assumptions about correlation between variables.	No assumptions have been made about the correlation between variables.
	Description of how the geological interpretation was used to control the resource estimates.	A volume model was generated in Surpac Vision 5.0-M using topographic surfaces and mineralised zone wireframes as constraints. Geological interpretation using all available drilling data was completed on sections. This data was digitised and then stitched together to form 3D volumes for both a lithological model which constrained and influenced the mineralisation model.
	Discussion of basis for using or not using grade cutting or capping.	Top-cuts were applied to the composited sample data with the intention of reducing the impact of outlier values on the average grade. Top cuts were selected based on a statistical analysis of the data with a general aim of not impacting the mean by more than 5% and vary by 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.	Historically block models were validated in plan and cross-section by comparison to previous models, actual development sampling and drill sampling, and ore development subsequent to production of the model In reviewing Mt Marion high level validations were applied, using the following: a visual interrogation, a comparison of the mean composite grade to the mean block grade for each domain, a comparison of the wireframe volume to the block volume for each domain, Grade trend plots (moving window statistics), comparison to the previous resource estimate. The process undertaken indicates that the resource model is accurate as the spatial grade distribution of the data is generally well represented by the model.
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 cut off grades used for the reporting of the Mineral Resources have been selected based on the style of mineralisation, depth from surface of the mineralisation and the most probable extraction technique.
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.	Possible mining strategies for the mineral resource extraction is conventional room and pillar and/or sub level caving in which the Mt Marion resource has been reported. Minimum mining width of 2m in both the underground environment assumed.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
Metallurgical factors or assumptions	The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	Successful historic mining practices indicates amenable metallurgical recoveries through the Jubilee Mill.
Environmental factors or assumptions	Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a green fields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	The significant operational history at SKO has allowed for a consistent set of environmental assumptions to be applied to the mineral resource deposits in the region.
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.	For Mount Marion density values were based on historic mining reconciliations combined with bulk density check test work. The geology solids were used to assign specific gravity statistics to the block model.
	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.	Minimal voids are encountered in the ore zones and underground environment
	Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	Density values are assigned based on oxidation state and lithology.
Classification	The basis for the classification of the Mineral Resources into varying confidence categories.	Resources are classified in line with JORC guidelines utilising a combination of various estimation derived parameters, the input data and geological / mining knowledge. Measured resources were defined as areas that had been drilled, developed and grade controlled, resulting in a high level of confidence in both the geological interpretation and the assay data associated with those areas. Measured resources have been face sampled within the development drives, in addition to resource definition drilling on an average spacing of 40m by 40m. Indicated resources are those areas outside the measured category that have been drilled to approximately a 40m by 40m spacing, giving enough information for a sound geological interpretation consistent with the rest of the mine's known geology, and enough assay data for a confident assay interpolation. Inferred resources are those areas that have not been sufficiently drilled to allow them to progress to the indicated category. They are based on some existing drilling combined with geological interpretation to indicate the presence and continuity of mineralisation, but with insufficient drilling or assay data to enable a high confidence level of grade interpolation. The longer-range model filling runs are conducted to throw grade out to these areas so it can be reported, but the inferred category is used to highlight the lower confidence level.
	Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).	All relevant factors have been given due weighting during the classification process.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	This approach considers all relevant factors and reflects the Competent Person's view of the deposit
Audits or reviews	The results of any audits or reviews of Mineral Resource estimates.	Resource estimates are peer reviewed by the Corporate technical team. No external reviews have been undertaken.
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 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 of tonnes and grade.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	The mineral resource model is reconciled to production on an ongoing basis, which confirms that the global total of Measured, Indicated, and Inferred material is accurate. The final reconciled throughput of 4.15 Mt @ 4.49 g/t for a total of 599,925 ounces reconciled from mine to mill at 98%.

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ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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South Kalgoorlie: Golden Hope – 31 March 2024

Section 1 Sampling Techniques and Data

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

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.	Historic methods conducted since 1984 have included, reverse circulation (RC) and diamond drillholes. Sampling methods undertaken by Northern Star at Golden Hope has consisted of diamond drilling (DD).
	Include reference to measures taken to ensure sample retrospectivity and the appropriate calibration of any measurement tools or systems used.	Sampling for diamond drilling is carried out as specified within Northern Star sampling and QAQC procedures as per industry standard. Diamond core provide high quality representative samples for analysis. Reverse circulation (RC) and diamond drilling (DD) core 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 30g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.	Diamond core (NQ or HQ sized) was transferred to core trays for logging and sampling. Half/full core samples were nominated by the geologist, generally being around 1 m intervals however, sample widths do vary due to geological boundaries, ranging between approximately 10 cm and 120 cm. Samples were taken to Genalysis Kalgoorlie for preparation by drying, crushing to < 3 mm, and pulverizing the entire sample to < 75µm. 300 g Pulp splits were then dispatched to Genalysis Perth, a 50 g sub sample were used for Fire assay charge and AAS analysis. Samples were also taken to ALS Kalgoorlie and dispatched to Perth for sample preparation by drying, crushing to < 3mm, and pulverizing the entire sample to < 75µm. 300 g Pulp splits were then sent back to ALS Kalgoorlie where a 50 g sub sample were used for Fire assay charge and AAS analysis. Historical DD and RC 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 Golden Hope deposit was initially sampled with 406 RC and 91 surface diamond core holes, the diameter of these holes are unknown. Northern Star has completed 34 surface diamond holes (HQ or HQ3 triple tube through the regolith and NQ2 diameter in fresh rock) at Golden Hope during mid 2021 - 2022. All DD holes were orientated once in fresh rock, using a Reflex Act IIII tool.
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 > 95%. No historic recoveries have been recorded.
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	All recovery is recorded by the drillers on core blocks. This is checked and compared to the measurements of the core by the geological team. Any issues are communicated back to the drilling contractor. Any historical relationship is not known.
	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 relationship has been observed between recovery and grade. 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.	All diamond core drilled by Northern Star were logged for regolith, lithology, veining, alteration, mineralisation and structure. Structural measurements of specific features were also taken through oriented zones. Geotechnical logging was carried out on all diamond holes to record recovery, RQD, defect number, type, fill material, shape and roughness. Various SG measurements were taken.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	All recent core samples are logged in full and samples are photographed in a wet state using Imago photographic software. Qualitative and quantitative logging of historic data varies in its completeness.
	The total length and percentage of the relevant intersections logged.	In all instances, the entire drill hole is logged.
Sub-sampling techniques and sample preparation	If core, whether cut or sawn and whether quarter, half or all core taken.	All regolith diamond core was fully sampled down to a depth where the core has been deemed competent enough to be sawn. The majority of the fresh diamond core were cut and half the core taken for sampling, the remaining half stored for later use. Parts of the fresh core sections were full core sampled, due to the fissile nature, making it challenging to cut. No details available for historic core.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	No sampling methods recorded for historic RC holes.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	The sample preparation of diamond 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. 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.	No field duplicates were taken from the core samples. Details of field duplicates from historic RC and core is not known.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	The sample sizes are considered appropriate for the material being sampled.

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ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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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.	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 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 at Golden Hope.
	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 materials (CRMs) are inserted into the sample sequence randomly at a rate of 1 per 20 samples to ensure correct calibration. Any values outside of 3 standard deviations are re-assayed with a new CRM. Blanks are inserted into the sample sequence at a rate of 1 per 20 samples, this is random, except where high-grade mineralization is expected. Here, a Blank is inserted after the high-grade sample to test for contamination. Failures above 0.2g/t are followed up, and re-assayed. New pulps are prepared if failures remain. No Field duplicates are submitted for diamond core.
Verification of sampling and assaying	The verification of significant intersections by either independent or alternative company personnel.	All significant intersections are verified by another Northern Star geologist during the drill hole validation process, and later by a Competent Person to be signed off
	The use of twinned holes.	No Twinned holes were drilled for this data set
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	Geological logging is directly entered into a robust database (Acquire). Assay files are received in csv format and loaded directly into the database by the project's responsible geologist with an importer object.
	Discuss any adjustment to assay data.	No adjustments are made to this assay data.
Location of data points	Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.	Drillhole collars from 2021 onwards were picked up by differential GPS in the MGA94 Zone 51 map grid. Downhole surveys using the Axis Champ north seeking Gyroscopic continuous in-rod survey instrument taking readings every 18m (diamond drilling) were taken from 2021 onwards. Previous holders' survey accuracy and quality is unknown
	Specification of the grid system used.	Collar coordinates are recorded in MGA94 Zone 51
	Quality and adequacy of topographic control.	Topographic control originally used site-based survey pickups in addition to a +/- 2m resolution DTM derived from 20cm stereo imagery.
Data spacing and distribution	Data spacing for reporting of Exploration Results.	Drillhole spacing across the area is variable.
	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.	Historic RC sampling was typically composited to 4 or 5 m, most of the ore zone were sampled at 1m intervals.
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.	All drilling was oriented as close to perpendicular as practicable to the interpretation of mineralisation orientation.
	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 sampling bias is considered to have been introduced by the drilling orientation.
Sample security	The measures taken to ensure sample security.	Prior to laboratory submission samples are stored by Northern Star Resources and previous companies in a secure yard. Once submitted to the laboratories they are stored in a secure fenced compound and tracked through their chain of custody and via audit trails
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	No audits of the sampling techniques or data have been conducted for this project.

Section 2 Reporting of Exploration Results
(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	Golden Hope is situated within the Hampton Freehold Location 48 (EEL48), which is owned by GKL Properties Pty Ltd, a wholly owned subsidiary of Northern Star Resources Ltd. This location falls within the Woolibar Pastoral Lease. EEL48 is subject to two royalties: the New Celebration Royalty, which is 1.75% NSR for precious metals and 1% NSR for other minerals, payable to Franco-Nevada Australia Pty Ltd, and the New Celebration 2001 Royalty, includes a Production Royalty of $10 per ounce payable in excess of 400,000 ounces, payable to Alcrest Royalties Australia.
	The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.	No known impediments exist, and the tenements are in good standing.

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Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	Gold was first discovered in the New Celebration area in 1919 and a short-lived gold rush ensued. Intermittent exploration for gold and nickel was undertaken by a variety of companies in the 1960s and 1970s. The rising gold price further rekindled interest in the area in the 1980s, and open-pit mining at New Celebration started in 1986 by a joint venture comprising Newmont Holdings Limited (subsequently Newcrest; 60%), Hampton Areas Australia Ltd., (25%) and Mt Martin Gold Mines (15%), which merged with Titan Resources in 1993. The New Celebration project includes the Hampton Boulder deposit. In June 2001 Hill 50 Gold agreed to purchase the New Celebration project from Newcrest Mining. In December 2001 Harmony Gold Mining acquired Hill 50 Gold, the transaction giving Harmony Gold Mining a 100% interest in the New Celebration project.
		The Jubilee deposit located south of the Hampton Boulder deposit was evaluated and mined by Hampton Areas Australia Ltd from 1984 to 1996 with open pit mining starting in 1987. New Hampton Goldfields (New Hampton) acquired the Jubilee deposit in 1996. In May 2001, Harmony Gold Mining acquired New Hampton, and combined the operations of New Hampton's Jubilee operations and associated small open pits with the New Celebration project into the South Kalgoorlie Operations (SKO).
		In 2007, Dioro Exploration NL (Dioro) acquired the SKO from Harmony Gold (Australia) Pty Ltd (Harmony) via its wholly owned subsidiaries, South Kal Mines Pty Ltd, New Hampton Goldfields Ltd and Aurora Gold (WA) Pty Ltd.
		The tenement package at SKO was then purchased by Avoca Resources in April 2010, which was subsequently acquired by Alacer Gold Corp. Pty Ltd in early 2011.
		Westgold Resources Limited acquired the SKO tenement holdings in October 2013 via the acquisition of Alacer Gold's Australian assets.
		In April 2018 Northern Star Resources acquired the SKO tenement holdings with the purchase of HBJ Minerals Pty Ltd from Westgold.
		The prospect referred to in this report is a project generated by NSR based on work previously undertaken by several different companies, which includes /RC/DD programs.
Geology	Deposit type, geological setting and style of mineralisation.	Stratigraphy for the Ora Banda and Kalgoorlie Domains is relatively well-known and comprise (from stratigraphically lowest) a lower basalt unit, komatiitic to high-magnesian basaltic rocks, an upper basalt unit and overlying felsic volcanic-sedimentary units. Conglomeratic and sandstone units unconformably overlie the upper felsic units adjacent to major shear zones. Layered mafic sills occur within various stratigraphic units and cross-cutting Proterozoic dykes also occur throughout the region. Metamorphic grade ranges from upper greenschist to upper amphibolite facies.
		The deformation history of the area is generally divided into four main phases, comprising north-directed thrusting with recumbent folding and stratigraphic repetition in D1. The second deformation (D2) resulted in north-northwest trending folds which are reflected in the dominant north-northwest trending fabric of the greenstone belts. Shortening continued during D3 with strike slip movement along northwest to north northwest trending shear zones and D4 brittle faulting.
		The Golden Hope mineralisation is confined to several zones along the Celebration Fault. Primary mineralisation occurs in two styles: sediment hosted with pervasive sericite-albite-pyrite mineralisation in the fault hanging wall and porphyry intrusions in the footwall.
Drill hole Information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: o easting and northing of the drill hole collar o elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar o dip and azimuth of the hole o down hole length and interception depth o hole length.	No drillhole information is being presented in this release.
	If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	Exclusion of information is not material.
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 drillhole information is being presented 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 drillhole information is being presented in this release.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	No drillhole information is being presented in this release.
Relationship between mineralisation widths and intercept lengths	These relationships are particularly important in the reporting of Exploration Results:	No drillhole information is being presented in this release.
	If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.	No drillhole information is being presented in this release.
	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').	No drillhole information is being presented in this release.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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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.	No drillhole information is being presented in this 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.	No drillhole information is being presented 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.	There is no other substantive exploration data associated with this release.
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).	Further exploration of the Golden Hope deposit is under review
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Appropriate diagrams and maps of future extensions and work are available in the appropriate ASX announcements.

Section 3 Estimation and Reporting of Mineral Resources
(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Database integrity	Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.	Historically the data was stored both manually (in archive) and electronically in the Harmony Australasian Management System (HAMS). Since acquiring South Kalgoorlie Operations from Westgold, the data has been merged to the Northern Star's acQuire database and validated on merging. Data entry is validated using extensive procedures built in to acQuire. These procedures prevent numerical errors including, but not limited to, overlapping samples and azimuths greater than 360 degrees.
	Data validation procedures used.	The historical data passed through a validation approval system designed to pick up any significant errors before the information is loaded into the master acQuire database. The information is uploaded by a series of Sequel routines. The data used in the estimate was reviewed and validated.
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	The CP has visited site.
	If no site visits have been undertaken indicate why this is the case.	The Resource process has been closely overseen by company personnel who have visited the site. The competent person has reviewed the inputs and outcomes of the work, including engagement with persons familiar with the site.
Geological interpretation	Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.	The lithological and structural model for the Golden Hope deposit is well understood as it is supported by the knowledge gained from open-pit operations. The Golden Hope mineralisation associated with the NNW-SSE orientated steeply WSW dipping Celebration Fault. The deposit consists of 67 separate mineralised domains associated with intermediate porphyry intrusions within the ultramafic footwall and the contact between the ultramafic footwall and basalt/sediment volcaniclastic hangingwall.
	Nature of the data used and of any assumptions made.	Geological interpretation of the deposit was carried out using a systematic approach to ensure that the resultant estimated Mineral Resource figure is both sufficiently constrained, and representative of the expected sub-surface conditions. The geological interpretation has been reviewed and validated.
	The effect, if any, of alternative interpretations on Mineral Resource estimation.	Alternative interpretations have been completed and estimated assessing bulk and narrow methods of extraction.
	The use of geology in guiding and controlling Mineral Resource estimation.	In all aspects of resource estimation, the factual and interpreted geology was used to guide the development of the interpretation.
	The factors affecting continuity both of grade and geology.	The intermediate intrusions are thin and discontinuous with erratic and unpredictable gold grade distribution.
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 Golden Hope mineralisation extends to over 1km in strike length, 600m in depth with the lodes varying in width up to 15m. The mineralisation is steeply plunging to the south with surface expression of the lodes in the historic pits.
Estimation and modelling techniques	The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.	The model was filled using both Categorical Indicator Kriging and Ordinary Kriging techniques, both proven and reliable method used at Golden Hope completed using Datamine Studio RM 1.19. Assay data for all the ore zones were composited into 1m intervals with residual samples incorporated using the distribute setting. Assay interpolation was constrained using 3D models of mineralisation for each of the 67 separate domains. The extrapolation was controlled through the interpreted estimation domains which were limited to half the drill hole spacing within section and half the section spacing.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
		Model filling was conducted nested search passes beginning with the domain variogram range increasing for subsequent runs; for the middle interpolation the distances were factored by 2; the maximum search distance was factored by 5.
		First pass estimation runs used a minimum of 8 samples and a maximum of 25 samples, tolerances were relaxed for subsequent runs. Discretisation points were set at 5, 5 and 5 for X, Y and Z directions.
		Top cuts were applied to individual domains to extreme outliers within the populations; often in the 98-99th percentile range.
	The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.	Checks of the models was completed by visual inspection, statistical comparisons and comparison with reconciliation data, with the final model achieving a satisfactory validation.
	The assumptions made regarding recovery of by-products.	No assumptions have been made about the correlation between variables.
	Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).	No by-products or deleterious elements are estimated.
	In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.	Block size was generally selected to suit the geometry of the domains being blocked out ranging from 10 x 10 x 5 (XYZ) and 10 x 5 x 10 through to 1 x 1 x 1 for indicator domains. Search ellipse dimensions were derived from the variogram model ranges.
	Any assumptions behind modelling of selective mining units.	Selective mining units were not used during the estimation process.
	Any assumptions about correlation between variables.	No assumptions have been made about the correlation between variables.
	Description of how the geological interpretation was used to control the resource estimates.	A volume model was generated using topographic surfaces and mineralised zone wireframes as constraints. Geological interpretation using all available drilling data was completed using Leapfrog vein modelling. The 3D volumes for the lithological model were used to constrain and influenced the mineralisation model.
	Discussion of basis for using or not using grade cutting or capping.	Top-cuts were applied to the composited sample data with the intention of reducing the impact of outlier values on the average grade. Top cuts were selected based on a statistical analysis of the data with a general aim of not impacting the mean by more than 5% and vary by 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.	Golden Hope block model validations include the following: a visual interrogation, a comparison of the mean composite grade to the mean block grade for each domain, a comparison of the wireframe volume to the block volume for each domain, grade trend plots (moving window statistics), comparison to the previous resource estimate. The process undertaken indicates that the resource model is accurate as the spatial grade distribution of the data is generally well represented by the model.
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 cut off grades used for the reporting of the Mineral Resources have been selected based on the style of mineralisation, depth from surface of the mineralisation and the most probable extraction technique.
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 resource only with cut-off grade 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 $2500 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 processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	Successful historic mining practices indicates amenable metallurgical recoveries through the Jubilee Mill.
Environmental factors or assumptions	Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a green fields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	The significant operational history at SKO has allowed for a consistent set of environmental assumptions to be applied to the mineral resource deposits in the region.

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Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
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E: info@nsrltd.com
W: www.nsrltd.com

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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.	For Golden Hope density values were based on historic mining reconciliations combined with bulk density check test work. The geology solids were used to assign specific gravity statistics to the block model.
	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.	Minimal voids are encountered in the ore zones and underground environment
	Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	Density values are assigned based on oxidation state and lithology.
Classification	The basis for the classification of the Mineral Resources into varying confidence categories.	Resources are classified in line with JORC guidelines utilising a combination of various estimation derived parameters, the input data and geological / mining knowledge.
		Indicated resources are those areas outside the measured category that have been drilled to approximately a 40m by 40m spacing, giving enough information for a sound geological interpretation consistent with the rest of the mine's known geology, and enough assay data for a confident assay interpolation.
		Inferred resources are those areas that have not been sufficiently drilled to allow them to progress to the indicated category. They are based on some existing drilling combined with geological interpretation to indicate the presence and continuity of mineralisation, but with insufficient drilling or assay data to enable a high confidence level of grade interpolation. The longer-range model filling runs are conducted to throw grade out to these areas so it can be reported, but the inferred category is used to highlight the lower confidence level.
	Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).	All relevant factors have been given due weighting during the classification process.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	This approach considers all relevant factors and reflects the Competent Person's view of the deposit
Audits or reviews	The results of any audits or reviews of Mineral Resource estimates.	Resource estimates are peer reviewed by the Corporate technical team. No external reviews have been undertaken.
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 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 of tonnes and grade.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	Production records not available.

South Kalgoorlie: White Hope / Hansel Mundy – 31 March 2024

Section 1 Sampling Techniques and Data

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

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.	Northern Star Resources has not completed any new drilling or sampling into White Hope / Hansel Mundy since taking ownership of the project. The current model utilises historic diamond drilling (DD) and reverse circulation (RC) drill types. The exact procedures used by the previous owners is unknown, however any data used in the current model has undergone Northern Star Resources current validation process prior to incorporation into the model.
		Some reports have documented that historical chips were sampled by scoop for multielement purposes. Samples were taken from chip trays and combined up to 5m representative chips. Vein and pyrite amount, alteration types, intensities and lithology were considered during the sampling process. This work was completed to support the geological model.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	Northern Star Resources has not completed any new drilling or sampling into White Hope / Hansel Mundy since taking ownership of the project.
		All RC, RAB, DD and channel sampling is assumed to have been completed by previous holders to industry standard at that time (1997- 2017).

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ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
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E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
	Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g., 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g., submarine nodules) may warrant disclosure of detailed information.	Northern Star Resources has not completed any new drilling or sampling into White Hope / Hansel Mundy since taking ownership of the project. However, NSR did sample 544 chips for multielement analysis (these were not used in the estimation). All RC, RAB, DD and channel sampling is assumed to have been completed by previous holders to industry standard at that time (1997- 2017).
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 329 air-core holes, 101 diamond drill holes, 2,073 rotary air blast holes, 1,068 reverse circulation holes , 138 holes of an unknown type and 1800 underground channel samples. Specifics surrounding the historic dataset are unknown.
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed.	Northern Star Resources has not completed any new drilling or sampling into White Hope / Hansel Mundy since taking ownership of the project. It is assumed that historic recoveries have not been recorded.
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	Northern Star Resources has not completed any new drilling or sampling into White Hope / Hansel Mundy since taking ownership of the project, therefore no active measures were taken to maximise sample recovery.
	Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	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 has recorded lithology, mineralogy, texture and colour, mineralisation, weathering, alteration and veining. It has been assumed that historic chip and core intervals were logged by qualified geologists to a level of detail to support the Mineral Resource estimate.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	All logging is quantitative where possible and qualitative elsewhere. Some core has been photographed in wet state. It is unknown whether all historic diamond core was photographed.
	The total length and percentage of the relevant intersections logged.	As all historic drilling was completed by companies other than Northern Star Resources, it is unknown as to whether logging has been in full.
Sub-sampling techniques and sample preparation	If core, whether cut or sawn and whether quarter, half or all core taken.	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.	The sampling method for historic drill core is half or quarter core sampled, with some remaining unknown
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	Best practice is assumed at the time of historic sampling.
	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.	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.	The sampling techniques for historic RAB, RC and DD drilling are unknown, best practice is assumed. The sample sizes are assumed appropriate for 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.	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.	Methods for historic RC, RAB and DD drilling included fire assay, aqua regia and unknown methods.
	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.	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.	Practices associated with significant intersections are unknown for previous holders. Significant intercepts are verified by the Geology Manager and corporate personnel for any work conducted by Northern Star Resources.
	The use of twinned holes.	No holes are twinned.
	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 Northern Star acQuire database.
	Discuss any adjustment to assay data.	Data from previous owners was taken from a database compilation and validated as much as practicable before entry into the Northern Star Resources acQuire database

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Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
Location of data points	Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.	Previous holders' survey accuracy and quality is unknown.
	Specification of the grid system used.	Historic collection and transformation processes are unknown.
	Quality and adequacy of topographic control.	MGA Zone 51 grid coordinate system is used
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.	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. The data has composites up to 7m with no de-composites in areas of interest.
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.	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.	No significant sampling was conducted or supervised by Northern Star Resources. Selective historical RC chips were sampled for multielement purposes and results were used to subdivide the White Hope Gabbro units and interpret surrounding geology, they were not used in the grade estimation.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	While no formal external review or audit has been conducted on the White Hope / Hansel Mundy model, Northern Star Resources conducted an internal review of companywide sampling methodologies, which resulted in the current sampling and QAQC procedures. A review of the historic dataset was conducted prior to use in interpretation and estimation of the White Hope / Hansel Mundy, any suspect data points were not included in the interpretation or estimation.

Section 2 Reporting of Exploration Results
(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	White Hope and Hansel Mundy are situated within the Hampton Freehold Location 48 (EEL48), which is owned by GKL Properties Pty Ltd, a wholly owned subsidiary of Northern Star Resources Ltd. This location falls within the Woolibar Pastoral Lease. EEL48 is subject to two royalties: the New Celebration Royalty, which is 1.75% NSR for precious metals and 1% NSR for other minerals, payable to Franco-Nevada Australia Pty Ltd, and the New Celebration 2001 Royalty, includes a Production Royalty of $10 per ounce payable in excess of 400,000 ounces, payable to Alcrest Royalties Australia.
	The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.	No known impediments exist, and the tenements are in good standing.
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	<table><tr><th>Date</th><th>Activity</th></tr><tr><td>1920 - 21</td><td>Costeans and four shafts were sunk along the length of the ore body.</td></tr><tr><td>1921 - 27</td><td>30Kt were mined from surface to 100 level.</td></tr><tr><td>1928 - 33</td><td>Spasmodic prospecting.</td></tr><tr><td>1937</td><td>Exploration was carried out by Consolidated Gold Areas and operations ceased pending plans for a treatment plant.</td></tr><tr><td>1939 - 1943</td><td>Production recommenced.</td></tr><tr><td>1943 - 1970</td><td>Sporadic tribute mining took place.</td></tr></table>

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Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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		1979	Hampton Gold Mining Areas took over the operation and dewatered the mine, continued production down to the 500 level.
		1983	White Hope was included in the Paringa Joint Venture with CSR.
		1984	13.8kt at 3.9g/t were mined in an open cut.
		1986	North Kalgurli Mines Limited took over and the management of the mine passed to Metals Exploration Limited.
		1987	Norkal Pty Ltd became operator.
		1988	Concord Mining NL took over the operation.
		1989	Scomac Pty Ltd continued the operation.
		1994	Dreadnought Mining NL purchased White Hope.
		1996?	Purchased by New Hampton Goldfields
		1997 - 98	Significant RC drilling undertaken, defining an open pit reserve of 218,000t @ 2.49g/t for 17,000 oz
		1999	Open Pit mined at White Hope
		1999 - 2010	Project essentially dormant
		2010	Avoca test down-plunge continuity of ore under UG workings with mixed results
		2012	Alacer recalculate a resource of 1.785Mt @ 2g/t for 112.5Koz
		2013	Following a positive optimisation of resource Alacer test White Hope and Hansel Mundy with encouraging results, followed by several follow-up stages of drilling
		2014	Revised resource estimate based on updated geological model calculates resource of 2.392Mt @ 2.17g/t for 167Koz followed by positive optimisation
		2016	86 RC holes drilled by Metal X Group
		2017	328 RC grade control holes drilled by Westgold Resources
Geology	Deposit type, geological setting and style of mineralisation.	The White Hope / Hansel Mundy project areas lies within Archean Norseman-Wiluna Greenstone Belt (Eastern Location 48). East Location 48, within which lies White Hope and Hansel Mundy, covers the northern extension of the Kambalda dome to its truncation by the Lefroy lineament/Boulder fault structure (BLSZ). The Kambalda dome consists of a central core of basic volcanics and granite, overlain by an intercalated series of high magnesian basalts, ultramafic and sedimentary rocks. White Hope and Hansel Mundy are hosted within the White Hope Gabbro unit immediately to the west of the Boulder Lefroy Shear Zone (BLSZ). Here the BLSZ is sub-vertically dipping and trending NNW before undergoing a strike swing to the north (NW-SE) before moving back to its well documented NNW orientation White Hope shear is mineralised over its entire length (currently drill tested for ~1km) but is only weakly mineralised where magnetics are low within the main gabbro host. As seen in drill core, the shear can be >2m wide with abundant sulphides, silica and biotite. Within the weakly sheared and altered portions of the gabbro, there appears to be an associated halo which can be up to 10m wide with disseminated sulphides.	

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
Drill hole Information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: o easting and northing of the drill hole collar o elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar o dip and azimuth of the hole o down hole length and interception depth o hole length.	DD and RC holes have been used in the mineral resource. It is not practical to summarise all the holes here in this release. Future drill hole data will be periodically released or when a result materially change the economic value of the project.
	If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	Exclusion of the 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 drillhole information is being presented 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 drillhole information is being presented 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.	No drillhole information is being presented in this release.
	If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.	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.
	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').	No drillhole information is being presented 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 drillhole information is being presented in this 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.	No drillhole information is being presented 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.	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).	Further exploration of the White Hope / Hansel Mundy deposit is under review.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Appropriate diagrams and maps of future extensions and work are available in the appropriate ASX announcements.

Section 3 Estimation and Reporting of Mineral Resources
(Criteria listed in section 1, and where relevant in section 2, also apply to this section).

Criteria	JORC Code explanation	Commentary
Database integrity	Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.	The historic data was provided to Northern Star Resources 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 Northern Star Resources 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.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
		User defined permissions also regulate the ability to add, edit or extract data. The rigor 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 (where available) 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.
		For all drilling conducted by Metals X Limited and Westgold Resources Limited, quality control procedures included the use of standards, blanks and duplicates. Standards and duplicates are used to test both the accuracy and precision of the analytical process, while blanks are employed to test for contamination during the sample preparation stage. QAQC practices are as follows; inclusion of certified standard reference materials at a rate of 4 in every 100 samples, inclusion of a field duplicate at a rate of 3 in every 100 samples, inclusion of blank material at a rate of 3 in every 100 samples.
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 the region. Historical regional drill core as well as recent regional drill core was inspected during the visits. Historic and current geological data, such as mapping and modelling, were reviewed and scrutinised
	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 reasonable level of confidence exists in the updated (current) interpretation for White Hope / Hansel Mundy. This follows an extensive desktop study reviewing historical exploration, mine and technical reports, and field work. More recently, surface mapping and sampling was completed by Northern Star in 2022. 90 outcrops were mapped across White Hope and Hansel Mundy with most of the outcrops sampled and assayed for gold. Grab samples were focussed around the south of the White Hope pit with the best assay result returning 3.09g/t Au (collected from the west of the pit). Historical RC chips were sampled for multielement purposes where the results were used to importantly subdivide the White Hope Gabbro units and interpret surrounding geology. As a result of the geochemical analysis, the White Hope Gabbro is subdivided into three units and basalt lies on the south of White Hope Gabbro and High Mg Basalt with amphibolite on the west. This work shows a potential north-northwest plunging anticline overlies in the White Hope and Hansel Mundy and this anticline hosts the White Hope Gold Mine, Hansel Mundy resource and the Link Lode mineralisation. Historical diamond drillholes in the northern section of White Hope indicates that there is potential to extend White Hope further north. Updated geology, regolith and mineralisation models were created with consideration of the historical White Hope open pit and underground operations.
		All interpretations and estimations have been completed in an MGA grid.
	Nature of the data used and of any assumptions made.	The historic data is the best available data at hand, with collar and down-hole survey positions reasonable and assumed accurate.
		The interpretations have been constructed for White Hope / Hansel Mundy using all available geological logging information; including but not limited to, stratigraphy, lithology, texture, veining, structure, mineral assemblages, and alteration. Pit mapping and underground development workings (in conjunction with the logging information) were used to generate cross-sectional interpretations of the mineralisation, which formed the basic framework through which the 3D wireframe solids were built in Leapfrog modelling software.
	The effect, if any, of alternative interpretations on Mineral Resource estimation.	Due to a well-understood geological and structural setting, there are no alternative interpretations on the Mineral Resource estimation.
	The use of geology in guiding and controlling Mineral Resource estimation.	Structural controls and relationships define the geological framework on which the mineralised domains are modelled. Furthermore, understanding of the geochemistry and local magnetics appears important for White Hope / Hansel Mundy. Both are hosted within the White Hope Gabbro unit immediately to the west of the Boulder Lefroy Shear Zone (BLSZ). Here the BLSZ is sub-vertically dipping and trending NNW before undergoing a strike swing to the north (NW-SE) before moving back to its well documented NNW orientation. Recent geochemical analysis show that the White Hope Gabbro is internally zoned and illustrates a potential northerly plunging anticline. Mineralisation at White Hope and Hansel Mundy is hosted within gabbro (Unit A). Between the deposits significant mineralisation has been discovered within the "magnetic swing of the gabbro", with the current interpretation labelling these mineralised domains as 'link lodes'.
	The factors affecting continuity both of grade and geology.	At Hansel Mundy the low angle shears are also preferentially mineralised within the high magnetic zones of the gabbro, although here grades and width are far more variable. The easterly dip of ~30° to the mineralised structures also seems to have a gentle northerly plunge and a higher angle zone of better gram per meter intercepts approximately 60° to the east. Within White Hope, the strong preference for mineralisation to be hosted within the gabbro Unit A appears key to continuity.
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 White Hope shear is mineralised over its entire length (currently drill tested for ~1km) but is only weakly mineralised where magnetics are low within the main gabbro host. As seen in drill core, the shear can be >2m wide with abundant sulphides, silica and biotite. Within the weakly sheared and altered portions of the gabbro, there appears to be an associated halo which can be up to 10m wide with disseminated sulphides.
	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	All wireframes are constructed in Leapfrog, which are used as hard boundaries for the estimations. Datamine was used for the estimation of the White Hope / Hansel Mundy resource.

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Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
Estimation and modelling techniques	extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.	The three major domains at White Hope / Hansel Mundy were estimated using categorical indicator kriging (CIK), with all remaining domains estimated using ordinary kriging (OK). Given the scale of the three major domains, to ensure that over-smoothing of grade into some portions of the lower confidence 'Potential' zones did not occur, a nearest neighbour estimation was applied in select and local areas of these domains.
		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 Westgold Resources in 2017 and Metals X Limited prior to that in 2016. For comparison; a review of the current model versus the previous model in the 2017 $1,500 Hansel Mundy pit shell was completed (Indicated and Inferred material only). A 12% variance on metal was noted between the two models. However, estimation parameters (such as top cuts, sub-domaining, variography and search parameters) and resource categorisation methodology within the previous model were unknown meaning comparisons are subjective.
	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
	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 5m (Y) by 5m (Z). These are deemed appropriate for the majority of the resource, where drill / sample spacing ranges from 10m to 40m.
		Parent blocks have been sub-celled to 1m(X) by 1m(Y) by 1m(Z) 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 size 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.	Selective mining units were not used during the estimation process.
	Any assumptions about correlation between variables.	No assumptions have been made regarding correlation between variables. Gold is the only mineral of economic significance at White Hope / Hansel Mundy at this stage.
	Description of how the geological interpretation was used to control the Resource estimates.	The geological interpretation, particularly the gabbro Unit A location and structural controls with associated alteration, and quartz veining, correlates with the mineralised domains. Variograms were used in conjunction with an understanding of the controls on mineralisation to determine the direction of maximum continuity. Search ellipses are aligned to that direction and affect both the CIK sub-domaining and the grade estimation.
	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 swath 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.	A relevant cut-off based on economic parameters was applied.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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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.	The White Hope and Hansel Mundy deposits are both amenable to mining by both open pit and underground methods. Currently there are no mining activities at either project, however White Hope has been mined previously by both surface and underground methods. Detailed discussions on future mining methods for White Hope / Hansel Mundy are ongoing. To best capture "reasonable prospects of eventual economic extraction", the mineral resource is reported within an optimised pit shell at $2,500.
Metallurgical factors or assumptions	The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	Metallurgical recovery factors have been developed based on extensive experience processing similar material from the South Kalgoorlie operations (district).
Environmental factors or assumptions	Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a green fields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	No current assumptions have been discussed regarding possible waste and processing residue disposal.
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.	A larger local density dataset is required to confirm local density values, including values specific to the weathering profile. This should be acquired from any existing local databases and future drill programs. The current model is drawing upon data from the Westgold block model (unknown collection locations and validation stringency) and neighbouring projects (HBJ and Golden Hope) to assign density values.
	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. Given the reconciliation of the historic values with the few collected by Northern Star Resources it is assumed that the historic bulk density values are reasonable but lacking.
	Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	As mentioned above, the local density dataset is lacking. The current model is drawing upon data from the Westgold block model (unknown collection locations and validation stringency) and neighbouring projects (HBJ and Golden Hope) to assign density values. A future, rigorous, density sampling campaign must be completed.
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, 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 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 Northern Star Resources.
	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.	While no formal external review or audit has been conducted on the White Hope / Hansel Mundy model, Northern Star Resources has adopted a process for geological modelling, estimation and reporting of mineral resources that meets high industry standards. Detailed internal peer reviews at both the end of the interpretation and estimation stages takes place prior to the release of a model.
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 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.	NA – Accurate and reliable historic production data is unknown as workings date back to 1920.

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Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Carosue Dam: Karari-Dervish – 31 March 2024

Section 1 Sampling Techniques and Data

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

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 Northern Star at Karari-Dervish have included reverse circulation drill holes (RC), diamond drill holes (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 drill holes.
	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 Northern Star 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 30g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. 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 (0.3-1.3m). 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. Northern Star 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. From July 2022 all samples are assayed using photon analysis. The sample Is crushed to 85% passing 2mm then split with a 500g sub sample taken for analysis (PAAU002). Some historic, in-pit, grade control RC chips were analysed in the Northern Star 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.).	Karari 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. Northern Star Resources Limited completed 17 surface RC pre-collars with HQ and NQ diamond tail drill holes (pre-collars averaging 287m, diamond tails averaging 168m), 61 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 3053 grade control RC holes within the pit. 1,582 NQ diamond holes have been drilled underground. 4080 underground faces and walls have been chip sampled. Whirling Dervish was initially sampled by 35 AC holes, 159 RAB holes, 407 RC holes (assumed standard 5 ¼ ''bit size) and 53 surface diamond HQ core and unknown diameter holes. Northern Star Resources Limited completed 51 surface RC pre-collar with NQ diamond tail drill holes (pre-collars averaging 193m, diamond tails averaging 200m) 1 deep surface diamond hole with 3 wedges (1633m deep), 12 diamond geotechnical holes, 80 RC holes from both surface and within the pit, 4039 grade control RC holes within the pit, 911 NQ underground diamond drillholes and 2,675 underground face channel samples. Surface RC pre-collar and diamond tails were oriented using an Ezi-mark tool. Underground diamond drill holes are orientated using the Boart Longyear TruCore UPIX 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. 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 was sampled 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.	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.

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PO Box 2008
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T: +61 8 6188 2100
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E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
		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.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	Geological data that requires description is qualitative, and where measured, such as structural and geotechnical data is quantitative. 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 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 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.
		The photon assay technique was introduced in 2022. This process involves crushing samples to < 3 mm. 500 g of crushed material is then placed into single-use sample jars.
		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 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 were analysed until July 2022 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.
		In July 2022 the photon assay technique was utilised at ALS. All samples are fed into a robot where the remaining sample preparation is automated. The robot weighs the samples, crushes the sample through the Boyd crusher to <3 mm. The crushed sample is then split through the smart linear splitter which calculates how to split each individual sample to achieve the 500g quotient. The 500g jar is analysed using PAA finish.
		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 Karari-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 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 grind size of 90% passing 75 microns.
		The laboratory performs several internal processes including standards, blanks, repeats and checks.
		QAQC data analysis demonstrates sufficient accuracy and precision.
		Industry best practice is assumed for previous holders.
	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-Dervish but grade control drilling has confirmed the width and grade of previous exploration drilling.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
Verification of sampling and assaying	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 Northern Star 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 drill holes (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. 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 KDEast KDNorth RL MGAEast MGANorth RL Point 1 2986.31 7233.832 0 438346.166 6663021.817 0 Point 2 3010.884 9675.445 0 438370.5380 6665462.457 0 Historic data is converted to the Karari-Dervish 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 25m up to 80x80m
	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 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 regard to mineralised structures.
Sample security	The measures taken to ensure sample security.	Samples are prepared on site under supervision of Northern Star Resources 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 listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	**Karari:** The Karari pit is located on M28/166 and M28/167 Mining Leases M28/166 and M28/167 are held 100% by Northern Star Resources Limited.

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Subiaco WA 6904

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E: info@nsrltd.com
W: www.nsrltd.com

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		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 two caveats (Caveat 51H/067 and 52H/067, respectively).
		The tenements are subject to two royalty agreements.
		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.
		Dervish:
		The Whirling Dervish pit is located on M28/166 and M31/220, while near mine exploration has been carried out on M28/245.
		The tenements are held 100% by Northern Star Resources Limited.
		Mining Leases M28/166 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 M28/245 has a 21 year life (held until 2029) and is renewable for a further 21 years on a continuing basis.
		M28/166 and M31/220 are the subject of two caveats (51H/067 and 64H/067 respectively).
		The tenements are subject to two royalty agreements.
		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.
		Mining Lease M31/220 is subject to the Gindalbie Pastoral Compensation Agreement.
		The tenements are affected by the Maduwongga (WC2017/001) and Nyalpa Pirniku (WC2019/002) registered native title claims.
		There are no registered Aboriginal Heritage sites within Mining Lease M28/166. Four registered Aboriginal Heritage Sites are located on M31/220 (Place ID's 16706, 16707, 16805, and 16806).
		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.	**Karari:**
		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.
		Whirling Dervish:
		The Carosue Dam project area in which the Whirling Dervish deposit 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 RAB drilling intersecting the Whirling Dervish mineralisation and an extensive RC campaign confirming it. Oriole Resources obtained the project in 1998 and, through wholly owned subsidiary company PacMin, completed closely spaced RC drilling to develop the 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 Karari-Dervish deposit sits along the regional NNW-trending Keith-Kilkenny fault zone within the eastern edge of the Norseman-Wiluna greenstone belt. The Whirling Dervsih deposit is off-set approximately 500m to the North of Karari by the Osman fault.
		The deposits are lithologically and structurally controlled and have been offset along a series of major faults running NE-SW and NW-SE, as well as intruded by large lamprophyre units post mineralization.
		The lithology comprises primarily of 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.
		Mineralisation 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.

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Criteria	JORC Code explanation	Commentary
Drill hole Information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: o easting and northing of the drill hole collar o elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar o dip and azimuth of the hole o down hole length and interception depth o hole length.	All material data is periodically released on the ASX: 03/05/2022, 03/05/2021, 18/02/2020, 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, 15/10/2015, 14/10/2013, 23/07/2013, 03/12/2012, 10/10/2012, 31/07/2012, 27/04/2012, 06/03/2012, 27/01/2012, 06/01/2012, 26/10/2011, 01/08/2011, 28/07/2011, 03/06/2011, 21/04/2011, 09/02/2011
	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.	No exploration results are being released
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 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.	Previous announcements included sufficient detail to clearly illustrate the geometry of the mineralisation and the recent drilling. All results are reported as downhole lengths.
	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 recent drilling. All results are reported as downhole lengths.
	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 exploration results are being released
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 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).	Karari-Whirling Dervish is currently in production and extensional exploration at this time is under review.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Karari-Whirling Dervish is currently in production and extensional exploration at this time is under review.

Section 3 Estimation and Reporting of Mineral Resources

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

Criteria	JORC Code explanation	Commentary
Database integrity	Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.	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.

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ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
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W: www.nsrltd.com

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		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.
	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 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. Confidence in the interpretation improved with increased data density from underground grade control drilling at 20m x 20m, face sampling of development rounds, and in pit and underground mapping.
	Nature of the data used and of any assumptions made.	The geological interpretation of Karari-Whirling Dervish 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 underground development exposures 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 Karari resource has been interpreted from 1,582 diamond holes, 23 RCD holes, 3052 RC grade control holes, and 4,347 simulated drill holes representing underground face sampling. The current Dervish resource has been interpreted from 911 diamond holes, 51 RCD holes, 4,039 RC holes, and 2,702 simulated drill holes representing underground face sampling.
	The effect, if any, of alternative interpretations on Mineral Resource estimation.	The geological wireframes defining the mineralised zones are robust. Alternative interpretations were historically in place that reflected the bulk extraction method of open pit mining. However, they do not affect the current Mineral Resource Estimation which is focused on underground extraction.
	The use of geology in guiding and controlling 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 interaction between mylonitic shears and monzonitic intrusives and is controlled by intense haematite, biotite, carbonate, silica and albite alteration
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-Dervish 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. If a computer assisted estimation method was chosen include a description of computer software and parameters used.	Mineralisation is domained based on geological continuity. All domain wireframes are created using Leapfrog software and all subsequent 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.	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 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

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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		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. Top-cuts 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.
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-offs 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 $2500 at a 0.5g/t cut off for the open pit resources, and for the underground resource, within MSO underground shells generated at 1.3 g/t cut-off for Karari and 1.1g/t for Dervish. 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 processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	The prediction of the metallurgical performance of the 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 89-93%. 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 green fields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	Waste rock characterisation has been conducted on the deposit with no environmental issues identified except dispersive oxidised material 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.
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-Dervish 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.

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T: +61 8 6188 2100
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W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
Classification	The basis for the classification of the Mineral Resources into varying confidence categories.	The Karari-Dervish 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 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_Dervish 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.	Northern Star has adopted a process for geological modelling, estimation and reporting of mineral resources that meets high industry standards. At the completion of resource estimation Northern Star 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, and 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. When required the resource estimation and process is externally reviewed 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. Northern Star uses a standard approach to resource estimation and the procedure requires the systematic completion of the Northern Star 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 steady and robust reconciliation against mill figures.

Section 4 Estimation and Reporting of Ore Reserves

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

Criteria	JORC Code explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.	The Mineral Resource estimate for the Karari - Dervish gold deposit used as a basis for conversion to the Ore Reserve estimate was compiled by Northern Star. The model was depleted with the final pit and underground surveys completed in March 2024.
	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, where the Karari - Dervish deposit is located. Northern Star and consultant geotechnical engineers regularly visit Karari - Dervish 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

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
Study status	The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.	Karari - Dervish is an active underground operation with a detailed mine design and an economic analysis, to define the Ore Reserve.
	The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.	Karari - Dervish is an active underground mine. 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.
Cut-off parameters	The basis of the cut-off grade(s) or quality parameters applied.	For the purpose of Ore Reserve Estimate a variable cut-off grade of 1.6g/t (Karari) and variable cut-off grade of 1.4g/t (Dervish) was calculated based upon an assumed gold price of AUD$2,000/oz and applicable mining production costs, processing, haulage and administration costs. This variable cut-off grade was then used as the basis of mine design. Spatial economic assessments were then completed to ensure each mining block covered the relevant capital and operating costs to extract that block.
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 Karari - Dervish underground ore reserve has been estimated using detailed mine development and stope designs. Paste backfill has been incorporated throughout the mine design. This mine design 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.	Underground mechanised mining for development, ground support, and open stoping is utilised at Karari - Dervish. 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.	Assumptions are based upon actual mining conditions. A review of the previous analysis and assessment of the designed stopes were performed by Northern Star's geotechnical team. Several external consultants have also reviewed the deposit and results / analysis found assumptions were acceptable. Karari; 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. Some mining of remnant pillars has been included in the mine design. Dervish; The current mine design allows for leaving in-situ pillars and paste fill. For areas leaving insitu pillars: Mine design allows for 20% to 30% of the available mineral resource to remain in-situ, as either rib or sill pillars. For areas using paste fill appropriate recoveries were applied. 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 design work by using geology approved resource model and making appropriate dilution and recovery factor allowance for mining fleet and method utilised.
	The mining dilution factors used.	An allowance for mining dilution has been incorporated into the mine designs. The dilution factors used have been based on geotechnical advice in different areas of the deposits, these range from 10-40% at 0.2g/t has been applied for stoping.
	The mining recovery factors used.	A mining recovery factor range of 50-95% has been assumed for all stopes. Some stopes have been allocated lower recovery factors due to proximity to structures and faults that may impact mining performance.
	Any minimum mining widths used.	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.	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.
	The infrastructure requirements of the selected mining methods.	The Carosue Dam Operation consist of multiple active mines, a 4.0Mt 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 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. 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.
	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 - Dervish deposit is estimated at 93.5%. The recovery estimation is based on met test work and current and past actual average recovery data collected at the Carosue Plant. The Karari - Dervish 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.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
	Any assumptions or allowances made for deleterious elements.	No deleterious elements have been identified during the processing of Karari - Dervish 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 orebody as a whole.	Ore from the Karari – Dervish undergrounds has been treated at the CDO Processing Plant since 2010. Current underground ore is considered representative of the ongoing ore expected from both the underground and open pit operations.
	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	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 - Dervish 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 7465/1999/9 including prescribed premises categories for processing and beneficiation of metallic or non-metallic ore, mine dewatering, Electric power generation, sewage facility, Class I inert landfill, Class II Putrescible landfill and bulk storage of chemicals. The existing Carosue Dam mine, including the area of Karari - Dervish 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. Waste rock characteristic 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.	Carosue Dam Operations are well established, with mining activities being conducted by Saracen/Northern Star since 2009. The CDO operation comprises at 4.0Mtpa CIL ore processing facility, aerodrome with sealed runway, associated tailings storage facilities, several power stations, water supply, workshops, and administration offices. Karari - Dervish 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 Northern Star 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.	Capital costs relate to establishment of capital infra-structure and continuing expansion of capital works for Karari - Dervish underground. The cost estimates are based on historical costs for similar work undertaken at Carosue Dam for the establishment and operation of the Karari - 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.	Operating costs for underground mining have been derived from a combination of actual costs from Karari - Dervish 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 - Dervish 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$2,000/oz. has been adopted for financial modelling.
	The source of exchange rates used in the 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 Carosue 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 Carosue Dam.
	The allowances made for royalties payable, both Government and private.	Royalty costs are the WA state government royalty of 2.5%, a third party royalty of 1.5% and a 4% profit third party royalty 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$2,000/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.

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ABN: 43 092 832 892

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Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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	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.	All costs assumptions are made based on a combination of historical performance at Carosue Dam and Karari - Dervish 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.	Sensitivities were assessed on a variety of gold prices to test the impact of inventory from external factors.
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 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 naturally occurring risk within the operation and was addressed by the construction of appropriate water diversion bunds to provide safe and risk free work environment. The sufficient long term bund wall is constructed across the mine footprint 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.	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 - Dervish have been granted.
Classification	The basis for the classification of the Ore Reserves into varying confidence categories.	The Ore Reserve Estimate classification for Karari - Dervish underground has been in accordance with the JORC code 2012. The estimated Ore Reserve is classed as Proved and Probable (97% of ounces classed as proved) with this percentage of inventory being classed as measured.
	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 Carosue 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 - Dervish 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 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 Northern Star's 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 geostatistical procedures to quantify the relative accuracy of the Reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.	The Ore Reserve estimate has been prepared within the guidelines of the 2012 JORC Code. The relative confidence of the estimate complies with the criteria of Proved/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 Karari - Dervish reserve. Reconciliation results from past and current mining at Karari - Dervish have been considered and factored into the reserve assumptions where appropriate.
	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.	As above

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Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

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E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
	Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.	As above
	It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	As above

Carosue Dam: Porphyry – 31 March 2024

Section 1 Sampling Techniques and Data

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

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 Northern Star 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 Northern Star's 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 30g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. 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. Northern Star 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. From July 2022 all samples are assayed using Photon analysis. Samples are crushed to 85% passing 3mm then split with a 500g sub sample taken for analysis (PAAU002). Historical RAB, RC and diamond sampling were 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 is sampled by 887 RAB holes, 28 aircore holes 6,196 RC holes (assumed standard 5 ¼ ''bit size) 131 surface RC precollar with NQ2 diamond tail drill holes, and 441 surface diamond core (NQ and HQ drill diameter) drill holes. Diamond tails prior to 2013 were oriented using an Ezy-mark tool. Diamond tails (2020-Current) are orientated using the Reflex Act III. 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. Historical RAB, RC and diamond drilling is sampled 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 given the competent nature of the ore body which corresponds to minimal loss of 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 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.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
		Chips from all RC holes (exploration and GC) are catalogued and stored in chip trays for future reference.
		Core is photographed is saved using Imago software in a wet state.
		All data is captured in a systematic manner to ensure data integrity and appropriateness for resource estimation.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	Most geological data that requires description is qualitative, and where measured, such as structural and geotechnical data is quantitative. 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.
		Historically, every second drill line was logged in grade control programs with infill logging carried out as necessary. Historical resource definition and exploration holes were logged completely.
		Currently every hole is logged.
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. 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. Rarely, 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.
		The photon assay technique was introduced in 2022. This process involves crushing samples to < 3 mm. 500 g of crushed material is then placed into single-use sample jars.
		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 duplicate sampling is carried out at a rate of 1:25 for exploration drilling and 1:40 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 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.
		The photon assay technique was introduced in 2022. The primary samples are analysed through ALS. For preparation, samples are oven dried at 105 degrees until dry . All samples are fed into a robot where the remaining sample preparation is automated. The robot weighs the samples, crushes the sample through the Boyd crusher to <3 mm. The crushed sample is then split through the smart linear splitter which calculates how to split each individual sample to achieve the 500g quotient. The 500g jar is analysed using PAA 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 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 Porphyry.
	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 is inserted into every drillhole at a rate of 1:25 for exploration and resource definition RC and DD, and 1:20 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 grind size of 90% passing 75 microns.
		The laboratory performs several internal processes including standards, blanks, repeats and checks.
		QAQC data analysis demonstrates sufficient accuracy and precision.

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F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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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 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 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 drill holes (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. Historically, downhole surveys were carried out using an Eastman single shot camera at regular intervals (usually 30m). A number of drillholes have also been gyroscopically surveyed. Currently GC drilling in line with mining requirements. Previous holders' survey accuracy and quality is unknown
	Specification of the grid system used.	Porphyry uses the MGA51 grid system (GDA94) with a +2,000m elevation on the RL plane. Historic data has been converted and is used in the MGA grid space.
	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 60mx60m
	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 reconnaissance RAB and RC sampling was composited into 2, 3 or 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 regard to mineralised structures.
Sample security	The measures taken to ensure sample security.	Samples are prepared on site under supervision of Northern Star's 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 listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	The 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 Northern Star Resources Ltd. 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).

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
		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.
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.
Drill hole Information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: o easting and northing of the drill hole collar o elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar o dip and azimuth of the hole o down hole length and interception depth o hole length.	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 results materially change the economic value of the project.
	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.	No exploration results are being released
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.	Previous announcements included sufficient detail to clearly illustrate the geometry of the mineralisation and the latest drilling. All results were reported as downhole lengths.
	If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.	No exploration results are being released
	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. This remains consistent with other announcements.

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Subiaco WA 6008, Australia

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Subiaco WA 6904

T: +61 8 6188 2100
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W: www.nsrltd.com

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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 Northern Star 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).	Porphyry is a developed project with continuing resource definition drilling occurring during FY23. Drilling activities focused on infilling internal optimisations while also testing the lateral and depth extents of the deposit. Porphyry underground development commenced in April 2023.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Appropriate diagrams and maps of future extensions and work are available in the appropriate ASX announcements.

Section 3 Estimation and Reporting of Mineral Resources
(Criteria listed in section 1, and where relevant in section 2, also apply to this section).

Criteria	JORC Code explanation	Commentary
Database integrity	Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.	Northern Star 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. 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. 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 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 Northern Star and previous owners of the project. This knowledge is based on extensive geological logging of drill core, RC chips, detailed open pit & underground 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. Commonly, a halo of weakly sheared and carbonate altered rocks envelope the strongly sheared and mineralised zone of quartz-pyrite veining and hematite alteration. The most obvious indicators of gold mineralisation are shearing, quartz-pyrite veining and strong hematite alteration.
	Nature of the data used and of 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 used to guide disruptions in the position of the key mineralised domains. The current resource has been interpreted from 434 surface diamond holes, 127 surface RC with NQ2 diamond tail drill holes, 6,173 RC holes and 923 UG face channels.
	The effect, if any, of alternative interpretations on Mineral Resource estimation.	The Porphyry deposit is generally shallow dipping in geometry, with clear well-defined geological zones that are coincidental with the tenor of the mineralisation. Northern Star considers the current interpretation to be robust based on all the examined geological data.
	The use of geology in guiding and controlling 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 two sub-parallel shear zones, the northern Porphyry shear zone and the southern Million Dollar shear zone. The two

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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		shear zones strike North and dip 20°- 25° east, lying close to the monzonite/greenstone contact along much of its length. Mineralisation thickens in the middle of the Porphyry structure and plunges to the SE.
	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 900m by 600m. 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 1.6 km in length spanning over an area with 900m 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. If a computer assisted estimation method was chosen include a description of computer software and parameters used.	Mineralisation is domained based on geological continuity. All domain wireframes are created using Leapfrog software and all subsequent estimation is completed using Datamine software. Lode wireframes are defined from 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 1x1x1m 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.	All resource models are compared to the immediate previous and budget model to determine changes from new input data. Porphyry open pit has previously been mined and milled and this material is considered well understood.
	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 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 for the main lode HG domain. The first search pass used a maximum of 26 and a minimum of 6 samples. The second search pass used a maximum of 26 with a minimum of 4 samples while the third search pass used a maximum of 6 with a minimum of 2 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.	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.
	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.	Several statistical and visual measures are used to validate the accuracy of the estimation. Volume variance between the wireframe domains and block model domains are assessed. 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

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Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
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E: info@nsrltd.com
W: www.nsrltd.com

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		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 Northern Star'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 mineral resource is reported as open pit and underground components at different cut-offs reflective of current break even grade requirements for the mining methods assumed. Some of the factors 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 extraction", the mineral resource was reported within an optimised pit shell at $2500 at a 0.5g/t cut off for the open pit resources, and for the underground resource within MSO underground shells generated at 1.1 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 processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	Metallurgical assumptions are based on operating history of the material through the CDO processing facility. Metallurgical testing identified Porphyry ores as being free milling at coarse grind sizes with appropriate leach 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 green fields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	No processing or beneficiation of ore expected on these tenements, as ore is hauled to Carosue Dam
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 Porphyry 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 nonporous 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 Porphyry 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 <=10x10m'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 10x10m and 35x35m, search pass either 1 or 2, established grade and geological continuity, predominantly 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 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.	Northern Star has adopted a process for geological modelling, estimation and reporting of mineral resources that meets high industry standards. At the completion of resource estimation Northern Star 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

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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. Northern Star uses a standard approach to resource estimation and the procedure requires the systematic completion of the Northern Star 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.	Ongoing production reconciliation is in line with model predictions.

Section 4 Estimation and Reporting of Ore Reserves
(Criteria listed in section 1, and where relevant in sections 2 and 3, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.	The Mineral Resource Model for the Porphyry gold deposit is a robust global estimate that was used as a basis for conversion to the Ore Reserve estimate. The block model was depleted with end of March 2024 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 is conducting frequent ongoing site visits to the Carosue Dam Operations (CDO) mine site. Porphyry is located 50kms northwest of the CDO Processing Plant and regularly visits the mine. Northern Star 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 Porphyry 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 an open pit mine for a period of 24 months between 2010-2012. Since then, a revised feasibility level study was undertaken with a view to commence underground mining and it has been included in the Carosue Dam life of mine plan. The 2024 Ore Reserve is an updated design of the Ore Reserve completed in 2023. 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. Operational costs and production parameters have been estimated from actual mining and processing performance. Northern Star has conducted a pre-feasibility level study with all appropriate supporting mining studies required for ore reserve estimation.
Cut-off parameters	The basis of the cut-off grade(s) or quality parameters applied.	For Ore Reserve Estimation a variable cut-off grade of 1.7g/t was calculated based upon an assumed gold price of AUD$2,000/oz and applicable processing, haulage and administration costs. A spatial economic assessment of each mining block was also completed to ensure all costs required to extract that mining block a covered by the revenue generated.
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 mining recovery and unplanned dilution 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 being used at Porphyry.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
		Mining and geotechnical studies determined the preferred mining method of long hole open stoping with remnant in-situ pillars is appropriate for the deposit. This method has been used at other operations in Western Australia with a similar geometry to Porphyry.
	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. In-situ pillars have been incorporated into the mine design using recovery factors to consider hanging wall stability and prevent unplanned dilution. Stopes are 20m long and varying widths and height depending on the ore body dip and thickness. A grade control program with associated grade control drilling designs, and sampling costs have been included 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.
	The mining dilution factors used.	An allowance for mining dilution was incorporated into the mine design. An additional dilution factor of 15% has been assumed for all reserve stopes generated by stope optimisation software.
	The mining recovery factors used.	A mining recovery factor of 69% has been assumed for all stopes to account for pillar requirements. A mining recovery factor of 100% has been assumed for all development activities.
	Any minimum mining widths used.	A minimum stope width of 2.0m 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.	Underground reserve inventory has excluded any inferred mineral resources.
	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.
	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 deposits 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 Porphyry deposit is estimated at 93.5%. 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.
	Any assumptions or allowances made for deleterious elements.	No deleterious elements have been identified during the processing of Porphyry ores.
	The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.	Ore from the Porphyry open pit 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. Number of Porphyry U/G samples of each expected rock type and grade bins have been sampled for trial test work. These samples are considered as sufficient to represent the Porphyry U/G 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	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 Environment studies have been completed and Statutory Government Approvals have been granted. A Mining Proposal and management plan for the previous open Pit has been approved for the reserve pit and underground operations. 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. An appropriate landform design criterion has been applied 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 Porphyry pit is ~50km from the CDO Processing Plant and ~120km northeast of Kalgoorlie, adjacent to Yarri Road. Carosue Dam Operations are well established, with mining activities being conducted by Saracen/Northern Star 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 4.0Mtpa CIL ore processing facility, aerodrome with sealed runway, associated tailings storage facilities, several power stations, water supply, workshops, and administration offices.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
		A modern accommodation camp is located within a few kilometres of the Porphyry mining area.
		A 70km gravel access road links Carosue Dam Operations to the gravel section of Yarri Road. Both Northern Star 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 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 existing mining activities at Porphyry.
	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 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$2,000/oz. has been adopted for financial modelling.
	The source of exchange rates used in the 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.
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.
	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$2,000/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 detailed life of mine 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.	Carosue Dam is fully operational and Northern Star has good relations 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. Aboriginal heritage surveys have been conducted and maintain no negative impact within the area.
		Granted mining leases cover all 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 within the operation and was addressed by the construction of appropriate water diversion bunds to provide safe and risk-free work environment.
		A containment pond and dewatering infrastructure is provided for in the mine design and capital costs to mitigate water inrush from rainfall captured within the existing open pit and underground access.

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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. A mining contract will be tendered for Porphyry 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 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 Environment studies have been completed and Statutory Government Approvals have been granted.
Classification	The basis for the classification of the Ore Reserves into varying confidence categories.	The Ore Reserve Estimate classification for Porphyry 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 Measured and Indicated only.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	Cost assumptions and input 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).	All of the Probable ore from 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 Northern Star 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 geostatistical procedures to quantify the relative accuracy of the Reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.	The Ore Reserve estimate has been prepared within the guidelines of the 2012 JORC Code. The relative confidence of the estimate complies with the criteria of 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 appropriate and confidence in the resulting reserve estimate is reasonable. The Ore Reserve estimation have been the subject to peer review internally, and the Competent Person is confident that it is an accurate estimation of the 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. The Porphyry operation will utilise the same grade control methods that widely utilised at current Carosue Dam operations.
	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.	As above
	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.	As above
	It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	As above

Carosue Dam: Million Dollar – 31 March 2024

Section 1 Sampling Techniques and Data

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

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.	Northern Star 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).

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
	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 Northern Star 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 30g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. 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 3kg. 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 3kg to ensure total sample inclusion at the pulverisation stage. Northern Star 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. From July 2022 all samples are assayed using Photon analysis. Samples are crushed to 85% passing 3mm then split with a 500g sub sample taken for analysis (PAAU002). 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 is sampled by 621 RAB holes, 1,014 surface RC holes (utilising a 143mm diameter bit with a face sampling hammer and an external auxiliary booster), 4543 In-pit grade control RC holes (using a 5 ¼ inch hammer) and 64 diamond core holes utilising NQ diameter drill bits. Diamond holes were oriented using the Reflect ACT III tool.
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 sampling is representative of the 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.	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. Chip trays are disposed of once the relevant area is mined. RC grade control samples are photographed using the Imago photo software for high resolution geological logging and modelling. Core is photographed in both dry and wet state.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	Most geological data that requires description is qualitative, and where measured, such as structural and geotechnical data is quantitative. 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. The photon assay technique was introduced in 2022. This process involves crushing samples to < 3 mm. 500 g of crushed material is then placed into single-use sample jars. 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.

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ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
	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 1:40 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 50g fire assay with AAS finish. This method is considered suitable for determining gold concentrations in rock and is a total digest method. The photon assay technique was introduced in 2022. The primary samples are analysed through ALS. For preparation, samples are oven dried at 105 degrees until dry . All samples are fed into a robot where the remaining sample preparation is automated. The robot weighs the samples, crushes the sample through the Boyd crusher to <3 mm. The crushed sample is then split through the smart linear splitter which calculates how to split each individual sample to achieve the 500g quotient. The 500g jar is analysed using PAA finish. 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, and 1:40 for grade control. 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 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 planned twinned holes have been drilled at Million Dollar. Many holes have had their position effectively twinning where historical data was of a dubious nature.
	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 Northern Star 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 drill holes (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 Grade Control holes are surveyed using Reflex gyro.
	Specification of the grid system used.	Million Dollar uses the GDA94 zone 51 grid system with +2000m added to the RL field.
	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 80m x 80m. Grade control drilling is 10m x 10m. Initial surface grade control completed by Northern Star was at 5 x 10m 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. Some historic RAB sampling was composited into 4m samples.

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Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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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 has been recognised due to orientation of drilling in regard to mineralised structures.
Sample security	The measures taken to ensure sample security.	Samples are prepared on site under supervision of Northern Star 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 listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	The Million Dollar pit is located on M31/3 with the southern extension extending on to M31/76. The tenements are held 100% by Northern Star Resources Ltd. 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. 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.
Drill hole Information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:	All material data was periodically released on the ASX: nominally the report dated: 03/05/2022, 03/05/2021, 30/07/2019, 29/07/2010

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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	o easting and northing of the drill hole collar o elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar o dip and azimuth of the hole o down hole length and interception depth o hole length.	Future drillhole data will be periodically released or when results materially change the economic value of the project.
	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.	N/A
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.	Previous announcements included sufficient detail to clearly illustrate the geometry of the mineralisation and the latest drilling. All results were reported as downhole lengths.
	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.
	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 Northern Star 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).	Million Dollar is currently an operating open pit mine. The mining occurs in two separate pits colloquially referred to as MD2 (main pit) and MD3 (satellite pit). Extensional drilling occurred during FY23 which focused on defining mineralisation a depth within the project area. No further exploration programs have been planned.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Previous announcements included sufficient detail to clearly illustrate the geometry of the mineralisation.

Section 3 Estimation and Reporting of Mineral Resources
(Criteria listed in section 1, and where relevant in section 2, also apply to this section).

Criteria	JORC Code explanation	Commentary
Database integrity	Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.	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 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.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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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 visited the site during 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.	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 of 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 pit 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 and estimated from 60 diamond holes, 4 surface RC NQ2 holes with diamond tail drillholes and 5555RC holes of which 4603 are in pit GC RC holes.
	The effect, 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 has been considered but deemed unsuitable to appropriately constraining metal distribution.
	The use of geology in guiding and controlling 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, to improve grade homogeneity and reduce variance. Further domain subdivision are also applied by lithology.
	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 6,704050mN to 6,702,450mN, 430,800mE to 431,400mE and 260 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. If a computer assisted estimation method was chosen include a description of computer software and parameters used.	Mineralisation is domained based on geological continuity. All domain wireframes are created using Leapfrog software and all subsequent 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 1 x 2 x 1m 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 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. The mine reconciles well against the model and mill with no issues identified.
	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.
	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 2m 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 40 x 40m 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.

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Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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	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.
	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 Northern Star'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 historically been mined as a trial open pit. Open Pit mining activities have recommenced at Million Dollar and consist of 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 $2500 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 processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	Metallurgical testing of transitional ores identified leach recoveries from 92% to 94% with a gravity gold component of 30% - 42%.
Environmental factors or assumptions	Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a green fields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	Waste rock characterisation has been conducted on the deposit with no environmental issues identified except dispersive oxidised material and waste dump construction plan in place to manage. Tailings from the deposit are stored in an appropriate licensed tailings facility and closure plan in place.
Bulk density	Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.	The bulk densities for 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 nonporous 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 <=10x10m'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 10x10m 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.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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	Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).	All 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.	Northern Star has adopted a process for geological modelling, estimation and reporting of mineral resources that meets high industry standards. At the completion of resource estimation Northern Star 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.
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. Northern Star uses a standard approach to resource estimation and the procedure requires the systematic completion of the Northern Star 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.	Recent production reconciles well and accurately with the resource estimation.

Carosue Dam: Monty's Dam-Elliot's – 31 March 2024

Section 1 Sampling Techniques and Data
(Criteria in this section apply to all succeeding sections.)

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 Northern Star 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 Northern Star 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 30g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. 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. Northern Star 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 Northern Star 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 is sampled by 43 AC holes, 200 RAB holes, 373 RC holes (assumed standard 5 ¼ ''bit size), 12 RC pre collar diamond tail holes and 19 surface diamond core holes of unknown diameter. Of the 373 RC holes, Northern Star drilled 110 RC holes using a 143mm diameter bit with a face sampling hammer. The rig was equipped with an external auxiliary/ booster.

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ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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		Northern Star has completed 12 surface RC precollar with NQ2 diamond tail drillhole (precollar averaging 259m, diamond tails averaging 154m) and 5 diamond drillholes (NQ2 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. 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.	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.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	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.
	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.

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Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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		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 Monty's Dam-Elliot's Lode by Northern Star. 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 Northern Star 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 drill holes (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. 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 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 Northern Star 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.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Section 2 Reporting of Exploration Results
(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	The Monty's Dam-Elliot's Lode gold deposit is located in M31/209. The tenement is held 100% by Northern Star Resources 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.
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, Northern Star 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 H_2O-CO_2 fluids. Mineralization at Monty's Dam-Elliot's Lode is related to moderately intense quartz veining centred 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.
Drill hole Information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: o easting and northing of the drill hole collar o elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar o dip and azimuth of the hole o down hole length and interception depth o hole length.	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 results materially change the economic value of the project.
	If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	Exclusion of the 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.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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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.	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.	Previous announcements included sufficient detail to clearly illustrate the geometry of the mineralisation and the recent drilling.
	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 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 Northern Star 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).	No further drilling is currently planned. Open pit evaluation work is ongoing.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Appropriate diagrams and maps of future extensions and work are available in the appropriate ASX announcements.

Section 3 Estimation and Reporting of Mineral Resources
(Criteria listed in section 1, and where relevant in section 2, also apply to this section).

Criteria	JORC Code explanation	Commentary
Database integrity	Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.	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 for this resource report has not visited site. The geological interpretation and background data has been produced by personnel with extensive onsite experience.
	If no site visits have been undertaken indicate why this is the case.	The geological interpretation and background data has been produced by personnel with extensive onsite experience.
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 of any assumptions made.	The geological interpretation of Monty's Elliots 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

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
		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 19 diamond holes, 12 RCDD holes and 481 RC holes.
	The effect, 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 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 Elliot Lode Shear, (ELS) with 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 Elliots has been interpreted in MGA grid with lodes extending along strike >950m along strike, 400m down dip and up to 50m width when stacked together. The total mineralised package including Monty's, Elliot's, and North West is situated between 433360-435060mE, 6672320-6673660mN, and -140-360mRL
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. If a computer assisted estimation method was chosen include a description of computer software and parameters used.	Mineralisation is domained based on geological continuity. All domain wireframes are created using Leapfrog software and all subsequent estimation is completed using Datamine software. Lode wireframes are intersected with a validated drill database from which all RAB, air core, WB 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.
	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 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.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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	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 Northern Star's current economic status the natural grade distinction above background for the Monty's Elliot's deposit is reported 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.	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 "reasonable prospects for eventual economic extraction", the mineral resource was reported within an optimised pit shell at $2500 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 processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	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 green fields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	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 nonporous 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 Monty's Elliots 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 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.	Northern Star has adopted a process for geological modelling, estimation and reporting of mineral resources that meets high industry standards. At the completion of resource estimation Northern Star undertake an extensive review of the model that covers; • Model inventory and comparisons to previous and budget models if in existence

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
		• 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. Northern Star uses a standard approach to resource estimation and the procedure requires the systematic completion of the Northern Star 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 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.

Carosue Dam: Wallbrook – 31 March 2024

Section 1 Sampling Techniques and Data

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

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 Northern Star 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 Northern Star 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 30g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. 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 Northern Star 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. From July 2022 all samples are assayed using Photon analysis. Samples are crushed to 85% passing 3mm then split with a 500g sub sample taken for analysis (PAAU002). 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 652 RAB holes, 588 RC holes (assumed standard 5 ¼ ''bit size) and 10 surface diamond HQ, PQ and unknown diameter holes. Northern Star has completed 2 NQ diameter diamond geotechnical holes, 1 HQ diameter diamond drillhole for metallurgical test work, 210 RC holes from surface and 2024 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.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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		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.	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 photographed. Chips from all RC holes (exploration and GC) are stored in chip trays for future reference. Grade control chips trays are disposed of once the relevant area has been mined.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	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. All grade control holes are logged. 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. The photon assay technique was introduced in 2022. This process involves crushing samples to < 3 mm. 500 g of crushed material is then placed into single-use sample jars. 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 1:40 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. The photon assay technique was introduced in 2022. The primary samples are analysed through ALS. For preparation, samples are oven dried at 105 degrees until dry . All samples are fed into a robot where the remaining sample preparation is automated. The robot weighs the samples, crushes the sample through the Boyd crusher to <3 mm. The crushed sample is then split through the smart linear splitter which calculates how to split each individual sample to achieve the 500g quotient. The 500g jar is analysed using PAA finish. Some GC samples were analysed in the Northern Star 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 within the Wallbrook project.

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Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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	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 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 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 Northern Star 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 drill holes (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, and 10 x 10m for current grade control.
	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 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 regard to mineralised structures.
Sample security	The measures taken to ensure sample security.	Samples are prepared on site under supervision of Northern Star 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.

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Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Section 2 Reporting of Exploration Results
(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	The Wallbrook resource is located on M31/172 The tenements are held 100% by Northern Star Resources 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 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 Northern Star 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 (northsouth) 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.
Drill hole Information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: o easting and northing of the drill hole collar o elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar o dip and azimuth of the hole o down hole length and interception depth o hole length.	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 results materially change the economic value of the project.
	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.	No exploration results are being reported
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 being reported
	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 being reported
	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 (mentioned above) included sufficient detail to clearly illustrate the geometry of the mineralisation and the recent drilling.
	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').	No exploration results are being reported

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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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 Northern Star 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 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.	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).	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.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Appropriate diagrams and maps of future extensions and work are available in the appropriate ASX announcements.

Section 3 Estimation and Reporting of Mineral Resources
(Criteria listed in section 1, and where relevant in section 2, also apply to this section).

Criteria	JORC Code explanation	Commentary
Database integrity	Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.	Northern Star 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 for this resource report has not visited site. The geological interpretation, background data & estimation parameters has been produced and/or extensively reviewed by both senior Resource geologists and onsite senior growth personnel.
	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.	Included in the Wallbrook Project area are three deposits. Redbrook, Eleven Bells and Red Flags, 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. The Red Flags project area is well defined within the regolith with close spaced drilling, however gold bearing structures are less understood at depth.
	Nature of the data used and of 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 effect, 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 historical model runs that included a bulk mining approach, and estimations looking at different composited lengths. The current model has generated more discrete domains within broad mineralisation halos. The global metal content remains relatively consistent between the historic bulk mining approach and the current model with greater domain selectivity.
	The use of geology in guiding and controlling 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 links into the

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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		Red Flags mineralisation. 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, and depth below surface to the upper and lower limits of the Mineral Resource.	Redbrook, Eleven Bells and Red Flags deposits stretch from 6694800mN to 6696350mN 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.
Estimation and modelling techniques	The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.	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, Eleven Bells and Red Flags due to the unreliability of results. Negative gold grades were replaced with a grade of 0.01 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. 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 1x1x1m 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.
	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 Wallbrook resource model has been compared to both the 2014 Resource estimate and previous 2021 sensitivity estimates. The previous resource model was reconciled with production data on a monthly basis. This information for Redbrook and Eleven Bells was fed back into the current 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., 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.	Average drill hole data spacing and mining selectivity were among the primary considerations for block size. The current resource model has been generated based on more discrete geological domains resulting in selection of a smaller parent block size (5x10x5m). 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.
	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 $2550 at a 0.5g/t cut off for the open pit resources.

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Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Metallurgical factors or assumptions	The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	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 potential environmental impacts, particularly for a green fields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	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 beneficiation of ore expected on these tenements, as ore is hauled to Carosue Dam Minesite for Processing.
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 Northern Star 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 nonporous 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 (<10x10m) 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 35m x 35m 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, measured (RESCAT = 1) Indicated (RESCAT = 2 and Inferred (RESCAT=3)) categories are assigned via boundary strings by domain . All other mineralisation is assigned a Potential resource category. 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 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 Northern Star 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.
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. Northern Star uses a standard approach to resource estimation and the procedure requires the systematic completion of the Northern Star 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% tonne 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.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Section 4 Estimation and Reporting of Ore Reserves

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

Criteria	JORC Code explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.	The Mineral Resource estimate for the Wallbrook Project was used as a basis for the conversion to the Ore Reserve estimate reported and was compiled by Northern Star Resources (NSR). Reported ore reserves are based on updated or depleted resource models for all project areas.
	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.	Competent Person and independent external geotech consultant have conducted several site visits to the Wallbrook mining region since the inclusion in Northern Star 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.	Site visits undertaken.
Study status	The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.	A minimum Pre-Feasibility level study is completed prior to converting an ore zone into ore Reserve.
	The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.	Ore Reserves have been calculated by generating detailed mining shapes for the proposed open pits. A series of nested optimised pit shells were generated using Whittle software, an analysis of the shells was completed to select one which was then used to complete a detailed pit design to closely resemble the selected whittle shell. The Whittle optimisation used parameters generated from NSR technical personnel and technical consultants. A detailed mine schedule and cost model has been generated using an excel spreadsheet model. Appropriate ore dilution and recoveries have been applied within the excel spreadsheet model. The processing parameters have been based on metallurgical test work and actual costs of the Carosue Dam processing plant. The current study level demonstrates high confidence that the projects can achieve the mine plan and be operated in a technically sound and economically viable manner.
Cut-off parameters	The basis of the cut-off grade(s) or quality parameters applied.	The pit cut-off grade has been calculated based on the key input components (processing, recovery, and administration) Forward looking forecast costs and physicals form the basis of the cut-off grade calculations. The AUD gold price as per corporate guidance. Mill recovery factors are based on metallurgical test work.
Mining factors or assumptions	The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design).	Mineral Resource is converted to Ore Reserve after completing a detailed mine design complete with a detailed financial assessment. A series of nested optimised pit shells were generated using Whittle software, an analysis of the shells was completed to select one which was then used to complete a detailed pit design to closely resemble the selected whittle shell. The Whittle optimisation used costs and inputs derived from current operational data, contractors, and independent consultant recommendations. Ore Reserves have been calculated by generating detailed mining shapes for the proposed pit design. Open pit planned and unplanned dilution (waste material that is located within the minable shape) has been modelled within the mining shapes.
	The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc.	The selected mining method for the Wallbrook deposit is of a bench mining open pit method. The open pit cutback is being mined using conventional open pit mining methods (drill, blast, load and haul) utilising similar class excavators and trucks used in other NSR open pit mining operations. This provides good operating dataset for production and productivity rate measurement and financial modelling.
	The assumptions made regarding geotechnical parameters (e.g., pit slopes, stope sizes, etc.), grade control and pre-production drilling.	An independent Geotechnical Consultant was engaged to complete a geotechnical study for the Wallbrook project. Recommended wall angles were applied to the Whittle optimisation and subsequent detailed pit designs. The Grade control method to be employed at Wallbrook is Reverse circulation drilling to obtain samples. The method and practice have been utilised successfully by northern Star at all current and past mining projects.
	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.
	The mining dilution factors used.	A mining dilution factor of 10% is applied in the Ore Reserve estimation and reflect the expected mining performance for the given ore body characteristic, 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 reflect the expected mining performance for the given ore body characteristic, selected mining method and equipment.

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Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
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E: info@nsrltd.com
W: www.nsrltd.com

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	Any minimum mining widths used.	The SMU dimensions for the Reserve Estimate are 4 m Wide x 5m High x 4.0 m Long. A minimum mining width down to 25 m for final pit extraction from the base of pit has been used.
	The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.	Inferred material is excluded from the ore reserves and treated as waste material. Which incurs a mining cost but is not processed and do not generate any revenue. Therefore, final pit reserve inventory has excluded any inferred mineral resources.
	The infrastructure requirements of the selected mining methods.	Infrastructure required for the Wallbrook Project has been accounted for and included in all work leading to the generation of the Ore Reserve estimate. Ore from the Wallbrook Project will be processed through the Carosue Dam Processing Plant; hence no processing infrastructure is required. The Wallbrook Project is connected by internal private haul roads to Carosue Dam. Infrastructure established at Wallbrook includes Offices, workshops and associated facilities, dewatering pipeline, Waste Rock Storage Dump; and ROM Pad.
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 93% to 94% for deposits 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%. The recovery estimation is based on met test work and past actual average recovery data collected at the Carosue Plant. 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 orebody as a whole.	When in operation the Wallbrook 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?	Not applicable
Environmental	The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.	All required Environment studies and Statutory Government Approvals including works approvals and clearing permit has been granted. The Mining Proposal and Mine Closure Plan for the Wallbrook project has been approved by DEMIRS. The existing Carosue Dam processing facility where ore will be processed and the accommodation village all lie 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. 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 Wallbrook Project is a satellite pit operation and extension of the Carosue Dam Operation. The Carosue Dam Operation comprises of a 4Mtpa CIL ore processing facility, aerodrome with sealed runway, associated tailings storage facilities, power station, water supply, workshops, and administration offices. A modern accommodation camp is located within 15km kilometres of the project mining area. The project area is connected to Carosue dam by a private haul road constructed for road train haulage. Minor infrastructure required at the project area has been allowed for in the cost model.
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 is included in the financial modelling. Other capital costs around camp and accommodation is minimal given close proximity to existing Carosue Dam Operations.
	The methodology used to estimate operating costs.	A capital and operating cost model has been developed in Excel and has been used to complete a life of mine cash flow estimate. The estimation of Open pit mine operating costs was based on a dry-hire mining, contract drilling, and contractor maintenance operation using first principles to determine equipment productivities and associated operating hours to generate mine schedules. Provided contract pricing were than applied to the schedule to calculate all unit costs.
	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.	Single commodity pricing for gold only, using a gold price of AUD$2,000 per ounce as per NSR corporate guidance.
	The source of exchange rates used in the study.	All revenue and cost calculations have been made in AUD, so no exchange rate usage or assumptions have been necessary.

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Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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	Derivation of transportation charges.	Costs associated with bullion transportation have been derived from existing contractual arrangements at Carosue 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 Carosue 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% private royalty.
Revenue factors	The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc.	All financial analysis and gold price have been expressed in Australian dollars and no direct exchange rates have been applied. Revenue factors within the whittle optimisation process were used. A revenue factor shell was selected and used to complete a detailed pit design. A gold price of AUD$2,000 per ounce has been used in the optimisation of the Wallbrook Project.
	The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.	Corporate guidance.
Market assessment	The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.	There is a transparent quoted market for the sale of gold.
	A customer and competitor analysis along with the identification of likely market windows for the product.	There is a transparent quoted market for the sale of gold.
	Price and volume forecasts and the basis for these forecasts.	Corporate guidance.
	For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.	Not applicable.
Economic	The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.	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 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 Northern Star 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. Aboriginal heritage surveys have been conducted and maintain no negative impact within the 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 within the operation and is addressed by constructing appropriate water diversion bunds 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 has been granted. All other Statutory Government permits including vegetation clearing, dewatering and discharge licences are in place.
Classification	The basis for the classification of the Ore Reserves into varying confidence categories.	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 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 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 Northern Star Ore Reserve Policy and undergone internal review.
	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	The Ore Reserve estimate has been prepared within the guidelines of the 2012 JORC Code.

Northern Star Resources Limited
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Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
Discussion of relative accuracy/ confidence	application of statistical or geostatistical procedures to quantify the relative accuracy of the Reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.	The relative confidence of the estimate complies with the criteria of 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 appropriate and confidence in the resulting reserve estimate is reasonable. The Ore Reserve estimation 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 operation will utilise the same grade control methods that widely utilised at current Northern Star open pit operations.
	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.	All modifying factors have been applied to design mining shapes on a global scale.
	Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.	Not applicable.
	It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	Not applicable.

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Section 1 Sampling Techniques and Data

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

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 Northern Star 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 Northern Star 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 were 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 30g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. 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 Northern Star 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 3158 RAB holes, 2769 RC holes (assumed standard 5 ¼ ''bit size) and 12 surface diamond HQ and unknown diameter holes. Northern Star has completed 7 NQ diameter diamond drill holes, 41 RC holes from surface and 2441 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.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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		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.
	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.	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.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	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.
		All Grade Control holes are logged.
		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 1:40 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 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.
		The photon assay technique was introduced in 2022. The primary samples are analysed through ALS. For preparation, samples are oven dried at 105 degrees until dry . All samples are fed into a robot where the remaining sample preparation is automated. The robot weighs the samples, crushes the sample through the Boyd crusher to <3 mm. The crushed sample is then split through the smart linear splitter which calculates how to split each individual sample to achieve the 500g quotient. The 500g jar is analysed using PAA finish.
		Best practice is assumed at the time of historic sampling.
		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 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.

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PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
		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 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 Northern Star 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 drill holes (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 MGA grid system it used at Enterprise
	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 regard to mineralised structures.
Sample security	The measures taken to ensure sample security.	Samples are prepared on site under supervision of Northern Star 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 listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	The Enterprise pit and near mine exploration are located on M31/380, M31/381 and M31/30. The tenements are held 100% by Northern Star Resources 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%.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
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Criteria	JORC Code explanation	Commentary
		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.
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 moderately to 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.
Drill hole Information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: o easting and northing of the drill hole collar o elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar o dip and azimuth of the hole o down hole length and interception depth o hole length.	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 results materially change the economic value of the project.
	If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	Exclusion of the 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 being released
	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 being released
	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.	Previous announcements include sufficient detail to clearly illustrate the geometry of the mineralisation and the drilling.
	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').	No exploration results are being released
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 Northern Star 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 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

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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).	Further exploration work at Enterprise is currently under review. Economic constraints determine the priority given to this area.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Appropriate diagrams and maps of future extensions and work are available in the appropriate ASX announcements.

Section 3 Estimation and Reporting of Mineral Resources
(Criteria listed in section 1, and where relevant in section 2, also apply to this section).

Criteria	JORC Code explanation	Commentary
Database integrity	Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.	Northern Star 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 for this resource report has not visited site with historical mining activities ceased in 2011/2012. The geological interpretation, background data & estimation parameters has been produced and/or extensively reviewed by both senior Resource geologists and onsite senior growth personnel.
	If no site visits have been undertaken indicate why this is the case.	historical mining activities ceased in 2011/2012. The geological interpretation, background data & estimation parameters has been produced and/or extensively reviewed by both senior Resource geologists and onsite senior growth personnel.
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 of 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 current resource has been interpreted from 38 surface diamond holes and 2,823 RC holes.
		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 effect, 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 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 1.3km strike extent area to 200m below surface, with MGA coordinates stretch from 6704400mN-6705750mN, 433600mE- 433900mE 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. If a computer assisted estimation method was chosen include a description of computer software and parameters used.	Mineralisation is domained based on geological continuity. All domain wireframes are created using Leapfrog software and all subsequent estimation is completed using Datamine software. Lode wireframes are defined from 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 1x1x1m 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

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
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E: info@nsrltd.com
W: www.nsrltd.com

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		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 is less than 20m as individual lodes do not have long strike or dip lengths.
	The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.	All resource models are compared to the immediate previous model to determine changes from new input data. Enterprise open pit has previously been mined and milled and this material is considered well understood.
	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. Northern Star 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 (2.0m) 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.	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.	Several statistical and visual measures are used to validate the accuracy of the estimation. Volume variance between the wireframe domains and block model domains are assessed. 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 Northern Star'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 Northern Star Gold Resources Limited. 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 $2500 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 processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	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 green fields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be	No processing or beneficiation of ore expected on these tenements, as ore is hauled to Carosue Dam Minesite 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

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W: www.nsrltd.com

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	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 Northern Star 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 nonporous 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 Enterprise 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 <=10x10m's, estimated in the first search pass, have established grade and geological continuity. Indicated material is assigned if drill spacing is between 10x10m and 35x35m, search pass either 1 or 2, established grade and geological continuity, predominantly 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 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.	Northern Star has adopted a process for geological modelling, estimation and reporting of mineral resources that meets high industry standards. At the completion of resource estimation Northern Star 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.
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. Northern Star uses a standard approach to resource estimation and the procedure requires the systematic completion of the Northern Star 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 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 listed in section 1, and where relevant in sections 2 and 3, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral Resource estimate for	Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.	The Mineral Resource estimate for the Enterprise Project was used as a basis for the conversion to the Ore Reserve estimate reported and was compiled by Northern Star Resources (NSR).

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ABN: 43 092 832 892

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T: +61 8 6188 2100
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E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
conversion to Ore Reserves		Reported ore reserves are based on updated or depleted resource models for all project areas.
	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.	Site visits have been undertaken by the Competent person.
	If no site visits have been undertaken indicate why this is the case.	Not applicable.
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 open pit mine for a period of 15 months between year 2011-2012. Since then, revised Pre-feasibility level study was undertaken with the view to recommence open pit operation and has been included in Carosue Dam 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.	Ore Reserves have been calculated by generating detailed mining shapes for the proposed open pits. A series of nested optimised pit shells were generated using Whittle software, an analysis of the shells was completed to select one which was then used to complete a detailed pit design to closely resemble the selected whittle shell. The Whittle optimisation used parameters generated from NSR technical personnel and technical consultants. A detailed mine schedule and cost model has been generated using an excel spreadsheet model. Appropriate ore dilution and recoveries have been applied within the excel spreadsheet model. The processing parameters have been based on metallurgical test work and actual costs of the Carosue Dam processing plant. The current study level demonstrates high confidence that the projects can achieve the mine plan and be operated in a technically sound and economically viable manner.
Cut-off parameters	The basis of the cut-off grade(s) or quality parameters applied.	The pit cut-off grade has been calculated based on the key input components (processing, recovery, and administration). Forward looking forecast costs and physicals form the basis of the cut-off grade calculations. The AUD gold price as per corporate guidance. Mill recovery factors are based on metallurgical test work.
Mining factors or assumptions	The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design).	Mineral Resource is converted to Ore Reserve after completing a detailed mine design complete with a detailed financial assessment. A series of nested optimised pit shells were generated using Whittle software, an analysis of the shells was completed to select one which was then used to complete a detailed pit design to closely resemble the selected whittle shell. The Whittle optimisation used costs and inputs derived from current operational data, contractors, and independent consultant recommendations. Ore Reserves have been calculated by generating detailed mining shapes for the proposed pit design. Open pit planned and unplanned dilution (waste material that is located within the minable shape) has been modelled within the mining shapes.
	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 operation efficiency, safety and productivity. Appropriate mine schedule and lead time have been applied to maintain effective operational delays and productivity rate.
	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 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 Enterprise will use RC drilling and sampling method. The method and practice has been utilised successfully at all current and past mining operations at Northern Star.
	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.
	The mining dilution factors used.	Physicals are reported within the generated mining shapes for the open pit Ore Reserve. SMU shapes have been generated for the reporting of Ore Reserve physicals. Dilution is accounted for within the SMU. An additional 5% was applied in the Ore Reserve estimation to reflect the expected mining performance for the given ore body characteristic, selected mining method and equipment.
	The mining recovery factors used.	Some ore loss has been accounted for while satisfying the SMU dimensions, a further 5% ore loss was applied in the Ore Reserve estimation to reflect the expected mining performance for the given ore body characteristic, selected mining method and equipment.
	Any minimum mining widths used.	The SMU dimensions for the Reserve Estimate are 4 m Wide x 5m High x 4.0 m Long. A minimum mining width down to 25 m for final pit extraction from the base of pit has been used.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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	The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.	Inferred material is excluded from the ore reserves and treated as waste material. Which incurs a mining cost but is not processed and do not generate any revenue. Therefore, final pit reserve inventory has excluded any inferred mineral resources.
	The infrastructure requirements of the selected mining methods.	The selected mining method and location of the pit is close to operating Carosue Dam mining operations, which consists of underground mines, 4Mt 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 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.
	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 deposits 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%. 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.
	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 orebody as a whole.	When in operation the Enterprise 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?	Not applicable.
Environmental	The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.	All required Environment studies and Statutory Government Approvals including works approvals have been granted. The Mining Proposal and Mine Closure Plan for the project has been approved by DEMIRS. A clearing permit has been submitted to accommodate updated project footprint. The existing Carosue Dam processing facility at which ore will be processed and the accommodation village all lie 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. An appropriate landform design criteria has been considered based on rock characteristic to mitigate current and future pit expansions.
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 Project is a satellite pit operation and extension of the Carosue Dam Operation. The Carosue Dam Operation comprises of a 4Mtpa CIL ore processing facility, aerodrome with sealed runway, associated tailings storage facilities, power station, water supply, workshops, administration offices and accommodation camps. The project area is connected to Carosue dam by an established haul road constructed for road train haulage. Minor infrastructure will be required at the project area and has been allowed for in the cost model.
Costs	The derivation of, or assumptions made, regarding projected capital costs in the study.	Majority of capital work relating to infrastructure setup 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.	A capital and operating cost model has been developed in Excel and has been used to complete a life of mine cash flow estimate. The estimation of Open pit mine operating costs was based on a dry-hire mining, contract drilling, and contractor maintenance operation using first principles to determine equipment productivities and associated operating hours to generate mine schedules. Provided contract pricing were than applied to the schedule to calculate all unit costs. 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$2,000/oz has been adopted for financial modelling. No allowance is made for silver by-products.
	The source of exchange rates used in the 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 Carosue 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 Carosue Dam.

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Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
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E: info@nsrltd.com
W: www.nsrltd.com

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	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.	All financial analysis and gold price have been expressed in Australian dollars and no direct exchange rates have been applied. Revenue factors within the whittle optimisation process were used. A revenue factor shell was selected and used to complete a detailed pit design. A gold price of AUD$2,000 per ounce has been used in the optimisation of the Enterprise Project.
	The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.	Corporate guidance.
Market assessment	The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.	There is a transparent quoted market for the sale of gold.
	A customer and competitor analysis along with the identification of likely market windows for the product.	There is a transparent quoted market for the sale of gold.
	Price and volume forecasts and the basis for these forecasts.	Corporate guidance.
	For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.	Not applicable.
Economic	The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.	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 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 Northern Star 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. Aboriginal heritage surveys have been conducted and maintain no negative impact within the 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 within the operation and will be addressed by constructing appropriate water diversion bunds 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 & Mine Closure Plan application has been approved. A clearing permit is currently under assessment. Works Approval for dewatering and discharge are in place.
Classification	The basis for the classification of the Ore Reserves into varying confidence categories.	The Ore Reserve Estimate classification for Enterprise 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.
	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 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 Ore Reserve estimate has been derived from Indicated Mineral Resource category. 100% of Proved ore from Ore Reserve estimate has been derived from 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 Northern Star Ore Reserve Policy and undergone internal review.
Discussion of relative accuracy/ confidencmee	Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the Reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.	The Ore Reserve estimate has been prepared within the guidelines of the 2012 JORC Code. The relative confidence of the estimate complies with the criteria of Ore Reserves. Based upon; - Resource estimate - significant operating history,

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Subiaco WA 6904

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E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
		- application of current industry practices, - appropriate operating and capital costs, The range of the modifying factors and mining parameters applied are appropriate and confidence in the resulting reserve estimate is reasonable. The Ore Reserve estimation 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 widely utilised at current Northern Star open pit operations.
	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.	All modifying factors have been applied to design mining shapes on a global scale.
	Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.	Not applicable.
	It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	Not applicable.

Carosue Dam: Kurnalpi – 31 March 2024

Section 1 Sampling Techniques and Data

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

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.	Northern Star has undertaken reverse circulation drilling (RC), RC pre-collar diamond drill tails (RCD) and diamond drilling (DD) at Kurnalpi. Historic sampling methods have included rotary air blast (RAB), Aircore (AC), reverse circulation (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 RC and DD drilling is carried out as specified within Northern Star 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.
	Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. 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 3kg. 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 3kg to ensure total sample inclusion at the pulverisation stage. Northern Star 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. From July 2022 all samples are assayed using Photon analysis. Samples are crushed to 85% passing 2mm then split with a 500g sub sample taken for analysis (PAAU002). 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 is sampled by 378 RAB holes, 179 Aircore holes, 724 surface RC holes (utilising a 143mm diameter bit with a face sampling hammer and an external auxiliary booster), 12 RCD holes and 30 diamond core holes from surface utilising NQ diameter drill bits (These include Northern Star drilling between 2021-2023(an additional 15 diamond and 75 RC). Diamond holes were oriented using the Reflex ACT III tool.
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.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
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E: info@nsrltd.com
W: www.nsrltd.com

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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.	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.	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. RC grade control samples are photographed using the Imago photo software for high resolution geological logging and modelling. Core is photographed in a wet state using Imago photographic software.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	Most geological data that requires description is qualitative, and where measured, such as structural and geotechnical data, is quantitative. 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 of the core preserving logging commentary and orientation lines. 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. The photon assay technique was introduced in 2022. This process involves crushing samples to < 3 mm. 500 g of crushed material is then placed into single-use sample jars. 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 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. The photon assay technique was introduced in 2022. The primary samples are analysed through ALS. For preparation, samples are oven dried at 105 degrees until dry . All samples are fed into a robot where the remaining sample preparation is automated. The robot weighs the samples, crushes the sample through the Boyd crusher to <3 mm. The crushed sample is then split through the smart linear splitter which calculates how to split each individual sample to achieve the 500g quotient. The 500g jar is analysed using PAA finish. 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. QAQC data is reported monthly.

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Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
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W: www.nsrltd.com

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		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 planned twinned holes have been drilled at Kurnalpi.
	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 Northern Star 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 drill holes (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 multi-shot, Axis Champ Gyro recorded at 3m intervals.
		Previous holders' survey accuracy and quality is unknown
	Specification of the grid system used.	Kurnalpi uses the GDA94 zone 51 grid system.
	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 drilling is 20m x 20m to 80m x 80m.
	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 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 has been recognised due to orientation of drilling in regard to mineralised structures.
Sample security	The measures taken to ensure sample security.	Samples are prepared on site under supervision of Northern Star 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 listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	The Kurnalpi area is located on M28/84, M28/374, M28/70, M28/92, M28/375 and M28/7. The tenements owned 100% by Northern Star Resources Limited.
		All Mining Leases have a 21 year life and are renewable for a further 21 years on a continuing basis.
		There are no registered Aboriginal sites within the Mining Leases.
		M28/92, M28/374 and M28/375 encroach on "C" Class Reserves with the purpose of Public Utility
		Mining Leases M28/84, M28/374, M28/92 and M28/375 are subject to a 0.5% Royalty on Gold Production
		Mining Leases M28/84, M28/374, M28/92, M28/375 and M28/7 are subject to a 1% Royalty of Gross Revenue

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Subiaco WA 6008, Australia

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T: +61 8 6188 2100
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W: www.nsrltd.com

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		All production is subject to a Western Australian state government NSR royalty of 2.5%.
		The Mining Leases are affected by the Maduwongga (WC2017/001) and Kakarra Part A (WC2020/005) Native Title 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 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 Kurnalpi Mining Centre, discovered in 1894, is renowned for its alluvial and deep-lead gold. Several large nuggets of more than 200 ounces have been found and prospectors were working shallow deposits for 'alluvial' gold with some success.
		In 1989, Barrick Exploration conducted geological mapping and sampling of all accessible mine workings within the prospect. Most of the workings were non extensive, generally consisting of exploratory shafts, shallow pits and trenches. Conclusions of the programme discovered significant gold grades were mostly confined to quartz veining, and structures that may follow lithological contacts.
		Since then, Kurnalpi has been subject to modern exploration techniques from multiple company owners. In March 2012, Snowden was commissioned by Carrick Gold (later changed to Kal-North) to undertake a Mineral Resource estimate for the Brilliant, Discovery Hill, Halfway Hill, Scottish Lass, Sparkle and Dazzle deposits. Results of the 2012 Mineral Resource is summarized in Table 1 below.
		In June 2021, Northern Star Resources purchased the project from Kal North Gold Mines Ltd.
Geology	Deposit type, geological setting and style of mineralisation.	The Kurnalpi Project is in the Kurnalpi domain of the Norseman-Wiluna greenstone belt in the Yilgarn Craton. The Kurnalpi domain is bounded by the Avoca shear in the west and Yilgangi shear in the east. The domain comprises of a poorly outcropping and lateralized sequence of the Mulgabbie Formation mafic volcanics, dolerite and gabbro intrusives. The greenstone is intruded by a large granitoid body in the north which forms the core of a south plunging anticline. The local geology mainly consists of basaltic flows with several komatiitic, peridotite flows interbedded with Archaean sedimentary rocks such as sandstone, siltstone and chert which is intruded by granitoid rock and gabbroic sills. The area is dominated by the north-northwest Brilliant shear zone which is a control for the gold mineralisation throughout the local area. The weathering profile can be up to 80 m deep and is overlayed by a lateritic ferriferous capping, ranging from 1 m to 5 m thick.
Drill hole Information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: o easting and northing of the drill hole collar o elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar o dip and azimuth of the hole o down hole length and interception depth o hole length.	All material data was periodically released on the ASX: nominally the report dated: 03/05/2021, 30/07/2019, 29/07/2010 Future drillhole data will be periodically released or when results materially change the economic value of the project.
	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.	N/A
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 being released
	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 being released
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	No exploration results are being released
Relationship between mineralisation widths and intercept lengths	These relationships are particularly important in the reporting of Exploration Results.	Previous announcements included sufficient detail to clearly illustrate the geometry of the mineralisation and the latest drilling. All results were reported as downhole lengths.
	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.
	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 Northern Star are accompanied by the appropriate diagrams and maps at the time of the release.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
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).	Kurnalpi is scheduled to commence grade control spaced drilling in 2025-2026 financial year. No further exploration programs have been planned.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Previous announcements included sufficient detail to clearly illustrate the geometry of the mineralisation.

Section 3 Estimation and Reporting of Mineral Resources

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

Criteria	JORC Code explanation	Commentary
Database integrity	Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.	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 has not visited the site regularly during exploration phases. However, the geological interpretation has been produced by personnel with extensive onsite experience. 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.	N/A
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 of any assumptions made.	The geological interpretation of Kurnalpi 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 used to help define the mineralised domains and regolith boundaries. The current resource has been interpreted from 1,451 RC holes (126,485m), 20 RCD holes (4689m) and 24 diamond holes (3677m).
	The effect, 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 has been considered but deemed unsuitable to appropriately constraining metal distribution.
	The use of geology in guiding and controlling 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 Kurnalpi is primarily hosted within a series of parallel North/North-west striking, sub-vertical dolerite units. Mineralisation presents as a series of quartz veins hoisted in this dolerite ranging from 0.1m-5m in thickness with the swarm plunging shallowly to the north.
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.	Kurnalpi mineralisation extends from 6,623,750N to 6,621,450N, 426,500E to 425,250E and 220 metres below surface.
	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	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

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
Estimation and modelling techniques	extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.	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 1 x 1 x 1m 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 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 80m 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. The mine reconciles well against the model and mill with no issues identified.
	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.
	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 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 surface exposures. Domains are estimated individually with search geometry and variography controlled by lode orientation and grade continuity respectively. Variogram major search directions are aligned with geologically interpreted high grade shoot trends. Categorical indicator kriging has been utilised to define sub-domains in lodes with mixed grade populations to limit the spread of high grade mineralisation. Dynamic anisotropy has been employed on lodes exhibiting excessive undulation. Boundary analysis has been conducted on key lodes indicating hard boundaries should be maintained across domain and sub-domain contacts.
	Discussion of basis for using or not using grade cutting or capping.	Samples with extreme high grades that bias the mean grade and positively skew the grade population within each mineralised domain are top cut to reduce the influence of high grade outliers. Log probability plots and the coefficient of variation statistic were used to determine top-cuts.
	The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.	A number of statistical and visual measures are used to validate the accuracy of the estimation. Volume variance between the wireframe domains and block model domains are assessed. 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 Northern Star's current economic operations, 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 project has been evaluated as an open pit project which is expected to enter into production in the 2026-2027 financial year. Resource numbers reported are constrained to internally generated $2500 open pit optimisation shell with the resource reported above COG of 0.5g/t.
Metallurgical factors or assumptions	The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	Metallurgical testing on core and RC composites of oxide and fresh ores identified leach recoveries from 86% to 93% with a high gravity gold component (28% - 58%).

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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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 green fields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	Waste rock characterisation has been conducted on the deposit with no environmental issues identified except dispersive oxidised material and waste dump construction plan in place to manage.
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 Kurnalpi were determined via testing of representative intervals from diamond drill holes. The sample size is generally between 0.5 and 1.3kg and the method of calculation is the water displacement technique. Measurements have been recorded in the Acquire database and extraction schemes pair this data with the major lithology code for statistical analysis.
	The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc.), moisture and differences between rock and alteration zones within the deposit.	Ore zones predominantly exist in transitional to fresh nonporous material, so additional measures to reduce moisture intake during the water displacement method is unnecessary at this stage. 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 Kurnalpi resource is classified as, indicated or Inferred assigned via boundary string by domain based on a combination of physical and estimation quality metrics including drill spacing, search pass, kriging efficiency / slope / variance, grade and geological continuity. Indicated material is assigned if drill spacing is between < 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 up to 80x80m's with established geological continuity. All other mineralisation is assigned a Potential resource category.
	Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).	All 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.	Northern Star has adopted a process for geological modelling, estimation and reporting of mineral resources that meets high industry standards. At the completion of resource estimation Northern Star 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.
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. Northern Star uses a standard approach to resource estimation and the procedure requires the systematic completion of the Northern Star 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.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Section 4 Estimation and Reporting of Ore Reserves

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

Criteria	JORC Code explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.	The Mineral Resource Model for the Kurnalpi gold deposit is a robust global estimate that was used as a basis for conversion to the Ore Reserve estimate. Resource estimate was compiled by Northern Star Resources (NSR). Reported ore reserves are based on updated or depleted resource models for all project areas.
	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.	Competent Person along with geotechnical consultant has conducted several site visits to the Kurnalpi open pit since the inclusion in Carosue Dam operations life of mine plan.
	If no site visits have been undertaken indicate why this is the case.	Site visits undertaken.
Study status	The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.	A minimum Pre-Feasibility level study is completed prior to converting an ore zone into ore Reserve.
	The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.	Ore Reserves have been calculated by generating detailed mining shapes for the proposed open pits. A series of nested optimised pit shells were generated using Whittle software, an analysis of the shells was completed to select one which was then used to complete a detailed pit design to closely resemble the selected whittle shell. The Whittle optimisation used parameters generated from NSR technical personnel and technical consultants. A detailed mine schedule and cost model has been generated using an excel spreadsheet model. Appropriate ore dilution and recoveries have been applied within the excel spreadsheet model. The processing parameters have been based on metallurgical test work and actual costs of the Carosue Dam processing plant. The current study level demonstrates high confidence that the projects can achieve the mine plan and be operated in a technically sound and economically viable manner.
Cut-off parameters	The basis of the cut-off grade(s) or quality parameters applied.	The pit cut-off grade has been calculated based on the key input components (processing, recovery, and administration) Forward looking forecast costs and physicals form the basis of the cut-off grade calculations. The AUD gold price as per corporate guidance. Mill recovery factors are based on metallurgical test work.
Mining factors or assumptions	The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e., either by application of appropriate factors by optimisation or by preliminary or detailed design).	Mineral Resource is converted to Ore Reserve after completing a detailed mine design complete with a detailed financial assessment. A series of nested optimised pit shells were generated using Whittle software, an analysis of the shells was completed to select one which was then used to complete a detailed pit design to closely resemble the selected whittle shell. The Whittle optimisation used costs and inputs derived from current operational data, contractors, and independent consultant recommendations. Ore Reserves have been calculated by generating detailed mining shapes for the proposed pit design. Open pit planned and unplanned dilution (waste material that is located within the minable shape) has been modelled within the mining shapes.
	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 Kurnalpi 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. Kurnalpi Reserve pit is designed to mine the deposit from natural surface to achieve life of mine Reserve such that it meets the operation efficiency, safety aspect and productivity. Appropriate mine schedule and lead time have been applied to maintain effective operational delays and productivity rate.
	The assumptions made regarding geotechnical parameters (e.g., pit slopes, stope sizes, etc.), grade control and pre-production drilling.	Independent Geotechnical Consultants Dempers & Seymour Pty Ltd completed a geotechnical study for the Kurnalpi project. Recommended wall angles were applied to the Whittle optimisation and subsequent detailed pit designs. The Grade control method to be employed at Kurnalpi is Reverse circulation drilling to obtain samples. The method and practice have been utilised successfully by northern Star at all current and past mining projects.
	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.
	The mining dilution factors used.	A mining dilution factor of 10% is applied in the Ore Reserve estimation and reflect the expected mining performance for the given ore body characteristic, 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 reflect the expected mining performance for the given ore body characteristic, selected mining method and equipment

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
	Any minimum mining widths used.	A minimum operating 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 Northern Star 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 has not been included within this Reserve estimate (treated as waste) but has been considered in LOM planning. The amount of inferred material has no impact on the sensitivity of the project.
	The infrastructure requirements of the selected mining methods.	Infrastructure required for the proposed Kurnalpi Project has been accounted for and included in all work leading to the generation of the Ore Reserve estimate. Planned infrastructure to be established at Kurnalpi will include Offices, workshops and associated facilities, dewatering pipeline, Waste Rock Storage Dump and ROM Pad. Ore from the Kurnalpi Project will be processed through the Carosue Dam Processing Plant; hence no processing infrastructure is required.
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.
	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% and 94% for deposits 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.	The metallurgical recoveries for the Kurnalpi project were set at 90% for all material types, which corresponds with metallurgical test work undertaken.
	Any assumptions or allowances made for deleterious elements.	There are no known deleterious elements present in Kurnalpi 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 orebody as a whole.	Based on metallurgical test work carried out and milling experience gained through processing similar material through the Carosue Dam Processing Plant.
	For minerals that are defined by a specification, has the ore Reserve estimation been based on the appropriate mineralogy to meet the specifications?	No minerals are defined by specification
Environmental	The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.	All required Environment studies and Statutory Government Approvals including works approvals and clearing permit are ongoing. A Mining Proposal and Mine Closure Plan will be submitted at later stage in appropriate manner for the operation to recommence. 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 Kurnalpi Project is a satellite pit operation and extension of the Carosue Dam Operation. The Carosue Dam Operation comprises of a 4Mtpa CIL ore processing facility, aerodrome with sealed runway, associated tailings storage facilities, power station, water supply, workshops, administration offices and accommodation camps. A new haul road will be constructed to connect the project area to Carosue dam. Minor infrastructure will be required at the project area and has been allowed for in the cost model.
Costs	The derivation of, or assumptions made, regarding projected capital costs in the study.	Capital work related costs have been allocated for the project establishment budget and further allowance has been made in financial modelling for the pre striping of the pit.
	The methodology used to estimate operating costs.	A capital and operating cost model has been developed in Excel and has been used to complete a life of mine cash flow estimate. The estimation of Open pit mine operating costs was based on a dry-hire mining, contract drilling, and contractor maintenance operation using first principles to determine equipment productivities and associated operating hours to generate mine schedules. Provided contract pricing were than applied to the schedule to calculate all unit costs.
	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.	Single commodity pricing for gold only, using a gold price of AUD$2,000 per ounce as per NSR corporate guidance.
	The source of exchange rates used in the 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.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
	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 total of 1.94% of private royalties.
Revenue factors	The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc.	All financial analysis and gold price have been expressed in Australian dollars and no direct exchange rates have been applied. Revenue factors within the whittle optimisation process were used. A revenue factor shell was selected and used to complete a detailed pit design. A gold price of AUD$2,000 per ounce has been used in the optimisation of the Kurnalpi Project.
	The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.	Corporate guidance.
Market assessment	The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.	There is a transparent quoted market for the sale of gold.
	A customer and competitor analysis along with the identification of likely market windows for the product.	Not Applicable.
	Price and volume forecasts and the basis for these forecasts.	Not Applicable.
	For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.	Not Applicable.
Economic	The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.	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 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 Northern Star 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. Aboriginal heritage surveys have been conducted. 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 within the operation and has been addressed appropriately. Adequate water diversion bunds will be 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 and Mine Closure Plan will be submitted using the updated mine reserve pit in a timely manner. Baseline environment studies are ongoing and other Statutory Government Approvals (prescribed premises and groundwater abstraction licenses; vegetation clearing permit), will be submitted in a timely manner.
Classification	The basis for the classification of the Ore Reserves into varying confidence categories.	The Ore Reserve Estimate classification for Kurnalpi 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.
	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 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 Kurnalpi 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 Indicated category of 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 Northern Star 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 geostatistical procedures to quantify the relative accuracy of the Reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.	The Ore Reserve estimate has been prepared within the guidelines of the 2012 JORC Code. The relative confidence of the estimate complies with the criteria of Ore Reserves. Based upon; - Resource estimate - significant operating history, - application of current industry practices,

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
		- appropriate operating and capital costs, The Ore Reserve estimation have been the subject to peer review internally, and the Competent Person is confident that it is an accurate estimation of the reserve. The Kurnalpi operation will utilise the same grade control methods that widely utilised at current Northern Star open pit operations.
	The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.	Estimates are global but will be reasonably accurate on a local scale.
	Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.	The range of the modifying factors and mining parameters applied are appropriate and confidence in the resulting reserve estimate is reasonable
	It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	Kurnalpi is unmined

Carosue Dam: Memphis – 31 March 2024

Section 1 Sampling Techniques and Data

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

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 Northern Star in the Memphis region has consisted of reverse circulation (RC) drilling, RC pre-collar diamond drill tail (RCD) 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 Northern Star sampling and QAQC procedures as per industry standard. RC chips and DD core provide high quality representative samples for analysis. RC, RAB and AC 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 30g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. 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. Northern Star 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 Memphis area has been tested by 68 AC holes, 19 RC holes (assumed standard 5 ¼ ''bit size) and 48 surface diamond (HQ and NQ) holes and 6 precollar /diamond tail drillholes in total. Northern Star has completed 11 surface RC drill holes, 48 surface diamond (HQ and NQ) holes and 6 RC precollar /diamond tail drillholes. Diamond holes were oriented using a Reflex Act III tool.
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 was sampled 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.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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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.	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.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	Core and chips are photographed in a wet state using Imago photographic software. Qualitative and quantitative logging of historic data varies in its completeness. All RC, RCD and Diamond logging is completed in full.
	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 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 a 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 1:20 for exploration RC 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 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. This method is 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.
	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 quarterly. 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 Memphis
	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.

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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 Northern Star 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 drill holes (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 in rod survey instrument taking readings every 18m/30m for diamond drilling. A Reflex EZ-GYRO tool carried out downhole surveys every 30m for RC drilling, as drilling progresses, with a continuous (SPRINT-IQ) survey conducted at the end of the hole taking a reading every 5m metres. Previous holders' survey accuracy and quality is unknown
	Specification of the grid system used.	GDA94 zone MGA_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 re-sampled to 1m intervals from an original sample coming off the RC rig cone splitter. 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 regard to mineralised structures.
Sample security	The measures taken to ensure sample security.	Samples are prepared on site under supervision of Northern Star 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 listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	The Memphis area is located on Exploration licence E31/1058. The tenement is held 100% by Northern Star Resources Limited. The exploration lease is renewable for an additional two years in June 2024. There is one registered Native Title Claim that incorporates the Carosue Dam leases; Nyalpa Pirniku (WC2019/002).
	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.	Previous exploration work and existing datasets over the Memphis Prospect include: • Historic soil/auger sampling completed. • 100k scale outcrop mapping 4km to the west, Cainozoic aged sandplains have been mapped covering the majority of the Memphis prospect. • 400m-600m spaced RAB/aircore lines on 80m intervals. Multiple programs have left several gaps in coverage in certain areas however continuation of the anomalous structure can be confidently predicted from the geophysical datasets. • Airborne & gravity datasets collected. • Several RC exploration holes drilled 2003-2004 by Sons of Gwalia

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
Geology	Deposit type, geological setting and style of mineralisation.	The Memphis prospect is located at the northern end of the Carosue Basin, approximately 18km north of the Carosue Dam mill. The lithology comprises primarily intermediate felsic volcaniclastic sandstones and conglomerates, minor intermediate tuffs and intermediate porphyry units with stratigraphy dipping generally to the east at approx. 60 degrees. Gold mineralisation is associated with stacked, flat-lying quartz-carbonate-tourmaline vein arrays developed within a steeply northeast-dipping volcaniclastic host sequence.
Drill hole Information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: o easting and northing of the drill hole collar o elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar o dip and azimuth of the hole o down hole length and interception depth o hole length.	A total of 124 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: 15/11/2022, 03/05/2022, 03/05/2021, 18/02/2020, 11/11/2019, 30/7/2019, 30/04/2019, 18/02/2019, 27/11/2018 A select group of Memphis intercepts are reported in this release with all details.
	If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	Exclusion of the 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.	Drilling is generally perpendicular to the mineralisation
	If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.	Drilling is generally perpendicular to the mineralisation
	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 and estimated true thickness
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.	Previous announcements included sufficient detail to clearly illustrate the geometry of the mineralisation and the recent drilling.
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 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).	Extensional exploration for the Memphis area at this time is under review.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Appropriate diagrams and maps are available in the appropriate ASX announcements.

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Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Section 3 Estimation and Reporting of Mineral Resources
(Criteria listed in section 1, and where relevant in section 2, also apply to this section).

Criteria	JORC Code explanation	Commentary
Database integrity	Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.	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 CDO to assess geological competency and ensure integrity across all geological disciplines.
	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. The interpretation is built using local, structural, mineral, and alteration geology obtained from mapping, logging, drill results and geophysics. There is reasonable confidence in the global interpretation, however given the current drill spacing and variability in Au, the estimation is classified as Inferred
	Nature of the data used and of any assumptions made.	The geological interpretation of Memphis has considered all available geological information including local geology, structural deformation events and geophysical data. 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. The current resource has been interpreted from 57 surface RC drill holes, 50 surface diamond holes and 7 RC precollar /diamond tail drillholes.
	The effect, if any, of alternative interpretations on Mineral Resource estimation.	The geological wireframes defining the mineralised zones are considered to be robust given the available data, as new data is available alternative interpretations will be reviewed.
	The use of geology in guiding and controlling Mineral Resource estimation.	Geological domains interpreted from all available geological data are used as estimation domains.
	The factors affecting continuity both of grade and geology.	Within the drilled areas, the gold continuity is loosely controlled by the geometry of sub-vertical breccia structures. The Deposit sits within 3 bounding north-south dextral faults.
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 820m long by 550m wide by 500m deep package with multiple lodes developed.
Estimation and modelling techniques	The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.	Mineralisation is domained based on geological continuity. All domain wireframes are created using Leapfrog software and all subsequent 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. An ordinary kriged estimation is applied to each domain. Variography is created for all domains with sufficient sample data. Output variograms are utilised in kriging neighbourhood analysis (KNA) to generate optimum parent block sizes and estimation parameters. 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.
	The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.	This is a maiden resource
	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).	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 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 2m 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 80% of the total sill of the variogram for Memphis. The second pass is set at 1.5 times the variogram range with the final pass set at a factor large enough to ensure all blocks comprising the domain are estimated.

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ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
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E: info@nsrltd.com
W: www.nsrltd.com

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	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 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.
	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 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 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 $2,500 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 an $2500 optimised shell reflecting the bulk mining method assumed.
Metallurgical factors or assumptions	The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	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 green fields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	Environmental considerations captured by Program of Work (PoW) requirements. Operations on these tenements 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 bulk densities 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.	Based on data density, Au variability and the further review required into influence of the sub vertical breccia domains on mineralisation controls, the Memphis deposit is categorised as an Inferred resource.
	Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).	All relevant factors have been taken into account and are validated through rigorous QAQC of the drill hole database, geological knowledge and interpretation of the Memphis deposit. Thorough model validations and reviews ensure the integrity of the final estimation and the grade and tonnage numbers.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
	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.	Northern Star has adopted a process for geological modelling, estimation and reporting of mineral resources that meets high industry standards. At the completion of resource estimation Northern Star 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. Northern Star uses a standard approach to resource estimation and the procedure requires the systematic completion of the Northern Star Resource Estimation Document that is thoroughly investigated and assessed in the Model review process, as stated above.
	The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.	The statement relates to a global estimate.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	N/A

Carosue Dam: Safari Bore – 31 March 2024

Section 1: Sampling Techniques and Data

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

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.	Northern Star has undertaken air core (AC), 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. Diamond core was placed in core trays for logging and sampling. Samples intervals are defined by the geologist to honour geological boundaries. Diamond core samples are mainly HQ and NQ (2) and vary between 0.3 m and 1.2 m (NQ2) or between 0.3 m and 1 m (HQ). For NSR RC samples were split using a rig-mounted cone splitter on 1m intervals to obtain a sample for assay.
	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 Northern Star 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 30g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. 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 samples are mainly HQ and NQ (2) and vary between 0.3 m and 1.2 m (NQ2) or between 0.3 m and 1 m (HQ) and cut into half core. Samples are selected to weigh less than 3 kg to ensure total sample inclusion at the pulverisation stage. Northern Star 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. From July 2022 all samples are assayed using Photon analysis. For Photon assaying, the sample Is crushed to 85% passing 2mm then split with a 500g sub sample taken for analysis (PAAU002). 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 170 AC holes, 984 RAB holes. 6,565 RC holes (assumed standard 5 ¼ ''bit size) and 66 surface diamond HQ core and unknown diameter holes cover the Safari Bore area (5,383 of which are in pit grade control holes). Northern Star has completed 15 AC holes, 158 RC holes (standard 5 ¼ ''bit size) and 17 surface diamond holes and are a combination of HQ/NQ2 sizes.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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		Diamond holes were oriented using a Reflex ACT Core orientation system.
		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.
		RC drilling contractors adjust their drilling approach to specific conditions to maximize sample recovery.
		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.
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 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.
	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 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.
		The photon assay technique was introduced in 2022. This process involves crushing samples to < 3 mm. 500 g of crushed material is then placed into single-use sample jars.
		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.
		For photon assay samples, coarse grind checks at the crushing stage (3 mm) are carried out at a ratio of 1:25 samples by the robot. If the grind check is > 3mm, the robot stops, and samples are looped back through and re-crushed.
		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.
		For Photon assaying, the sample Is crushed to 85% passing 2mm then split with a 500g sub sample taken for analysis.
		Historic sampling includes fire assay, aqua regia, atomic absorption spectroscopy and unknown methods.

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Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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	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 Safari Bore.
	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 1:20 for DD and RC drilling. These are not identifiable to the laboratory. Blanks are inserted into the sample sequence at a rate of 1 per 20 samples. The insertion points are selected at random, except where high grade mineralisation is expected. 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. Barren flushes are regularly inserted after anticipated high gold grades. 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 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 Northern Star 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 drill holes (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 18m or 30m). Driller operated north-seeking gyroscopic 'Champ' in-rod survey instruments supplied by Axis were used for the 30m single shot surveys. 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 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.	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.
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.

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Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
Sample security	The measures taken to ensure sample security.	Samples are prepared on site under supervision of Northern Star 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 listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	The Safari Bore resource is located on M39/307. Near mine exploration extends onto M39/639. The tenements are held 100% by Northern Star Resources Ltd. 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 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.
Drill hole Information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: o easting and northing of the drill hole collar o elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar o dip and azimuth of the hole o down hole length and interception depth o hole length.	All significant exploration results released by Northern Star (Saracen) are documented in ASX statements, notably 18/02/2020
	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.	There are no exploration results to report with this document.

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E: info@nsrltd.com
W: www.nsrltd.com

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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.	There are no exploration results to report with this document.
	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.	There are no exploration results to report with this document.
	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.	There are no exploration results to report with this document.
	If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.	There are no exploration results to report with this document.
	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 include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	All significant exploration results released by Northern Star 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 previous 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).	Safari Bore is currently under review and exploration targeting will focus on areas with economic gain.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Appropriate diagrams and maps of future extensions and work are available in the appropriate ASX announcements.

Section 3: Estimation and Reporting of Mineral Resources

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

Criteria	JORC Code explanation	Commentary
Database integrity	Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.	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 has not carried out site visits to the safari bore deposit, however geology management and exploration geology personnel have carried out site visits to the Safari Bore deposit on numerous occasions. The competent person has built a sound understanding of the deposit geology. All geological processes undertaken by Northern Star concerning the Safari Bore resource have been done using Northern Star's standard operating procedures.
	If no site visits have been undertaken indicate why this is the case.	N/A
	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 is considered good. The interpretation has been based on the detailed geological work completed by both previous owners of the project coupled with recent review by the Northern star growth team. This knowledge is based on extensive geological logging of drill core, RC

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Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
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E: info@nsrltd.com
W: www.nsrltd.com

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Geological interpretation		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 Lodes and Serengeti mineralisation lie within and at the margins of a gently southerly plunging felsic porphyry. The Serengeti porphyry and associated mineralisation may be a southern structural repetition of the Red Lode. In contrast to the Red Lodes 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 of 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 effect, 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. Northern Star considers the current interpretation to be robust based on all the examined geological data. The current resource has been interpreted from 82 diamond holes, and 6456 RC holes (5383 of which are in pit grade control holes).
	The use of geology in guiding and controlling 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 Lodes and Serengeti mineralisation lie 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, purple and blue 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.
	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. If a computer assisted estimation method was chosen include a description of computer software and parameters used.	Mineralisation is domained based on geological continuity. All domain wireframes are created using Leapfrog software and all subsequent 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. Northern Star 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 Safari Bore was constructed using a 5 mE x 10 mN x 5 mRL parent block size with sub-celling to 1 mE x 2 mN x 1 mRL for domain volume resolution. All estimation was completed at the parent cell size scale. 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

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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		across structure variogram range. Minimum and maximum number of samples used are determined through KNA analysis, with the minimum number of samples required relaxed by 2 with each subsequent search pass.
	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 Lodes and Serengeti mineralisation lie 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 were 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.
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 factors 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 $2500 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 processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	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: 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.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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		• 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 environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a green fields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	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. • 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. Northern Star 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 Northern Star 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 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.	Northern Star 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 Northern Star geology personnel. Northern Star has reviewed the resource estimates and is satisfied that they are a true reflection of the global in situ 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 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 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.	The Safari Bore resource model was completed by Northern Star 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 in situ 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.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Section 4: Estimation and Reporting of Ore Reserves
(Criteria listed in section 1, and where relevant in sections 2 and 3, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.	The Mineral Resource Model for the Safari Bore gold deposit is a robust global estimate that was used as a basis for conversion to the Ore Reserve estimate. Resource estimate was compiled by Northern Star 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. Reported ore reserves are based on depleted resource models for all project areas
	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.	Site visits undertaken.
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 previous as an open pit mine. More recently Northern Star has conducted a Pre-Feasibility level study with the view to recommence open pit operation and has been included in Carosue Dam life of mine plan. The 2024 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.	Ore Reserves have been calculated by generating detailed mining shapes for the proposed open pits. A series of nested optimised pit shells were generated using Whittle software, an analysis of the shells was completed to select one which was then used to complete a detailed pit design to closely resemble the selected whittle shell. The Whittle optimisation used parameters generated from NSR technical personnel and technical consultants. A detailed mine schedule and cost model has been generated using an excel spreadsheet model. Appropriate ore dilution and recoveries have been applied within the excel spreadsheet model. The processing parameters have been based on metallurgical test work and actual costs of the Carosue Dam processing plant. The current study level demonstrates high confidence that the projects can achieve the mine plan and be operated in a technically sound and economically viable manner.
Cut-off parameters	The basis of the cut-off grade(s) or quality parameters applied.	The pit cut-off grade has been calculated based on the key input components (processing, recovery, and administration). Forward looking forecast costs and physicals form the basis of the cut-off grade calculations. The AUD gold price as per corporate guidance. Mill recovery factors are based on metallurgical test work.
Mining factors or assumptions	The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design).	Mineral Resource is converted to Ore Reserve after completing a detailed mine design complete with a detailed financial assessment. A series of nested optimised pit shells were generated using Whittle software, an analysis of the shells was completed to select one which was then used to complete a detailed pit design to closely resemble the selected whittle shell. The Whittle optimisation used costs and inputs derived from current operational data, contractors, and independent consultant recommendations. Ore Reserves have been calculated by generating detailed mining shapes for the proposed pit design. Open pit planned and unplanned dilution (waste material that is located within the minable shape) has been considered in the financial evaluation.
	The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc.	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.
	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 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 to assist geotechnical aspect of technical studies. It is expected that once the pit is in operation there may be some need for additional geotechnical input and reflect any changes into life of mine pit design. The Grade control method to be employed at Safari Bore will use RC drilling and sampling method. The method and practice has been utilised successfully at all current and past mining operations at Northern Star.
	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.
	The mining dilution factors used.	A mining dilution factor of 15% is applied in the Ore Reserve estimation and reflect the mining performance based in ore body characteristic, mining method and equipment utilised.

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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	The mining recovery factors used.	A mining ore loss factor of 5% is applied in the Ore Reserve estimation and reflect the mining performance based in ore body characteristic, 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 Northern Star 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, thereby incurring a mining cost but is not processed and does not generate any revenue. The final pit reserve inventory has excluded any inferred mineral resources.
	The infrastructure requirements of the selected mining methods.	Infrastructure required for the Safari Bore Project has been accounted for and included in all work leading to the generation of the Ore Reserve estimate. Ore from the Safari Bore Project will be processed through the Carosue Dam Processing Plant; hence no processing infrastructure is required. The Safari Bore Project is connected by internal private haul roads to Carosue Dam. Planned infrastructure to be established at Safari Bore will include Offices, workshops and associated facilities, dewatering pipeline, Waste Rock Storage Dump, and ROM Pad.
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 93% and 94% for deposits 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 Safari Bore deposit is estimated to be 90%. The recovery estimation is based on Metallurgical test work and ongoing actual average recovery data collected at the Carosue Plant.
	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 orebody as a whole.	Number of samples of each expected rock type and grade bins have been sampled through the Carosue Dam processing plant for trial test work. These bulk samples/pilot test work is considered as 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?	Not applicable.
Environmental	The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.	The pit is currently on 'care and maintenance'. All required Environment studies and Statutory Government Approvals including works approvals and clearing permit are ongoing. A Mining Proposal and Mine Closure Plan will be submitted at later stage in appropriate manner for the operation to recommence. 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. Waste rock characteristic 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.	Safari Bore is a satellite open pit project and extension the Carosue Dam operations. The Carosue Dam Operation comprises of a 4Mtpa CIL ore processing facility, aerodrome with sealed runway, associated tailings storage facilities, power station, water supply, workshops, administration offices and accommodation camps. The project area is connected to Carosue Dam by an established haul road constructed for road train haulage. Minor infrastructure required at the project area has been allowed for in the cost model.
Costs	The derivation of, or assumptions made, regarding projected capital costs in the study.	There will be minimum capital cost relating to infrastructure setup as majority of the facilities have been already layout. Further allowance has been made in financial modelling for pre striping of the pit.
	The methodology used to estimate operating costs.	Operating costs for ore processing, haulage and administration have been derived from known parameters at Carosue Dam operations. A capital and operating cost model has been developed in Excel and has been used to complete a life of mine cash flow estimate. The estimation of Open pit mine operating costs was based on a dry-hire mining, contract drilling, and contractor maintenance operation using first principles to determine equipment productivities and associated operating hours to generate mine schedules. Provided contract pricing were than applied to the schedule to calculate all unit costs.
	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.	Single commodity pricing for gold only, using a gold price of AUD$2,000 per ounce as per NSR corporate guidance.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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	The source of exchange rates used in the 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.	All financial analysis and gold price have been expressed in Australian dollars and no direct exchange rates have been applied. Revenue factors within the whittle optimisation process were used. A revenue factor shell was selected and used to complete a detailed pit design. A gold price of AUD$2,000 per ounce has been used in the optimisation of the Safari Bore Project.
	The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.	Corporate guidance,
Market assessment	The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.	There is a transparent quoted market for the sale of gold.
	A customer and competitor analysis along with the identification of likely market windows for the product.	There is a transparent quoted market for the sale of gold.
	Price and volume forecasts and the basis for these forecasts.	Corporate guidance.
	For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.	Not applicable.
Economic	The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.	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.	Carouse Dam is in operation and Northern Star 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. Heritage surveys have previously been conducted within the area. However updated surveys are required. 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 within 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 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 Carouse 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 and Mine Closure Plan will be submitted using the updated mine reserve pit in a timely manner. Environmental studies and other Statutory Government Approvals including vegetation clearing, dewatering and discharge licence are ongoing.
Classification	The basis for the classification of the Ore Reserves into varying confidence categories.	The Ore Reserve Estimate classification has been in accordance with the JORC code 2012. The Ore Reserve Estimate is 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 Northern Star's Carouse 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 Ore Reserve estimate has been derived from Indicated category of Mineral Resource.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
Audits or reviews	The results of any audits or reviews of Ore Reserve estimates.	The Ore Reserve estimation process is in line with the Northern Star 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 geostatistical procedures to quantify the relative accuracy of the Reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.	The Ore Reserve estimate has been prepared in accordance with the guideline of the 2012 JORC Code. The relative confidence of the estimate complies with the criteria of 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 appropriate and confidence in the resulting reserve estimate is reasonable. The Ore Reserve estimation 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 Northern Star open pit operations.
	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.	All modifying factors have been applied to design mining shapes on a global scale.
	Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.	Not applicable.
	It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	Not applicable.

Carosue Dam: Moody's Reward – 31 March 2024

Section 1 Sampling Techniques and Data

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

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.	Northern Star has complete reverse circulation (RC) drilling and surface diamond drilling (DD) 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 Northern Star 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 30g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. 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 samples are mainly HQ and NQ (2) and vary between 0.3 m and 1.2 m (NQ2) or between 0.3 m and 1 m (HQ) and cut into half core. Samples are selected to weigh less than 3 kg to ensure total sample inclusion at the pulverisation stage. Northern Star 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. 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. Northern Star have completed 29 RC drillholes (standard 5 ¼ ''bit size), 2 RCD holes and 7 diamond holes and are a combination of HQ/NQ2 sizes. Northern Star Diamond holes were oriented using a Reflex ACT Core orientation system.
	Method of recording and assessing core and chip sample recoveries and results assessed.	Sampling recoveries of Northern Star RC holes were recorded as a percentage based on a visual weight estimate.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
Drill sample recovery		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 campaigns daily rig inspections are carried out to check splitter condition, general site and address general issues. At the RC rig, sampling systems are routinely cleaned to minimise contamination and drilling methods are focused on sample quality. RC drilling contractors adjust their drilling approach to specific conditions to maximize sample recovery. 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.	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.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	It is unknown if all diamond core was photographed.
	The total length and percentage of the relevant intersections logged.	All Northern Star 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 historic drill core is unknown. 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.	Northern Star 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 adheres 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 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.

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Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
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E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
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. Data from previous owners was taken from a database compilation and validated as much as practicable before entry into the Northern Star 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 drill holes (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 on historic data.
	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.
	Whether sample compositing has been applied.	Some RC drilling was composited into 4m samples, with anomalous or geologically significant areas reassayed on 1m intervals
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 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 Northern Star 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 listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	The Moody's Reward resources are located on M39/1112 which is held 100% by Northern Star Resources 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. 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

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Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
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E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
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
Drill hole Information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: o easting and northing of the drill hole collar o elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar o dip and azimuth of the hole o down hole length and interception depth o hole length.	A total of 150 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 results materially change the economic value of the project.
	If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	Exclusion of the 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 being reported
	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.	No exploration results are being 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').	No exploration results are being reported
Diagrams	Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	All significant exploration results released by Northern Star 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 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.	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).	Northern Star is currently working on establishing an exploration program which will identify areas of opportunity to extend or enhance the Moody's Reward mineral resource.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Appropriate diagrams and maps of future extensions and work are available in the appropriate ASX announcements.

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Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Section 3 Estimation and Reporting of Mineral Resources
(Criteria listed in section 1, and where relevant in section 2, also apply to this section).

Criteria	JORC Code explanation	Commentary
Database integrity	Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.	The database provide to Northern Star 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 has not carried out site visits to the Moody's reward deposit, however geology management and exploration geology personnel have carried out site visits to the Safari Bore deposit on numerous occasions. The competent person has built a sound understanding of the deposit geology. All geological processes undertaken by Northern Star concerning the Safari Bore resource have been done using Northern Star's standard operating procedures.
	If no site visits have been undertaken indicate why this is the case.	The competent person has not carried out site visits to the Moody's reward deposit, however geology management and exploration geology personnel have carried out site visits to the Safari Bore deposit on numerous occasions.
Geological interpretation	Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.	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.
	Nature of the data used and of 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 current resource has been interpreted from 10 surface diamond holes, 2 surface RC with NQ2 diamond tail drill holes and 138 RC holes.
	The effect, if any, of alternative interpretations on Mineral Resource estimation.	Northern star considers the current interpretation to be robust based on all examined geological data.
	The use of geology in guiding and controlling Mineral Resource estimation.	Geological controls and relationships were used to define mineralised domains. The gold mineralised zones dip consistently at 40 and 65 degrees to the east or north-east with mineralisation developed between areas of contrasting rheological competency. The mineralised widths vary between 3 – >30 metres true width.
	The factors affecting continuity both of grade and geology.	Mineralisation at Moody's reward is affected by flexures in the local geology. These positions are well understood and define by Northern Star.
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) up to 200 m vertically. The mineralisation stretches from 6756400mN-6754700, 429400mE-429700mE and 180mRL to 387mRL. 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 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 1x1x1m 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.

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ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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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. If a computer assisted estimation method was chosen include a description of computer software and parameters used.	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 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.
	The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.	There are no material differences between the current estimate by Northern Star and the previous estimate by Hawthorn (previous owner).
	The assumptions made regarding recovery of by-products.	There are no by-products currently known
	Estimation of deleterious elements or other non-grade variables of economic significance (e.g., sulphur for acid mine drainage characterisation).	There are no known deleterious elements to date.
	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 5mE × 10mN × 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. Parent blocks have been sub-celled to X (1.0m) by Y (1.m) 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, geometry of the mineralised lodes and examination through Kriging Neighbourhood analysis. A minimum of 6 samples and maximum of 28 samples was selected for the main domains with a restriction of 4 samples per drillhole. The subsequent passes are set to lower minimums while increasing the search distances to find sufficient samples where drilling density decreases.
		A maximum of 16-18 samples were selected for the HW domains to avoid an increase in negative weights coupled with a restriction of 4 samples per drillhole.
	Any assumptions behind modelling of selective mining units.	No selective mining units have been explored by Northern Star at this stage
	Any assumptions about correlation between variables.	No Assumptions 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.	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.	Based on Northern Star's current economic status the natural grade distinction above background for the cut-off grade used to report the resource at Moody's reward is set at a grade of 0.5g/t.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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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.	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 $2500 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 processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	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
Environmental factors or assumptions	Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a green fields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	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.	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
	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 sample size is generally between 0.5 and 1.5kg and the method of calculation is the water displacement technique
	Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	No audits have been done at this time.
Classification	The basis for the classification of the Mineral Resources into varying confidence categories.	
	Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).	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
	Whether the result appropriately reflects the Competent Person's view of the deposit.	No audits have been done at this time.
Audits or reviews	The results of any audits or reviews of Mineral Resource estimates.	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
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.	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.
	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 Moody's Reward MRE is a global estimate.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	N/A

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Section 4 Estimation and Reporting of Ore Reserves

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

Criteria	JORC Code explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.	The Mineral Resource Model for the Moody's Reward gold deposit is a robust global estimate that was used as a basis for conversion to the Ore Reserve estimate. Resource estimate was compiled by Northern Star 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. Reported ore reserves are based on depleted resource models for all project areas.
	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 site visits to the Moody's Reward 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.	Site visits undertaken.
Study status	The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.	The Moody's Reward deposit is closely located to Deep South operation which is in operation. Northern Star has conducted Pre-Feasibility level study with the view to commence open pit operation and has been included in Carosue Dam life of mine plan. The 2024 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.	Ore Reserves have been calculated by generating detailed mining shapes for the proposed open pits. A series of nested optimised pit shells were generated using Whittle software, an analysis of the shells was completed to select one which was then used to complete a detailed pit design to closely resemble the selected whittle shell. The Whittle optimisation used parameters generated from NSR technical personnel and technical consultants. A detailed mine schedule and cost model has been generated using an excel spreadsheet model. Appropriate ore dilution and recoveries have been applied within the excel spreadsheet model. The processing parameters have been based on metallurgical test work and actual costs of the Carosue Dam processing plant. The current study level demonstrates high confidence that the projects can achieve the mine plan and be operated in a technically sound and economically viable manner.
Cut-off parameters	The basis of the cut-off grade(s) or quality parameters applied.	The pit cut-off grade has been calculated based on the key input components (processing, recovery, and administration). Forward looking forecast costs and physicals form the basis of the cut-off grade calculations. The AUD gold price as per corporate guidance. Mill recovery factors are based on metallurgical test work.
Mining factors or assumptions	The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design).	Mineral Resource is converted to Ore Reserve after completing a detailed mine design complete with a detailed financial assessment. A series of nested optimised pit shells were generated using Whittle software, an analysis of the shells was completed to select one which was then used to complete a detailed pit design to closely resemble the selected whittle shell. The Whittle optimisation used costs and inputs derived from current operational data, contractors, and independent consultant recommendations. Ore Reserves have been calculated by generating detailed mining shapes for the proposed pit design. Open pit planned and unplanned dilution (waste material that is located within the minable shape) has been considered in the financial evaluation.
	The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc.	Mining method to be employed at Moody's Reward 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. Moody's Reward Reserve pit is designed to mine the deposit from natural surface to achieve life of mine Reserve such that it meets the operation efficiency, safety aspect and productivity. Appropriate mine schedule and lead time have been applied to maintain effective operational delays and productivity rate.
	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 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 to assist geotechnical aspect of technical studies. It is expected that once the pit is in operation there may be some need for additional geotechnical input and reflect any changes into life of mine pit design. The Grade control method to be employed at Moody's Reward will use RC drilling and sampling method. The method and practice has been utilised successfully at all current and past mining operations at Northern Star.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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	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.
	The mining dilution factors used.	A mining dilution factor of 10% is applied in the Ore Reserve estimation and reflect the mining performance based in ore body characteristic, mining method and equipment utilised.
	The mining recovery factors used.	A mining ore loss factor of 5% is applied in the Ore Reserve estimation and reflect the mining performance based in ore body characteristic, 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 Northern Star 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 thereby incurring mining cost but is not processed and does not generate any revenue. The final pit reserve inventory has excluded any inferred mineral resources.
	The infrastructure requirements of the selected mining methods.	Infrastructure required for the Moody's Reward Project has been accounted for and included in all work leading to the generation of the Ore Reserve estimate. Ore from the Moody's Reward Project will be processed through the Carosue Dam Processing Plant; hence no processing infrastructure is required. Limited haul road construction is required to connect the Moody's Reward Project to Carosue Dam. Planned infrastructure to be established at Moody's Reward will include Offices, workshops and associated facilities, dewatering pipeline, Waste Rock Storage Dump, and ROM Pad.
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 93 to 94% for deposits 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 Moody's Reward 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 testwork has been carried out on samples from the Moody's Reward deposit by test and plant lab and indicating higher ~94% recovery.
	Any assumptions or allowances made for deleterious elements.	There are no known deleterious elements present in Moody's Reward 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 orebody as a whole.	Number of samples of each expected rock type and grade bins have been sampled through the Carosue Dam processing plant for trial test work. These bulk samples/pilot test work is considered as sufficient to represent the Moody's Reward 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?	Not applicable.
Environmental	The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.	All required Environment studies and Statutory Government Approvals including works approvals and clearing permit are ongoing. A Mining Proposal and Mine Closure Plan will be submitted in due course. 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.	Moody's Reward is a satellite open pit project and extension the Carosue Dam operations. The Carosue Dam Operation comprises of a 4Mtpa CIL ore processing facility, aerodrome with sealed runway, associated tailings storage facilities, power station, water supply, workshops, administration offices and accommodation camps. Limited haul road construction is required to connect the project area to Carosue Dam. Minor infrastructure required at the project area has been allowed for in the cost model.
Costs	The derivation of, or assumptions made, regarding projected capital costs in the study.	There will be minimum capital cost relating to infrastructure setup as majority of the facilities have been already layout. Further allowance has been made in financial modelling for pre striping of the pit.
	The methodology used to estimate operating costs.	Operating costs for ore processing, haulage and administration have been derived from known parameters at Carosue Dam operations. A capital and operating cost model has been developed in Excel and has been used to complete a life of mine cash flow estimate.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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		The estimation of Open pit mine operating costs was based on a dry-hire mining, contract drilling, and contractor maintenance operation using first principles to determine equipment productivities and associated operating hours to generate mine schedules. Provided contract pricing were than applied to the schedule to calculate all unit costs.
	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.	Single commodity pricing for gold only, using a gold price of AUD$2,000 per ounce as per NSR corporate guidance.
	The source of exchange rates used in the 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.	All financial analysis and gold price have been expressed in Australian dollars and no direct exchange rates have been applied. Revenue factors within the whittle optimisation process were used. A revenue factor shell was selected and used to complete a detailed pit design. A gold price of AUD$2,000 per ounce has been used in the optimisation of the Moody's Reward Project.
	The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.	Corporate guidance.
Market assessment	The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.	There is a transparent quoted market for the sale of gold.
	A customer and competitor analysis along with the identification of likely market windows for the product.	There is a transparent quoted market for the sale of gold.
	Price and volume forecasts and the basis for these forecasts.	Corporate guidance.
	For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.	Not applicable.
Economic	The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.	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 Northern Star 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. Aboriginal heritage surveys have previously been conducted and maintain no negative impact within the 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 within the operation and has been addressed appropriately. Adequate water diversion bunds will be adequately 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 Approval will be submitted for the updated mine reserve pit in timely manner. Environmental studies are planned, and other Statutory Government Approvals including vegetation clearing, permits will be submitted in due course.
Classification	The basis for the classification of the Ore Reserves into varying confidence categories.	The Ore Reserve Estimate classification has been in accordance with the JORC code 2012. The Ore Reserve Estimate is classified as being Probable has been derived from Mineral Resource classified as Indicated and Measured only.

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Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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	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 Northern Star'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 Moody's Reward 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 Indicated category of 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 Northern Star 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 geostatistical procedures to quantify the relative accuracy of the Reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.	The Ore Reserve estimate has been prepared in accordance with the guideline of the 2012 JORC Code. The relative confidence of the estimate complies with the criteria of 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 appropriate and confidence in the resulting reserve estimate is reasonable. The Ore Reserve estimation have been the subject to peer review internally, and the Competent Person is confident that it is an accurate estimation of the reserve. The Moody's Reward pit mining will utilise the same grade control methods that are widely utilised at current Northern Star open pit operations.
	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.	All modifying factors have been applied to design mining shapes on a global scale.
	Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.	Not applicable.
	It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	Not applicable.

Carosue Dam: Deep South – 31 March 2024

Section 1 Sampling Techniques and Data

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

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 Northern Star 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 Northern Star 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 30g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. 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. Deep South Diamond drill core has been sampled as whole core since 2020. Previously, samples were cut into half core nominally cut to 1.0m or to geological boundaries where required (ranging 0.3-1.3m) aiming to give sample weights under 3 kg. UG faces are chip sampled to geological intervals (0.3 to 1.3m). Samples are selected to weigh less than 3 kg to ensure total sample inclusion at the pulverisation stage. Northern Star 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. From July 2022 all samples are assayed using Photon analysis. Some historic open pit, grade control RC chips were analysed in the Northern Star on site laboratory using a PAL (pulverise and leach) method.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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		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. Northern Star 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 drill types used include NQ2 diameter diamond drillholes and Faces channel samples collected with a geology pick. Exploration of the broader Deep South area has included 312AC holes. Diamond tails were oriented using the Boart-Longyear Trucore 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. 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 was sampled 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.	Logging of RC and AC chips and diamond drill core records lithology, mineralogy, texture, 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 (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.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	Geological data that requires description is qualitative, and where measured, such as structural and geotechnical data is quantitative. 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.	Diamond drill core has been whole core sampled from 2020-present. Drill core prior to this time was cut in half onsite using an automatic core saw. Samples are always collected from the same side preserving the logging comments and orientation line. 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. The photon assay technique was introduced in 2022. This process involves crushing samples to < 3 mm. 500 g of crushed material is then placed into single-use sample jars. 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.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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		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 and UG chip samples and diamond core are analysed by external laboratories using a 40g or 50 g 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. The photon assay technique was introduced in 2022. All samples are fed into a robot where the remaining sample preparation is automated. The robot weighs the samples, crushes the sample through the Boyd crusher to <3 mm. The crushed sample is then split through the smart linear splitter which calculates how to split each individual sample to achieve the 500g quotient. The 500g jar is analysed using PAA finish. GC samples were analysed in the Northern Star 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 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 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 Northern Star 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 drill holes (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: SBEast SBNorth RL MGAEast MGANorth RL Point 1 51000 34000 2000.0 451137.753 6734157.921 0.0

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Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
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E: info@nsrltd.com
W: www.nsrltd.com

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		Point 2 51000 30000 2000.0 451137.896 6730157.896 0.0 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.
	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.
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 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 Northern Star 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 listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	The Deep South pit is located on M39/740. The tenement is held 100% by Northern Star Ltd. 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. 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.

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PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
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W: www.nsrltd.com

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		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 hanging wall and footwall. The two lodes are separated by a high magnesium basalt and an ultramafic unit.
		The Butler lode is located in the hanging wall 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.
Drill hole Information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: o easting and northing of the drill hole collar o elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar o dip and azimuth of the hole o down hole length and interception depth o hole length.	All material data is periodically released on the ASX: 03/05/22, 03/05/2021, 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 results materially change the economic value of the project.
	If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	Exclusion of the 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, 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.	Previous announcement included sufficient detail to clearly illustrate the geometry of the mineralisation and the recent drilling.
	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.
	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').	No exploration results are being released
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 Northern Star 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.	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. Northern Star 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 used in any calculation of mineralisation. The leaves were washed, dried and pulverised followed by an aqua regia digest for multi-element 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).	The initial results from the biogeochemical sampling were encouraging and further expansion of the survey area being planned.

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Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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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.	Appropriate diagrams and maps of future extensions and work are available in the appropriate ASX announcements.

Section 3 Estimation and Reporting of Mineral Resources
(Criteria listed in section 1, and where relevant in section 2, also apply to this section).

Criteria	JORC Code explanation	Commentary
Database integrity	Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.	Northern Star 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. 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 visited the site towards the end of mining operations. Robust systems and procedures have been established to track and monitor progress. Deep South is currently in care and maintenance
	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 interpretation has been based on historical data captured by previous owners and refined by new information generated by Northern Star 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. The current resource has been interpreted (and estimated) from 1250 holes of RC and DD quality and 2592 channel samples.
	Nature of the data used and of 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. Underground mapping is used to refine boundaries in the local scale.
	The effect, 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.
	The use of geology in guiding and controlling 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 (>1to <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. If a computer assisted estimation method was chosen include a description of computer software and parameters used.	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

Northern Star Resources Limited
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Level 4, 500 Hay Street
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PO Box 2008
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		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 period Northern Star 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., sulphur for acid mine drainage characterisation).	There has been no estimate at this point of deleterious elements. Northern Star 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. 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, influenced 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 suitably 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.	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 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 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 Northern Star's current economic operations at Carosue Dam, and the natural grade distinction above background, a grade of 1.0g/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 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 $2500 at a 0.5g/t cut off for the open pit resources, and for the underground resource within MSO underground shells generated at 1.1 g/t cut-off at a gold price of $2500.
Metallurgical factors or assumptions	The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	Deep South was treated through the Carosue Dam treatment plant. 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.

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W: www.nsrltd.com

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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 green fields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	Waste rock characterisation has been conducted on the deposit with no environmental issues identified. Ore from the Deep South project is hauled to Carosue Dam for Processing and waste tailings storage in the appropriately licensed Carosue Dam tailings storage facility, with approved closure plan in place.
Bulk density	Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.	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.
	Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).	All 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 Northern Star 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. Northern Star Ltd. uses a standard approach to resource estimation and the procedure requires the systematic completion of the Northern Star 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.

Carosue Dam: Twin Peaks – 31 March 2024

Section 1 Sampling Techniques and Data

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

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,	Sampling methods undertaken by Northern Star 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.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
	or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.	
	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 Northern Star 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 30g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. 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. Northern Star 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 is sampled by 41 AC holes, 185 RAB holes, 125 RC holes (assumed standard 5 ¼" bit size) and 28 surface diamond HQ core and unknown diameter holes. Northern Star has completed 9 surface RC precollar with NQ diamond tail drill holes, and 15 RC holes (5 ¼" bit size). 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.
	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.	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.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	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.

Northern Star Resources Limited
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Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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		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) 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 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 Northern Star 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 drill holes (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.
	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.

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PO Box 2008
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T: +61 8 6188 2100
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E: info@nsrltd.com
W: www.nsrltd.com

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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 regard to mineralised structures.
Sample security	The measures taken to ensure sample security.	Samples are prepared on site under supervision of Northern Star 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 listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	The Twin Peaks pit is located on M31/208. The tenement is held 100% by Northern Star Resources 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.
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.
Drill hole Information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: o easting and northing of the drill hole collar o elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar	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 results materially change the economic value of the project.

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Criteria	JORC Code explanation	Commentary
	o dip and azimuth of the hole o down hole length and interception depth o 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.	No exploration results are being reported
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 being reported
	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 being reported
	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.	Previous announcements included sufficient detail to clearly illustrate the geometry of the mineralisation and the recent drilling.
	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').	No exploration results are being reported
Diagrams	Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	All significant exploration results released by Northern Star 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 previous 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).	Twin Peaks is a current exploration play that will be further reviewed post optimisation processes.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Appropriate diagrams and maps of future extensions and work are available in the appropriate ASX announcements.

Section 3 Estimation and Reporting of Mineral Resources
(Criteria listed in section 1, and where relevant in section 2, also apply to this section).

Criteria	JORC Code explanation	Commentary
Database integrity	Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.	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.

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Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
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T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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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 Northern Star'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 Northern Star concerning Twin Peaks Resource have been done using Northern Star'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 of 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 used 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 effect, 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. Northern Star 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 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.
Estimation and modelling techniques	The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.	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., sulphur for acid mine drainage characterisation).	There has been no estimate at this point of deleterious elements.

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Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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	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.
	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 Northern Star'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 processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	The 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. • 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 deposit (assuming the material tested is representative of the ore deposit).

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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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 green fields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	No processing or beneficiation of ore expected on these tenements, as ore is hauled to Carosue Dam Minesite 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 Northern Star 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 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 Twin Peaks consists of a primary mineralisation is associated with easterly 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.	Northern Star 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 Northern Star 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 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.	The Twin Peaks resource model was done using Northern Star' 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 in situ 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.

Carosue Dam: Atbara & Qena – 31 March 2024

Section 1 Sampling Techniques and Data

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

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 Northern Star in the Atbara/Qena region has consisted of reverse circulation (RC) drilling and RC pre-collar diamond drill tail (RCD). Historic methods conducted since 1993 have included aircore (AC), rotary air blast (RAB), reverse circulation and diamond drillholes.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
	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 Northern Star sampling and QAQC procedures as per industry standard. RC chips and DD core provide high quality representative samples for analysis. RC, RAB, AC, RCD 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 30g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. 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. Northern Star 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. From July 2022 all samples are assayed using Photon analysis. Samples are crushed to 85% passing 2mm then split with a 500g sub sample taken for analysis (PAAU002). 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/Qena 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. Northern Star has completed 106 surface RC drill holes, 101 surface diamond holes and 46 RC precollar /diamond tail drillholes (tail depths averaging 166m) Diamond holes were oriented using a Reflex Act III 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 was sampled 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.	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.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	Core and chips are photographed in a wet state using Imago photographic software. Qualitative and quantitative logging of historic data varies in its completeness. All RC, RCD and Diamond logging is completed in full.
	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. The photon assay technique was introduced in 2022. This process involves crushing samples to < 3 mm. 500 g of crushed material is then placed into single-use sample jars. 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.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
		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 method is considered suitable for determining gold concentrations in rock and are total digest methods. The photon assay technique was introduced in 2022. The primary samples are analysed through ALS. For preparation, samples are oven dried at 105 degrees until dry . All samples are fed into a robot where the remaining sample preparation is automated. The robot weighs the samples, crushes the sample through the Boyd crusher to <3 mm. The crushed sample is then split through the smart linear splitter which calculates how to split each individual sample to achieve the 500g quotient. The 500g jar is analysed using PAA finish. 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.
	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 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 Atbara/Qena
	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 Northern Star 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 drill holes (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.	GDA94 zone MGA_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 re-sampled to 1m intervals from an original sample coming off the RC rig cone splitter. 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.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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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 regard to mineralised structures.
Sample security	The measures taken to ensure sample security.	Samples are prepared on site under supervision of Northern Star 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 listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	The Atbara/Qena area is located on M31/210, M31/219, and M31/220 The tenements are held 100% by Northern Star Resources 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/Qena 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/Qena 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. Mineralisation has a combined lithological and structurally control dipping parallel to the stratigraphy. Mineralisation 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.
Drill hole Information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: o easting and northing of the drill hole collar o elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar o dip and azimuth of the hole o down hole length and interception depth o hole length.	A total of 499 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: 15/11/2022, 03/05/2022, 03/05/2021, 18/02/2020, 11/11/2019, 30/7/2019, 30/04/2019, 18/02/2019, 27/11/2018 A select group of Qena intercepts are reported in this release with all details.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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	If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	Exclusion of the 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.	Drilling is generally perpendicular to the mineralisation
	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 and estimated true thickness
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.	Previous announcements included sufficient detail to clearly illustrate the geometry of the mineralisation and the recent drilling.
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 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).	Extensional exploration for the Atbara/Qena area at this time is under review.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	N/A

Section 3 Estimation and Reporting of Mineral Resources

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

Criteria	JORC Code explanation	Commentary
Database integrity	Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.	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 CDO to assess geological competency and ensure integrity across all geological disciplines.
	If no site visits have been undertaken indicate why this is the case.	NA

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Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
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 of any assumptions made.	The geological interpretation of Atbara/Qena 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 effect, 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 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/Qena deposit and its rheological contact, controls the tenor and character of AU mineralisation. 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 Northern Stars 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
Estimation and modelling techniques	The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.	Mineralisation is domained based on geological continuity. All domain wireframes are created using Leapfrog software and all subsequent 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.

An ordinary kriged estimation is applied to each domain.

Variography is created for all domains with sufficient sample data. Output variograms are utilised in kriging neighbourhood analysis (KNA) to generate optimum parent block sizes and estimation parameters. 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. |
	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. With broader spaced sample data alternative estimation techniques were trialled but deemed appropriate at this stage.
	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/Qena 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 and 80% of the total sill of the variogram for Atbara and Qena respectively . The second pass is set at 1.5 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 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.
	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.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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	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 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 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 Luvironza Open Pit Resources within a $2,2250 optimised shell The underground Mineral Resource was reported within UG optimised shapes, at the gold price of $2500 for a cut off grade of 1.3g/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 Luvronza 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 an $2250 optimised shell reflecting the bulk mining method assumed.
Metallurgical factors or assumptions,	The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	Preliminary work shows, at a 212 micron grind and a residence time of 26 hours, a head grade of 1.34 g/t Au 61% Au is recovered via gravity and a further 25% Au is recovered through cyanidation for a total of 86% Au recovered. At a 106 micron grind and a residence time of 26 hours, a head grade of 1.34 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.
Environmental factors or assumptions	Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a green fields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	Waste rock characterisation studies are currently in progress and will be finalised FY24. No environmental issues have been identified except dispersive oxidised material. Atbara is 4km north of Northern Star'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/Qena 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 Luvironza Resource is comprises both Indicated & Inferred material. 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. The Qena resource is classified as Indicated or Inferred assigned via boundary string by domain based on a combination of physical and estimation quality metrics including mining exposure, drill spacing, search pass, kriging efficiency / slope / variance, grade and geological continuity. Qena currently has no measured Resource. Mineralisation has been categorised as Indicated material if drill spacing is between 10x10m and 40x40, 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.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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	Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).	All relevant factors have been taken into account and are validated through rigorous QAQC of the drill hole database, geological knowledge and interpretation of the Atbara/Qena 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.	Northern Star has adopted a process for geological modelling, estimation and reporting of mineral resources that meets high industry standards. At the completion of resource estimation Northern Star 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. Northern Star uses a standard approach to resource estimation and the procedure requires the systematic completion of the Northern Star Resource Estimation Document that is thoroughly investigated and assessed in the Model review process, as stated above.
	The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.	The statement relates to a global estimate.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	N/A

Section 4 Estimation and Reporting of Ore Reserves
(Criteria listed in section 1, and where relevant in sections 2 and 3, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.	The Mineral Resource estimate for the Qena gold deposit used as a basis for conversion to the Ore Reserve estimate was compiled by Northern Star. The data included drilling and assay data and geological mapping 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).
	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, where the Qena deposit is located. Northern Star and consultant geotechnical engineers have visited CDO to gather data used in the preparation of geotechnical reports to define parameters for underground mining. Hydrogeology consultants have visited Carosue Dam to gather data 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.	A pre-feasibility assessment has been conducted on the Qena deposit forming the basis for the Reserve estimation.
	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 mine design, as well as a financial analysis completed, both of these have been the subject to peer review. The pre-feasibility study determined a mine plan that is both technically achievable and economically viable.

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Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Cut-off parameters	The basis of the cut-off grade(s) or quality parameters applied.	For the Ore Reserve estimate a variable cut-off grade of 1.7g/t was calculated based upon an assumed gold price of AUD$2,000/Oz and applicable mining production costs, processing, haulage and administration costs. This variable cut-off grade was then used as the basis of mine design. Spatial economic assessments were then completed to ensure each mining block covered the relevant capital and operating costs to extract that block.
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 Qena underground ore reserve has been estimated using detailed mine development and stope designs. This mine design is supported suitable modifying factors for dilution and recovery that 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 open stoping utilised at the nearby Dervish mine has been considered as a suitable mining method for Qena. Mining and geotechnical studies have determined that a shallow boxcut to establish underground access and production levels is the most suitable option. Stoping locations will utilise remnant rib and sill pillars for either geotechnical reasons and/or availability of paste fill.
	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 encountered in the area. A review of the designed stopes was performed by Northern Star's technical team. External consultants have also reviewed the deposit and form the basis for pit slope design. The current mine design allows for leaving in-situ pillars. The mine design applies a recovery factor that allows for 35% of the available mineral resource to remain in-situ, as either rib or sill pillars. Stope sizes are 20m long, 20m high and width will vary with orebody thickness. A grade control program with associated development for drilling platforms, grade control drilling designs, and sampling costs have been included 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 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.	An allowance for mining dilution has been incorporated into the mine designs. A dilution factor of 15% has been used at 0 g/t Au has been applied for stoping.
	The mining recovery factors used.	A mining recovery factor range of 65% has been assumed for all stopes.
	Any minimum mining widths used.	A minimum stope width of 2m 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.	A minor amount (2% 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 amount of metal (2% of ounces) within the design. This Inferred material is excluded from the Ore Reserve estimate for the mine.
	The infrastructure requirements of the selected mining methods.	The selected mining method and location of the deposit is within the main Carosue Dam operation, which consists of underground mines, 4Mt 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 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. An average plant processing recovery of 89% has been assumed in the Ore Reserve Estimate which is consistent with current and metallurgy testing on ore samples from the deposit.
	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 Qena deposit is estimated at 89% from the testing of eight composite samples from the different lithography types within the mining area.
	Any assumptions or allowances made for deleterious elements.	No deleterious elements have been identified during the testing of Qena ore.
	The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.	The range of samples that have been met-tested are considered representative of the ore body due to covering all the ore-bearing lithology types that are expected.
	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	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.	Qena is currently compliant with all legal and regulatory requirements. All approvals (clearing permit, works approval and Mining Proposals) are progressing at various stages and are not expected to restrict the plan to mine the deposit. The project area is within a historical mining footprint. The existing Carosue Dam process plant 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 and fauna surveys of areas to be cleared, waste rock characterisation studies, and surface and ground water studies.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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		Waste rock characteristic 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.	Carosue Dam Operations are well established, with mining activities being conducted by Saracen/Northern Star since 2009. The CDO operation comprises at 4Mtpa CIL ore processing facility, aerodrome with sealed runway, associated tailings storage facilities, several power stations, water supply, workshops, and administration offices. The Qena area currently has water abstraction bores providing water to the processing plant. An active haul road runs adjacent to the deposit. Power for the mine may come from the existing main CDO power plant or a separate smaller plant to be established at the mine. 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 Northern Star 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.	Capital costs relate to establishment of capital infrastructure and continuing expansion of capital works for Qena underground. The cost estimates are based on historical costs for similar work undertaken at Carosue Dam. Actual mine operating and capital costs have been used in the Reserve calculations.
	The methodology used to estimate operating costs.	Operating costs for underground mining have been derived from a combination of actual costs from Karari - Dervish mines and tendered contract costs supplied by independent mining contractors. Operating costs for ore processing have been derived from known parameters at Carosue Dam.
	Allowances made for the content of deleterious elements.	Current test work at Qena does 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$2,000/oz. has been adopted for financial modelling.
	The source of exchange rates used in the 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 Carosue 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 included in the processing cost assumption.
	The allowances made for royalties payable, both Government and private.	Royalty costs are the WA state government royalty of 2.5%, a third party royalty of 1.5% and a 4% profit third party royalty 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$2,000/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.	All costs assumptions are made based on a combination of historical performance at Carosue Dam mines. 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 assessed on a variety of gold prices to test the impact of inventory from external factors.
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 the proposed mining and processing assets. Agreements with traditional owners will be renewed to cover the Qena deposit prior to mining.

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Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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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 within the operation and the construction of appropriate water diversion bunds to provide safe and risk-free work environment are highlighted in the hydrology report.
	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.	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 the Qena deposit have been progressed and material delays are not anticipated.
Classification	The basis for the classification of the Ore Reserves into varying confidence categories.	The Ore Reserve Estimate classification for Qena underground has been in accordance with the JORC code 2012. The estimated Ore Reserve is classed as Probable with this inventory being classed 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 Carosue 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 Qena deposit.
	The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).	The Probable ore from 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 Northern Star's Ore Reserve Policy and 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 geostatistical procedures to quantify the relative accuracy of the Reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.	The Ore Reserve estimate has been prepared within the guidelines of the 2012 JORC Code. The relative confidence of the estimate complies with the criteria of Proved/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 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 Qena reserve.
	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.	As above
	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.	As above
	It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	As above

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PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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APPENDIX C: TABLE 1

Carosue Dam: Belize – 31 March 2024

Section 1 Sampling Techniques and Data

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

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. Northern Star 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 30g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. 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.	Logging of diamond drill core, AC, RAB, and RC chips record lithology, mineralogy, texture, mineralisation, weathering, alteration and veining. All chips have been retained in chip trays
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	It is unknown if all diamond core was photographed.
	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. Northern Star has not had full access to all the data during the acquisition process.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
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E: info@nsrltd.com
W: www.nsrltd.com

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	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 drill holes (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 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.	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.
	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
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 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. Northern Star has not had access to this information during the acquisition process.

Section 2 Reporting of Exploration Results
(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	The Belize resources are located on M39/1109 and M39/1110 which is held 100% by Northern Star Resources 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 Gutnick Resources carrying out tenement wide RAB 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 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

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

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E: info@nsrltd.com
W: www.nsrltd.com

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		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.
Drill hole Information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: o easting and northing of the drill hole collar o elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar o dip and azimuth of the hole o down hole length and interception depth o hole length.	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 results materially change the economic value of the project.
	If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	Exclusion of the 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.	Northern Star 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.
	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').	No exploration results are being released
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 is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	Northern Star 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).	Northern Star is currently working on establishing an exploration program which will identify areas of opportunity to extend or enhance the Belize mineral resource.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Appropriate diagrams and maps of future extensions and work are available in the appropriate ASX announcements.

Section 3 Estimation and Reporting of Mineral Resources
(Criteria listed in section 1, and where relevant in section 2, also apply to this section).

Criteria	JORC Code explanation	Commentary
Database integrity	Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.	The database provided to Northern Star 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.

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ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
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E: info@nsrltd.com
W: www.nsrltd.com

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		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.	There have been no recent visits to the Belize deposit by the competent person.
	If no site visits have been undertaken indicate why this is the case.	Exploration personnel and senior Resource geologists have covered the ground since its acquisition from Hawthorn resources in 2019, and the resource was updated in 2019 to reflect their findings.
Geological interpretation	Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.	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 Northern Star'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.
	Nature of the data used and of any assumptions made.	The interpretations have been constructed using all available geological logging descriptions including but not limited to, stratigraphy, lithology, texture, and alteration. Interpretations of the mineralisation have been created as 3D wireframe solids.
	The effect, if any, of alternative interpretations on Mineral Resource estimation.	There are no alternative interpretations available for this deposit.
	The use of geology in guiding and controlling Mineral Resource estimation.	The deposit scale to local geological framework and understanding, and logging is used guide geological domains.
	The factors affecting continuity both of grade and geology.	Mineralisation at Belize is analogous to that currently mined in the Northern Star's – Deep South Mine. These controls are well understood by Northern Star.
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 100m BSL (303m 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. If a computer assisted estimation method was chosen include a description of computer software and parameters used.	Mineralisation is domained based on geological continuity. All domain wireframes are created using Leapfrog software and all subsequent 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 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.	Northern Star has compared the previous estimates with the current estimate, and there are no material differences
	The assumptions made regarding recovery of by-products.	No assumptions made, as there are no known 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. Northern Star 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 × 20mN × 10mRL. 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.
		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 together with the geometry 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.

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ABN: 43 092 832 892

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Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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		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.	No assumptions have been made with regards to selective mining units.
	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.	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.	Based on Northern Star's current economic status the natural grade distinction above background the reporting cut-off grade is set 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.	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 reported within an optimised pit shell at $2500 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 processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	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 green fields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	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.
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.	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
	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 previous owners to determine bulk density values.
		Any future density measurements will adhere to Northern Stars standardised procedures for bulk density testing.

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T: +61 8 6188 2100
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W: www.nsrltd.com

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	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 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
	Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).	The mineral resource has been reported in accordance with the guidelines established in the 2012 edition of the JORC code. Northern Star uses a standard approach to resource estimation and the procedure requires the systematic completion of the Northern Star Resource Estimation Document that is thoroughly investigated and assessed in the Model review process, as stated above.
	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 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.	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 the resource at Belize. Further drilling both along strike and at depth has been recommended by the previous owners.
	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 Belize. There are no previous mining activities at Belize consequently no production data to compare the estimate with.

Carosue Dam: Blue Manna – 31 March 2024

Section 1 Sampling Techniques and Data

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

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 Northern Star 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 30g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g., submarine nodules) may warrant disclosure of detailed information.	Northern Star 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. Diamond core samples are mainly HQ between 0.3 m and 1 m and cut into half core.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
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). Northern Star 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 Northern Star RC holes were recorded as a percentage based on a visual weight estimate. No historical record exists in the Northern Star 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.
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 diamond core records lithology, mineralogy, texture, mineralisation, weathering, alteration, veining and other features.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	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.	Northern Star 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 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.
	The verification of significant intersections by either independent or alternative company personnel.	Significant intercepts are verified by the Geology Manager and corporate personnel.

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Criteria	JORC Code explanation	Commentary
Verification of sampling and assaying	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 Northern Star 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 drill holes (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 Northern Star-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.
	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.
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 regard to mineralised structures
Sample security	The measures taken to ensure sample security.	Samples are prepared on site under supervision of Northern Star 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 listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	Blue Manna is wholly located within Mining Lease M31/156. The tenement is held 100% by Northern Star Resources 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.

Northern Star Resources Limited
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Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
	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. Northern Star 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.
Drill hole Information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: o easting and northing of the drill hole collar o elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar o dip and azimuth of the hole o down hole length and interception depth o hole length.	Material information about Northern Star'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 results materially change the economic value of the project.
	If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	Exclusion of the 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 being released
	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 being released
	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.	No exploration results are being released
	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').	No exploration results are being released
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 Northern Star 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.	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).	Blue Manna is a current exploration play that will be further reviewed post optimisation processes.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	N/A

Northern Star Resources Limited
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Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Section 3 Estimation and Reporting of Mineral Resources
(Criteria listed in section 1, and where relevant in section 2, also apply to this section).

Criteria	JORC Code explanation	Commentary
Database integrity	Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.	Northern Star 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.	There have been no recent visits to the Blue Manna deposit by the competent person. Growth and resource personnel have covered the ground since the MRE release and Blue Manna is an established resource that has not required recent review.
	If no site visits have been undertaken indicate why this is the case.	Growth and resource personnel have covered the ground since the MRE release and Blue Manna is an established resource that has not required recent review.
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 of 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 effect, 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 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. If a computer assisted estimation method was chosen include a description of computer software and parameters used.	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.
		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., sulphur for acid mine drainage characterisation).	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
	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.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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		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
		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 grade 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 $2500 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 processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	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 green fields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	Environmental considerations captured by Program of Work (PoW) requirements. Operations on these tenements 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.	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 Northern Star procedures that take into account porosity and moisture variances. It was found that the oxide horizons contain moisture and affect the density value.

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Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
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E: info@nsrltd.com
W: www.nsrltd.com

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	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 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 Northern Star 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 Northern Star, 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. Northern Star uses a standard approach to resource estimation and the procedure requires the systematic completion of the Northern Star 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.
	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.

Carosue Dam: Butcher Well – 31 March 2024

Section 1 Sampling Techniques and Data

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

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 Northern Star 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 Northern Star 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 30g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. 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. Northern Star 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. Northern Star 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.
	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.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
Drill sample recovery	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 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 (exploration and GC) are stored in chip trays for future reference. Qualitative and quantitative logging of historic data varies in its completeness.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	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.
	The total length and percentage of the relevant intersections logged.	Northern Star has not completed any diamond drilling at Butcher Well. Historic diamond drilling was quarter core sampled or sampled via unknown methods.
Sub-sampling techniques and sample preparation	If core, whether cut or sawn and whether quarter, half or all core taken.	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.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	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
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	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.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	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.
	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.	Sample sizes are considered to be appropriate give n the grainsize (90% passing 75 microns) of the material sampled.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	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
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.	No geophysical tools have been utilised for reporting gold mineralisation at Butcher Well.
	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.	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.
	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.	Significant intercepts were verified by the Geology Manager and corporate personnel.

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Subiaco WA 6904

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E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
Verification of sampling and assaying	The verification of significant intersections by either independent or alternative company personnel.	Northern Star 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.
	The use of twinned holes.	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 Northern Star acQuire database
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	No adjustments have been made to assay data. First gold assay is utilised for resource estimation.
	Discuss any adjustment to assay data.	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
Location of data points	Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.	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.
	Specification of the grid system used.	Topographic control originally used site based survey pickups in addition to Kevron aerial photogrammetric surveys with +/- 5m resolution.
	Quality and adequacy of topographic control.	The nominal spacing for exploration drilling are sufficient to establish the degree of geological and grade continuity
Data spacing and distribution	Data spacing for reporting of Exploration Results.	Data spacing and distribution are sufficient to establish the degree of geological and grade continuity appropriate for JORC classifications applied.
	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.	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 sample compositing has been applied.	The majority of drillholes were positioned to achieve optimum intersection angles to the ore zone as was practicable.
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.	No significant sampling bias was thought to occur due to orientation of drilling in regard to mineralised structures.
	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.	Samples were prepared on site under supervision of Northern Star 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
Sample security	The measures taken to ensure sample security.	An internal review of companywide sampling methodologies was conducted to create the current sampling and QAQC procedures
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	

Section 2 Reporting of Exploration Results
(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	The Butcher Well resources are located on M39/165, M39/166 and M39/230. The tenements are held 30% by Northern Star Resources Limited in a Joint Venture agreement with AngloGold Ashanti. 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%.

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PO Box 2008
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T: +61 8 6188 2100
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E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
		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-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.
Drill hole Information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: o easting and northing of the drill hole collar o elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar o dip and azimuth of the hole o down hole length and interception depth o hole length.	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 results materially change the economic value of the project.
	If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	Exclusion of the 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 being released
	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 being released
	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.	No exploration results are being released .
	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').	No exploration results are being released
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 being released
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	No substantive data acquisition has been completed in recent times.

Northern Star Resources Limited
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Level 4, 500 Hay Street
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PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
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E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
	method of treatment; metallurgical test results; bulk 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).	In the current economic climate, exploration activities at Butcher Well are under review to highlight areas of greatest potential.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Appropriate diagrams and maps of future extensions and work are available in the appropriate ASX announcements.

Section 3 Estimation and Reporting of Mineral Resources
(Criteria listed in section 1, and where relevant in section 2, also apply to this section).

Criteria	JORC Code explanation	Commentary
Database integrity	Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.	Northern Star 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.	
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 of 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 effect, 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 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.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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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.	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.
Estimation and modelling techniques	The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.	Mineral Resource models for the Butcher Well project have been generated using the geostatistical technique of LUC. The Butcher Well model uses a significant proportion of historical drilling completed by Northern Star Resources Limited and previous owners of the deposit, as well as additional drilling completed by AngloGold Ashanti during 2017 and 2018. Only the areas that have had follow up drilling by AngloGold Ashanti are reported in the current Mineral Resource estimate (The Butherwell project is a JV between Northern Star Resource Limited (30%) and AngloGold Ashanti (70%)). 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. 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., sulphur for acid mine drainage characterisation).	There has been no estimate at this point of deleterious elements. Northern Star 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. 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 Northern Stars.
	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.

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PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
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E: info@nsrltd.com
W: www.nsrltd.com

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		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 Northern Star'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 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.	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.
Metallurgical factors or assumptions	The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	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 green fields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	No processing or beneficiation of ore expected on these tenements, as ore is hauled to Carosue Dam Minesite 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 Northern Star 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 Northern Stars Metals standardised procedures for bulk density testing.
	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 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 Northern Star resources 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.	Northern Star has adopted a process for geological modelling, estimation and reporting of mineral resources that meets high industry standards.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
		At the completion of resource estimation Northern Star 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 2012 edition of the JORC code. Northern Star uses a standard approach to resource estimation and the procedure requires the systematic completion of the Northern Star Resource Estimation Document that is thoroughly investigated and assessed in the Model review process, as stated above. It was identified that; The inclusive Mineral Resource for Butcher Well includes areas drilled by AngloGold Ashanti, with several shallow open pit areas, and the underground Camp Zone. The open pits are constrained within a US$1,500/oz whittle shell and the underground Mineral Resource has been constrained within an MSO (floating stope) wireframe above the breakeven cut-off grade, calculated using costs derived from ongoing underground mining at Sunrise Dam (JV partner Mine).
	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 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.

Carosue Dam: Crimson Belle – 31 March 2024

Section 1 Sampling Techniques and Data

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

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.	Northern Star 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 Northern Star 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 30g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. 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. Northern Star 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. Northern Star has completed 28 RC drillholes utilising a 5 ¼ '' face sampling hammer. It is unknown if historic diamond drill core was oriented.
	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.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
Drill sample recovery	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.
	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. Historical logging is complete.
Sub-sampling techniques and sample preparation	If core, whether cut or sawn and whether quarter, half or all core taken.	Northern Star 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 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.
	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.

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PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
Verification of sampling and assaying	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 Northern Star 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 drill holes (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.
	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.
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 regard to mineralised structures.
Sample security	The measures taken to ensure sample security.	Samples were prepared on site under supervision of Northern Star 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 listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	The 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 30% by Northern Star Resources Limited in a Joint Venture agreement with AngloGold Ashanti. 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.

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ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
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E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
		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.
Drill hole Information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: o easting and northing of the drill hole collar o elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar o dip and azimuth of the hole o down hole length and interception depth o hole length.	All material data is periodically released on the ASX: 25/01/2013. Future drill hole data will be periodically released or when aresults materially change the economic value of the project.
	If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	Exclusion of the 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 being released
	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 being released
	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.	No exploration results are being released
	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').	No exploration results are being released
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 Northern Star 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 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.
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).	Crimson Belle is a prospective resource with exploration potential. Further Exploration activity for this deposit is currently under review.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Appropriate diagrams and maps of future extensions and work are available in the appropriate ASX announcements.

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ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Section 3 Estimation and Reporting of Mineral Resources
(Criteria listed in section 1, and where relevant in section 2, also apply to this section).

Criteria	JORC Code explanation	Commentary
Database integrity	Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.	Northern Star 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 of 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 effect, 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 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 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. If a computer assisted estimation method was chosen include a description of computer software and parameters used.	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.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
	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. Northern Star 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. 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 Northern Star's current economic status the natural grade distinction above background for the Crimson Belle deposit was reported at a grade of 0.8 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.	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.
Metallurgical factors or assumptions	The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	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 green fields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	Environmental considerations are captured by Program of Work (PoW) requirements. Operations on these tenements are purely exploratory in nature to date.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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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 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 Northern Star'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.
	Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).	All care has been taken to account for relevant factors influencing the mineral resource estimate. The diligent Northern Star 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. Northern Star 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.

Carosue Dam: Deep Well – 31 March 2024

Section 1 Sampling Techniques and Data

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

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 Northern Star 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.

Northern Star Resources Limited
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Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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	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 Northern Star 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 30g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. 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. Northern Star 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 Northern Star 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). Northern Star 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 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 (exploration and GC) are stored on site in chip trays for future reference.
	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 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 Northern Star 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.

Northern Star Resources Limited
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Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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	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 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 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 Northern Star 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 drill holes (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.
	Whether sample compositing has been applied.	Sample compositing is not applied until the estimation stage.
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 has been recognised due to orientation of drilling in regard to mineralised structures.

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PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Sample security	The measures taken to ensure sample security.	Samples are prepared on site under supervision of Northern Star 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 listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	The Deep Well resource is located on M39/129. The tenement is held 100% by Northern Star Resources 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.
Drill hole Information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: o easting and northing of the drill hole collar o elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar o dip and azimuth of the hole o down hole length and interception depth o hole length.	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 results materially change the economic value of the project.
	If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	Exclusion of the 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 being released

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	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 being released
	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.	Previous announcements included sufficient detail to clearly illustrate the geometry of the mineralisation and the drilling.
	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').	No exploration results are being released
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 Northern Star 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 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).	No further drilling is currently planned. Open pit evaluation work is ongoing.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Appropriate diagrams and maps of future extensions and work are available in the appropriate ASX announcements.

Section 3 Estimation and Reporting of Mineral Resources
(Criteria listed in section 1, and where relevant in section 2, also apply to this section).

Criteria	JORC Code explanation	Commentary
Database integrity	Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.	Northern Star 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 Northern Star.
	Nature of the data used and of 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 solid is built.
	The effect, 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 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.

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Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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	The factors affecting continuity both of grade and geology.	Mineralisation and lithology are both highly continuous. The stratigraphic horizon that hosts 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. If a computer assisted estimation method was chosen include a description of computer software and parameters used.	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 Supervisor software. This defined 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.	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., sulphur for acid mine drainage characterisation).	There has been no estimate at this point of deleterious elements. Northern Star 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. 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 highlights 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 samples 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 Northern Star's current economic operations at Carosue Dam, and the natural grade distinction above background, a grade of 0.5g/t has been chosen .

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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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.	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 $2500 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 processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	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 green fields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	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.
	Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).	All 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, Northern Star 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. Northern Star uses a standard approach to resource estimation and the procedure requires the systematic completion of the Northern Star 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.

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Carosue Dam: Margarets – 31 March 2024

Section 1 Sampling Techniques and Data

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

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 Northern Star 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 Northern Star 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 30g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. 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. Northern Star 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 Northern Star 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. Northern Star 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 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 (exploration and GC) are stored in chip trays for future reference.
	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 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.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
	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 Northern Star 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 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 Margarets 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 Northern Star 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 drill holes (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 Margarets. 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 for reporting of Exploration Results.	The nominal spacing for exploration drilling is 25m x 20m to 12.5m x 20m.

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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.	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 regard to mineralised structures.
Sample security	The measures taken to ensure sample security.	Samples are prepared on site under supervision of Northern Star 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 listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	The Margaret's pit and near mine exploration is located on M31/30. The tenement is held 100% by Northern Star Resources 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.
		Northern Star 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.
Drill hole Information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: o easting and northing of the drill hole collar o elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar o dip and azimuth of the hole o down hole length and interception depth o hole length.	All material data in relation to this deposit was periodically released on the ASX. Future drill hole data will be periodically released or when results materially change the economic value of the project.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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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.	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 drilling released
	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 drilling released
	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.	Previous announcement included sufficient detail to clearly illustrate the geometry of the mineralisation and the drilling.
	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').	No exploration drilling released
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 Northern Star 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 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).	At this time the Margaret Deposit is under review.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	N/A

Section 3 Estimation and Reporting of Mineral Resources
(Criteria listed in section 1, and where relevant in section 2, also apply to this section).

Criteria	JORC Code explanation	Commentary
Database integrity	Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.	Northern Star 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 has not carried out site visits to the safari bore deposit as mining activities ceased in 2011/2012, however geology management and exploration geology personnel have carried out site visits to the Margarets deposit on numerous occasions. The competent person has built a sound understanding of the deposit geology. All geological processes undertaken by Northern Star concerning the Margarets resource have been done using Northern Star's standard operating 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.	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.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
	Nature of the data used and of 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. 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. The current resource has been interpreted from 38 surface diamond holes and 2,823 RC holes. 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 effect, if any, of alternative interpretations on Mineral Resource estimation.	A comparative MP3 model was available and at the time of the previous 2012 estimation 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 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 MGA coordinates 433100mE – 433450mE, 6705000mN – 6705600mN and 2190mRL - 2380mRL. 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. If a computer assisted estimation method was chosen include a description of computer software and parameters used.	Mineralisation is domained based on geological continuity. All domain wireframes are created using Leapfrog software and all subsequent estimation is completed using Datamine software. Lode wireframes are defined from 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 1x1x1m 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 sub-domains. The maximum distance of extrapolation is less than 20m as individual lodes do not have long strike or dip lengths
	The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.	All resource models are compared to the immediate previous model to determine changes from new input data. Margarets open pit has previously been mined and milled and this material is considered well understood. The current model reconciled within 1%of the ounces from the previous 2012 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., sulphur for acid mine drainage characterisation).	There has been no estimate at this point of deleterious elements. Northern Star 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.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
	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 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 Northern Star's current economic status the natural grade distinction above background for the Margarets 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 $2500 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 processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	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 green fields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	No processing or beneficiation of ore expected on these tenements, as ore is hauled to Carosue Dam Minesite 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
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 Margarets 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.	Northern Star has standardised procedures for bulk density testing. Most ore zones predominantly exist in transitional to fresh nonporous 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 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 Northern Star 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.

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T: +61 8 6188 2100
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E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
Audits or reviews	The results of any audits or reviews of Mineral Resource estimates.	Northern Star has adopted a process for geological modelling, estimation and reporting of mineral resources that meets high industry standards. At the completion of resource estimation Northern Star 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 2012 edition of the JORC code. Northern Star Gold Mine uses a standard approach to resource estimation and the procedure requires the systematic completion of the Northern Star 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.
	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%.

Carosue Dam: Pinnacles – 31 March 2024

Section 1 Sampling Techniques and Data

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

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.	Northern Star 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 Northern Star 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 30g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. 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. Northern Star 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). Northern Star 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.

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ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
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E: info@nsrltd.com
W: www.nsrltd.com

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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. 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.
	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 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 by Northern Star.
	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 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 Pinnacles.
	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 Northern Star acQuire database.
	Discuss any adjustment to assay data.	No adjustments have been made to assay data. First gold assay is utilised for resource estimation.

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Criteria	JORC Code explanation	Commentary
Location of data points	Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.	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.
	Whether sample compositing has been applied.	Sample compositing is not applied until the estimation stage. Some historic RC sampling was composited into 3m 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 has been recognised due to orientation of drilling in regard to mineralised structures.
Sample security	The measures taken to ensure sample security.	Samples are prepared on site under supervision of Northern Star 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 listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	The Pinnacles resource is located on M28/243. Mining Lease M28/243 is part of a JV agreement between Nexus Minerals and Northern Star. 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.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
		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.
Drill hole Information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: o easting and northing of the drill hole collar o elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar o dip and azimuth of the hole o down hole length and interception depth o hole length.	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 results materially change the economic value of the project.
	If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	Exclusion of the 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 drilling released
	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 drilling released
	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.	Previous announcements included sufficient detail to clearly illustrate the geometry of the mineralisation and the recent drilling.
	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').	No exploration drilling released
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 Northern Star 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 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).	The Pinnacle Deposit is a current exploration play that will be further reviewed post optimisation processes.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Appropriate diagrams and maps of future extensions and work are available in the appropriate ASX announcements.

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Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Section 3 Estimation and Reporting of Mineral Resources

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

Criteria	JORC Code explanation	Commentary
Database integrity	Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.	Northern Star 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 regularly visits CDO 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 logging, drill results and geophysics.
	Nature of the data used and of 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 effect, 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.
	The use of geology in guiding and controlling 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. If a computer assisted estimation method was chosen include a description of computer software and parameters used.	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 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.	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.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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		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., sulphur for acid mine drainage characterisation).	There has been no estimate at this point of deleterious elements. Northern Star 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 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 Northern Star'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 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 Pinnacles resource will be mined by conventional open pit methods given the close proximity to surface and the mean average grade 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 processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	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 green fields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be	Environmental considerations are captured by Program of Work (PoW) requirements. Operations on these tenements are purely exploratory in nature to date.

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PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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	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 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 Northern Star standardised procedures. Northern Star have standardised procedures for bulk density testing. Most ore zones predominantly exist in transitional to fresh nonporous 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 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 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 Northern Star 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.	Northern Star has adopted a process for geological modelling, estimation and reporting of mineral resources that meets high industry standards. At the completion of resource estimation Northern Star 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. Northern Star uses a standard approach to resource estimation and the procedure requires the systematic completion of the Northern Star 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.

Carosue Dam: Thin Lizzie – 31 March 2024

Section 1 Sampling Techniques and Data

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

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,	Northern Star 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.

Northern Star Resources Limited
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Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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	or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.	
	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 30g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. 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.	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.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	All drillholes appear to have been logged in full.
	The total length and percentage of the relevant intersections logged.	No diamond drilling has been completed at Thin Lizzie.
Sub-sampling techniques and sample preparation	If core, whether cut or sawn and whether quarter, half or all core taken.	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.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	The sampling techniques for historic drilling are unknown, best practice is assumed.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	Sampling by previous holders assumed to be industry standard at the time.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	It is unknown if historic duplicate sampling was performed.
	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 assumed historic sample sizes were appropriate to the grainsize of material being sampled.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	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
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.	No geophysical tools have been utilised for reporting gold mineralisation.
	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.	Historic RAB, AC and RC drilling is assumed to have been carried out to industry standard regarding QAQC procedures.
	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.	It is unknown if historic intercepts were verified by alternative company personnel.
	The verification of significant intersections by either independent or alternative company personnel.	No specific twinned holes have been drilled at Thin Lizzie
	The use of twinned holes.	Data from previous owners was taken from a database compilation and validated as much as practicable before entry into the Northern Star acQuire database.

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Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
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E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
Verification of sampling and assaying	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	No adjustments have been made to assay data. First gold assay is utilised for resource estimation.
	Discuss any adjustment to assay data.	Previous holders' survey accuracy and quality is unknown.
Location of data points	Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.	MGA Zone 51 grid system is used in the Thin Lizzie area.
	Specification of the grid system used.	Kevron Geomatic Services flew and processed aerial photography and provided orthoimages at 1:5000 scale over the Thunderbox deposit and environs.
	Quality and adequacy of topographic control.	No exploration results reported in this release
Data spacing and distribution	Data spacing for reporting of Exploration Results.	Data spacing and distribution are sufficient to establish the degree of geological and grade continuity appropriate for JORC classifications applied.
	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.	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 sample compositing has been applied.	The majority of drillholes are positioned to achieve optimum intersection angles to the ore zone as are practicable.
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.	No significant sampling bias has been recognised due to orientation of drilling in regard to mineralised structures.
	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.	It is unknown what measures were taken to ensure sample security; best practice is assumed.
Sample security	The measures taken to ensure sample security.	It is unknown if any audits or reviews were completed.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	

Section 2 Reporting of Exploration Results
(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	The Thin Lizzie resource is located on M39/120. The tenement is held 30% by Northern Star Resources Limited in a joint venture agreement with AngloGold Ashanti. 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.
Drill hole Information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: o easting and northing of the drill hole collar o elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar o dip and azimuth of the hole o down hole length and interception depth o hole length.	It is not practical to summarise all of the holes deemed material in this release.

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Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
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E: info@nsrltd.com
W: www.nsrltd.com

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	If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	Exclusion of the 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.	Northern Star has not previously reported any exploration results for Thin Lizzie, nor are any included in this release.
	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').	No exploration results are reported 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 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.	Northern Star has not previously reported exploration results at Thin Lizzie, 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.	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).	Further work at Thin Lizzie is currently under review. Economic factors play an important role in the priority given to this deposit.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Appropriate diagrams and maps of future extensions and work are available in the appropriate ASX announcements.

Section 3 Estimation and Reporting of Mineral Resources
(Criteria listed in section 1, and where relevant in section 2, also apply to this section).

Criteria	JORC Code explanation	Commentary
Database integrity	Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.	Northern Star 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.

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PO Box 2008
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T: +61 8 6188 2100
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E: info@nsrltd.com
W: www.nsrltd.com

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	Nature of the data used and of 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 effect, 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 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. If a computer assisted estimation method was chosen include a description of computer software and parameters used.	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 Resource estimate takes appropriate account of such data.	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 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., sulphur for acid mine drainage characterisation).	There has been no estimate at this point of deleterious elements. Northern Star 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 together with the geometry 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.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
	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 Northern Star's current economic status the natural grade distinction above background for the Thin Lizzie 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 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 processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	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 green fields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	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 Northern Star's standardised procedures. Most ore zones predominantly exist in transitional to fresh nonporous 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.	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 2012 JORC Code.
	Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).	All care has been taken to account for relevant factors influencing the mineral resource estimate. The diligent Northern Star 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. Northern Star undertake an extensive review of the model that covers;

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Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
		• 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 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 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.
	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.

Carosue Dam: Tin Dog – 31 March 2024

Section 1 Sampling Techniques and Data

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

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.	Northern Star 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 Northern Star 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 30g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. 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 Northern Star 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). Northern Star 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.

Northern Star Resources Limited
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Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
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E: info@nsrltd.com
W: www.nsrltd.com

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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. 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.
	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 Northern Star 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 Northern Star 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 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.
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 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 Northern Star acQuire database.

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Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
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E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
	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 drill holes (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.
	Whether sample compositing has been applied.	A select number of samples were composited into 4m lengths and sampled in the Northern Star 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.
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 regard to mineralised structures.
Sample security	The measures taken to ensure sample security.	Samples are prepared on site under supervision of Northern Star 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 listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	The Tin Dog project is located on M39/588 with near mine exploration extending onto M39/589. The tenement is held 100% by Northern Star resource 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.

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ABN: 43 092 832 892

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Subiaco WA 6008, Australia

PO Box 2008
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T: +61 8 6188 2100
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W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
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
Drill hole Information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: o easting and northing of the drill hole collar o elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar o dip and azimuth of the hole o down hole length and interception depth o hole length.	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 results materially change the economic value of the project.
	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.	No exploration results are being reported
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 being reported
	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.	There are no metal equivalents reported in this release.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	Previous announcements included sufficient detail to clearly illustrate the geometry of the mineralisation and the recent drilling. All results were reported as downhole lengths.
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.	All significant exploration results released by Northern Star are accompanied by the appropriate diagrams and maps at the time of the release.
	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').	No exploration results are being reported
Diagrams	Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	No substantive data acquisition has been completed in recent times.
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.	In the current economic climate, exploration activities at Tin Dog have been given a lower priority.
Other substantive exploration data	Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	No other exploration data to add
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).	Nothing currently planned
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Appropriate diagrams and maps of future extensions and work are available in the appropriate ASX announcements.

Section 3 Estimation and Reporting of Mineral Resources
(Criteria listed in section 1, and where relevant in section 2, also apply to this section).

Criteria	JORC Code explanation	Commentary
Database integrity	Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.	Northern Star 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.

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Criteria	JORC Code explanation	Commentary
	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 Northern Star AcQuire Database and in the process was validated by internal processes and systems. The process was overseen by the Database Administrator. Data collected by Northern Star 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.	N/A
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 of 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 effect, 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 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.
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 Northern Star 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. If a computer assisted estimation method was chosen include a description of computer software and parameters used.	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 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.	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., sulphur for acid mine drainage characterisation).	There has been no estimate at this point of deleterious elements. Northern Star 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.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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		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.
	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 Northern Star's current economic profile, and the natural grade distinction above background, a grade of 0.5/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 $2500 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 processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	At this stage of the project there has been no metallurgical testing.
Environmental factors or assumptions	Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a green fields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	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 Northern Star.
	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 Northern Stars 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.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
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E: info@nsrltd.com
W: www.nsrltd.com

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	Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).	All 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 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.	Northern Star uses a standard approach to resource estimation and the procedure requires the systematic completion of the Northern Star 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. 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.

Jundee: Surface – 31 March 2024

Section 1 Sampling Techniques and Data

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

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 is by both diamond drilling (DD) and Reverse Circulation (RC) drilling completed by Northern Star Resources (NSR) and previous lease holders. DD samples are HQ and NQ core with sample intervals defined by the geologist to honour geological boundaries ranging from 0.3 to 1.2m in length. RC samples are collected via rig-mounted static cone splitter with sample falling though inverted cone splitter, splitting the sample in 88%/9%/3% ratio. 9% split retained for 1m composites and 3% split retained for 4m composites. 1m samples are sent for further analysis if any 4m composites return a gold value > 0.1g/t or intervals containing alteration/mineralisation failed to return a significant composite assay result. NSR Resource definition and grade control drilling routinely collects 1m composites and also routinely employs the use of a drop box located between the cyclone and inverted cone splitter.
	Include reference to measures taken to ensure sample representativity and the appropriate calibration of any measurement tools or systems used.	DD core is aligned and measured by tape, comparing back to down hole core blocks consistent with industry practice. RC metre intervals are delineated with spray paint to determine metres drilled. Sample rejects are left on the sample pad to indicate metres drilled for the hole.
	Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g., 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g., submarine nodules) may warrant disclosure of detailed information.	Diamond drilling is completed to industry standard using varying sample lengths (0.3 to 1.2m) based on geological intervals, which are then crushed and pulverised to produce a ~200 gm pulp sub sample to use in the assay process. Diamond core samples are fire assayed (30g charge) or 50 g charge) or Photon analysed (500 g jars). Visible gold is occasionally encountered in core and in RC chips. RC sampling to industry standard at the time of drilling where ~3-4kg samples are pulverised to produce a ~200 gm pulp sample to utilise in the assay process. RC samples are fire assayed (50 gm charge) or analysed by Photon-Assay (PAAU002) method with detection limits of 0.02-350 ppm (Millrose)
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.).	RC drilling is carried out using a face sampling hammer and a 130mm diameter bit or 143 mm to 146 mm diameter bit. Diamond drilling carried used PQ, HQ3 (triple tube), HQ and NQ2 techniques. Core is routinely orientated using the ORI-shot device. Selected diamond holes had core orientated using a spear method every 3m. All other diamond utilised REFLEX ACT Orientation tools for core orientation (Millrose)

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed.	RC – Approximate recoveries are sometimes recorded as percentage ranges based on a visual and weight estimate of the sample. DD – Recoveries are recorded as a percentage calculated from measured core versus drilled intervals.
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	Diamond drilling practice results in high core recovery due to the competent nature of the ground. RC drilling recovery is supervised on the rig and any recovery issues are recorded and rectified.
	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, diamond drill sample recovery is very high.
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.	DD core and RC chip samples have been logged by qualified geologists to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies. RC hole logging was carried out on a metre-by-metre basis and at the time of drilling. Millrose: A re-logging campaign of historic diamond core was undertaken by NSR. Re-logging occurred on nominated fences across the Millrose deposit. The re-logging added confidence to the existing database and the level of detail supports appropriate Mineral Resource estimation, mining studies and metallurgical studies.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	Logging is qualitative and quantitative; all core is photographed wet. Visual estimates are made of sulphide, quartz and alteration as percentages. Photography of RC chip trays (wet) is carried out for some of the NSR Resource definition and grade control RC drilling. Millrose: Logging is qualitative and quantitative; not all photos were available for core and chip trays; historic core and chip trays were photographed wet as part of a re-logging campaign. Visual estimates are made of sulphide, quartz and alteration as percentages.
	The total length and percentage of the relevant intersections logged.	100% of all DD and RC drilling is logged.
Sub-sampling techniques and sample preparation	If core, whether cut or sawn and whether quarter, half or all core taken.	DD core is halved with an Almonté diamond core saw. The core is quarter cut when metallurgical samples are required. Sample intervals are defined by a qualified geologist to honour geological boundaries. The left half is archived. All mineralised zones are sampled plus associated visibly barren material in contact with mineralised zones. Core is sampled on the width of the geological/mineralised structure with a minimum sample length of 0.3m and a maximum sample length of 1.2m. Total weight of each sample generally does not exceed 5kg. Millrose: Diamond core samples are either collected at geologically defined intervals, with a minimum sample length of 0.3 m and maximum of 1.2 m, or at one metre intervals regardless of the lithological boundaries.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	RC drilling uses a cyclone mounted inverted cone splitter. NSR RC Resource definition and grade control drilling routinely uses a drop box that in is situated between the cyclone and inverted cone splitter. Millrose: RC samples were collected using a combination of 1m riffle split comprising approximately 8-10% of the original sample material and 1 m dry, bulk sample via a cone splitter directly from the cyclone.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	DD core is dried at 100°C to constant mass, all samples below approximately 4kg are totally pulverised in LM5's to nominally 85% passing a 75µm screen. The few samples generated above 4kg are crushed to <6mm and riffle split first prior to pulverisation. RC samples are dried at 100°C to constant mass, all samples below approximately 3kg are totally pulverised in LM5's to nominally 85% passing a 75µm screen. Samples generated above 4kg are crushed to <6mm and cone split to nominal mass prior to pulverisation. For RC samples, no formal heterogeneity study has been carried out or monographed. An informal analysis suggests that the sampling protocol currently in use are appropriate to the mineralisation encountered and should provide representative results. Millrose: All Strickland Metals Limited samples were sorted and dried at 105 C, crushed to ~3 mm and linearly split, ensuring jars are filled to 85 % full. Samples were then analysed by Photon-Assay (PAAU002) method with detection limits of 0.02-350 ppm.
	Quality control procedures adopted for all sub-sampling stages to maximise representativity of samples.	Repeat analysis of pulp samples (all sample types) occurs at an incidence of 1 in 20 samples. Analysis of 2mm coarse crush and split has been completed for three RC bulk cone splitter rejects each of them divided into 32 equal splits. No bulk analysis of rejects was conducted on the 2023 Gourdis and Vause RC drill program. Millrose: Samples submitted to Intertek separately analyse 1 CRM in every 50 samples as well as 1 duplicate assay in every 50 samples as part of standard QAQC protocol for Photon analysis.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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	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 duplicates, (i.e., other half of cut core) are routinely assayed. NSR routinely collects field duplicates during RC drilling. Millrose: Strickland Metals Limited collected field duplicates from the B-chute of the splitter at a 1:40 ratio through the entire hole at the same time as the original sample collection from the A-chute.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Sample sizes are considered appropriate. No formal nomograph study has been conducted on the RC primary sub sample split. Industry standard practice supports splitting of primary sub samples at particle sizes of <6mm and P_{80} 75µm.
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.	For RC drill samples, gold concentration was determined by fire assay using the lead collection technique with a 50 gm sample charge weight. MP-AES instrument finish or ICP-OES finish were used to be considered as total gold. For the RC drill samples from the 2022 Cook RC drill program and the 2023 Gourdis and Vause RC drill program, gold concentration was determined by fire assay using the lead collection technique with a 50 gm sample charge weight. AAS instrument finish was used to be considered as total gold. For DD drill samples, gold concentration was determined by fire assay using the lead collection technique with a 30 gm or 50 gm sample charge weight. AAS or MP-AES instrument finish was used to be considered as total gold. For the majority of drill core samples, gold concentration is determined by fire assay with an AAS or MP-AES finish is used to be considered as total gold. In 2021 Photon assay was introduced at Jundee, the sample is crushed to 85% passing 2mm then split with a 500g sub sample taken for analysis. Various multi-element suites are analysed using a four-acid digest with an AT/OES or ICP-MS finish. Millrose: Strickland Metals Limited analysed samples using Photon-Assay (PAAU002). All samples were sorted and dried at 105 C, crushed to ~3 mm and linearly split, ensuring jars are filled to 85 % full.
	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.	For selected RC and DD drill samples, handheld XRF analysis was undertaken to help confirm lithological rock identification. An Olympus Vanta M Series Portable XRF analyser utilising 2 beam analysis with 30 second scan time per beam was used. Millrose: No geophysical derived analyses are reported.
	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.	The QAQC protocols used include the following for all drill samples: - Field QAQC protocols used for all drill samples include commercially prepared certified reference materials (CRM) inserted at an incidence of 1 in 20 samples. The CRM used is not identifiable to the laboratory with QAQC data is assessed on import to the database and reported monthly, quarterly and yearly. - NSR RC Resource definition and grade control drilling routinely inserts field blanks and monitor their performance. - NSR RC Resource definition and grade control drilling routinely inserts field duplicates and monitor their performance. - Laboratory QAQC protocols used for all drill samples include repeat analysis of pulp samples occurs at an incidence of 1 in 20 samples and screen tests (percentage of pulverised sample passing a 75µm mesh) are undertaken on 1 in 40 samples. - The laboratories' own standards are loaded into the database and the laboratory reports its own QAQC data monthly. - In addition to the above, about 5% of drill samples are sent to a check laboratory. Samples for check -assay are selected automatically from holes based on the following criteria: grade above 0.5g/t or logged as a mineralised zone or is followed by feldspar flush or blank. - Failed standards are generally followed up by re-assaying a second 50g or 30g pulp sample of all samples in the fire above 0.1g/t by the same method at the primary laboratory. Both the accuracy component (CRM's and third-party checks) and the precision component (duplicates and repeats) of the QAQC protocols are thought to demonstrate acceptable levels of accuracy and precision.
Verification of sampling and assaying	The verification of significant intersections by either independent or alternative company personnel.	Significant intercepts were verified by NSR Geologists as part of the re logging campaign. Sample marks were preserved on the remaining half core for reconciliation.
	The use of twinned holes.	Millrose has documented twinning historic holes to validate assay data (Strickland).
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	Sampling and logging data are digitally entered into a tablet using Logchief software imported into SQL database using semi-automated or automated data entry. Digital assay files are loaded directly into the database. Visual checks are part of daily use of the data in Vulcan, Leapfrog or Datamine.
	Discuss any adjustment to assay data.	The first gold assay is almost always utilised for any Mineral Resource estimation except where evidence from re-assaying and/or check-assaying dictates. A systematic procedure utilizing several re-assays and/or check assays is in place to determine when the final assay is changed from the first gold assay. Millrose: Further infill drilling has been completed by STK to validate historic resource models.

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ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Location of data points	Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.	Collar positions are recorded using conventional survey methods based on Leica TS15 3" total stations and Trimble R10 GNSS instruments. The location of each station is referenced to state-wide network of Standard Survey Marks (SSM) established and coordinated by the Department of Land Administration (WA Government). Where regional drill hole positions are distant from the SSM network, the worldwide Global Navigational Satellite System (GNSS) network is used. Positional checks are carried out using a combination of existing known positions (usually based on prominent landmarks) and grid referenced information such as ortho-linear rectified photogrammetry based on the Map Gird of Australia MGA94. Collar coordinates are recorded in MGA94. Surface collar RL's have been validated utilizing an airborne elevation survey by Arvista. Multi shot cameras and gyro units were used for down-hole survey. Millrose: Drill hole collars (pre-Strickland ownership) were surveyed by registered surveyors using theodolite and EDM equipment. Drill holes were down hole surveyed using an Eastman camera arrangement. For confirmation, some holes were surveyed using a Gyro arrangement provided by Surtron. There was no difference between the methodologies. There are no magnetic lithologies in the gold mineralisation zone which would affect an Eastman camera. Strickland surveyed drillhole collar positions using a Garmin GPSMAP 64.
	Specification of the grid system used.	Collar coordinates are recorded in MGA94 Zone 51. The difference between magnetic north (MN) and true north (TN) is 1º 34' 30". The difference between true north (TN) and AMG84 Zone 51 (AMG GN) is 1º 02' 47". The difference between true north and GDA is zero. Millrose: Pre Strickland ownership, the grid system used was AMG 84 Zone 51. This data has since been transformed into the MGA 94 Zone 51 grid system. Millrose: All other location data was captured in MGA94 Zone 51 and drillhole collar positions surveyed using a Garmin GPSMAP 64.
	Quality and adequacy of topographic control.	Topographic control is from Digital Elevation Contours (DEM) 2020, 1m contour data and site surveyed pickups. Millrose: The topographic surface of the deposit was generated from the coordinates of the drill hole collars. Millrose: Surface collar RL's have been validated utilising an airborne elevation survey by RocketDNA (DTM at 1 m sample spacing, +/- 0.1 m vertical accuracy).
Data spacing and distribution	Data spacing for reporting of Exploration Results.	All Ore Reserves are based on a maximum drill hole spacing of 25m x 25m and all Mineral Resources are based on a maximum of 60m x 60m. Exploration results in this report range from 25m x 25m drill hole spacing to 60m x 60m. Millrose: Drill hole density across the deposit (including all drilling) is approximately 40x40m closing in to better than 20 x 20m in places. Drill hole density across the laterite mineralisation is approximately 40 metres (north-south) by 20 metres (east-west).
	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.	Ore Reserves are generally based on 25m x 25m drilling to a maximum of 40m by 40m. Mineral Resources are generally based on 25m x 25m drilling up to a maximum of 60m x 60m. The data spacing and distribution is sufficient to establish geological and/or grade continuity appropriate for the Mineral Resource and classifications to be applied.
	Whether sample compositing has been applied.	Core is sampled to lithology; sample compositing is not applied until the estimation stage. RC samples are taken as 1 m samples and 4 m composites during first pass exploration,1m samples are sent for further analysis if any 4m composites return a gold value > 0.1g/t or intervals containing alteration/mineralisation failed to return a significant composite assay result. For RC Resource definition and grade control drilling 1 m samples are routinely collected. No RC samples greater than 1m were used in estimation. Millrose: Strickland's sampling consisted of 1 m cone-split sampling throughout ore zones and exploration drilling, with 4 m compositing used in waste zones. Where composite assays are returned with greater than 0.1 g/t Au, the original 1 m A-chute split was sent for assay. 1 m cone-split sampling has been used throughout the laterite RC drill program.
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 orientation of sampling is generally on a high angle to the main mineralisation trends as these are vertical to sub-vertical. Drill holes are drilled on a 60-degree angle, perpendicular to the strike of the mineralisation.
	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.	The drill orientation to mineralised structures biases the number of samples per drill hole. It is not thought to make a material difference in the Mineral Resource estimation. Millrose: Diamond drilling confirmed that drilling orientation did not introduce any bias regarding the orientation of the mineralised horizons.
Sample security	The measures taken to ensure sample security.	All samples are selected, cut and bagged in tied numbered calico bags, grouped in larger tied plastic bags, and placed in large sample cages with a sample submission sheet. The cages are either sent to the site laboratory or are transported via freight truck to Perth, with consignment note and receipted by external and independent laboratory. All sample submissions are documented, and all assays are returned via email and hard copy.

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Subiaco WA 6008, Australia

PO Box 2008
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T: +61 8 6188 2100
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E: info@nsrltd.com
W: www.nsrltd.com

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		Sample pulp splits from the site lab are stored at the Jundee mine site and those from the Newburn Lab in Perth are stored at the Newburn Lab.
		RC samples processed at SGS have had the bulk residue discarded and pulp packets sent to Jundee mine site for long term storage.
		Millrose: Collection of physical core and chip trays was undertaken by NSR personnel. Core was catalogued at the Jundee Corefarm and chip trays are stored in shelving at the Jundee Coreyard Exploration Shed. Available pulps were returned to Jundee Mine Site for storage.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	Historical audits of all Jundee data were carried out by previous operators. During 2018, 2019, 2020 and 2021 Zaremus Pty Ltd conducted an audit of the site laboratory and audit of the external laboratories. Both audits found the laboratory procedures and performance to be adequate.
		All recent NSR sample data has been extensively QAQC reviewed both internally and externally.
		Millrose:
		A quality control (QC) analysis was conducted on the assay data in November 1999, including all assay data within the database as of 27/10/1999. The report indicated that the assay data was accurate and precise and could be reliably included in the Millrose resource estimate of 1999.
		A data evaluation was conducted by CSA Global in 2009. CSA reviewed the data supplied to prepare a data summary in preparation for establishing the resource potential to the south of Old Camp Bore at the Millrose project. Collar, Survey, Assays_Combined and Geology files were imported and validated with no errors identified.
		Drilling data from 2022-2023 has been extensively QAQC reviewed internally. Greater emphasis was given to the more recent drilling because this is the first resource estimation to include the newly acquired data. The outcome of the report suggests that the samples collected are for the most part both representative and accurate and associated data was accurate and validated. The data can be deemed low risk and is suitable to support Millrose Resources and Ore Reserves.

Section 2 Reporting of Exploration Results
(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	The Jundee Project consists of 12 Exploration Licenses, 62 Mining Leases, 1 General Purpose Lease and 1 Prospecting Licence covering a total area of approximately 86,341 Ha. The Leases are 100% registered to Northern Star Resources Ltd.
		The Project also includes 28 Miscellaneous Licenses, 4 Groundwater Licenses, a Pipeline License and the Jundee Pastoral Lease covering the bore fields, roads, airstrip, and gas pipeline. There are numerous access agreements in place including access rights over part of M53/193 which lies contiguous to, and beneath, the General Purpose Lease on which the Jundee processing plant is located.
		There are no heritage issues with the current operation. The majority of the Jundee leases are granted Mining Leases prior to 1994 (pre-Mabo) and as such Native Title negotiations are not required. During 2004, two agreements were struck between Ngaanyatjarra Council (now Central Desert Native Title Services (CDNTS)) and Newmont Yandal Operations, these agreements being the Wiluna Land Access Agreement 2004 and the Wiluna Claim Heritage Agreement 2004, both agreements were transferred to Northern Star on purchase of the Jundee Operations in 2014.
		The Millrose project is located within Exploration Licence E53/1304 located 35km east of the Jundee Gold operations. The Licence was acquired from Strickland Metals Limited on 25 July 2023 and is held 100% by Northern Star Resources Ltd. The Licence is located within the Wiluna People Native Title Determined Claim (WAD6164/1998) and is subject to a 2021 Agreement transferred to Northern Star Resources Ltd.
	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.	All leases and licences to operate are granted and in the order for between 2 and 20 years.
		Renegade Exploration Limited holds a 0.5% Net Smelter Royalty over a 75% interest in E53/1726 and E53/2109. Vox Royalty Australia Pty Ltd holds a 1% Gross Profit Royalty over E53/1962
		Millrose: The Exploration Licence is in good standing with no known impediments. The Licence is subject to a conversion to Mining Lease M53/1110, also acquired from Strickland Metals Limited, which is undergoing assessment by the requisite governing bodies and Native Title.
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	All the exploration work has been completed by NSR.
Geology	Deposit type, geological setting and style of mineralisation.	Jundee is an Archean gold mineralised deposit that is part of the Northern Yandal Greenstone belt. Gold mineralisation is controlled by a brittle fracture-system, is commonly fracture-centred, and is predominantly hosted in dolerite and basalt. Mineralisation can be disseminated or vein style host.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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		The Millrose gold deposit is a typical Archaean aged, shear related gold deposit. The shear (Celia Shear) strikes north-south and is sub-vertical. Gold mineralisation is associated with the shearing and alteration of a volcaniclastic succession. There is an extensive lateritic profile with a pronounced depletion zone. Mineralisation is sub horizontal in the lateritic profile and subvertical when fresh.
Drill hole Information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: o easting and northing of the drill hole collar o elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar o dip and azimuth of the hole o down hole length and interception depth o hole length.	DD and RC holes have been used in the mineral resource. It is not practical to summarise all the holes here in this release. Future drill hole data will be periodically released or when a result materially change the economic value of the project.
	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 relevant information has been or will be released in appropriate ASX announcements.
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.	Millrose: Historic exploration results were reported using a nominal 0.5g/t Au cut off for delineating significant gold intercepts associated with the resource estimation. A nominal 0.3g/t Au cut off was used in determining the significant intercepts from the laterite RC sample assays.
	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 new significant results reported.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	Millrose: It has been previously reported that several discrete zones of core loss were encountered in the weathered portion of the MRDD005 diamond drill hole. To calculate the grade average for this hole, a value of 0.02g/t Au (Photon Assay detection limit), was assigned to the core loss zone.
Relationship between mineralisation widths and intercept lengths	These relationships are particularly important in the reporting of Exploration Results.	No new significant results reported.
	If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.	Millrose: Historic drilling is at a declination of 60deg generally to grid west (270°) although some holes were drilled to grid east (90°). The shear hosted gold mineralisation is sub vertical to steeply east dipping. The laterite mineralisation is flat lying and as such each RC hole was drilled vertically to drill perpendicular to the mineralisation orientation.
	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').	No new significant results reported.
Diagrams	Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	Plans and sections of the Millrose deposit are included in this report.
Balanced reporting	Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	No new significant results reported.
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.	Portable XRF (pXRF) data was reviewed and a lithogeochemical classification of this data was undertaken at Millrose. The result was a detailed interpretation which was simplified to support geological modelling in Leapfrog. Several historic diamond holes across the deposit from five sections were selected for high-level relogging for the purpose of: • evaluating conforming controls on mineralisation. • Validate the pXRF lithogeochemical interpretation and develop a more robust stratigraphic/lithological model. • Validate and update where possible the current weathering surfaces/regolith model Historic RC chip trays were logged and photographed to further validate and update the current weathering surfaces. For selected RC drill holes from the 2023 Gourdis and Vause RC drill program, RC chip samples were analysed by handheld XRF analysis, to help confirm lithological rock identification. An Olympus Vanta M Series Portable XRF analyser utilising 2 beam analysis with 30 second scan time per beam was used.
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).	Further extensional, resource definition and grade control drilling are planned for FY2024. Diamond drilling for geotechnical and rock characteristics are planned for FY2025.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
		Millrose: Further diamond holes are planned for FY2025 for the purpose of twinning historic AC intercepts to validate high-grade zones not used in the estimation. The core will also provide material for met testing.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Appropriate diagrams and maps of future extensions and work are available in the appropriate ASX announcements.

Section 3 Estimation and Reporting of Mineral Resources
(Criteria listed in section 1, and where relevant in section 2, also apply to this section.

Criteria	JORC Code explanation	Commentary
Database integrity	Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.	Sampling and logging data are digitally entered into a tablet using Logchief software and then transferred to an SQL based database. Assay results are returned from the laboratory as digital files and loaded directly into the database. A series of verification validations are performed prior to importing the data in the database. There are checks in place to avoid duplicate holes, sample numbers and missing intervals. There is a database manager on site who is responsible for the integrity and use of the data. Only the database manager and the database administrator have access to the database. Where possible, raw data is loaded directly to the database from lab, logging and survey derived files. Millrose: The historic data was provided to Northern Star in a Microsoft Access Database and is considered correct.
	Data validation procedures used.	All the electronic log files are reviewed and validated prior to being imported into the database. Drill hole information is loaded in Vulcan, Datamine (Gourdis-Vause) and Leapfrog software for verification and validation of collar, lithology, and downhole surveys. Database administrators perform a series of verification validations prior to storing the information in the database. There is a QA/QC geologist that reviews the QA/QC information daily and ensures that the company QA/QC protocols are followed. Millrose: The pre NSR data has been partially validated internally. Validation included, but was not limited to, review of the database, WAMEX spot checks, core and chip re logging, QAQC data interrogation, topography checks, review of over lapping segments and invalid value handling using Leapfrog Software.
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	The Competent Person for this Mineral Resource report has worked on site for extensive periods over the last 4 years.
	If no site visits have been undertaken indicate why this is the case.	Regular site visits have been undertaken, except for Millrose. Site visit to be competed FY2025.
Geological interpretation	Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.	The interpretation of the deposit was carried out using a systematic approach to ensure continuity of the geology and estimated Mineral Resource using Leapfrog, Datamine (Gourdis-Vause) and Vulcan software. The confidence in the geological interpretation is relatively high, though a certain degree of uncertainty always remains due to the structurally complex and nuggetty nature of the ore body on a local scale. Millrose: The interpretation of the deposit was carried out using a systematic approach to ensure continuity of the geology and estimated Mineral Resource using Leapfrog software. The confidence in the geological interpretation is relatively high, though a certain degree of uncertainty always remains due to the structurally complex and nuggetty nature of the ore body on a local scale.
	Nature of the data used and of any assumptions made.	All available geological data was used in the interpretation including mapping, drilling and oxidation surfaces.
	The effect, if any, of alternative interpretations on Mineral Resource estimation.	No alternative interpretations have been completed or put forward.
	The use of geology in guiding and controlling Mineral Resource estimation.	Logging and grade distribution were used to create 3D constrained wireframes. A 0.3 g/t Au was used as a guide to model the mineralised envelopes for the open pit resources and a 1.0 g/t Au was used as a guide for the underground resources. The Modelling cut-off was determined after the statistical analysis of the sample population.
	The factors affecting continuity both of grade and geology.	Continuity of the grade varies significantly, though the main mineralised structures show good continuity downdip and across strike. The geology consists of a stockwork of short-range quartz veins with carbonate, chlorite and sulphides hosted by granite. The splays or small lodes coming of this main trend tend to have a shorter continuity. Mineralisation of Millrose occurs in silicified (± carbonate) rocks on the contact between felsic volcanic sediments and mafic schists. Mineralisation and grade continuity is predominantly affected by the F2 fold and lineation architecture within the silicification zones - explained by the entrainment of gold within the main North-plunging intersection lineation. Sedimentary iron formation acts as a rheological control on the mineralization at Millrose
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.	Mineralised zones are variable with true width ranging from 0.5m to 30m. They are extensive along strike and down dip, up to 450m and 350m, respectively.

Northern Star Resources Limited
ABN: 43 092 832 892

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Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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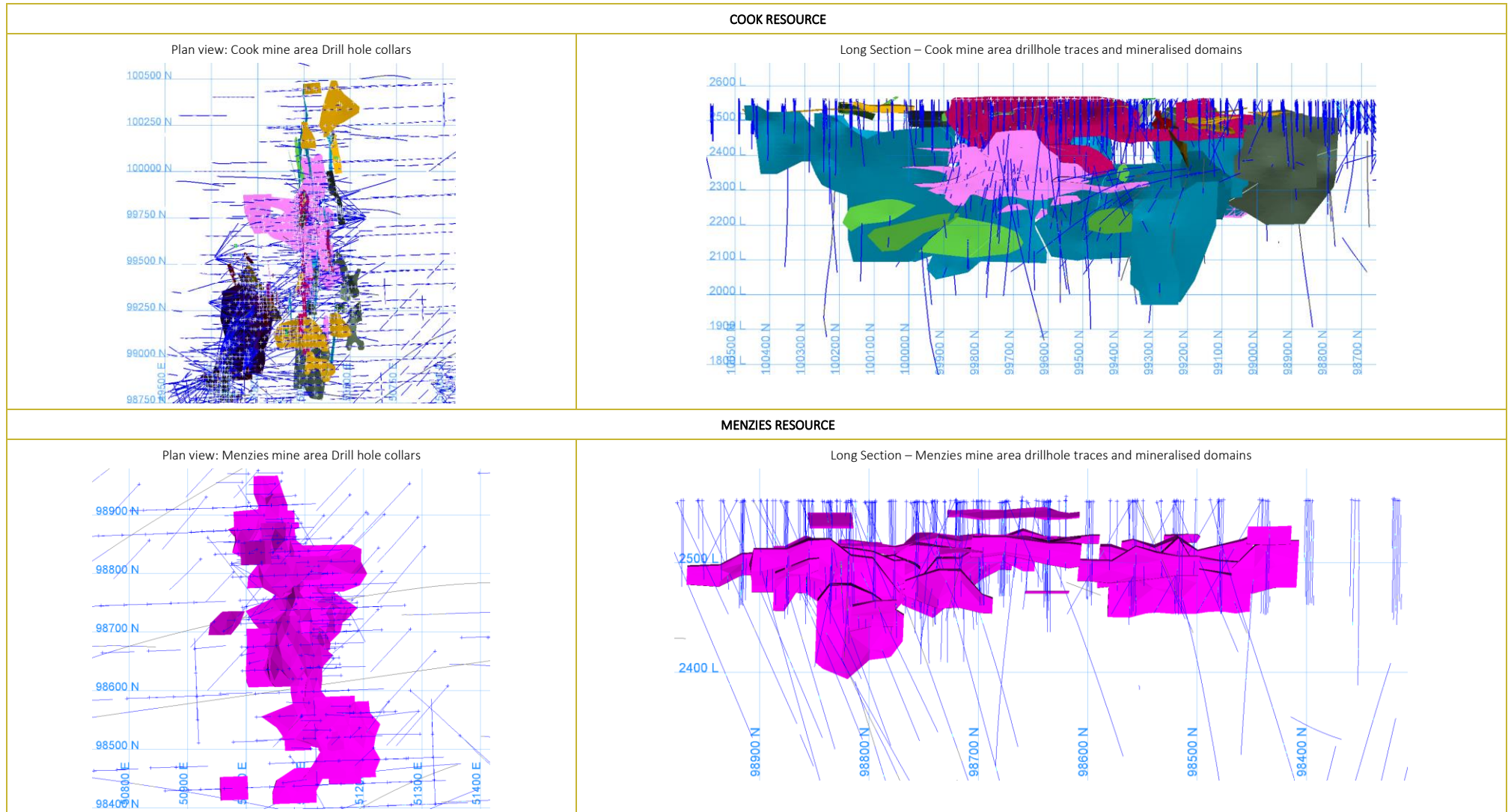| Criteria	JORC Code explanation	Commentary
		Depth from surface is 350m approximately. The mineralised envelope has been extended down dip for targeting purposes any mineralisation modelled beyond the drilling coverage has not been included in the resource classification or reporting.
		Millrose full extent of mineralisation spans a strike length of 2.6km and up to 100, wide. The laterite mineralisation is a 380m by 250m flat zone with a consistent width between 1-7m. Depth from surface is approximately 3m to laterite, 30m to supergene, and 100m to fresh mineralisation. The mineralised envelope has been extended down dip equal to half the average distance to the nearest drillhole and is included in the resource classification and reporting.
Estimation and modelling techniques	The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.	Domains are set by grouping lodes as dictated by their structural setting, geological, mineralisation and statistical characteristics. The raw data is subdivided into domains based on geological controls and further analysed for correlation and similarity using statistics. The purpose of this analysis is to determine further domaining of the data for variography purposes (by combining groups of lodes).
		The Mineral Resource estimation utilises 1m composites for all RC and DD sampling data composites residuals smaller than 1m have been weighted by length for the estimation.
		Modelling was completed using Leapfrog, Datamine (Gourdis-Vause) and Vulcan software.
		Detailed exploratory data analysis, variography, Kriging Neighbourhood analysis (KNA) and model validation is carried out using Snowden Supervisor software.
		The Mineral Resource was estimated using ordinary kriging (OK). Vulcan and Datamine (Gourdis-Vause) software is used for data compilation, calculating and coding composite values, estimating and reporting.
		Estimation was completed using an oriented search ellipsoid. Three estimation passes were used with increasing search ellipsoid radius. Maximum and minimum number of samples for the estimation and ellipsoid search ranges were derived from KNA analysis, variogram ranges and drill hole spacing. Search ellipsoid radius ranges from 30m to 80m. A minimum of 12 samples and a maximum of 28 was used in the first pass, minimum of 10 samples and a maximum of 28 was used in the second pass and minimum of 6 samples and a maximum of 28 was used in the third pass. Minor variations to the number of samples have been applied in some zones based on drill spacing.
		Block model volumes were compared to wireframe volumes to validate sub-blocking.
		For the OK estimates treatment of extreme high grades was dealt with by using a cap grade strategy and high-grade restraining.
	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 are in line with the current estimation for this deposit.
	The assumptions made regarding recovery of by-products.	No assumptions are made and only gold is defined for estimation.
	Estimation of deleterious elements or other non-grade variables of economic significance (e.g., sulphur for acid mine drainage characterisation).	No deleterious elements estimated in the model.
	In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.	All open pit Mineral Resource models use a 1m straight composite generation based on RC sample length where the parent block sizes are 10 m in strike, 3m in RL, and 3m across strike direction. Sub-block sizes are 1m in strike, 1m in RL, and 1m across strike direction. Gourdis-Vause block models have a parent block sizes of 5 m in strike, 5 m in RL, and 5m across strike direction. Sub-block sizes are 1m in strike, 1m in RL, and 1m across strike direction.
		Average drill spacing ranges between 25m x 25m and 10m x 10m.
		Ore Reserves are generally based on 20m x 20m drilling up to a maximum of 40m x 40m. Mineral Resources are generally based on 40m x 40m drilling up to a maximum of 80m x 80m.
	Any assumptions behind modelling of selective mining units.	A 2m minimum mining width for open pit environment is assumed.
	Any assumptions about correlation between variables.	There is no correlation between variables.
	Description of how the geological interpretation was used to control the Resource estimates.	Mineralised wireframes are created within the geological shapes based on drill core logs, mapping and grade. An 0.3 g/t Au was used as a guide to model the mineralised envelopes for open pit resources and 1g/t for the underground resources. Low grades can form part of an ore wireframe. Estimations are constrained by the mineralised envelopes. Where required, late intrusives such as the Proterozoic dolerite dyke were used to sterilise the mineralisation.
	Discussion of basis for using or not using grade cutting or capping.	Top cuts were determined by a range of statistical techniques including analysis of histogram, Log-probability and Mean- CV plots: ■ Contained Metal Plots assess contribution of the highest values on the quantity of metal in an estimate, ■ Coefficient of Variation plots analyse impact top cuts have on CV. A range of top cuts are then selected for each domain utilising the above strategies and an appropriate top cut chosen after further examination to assess sensitivity of selected cap grades and associated risk. Metal estimated in the Mineral Resource models are finally reconciled with production models of like areas to determine the appropriateness of the high-grade treatment on the assays.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
		No top cutting or capping of high grades is done at the raw sample or compositing stage.
		For CIK, OK and ID^2, treatment of the high-grade assays occurs at the estimation stage.
		A range of top cuts was used in estimation and high-grade restraining for high grade samples, limiting their range of influence in the estimation.
	The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.	The Mineral Resource estimate was validated using processes that are based on a combination of visual, graphical and reconciliation validations summarised as:
		■ Visual validation of the lode and lithology coding of both the composite data and the block model.
		■ Comparison of lode wireframe volumes to block model volumes.
		■ Visual validation of Mineral Resource estimate against composite data in plan, section, and 3D.
		■ Sensitivity to top-cut values uses a variety of top-cuts which are compared to themselves and to the un-cut nearest neighbour estimate at a variety of cut-offs.
		■ Comparison of nearest neighbour, ID2, OK and CIK estimates to the final estimate (generally CIK, OK & ID2). These comparisons are conducted through visual validation and trend analysis along Northing, Easting and RL slices.
		■ Global, level and lode tonnages and grades, at various elemental cut-offs were compared, and given the changes in support data, were consistent.
		■ Statistical comparison of composites versus all estimates in block model with trend analysis plots for each domain produced by Northing / Easting / RL.
		■ Statistical comparison of composites grades versus lode grades in a lode-by-lode basis.
		■ Change of Support validation
		The Mineral Resource estimate shows a reasonably reflection of the composites where there are high numbers of composites used in the estimate. Where the numbers of samples reduce, the accuracy of the estimation suffers, and a more significant deviation is noted between the Mineral Resource estimate and associated composite data. These deviations are considered when assigning a Resource classification.
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. Moisture content within the ore is expected to be low.
Cut-off parameters	The basis of the adopted cut-off grade(s) or quality parameters applied.	Mineral Resources are reported at a 0.6g/t cut-off grade (Gourdis- Vause) and at a 0.7g/t cut-off grade (Millrose)
		The pit cut-off grade has been calculated based on the key input components of mining, processing, recovery and administration costs.
		Forward looking forecast costs and physicals form the basis of the cut-off grade calculations.
		The AUD $2,500 gold price as per corporate guidance.
		■ Mill recovery factors are based on historical data and metallurgical test work.
		■ Variable treatment costs to open pit mining for processing is a fundamental premise in the evaluation of open pit projects.
		Variable cut-off grade is used in the evaluation of open pit projects.
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.	A 2m minimum mining width for open pit environment is assumed and incorporated into the modelling and estimation. All Mineral Resources have been reported within $2,500 AUD optimisation shell.
Metallurgical factors or assumptions	The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	Assumed all material will be trucked and processed in the Jundee Mill. Recovery factors vary for the various mining areas and are based on lab testing and on-going operational experience. No metallurgical assumptions have been built or applied to the Mineral Resource model.
Environmental factors or assumptions	Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a green fields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	The Project currently possesses all necessary government permits, licenses and statutory approvals to be compliant with all legal and regulatory requirements.

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PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
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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.	RC bulk density values used were based on analysis of grab samples obtained during excavation of open cut mines. Calculated averages were applied to density boundaries for each model. DD bulk density values are based on an updated study of the average lithological densities across the mine site completed in 2013. This study consisted of a detailed statistical analysis of 72,634 measurements that have been recorded from all deposits. These values are also in agreement with over 10 years of production data. Millrose: DD bulk density values have been obtained from a detailed statistical analysis of 6,136 measurements that have been recorded from diamond core samples taken at Millrose within the fresh, oxide and transition zones. These values are also in agreement with bulk density measurements that been taken in the Yandal district.
	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 measurements for core samples are taken using the water displacement technique, where the samples are dried and weighed in air then weighed in water.
	Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	Individual bulk densities are applied in accordance with specific lithologies, mineralisation and weathering states.
Classification	The basis for the classification of the Mineral Resources into varying confidence categories.	Measured Resources are defined from grade control models based on geological mapping, diamond and RC drill holes which are imported into Vulcan and Datamine (Gourdis-Vause) software and modelled in 3D. Indicated Resources are defined by drilling which is generally 25m x 25m and may range up to 40m x 40m maximum. Material classified as Indicated are supported by a minimum of 5 RC and Diamond drill holes or a minimum of 3 drill holes when drill spacing is 25m x 25m or less and there is grade and geological continuity. Inferred Resources are defined on a nominal 40m x 40m drilling pattern and may range up to 80m x 80m. Resources based on less than 40m x 40m spaced drilling, but which have a low level of confidence in the geological interpretation may also be classified as inferred
	Whether appropriate account has been taken of all relevant factors (i.e., relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).	Input and geological data is accurate based on a long, successful mining history at the site on this mineralisation. Millrose: The classification has taken into account all available geological and sampling information, and the classification level is considered appropriate for the current stage of this project.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	This Mineral Resource estimate is considered representative with comments noted in the discussion below.
Audits or reviews	The results of any audits or reviews of Mineral Resource estimates.	The Mineral Resource estimate have been internally reviewed by NSR personnel. No external audits and reviews have been completed.
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.	This Mineral Resource estimate is considered as robust and representative of the Jundee mineralisation with local estimates considered variable in nature. The application of geostatistical methods has supported to increase the confidence of the model and quantify the relative accuracy of the Mineral Resource on a global scale and against actual production reconciliation.
	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.	This Mineral Resource report relates to the Jundee deposits and is likely to have local variability within a global assessment further supported and reconciled against actual mine production.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	Comparison with previous Mineral Resource estimates and production data was undertaken. Global, level and lode tonnages and grades, at various elemental cut-offs were compared, and given the changes in support data, were consistent.

Northern Star Resources Limited
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Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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COOK RESOURCE

Plan view: Cook mine area Drill hole collars

Long Section – Cook mine area drillhole traces and mineralised domains

MENZIES RESOURCE

Plan view: Menzies mine area Drill hole collars

Long Section – Menzies mine area drillhole traces and mineralised domains

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PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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VAUSE RESOURCE

Plan view: Vause mine area Drill hole collars
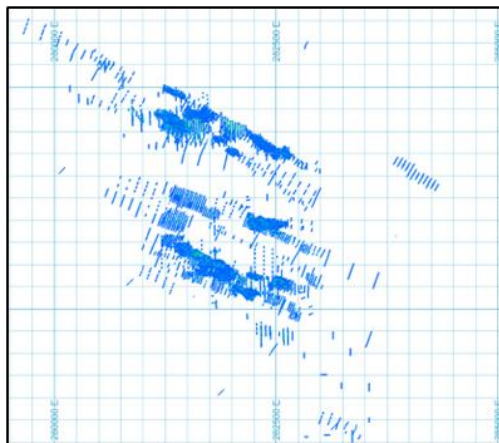
Long Section – Vause mine area drillhole traces and mineralised domains
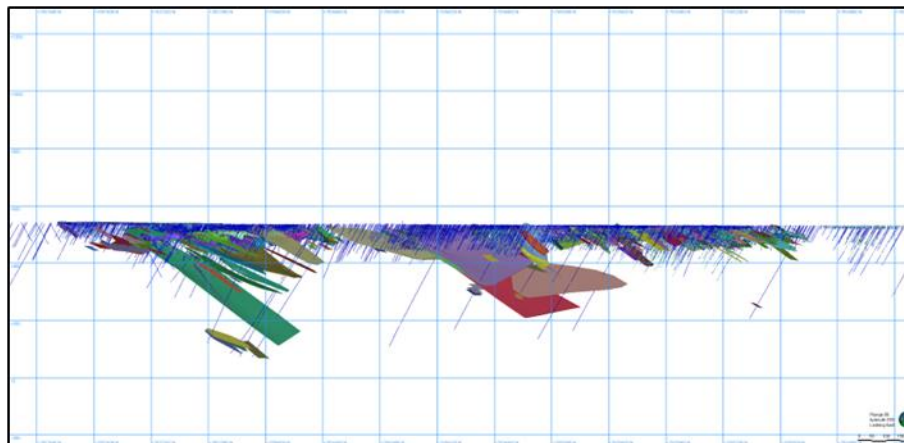
DESERT DRAGON RESOURCE

Plan view: Desert Dragon mine area Drill hole collars
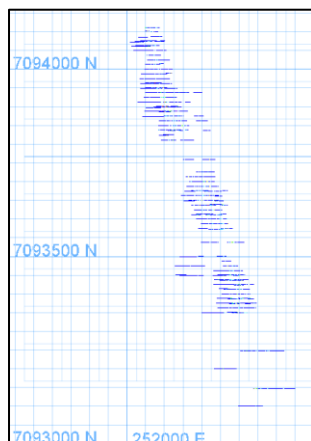
Long Section – Desert Dragon mine area drillhole traces and mineralised domains

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ABN: 43 092 832 892

Level 4, 500 Hay Street
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PO Box 2008
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T: +61 8 6188 2100
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E: info@nsrltd.com
W: www.nsrltd.com

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MILLROSE RESOURCE

Plan View – Drill traces and mineralized domains

Long Section - Drill traces and mineralized domains

Section 4 Estimation and Reporting of Ore Reserves
(Criteria listed in section 1, and where relevant in sections 2 and 3, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.	Reported Ore Reserves are based on updated or depleted resource models for all project areas. Stockpile reserves are based on grade control sampling and stockpile accounting.
	Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.	Mineral Resources are reported inclusive of Ore Reserves.
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	Regular site visits have been undertaken.
	If no site visits have been undertaken indicate why this is the case.	Regular site visits have been undertaken.
Study status	The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.	The Jundee Gold Project is a fully operational mine and has been in operations for over 25 years.
		The processing parameters have been based on metallurgical test work and experience from previous and current ore types processed and actual costs of the Jundee processing plant.
		Mining costs are based on pricing sourced from a reputable mining contractor with considerable experience in mining open pit gold mines. The schedule of rates provided were in a fixed and variable format.
		There is a high level of confidence in the parameters used.

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Criteria	JORC Code explanation	Commentary
	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.	Detailed mine design and costing based upon ongoing mine performance. The current study level demonstrates high confidence that the projects can achieve the mine plan and be operated in a technically sound and economically viable manner.
Cut-off parameters	The basis of the cut-off grade(s) or quality parameters applied.	The pit cut-off grade has been calculated based on the key input components (processing, recovery and administration) Forward looking forecast costs and physicals form the basis of the cut-off grade calculations. ■ The AUD gold price as per corporate guidance. ■ Mill recovery factors are based on historical data and metallurgical test work. Variable treatment costs to open pit mining for processing is a fundamental premise in the evaluation of open pit projects.
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).	Ore Reserves have been calculated by generating detailed mining shapes for any proposed open pits. A series of nested optimised pit shells were generated using Whittle software, an analysis of the shells was completed to select one which was then used to complete a detailed pit design to closely resemble the selected whittle shell. The Whittle optimisation used parameters generated from NSR technical personnel and technical consultants.
	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.	Any Jundee open pits will be mined using conventional open pit mining methods (drill, blast, load and haul) by a mining contractor utilising 120t class excavators and 90t trucks. This method is used widely in mines across Western Australia and is deemed appropriate given the nature of the ore body. Ore reserve stockpiles will be hauled from the project location to the Jundee Mill for processing.
	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 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 to assist geotechnical aspect of technical studies. It is expected that once the pit is in operation there may be some need for additional geotechnical input and reflect any changes into life of mine pit design.
	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.
	The mining dilution factors used.	A mining dilution factor of 10% of zero grade has been applied for the reporting of Reserve physicals for any open pits.
	The mining recovery factors used.	A mining recovery of 95% has been applied to any open pits.
	Any minimum mining widths used.	For any open pits, the SMU dimensions for the Reserve Estimate are 4.0 m Wide x 2.5 m High x 4.0 m Long. A minimum mining width down to 20 m for final pit extraction from the base of pit has been used.
	The way Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.	For any open pits, inferred material is not included within the Ore Reserve estimate (treated as waste) but has been considered in LOM planning. It is assumed that Inferred material will be converted to Ore Reserve in future via grade control drilling which has been provided for and will be carried out ahead of mining.
	The infrastructure requirements of the selected mining methods.	Infrastructure requirements for any Jundee open pit projects is accounted for and included in all work leading to the generation of the Ore Reserve estimate. As there is currently infrastructure in place for the Jundee underground operations and the life of Open Pit Projects are limited, planned infrastructure includes: ■ Offices, workshops, and associated facilities. ■ Dewatering pipeline. ■ Waste Dump; and ■ ROM Pad. Processing will be conducted at the Jundee operation; hence no processing infrastructure is required.
Metallurgical factors or assumptions	The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.	The existing Jundee Processing plant will be utilised to treat the Open Pit ore.
	Whether the metallurgical process is well-tested technology or novel in nature.	Metallurgical test work has been completed on open pit ore and applied to the optimisations and is well understood.
	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 metallurgical recoveries for the stockpiles are set at 93.9% for oxide, 94.1% for transitional, 92.9% for fresh rock, which corresponds with historic data and metallurgical test work undertaken.
	Any assumptions or allowances made for deleterious elements.	There has been no allowance for deleterious elements. Test work indicates there are no deleterious elements.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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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 orebody as a whole.	Milling experience gained from 2Mt of Vause open pit ore previously processed through the Jundee Processing Plant.
	For minerals that are defined by a specification, has the ore Reserve estimation been based on the appropriate mineralogy to meet the specifications?	Not applicable, gold only.
Environmental	The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.	Jundee operates under Department of Water and Environmental Regulation (DWER) Licence L6498/1995/11 in accordance with the Environmental Protection Act WA 1986. Jundee holds one groundwater licence GWL 107143. Jundee's mine closure plan has been developed in accordance with the DMIRS and EPA Guidelines for Preparing Mine Closure Plans. The mine closure plan details studies such as waste rock characterisation that are to be completed before closure of the site. Vause is a satellite mining operation to Jundee with past completed open pits nearby and are included in the Jundee Mine Closure Plan. All ore from the Open Pit Projects will be trucked to the Jundee Gold Processing Plant for milling and as such tails storage is included in the current Jundee (DWER) licence. There are no native title issues, mining areas have been heritage cleared for mining activities. Flora & Fauna and hydrogeological studies have been completed.
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.	All processing infrastructure is in place at Jundee. The project areas are connected to Jundee by an established haul road constructed for road train haulage.
Costs	The derivation of, or assumptions made, regarding projected capital costs in the study.	Mining costs are based on mining contract rates supplied by a reputable WA based mining contractor. Contract rates are for open pit mining services as well as drill and blast operations and associated services required to complete the project. Mining costs were built up from first principals on mine designs supplied by NSR. Capital costs were not included in the optimised parameter inputs. Capital costs based on quotes supplied and have been included in the economic cost model.
	The methodology used to estimate operating costs.	A capital and operating cost model has been developed in Excel and has been used to complete a life of mine cash flow estimate. Mining costs supplied by a reputable WA based mining contractor who built up costs from first principles from mine designs supplied by NSR.
	Allowances made for the content of deleterious elements.	Nil allowance, none expected based on metallurgical test work.
	The derivation of assumptions made of metal or commodity price(s), for the principal minerals and co-products.	Single commodity pricing for gold only, using a long-term gold price of A$2,000 per ounce as per NST corporate guidance
	The source of exchange rates used in the study.	NST report in Australian dollars. Therefore, no exchange rate is used or required.
	Derivation of transportation charges.	Transportation costs for ore haulage from satellite pits to Jundee have been based on current NSR contractor quotes. Transportation costs also include an allowance haul road maintenance and dust suppression.
	The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.	Processing costs are based on historic and actual Jundee plant processing costs. This cost component has been used to determine the cut-off grades as well as applied to the operating cash flow estimate.
	The allowances made for royalties payable, both Government and private.	WA State Government royalty of 2.5%.
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.	All financial analysis and gold price have been expressed in Australian dollars and no direct exchange rates have been applied. Revenue factors within the whittle optimisation process were used. A revenue factor shell was selected and used to complete a detailed pit design. A gold price of A$2,000 per ounce has been used in the optimisation of the Vause Project. 2.5% WA State Government royalty.
	The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.	Corporate guidance.
Market assessment	The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.	Gold doré from the mine is to be sold at the Perth mint.

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Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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	A customer and competitor analysis along with the identification of likely market windows for the product.	Not Applicable.
	Price and volume forecasts and the basis for these forecasts.	Not Applicable.
	For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.	Not Applicable.
Economic	The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.	The Ore Reserve estimate is based on a financial model that is reflective of current operational costs and contract conditions. All inputs from mining operations, processing, transportation and sustaining capital as well as contingencies have been scheduled and evaluated to generate a full life of mine cost model.
	NPV ranges and sensitivity to variations in the significant assumptions and inputs.	Sensitivities were conducted on metal price fluctuations of A$2,000 ± $250 per ounce. Due to the current short life, the project is not seen as highly sensitive to cost inputs.
Social	The status of agreements with key stakeholders and matters leading to social licence to operate.	Agreements are in place and are current with all key stakeholders including traditional landowner claimants.
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.	None
	The status of material legal agreements and marketing arrangements.	None
	The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the Reserve is contingent.	No issues.
Classification	The basis for the classification of the Ore Reserves into varying confidence categories.	The classification of Open Pit Ore Reserves has been carried out in accordance with the JORC code 2012.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The results appropriately reflect the Competent Person's view of the deposit.
	The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).	No Measured Mineral Resource contributes to Probable Ore Reserves.
Audits or reviews	The results of any audits or reviews of Ore Reserve estimates.	The Ore Reserve has been internally reviewed in line with Northern Star Resources governance standard for Reserves and Resources. There have been no external reviews of this Ore Reserve estimate.
Discussion of relative accuracy/ confidence	Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the Reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.	Confidence in the Vause Ore Reserve Estimate is high based on current mine and historical reconciliation performance. The design, schedule and financial model on which the Vause Ore Reserve is based has been completed to a "pre-feasibility study" standard, with a corresponding level of confidence.
	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.	All modifying factors have been applied to design mining shapes on a global scale.
	Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.	Not applicable.
	It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	Not applicable.

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Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Jundee: Underground – 31 March 2024

Section 1 Sampling Techniques and Data

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

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.	This deposit is sampled by diamond drilling (DD) and reverse circulation (RC) drilling completed by previous operators. DD - Sampled sections are generally NQ2 or BQ. Core sample intervals are defined by the geologist to honour geological boundaries ranging from 0.3 to 1.2m in length. RC - Rig-mounted static cone splitter used, with sample falling through a riffle splitter or inverted cone splitter, splitting the sample in 87.5/12.5 ratio. 12.5% Off-split retained. 87.5% split sampled using 'pipe' or 'spear' sampling tool. Generally sampled as 4m composites. 1m composites (12% split) was sent for further analysis if any 4m composite values returned a gold value > 0.1g/t or intervals containing alteration/mineralisation failed to return a significant 4m composite assay result. RC and DD sampling by previous operators are to industry standard at that time often using 1m samples after initial 4m composites. It is unknown what grade threshold triggers the 1m re-samples. The greater majority (>90%) of samples used for Reserve and Resource estimates are DD.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	Core is aligned and measured by tape, comparing back to downhole core blocks consistent with industry practice. RC and surface core drilling completed by previous operators 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 30g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g., submarine nodules) may warrant disclosure of detailed information.	Diamond drilling completed to industry standard using varying sample lengths (0.3 to 1.2m) based on geological intervals, which are then crushed and pulverised to produce a ~200 gm pulp sub sample to use in the assay process. Diamond core samples are fire assayed (30 gm charge). Visible gold is occasionally encountered in core. RC sampling to industry standard at the time of drilling.
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.).	RC – Reverse circulation drilling was carried out using a face sampling hammer and a 130mm diameter bit. Previous operators surface diamond drilling carried out by using both HQ2 or HQ3 or PQ2 (triple tube) and NQ2 (standard tube) techniques. Sampled sections are generally NQ2. Core is routinely orientated using the ORI-shot device.
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed.	RC – Approximate recoveries are sometimes recorded as percentage ranges based on a visual and weight estimate of the sample. DD – Recoveries are recorded as a percentage calculated from measured core verses drilled intervals.
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	Diamond drilling practice results in high core recovery due to the competent nature of the ground. RC and diamond drilling by previous operators are 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, diamond drill sample recovery is very high.
Logging	Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.	Core and chip samples have been logged by qualified geologist to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies. Percussion holes logging was carried out on a metre-by-metre basis and at the time of drilling. Surface core and RC logging completed by previous operators assumed to be to industry standard.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	Logging is qualitative and quantitative, and all core is photographed wet (some older core is pre-digital, photos not all reviewed). Visual estimates of sulphide, quartz and alteration as percentages.
	The total length and percentage of the relevant intersections logged.	100% of the drill core is logged. 100% of RC drilling is logged.
Sub-sampling techniques and	If core, whether cut or sawn and whether quarter, half or all core taken.	DD - Resource definition drilling uses NQ2: Core is half cut with an Almonté diamond core saw. Sample intervals are defined by a qualified geologist to honour geological boundaries. The left half is archived. ■ Grade Control drilling uses half core NQ2 or BQ: Whole core sampling. Sample intervals are defined by a qualified geologist to honour geological boundaries.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
sample preparation		All mineralised zones are sampled, plus associated visibly barren material in contact with mineralised zones. Core is sampled on the width of the geological/mineralised structure in recognized ore zones. The minimum sample length is 0.3m while the maximum is 1.2m. Total weight of each sample generally does not exceed 5kg. For pre-Northern Star Resources (NSR) and prior operator's samples, best practice of the time is assumed.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	RC – Cyclone mounted riffle splitter or inverted cone splitter. Pre NSR, RC sub sampling assumed to be at industry standard at that time.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	Following drying at 100°C to constant mass, all samples below approximately 4kg are totally pulverised in LM5's to nominally 85% passing a 75µm screen. The very few samples generated above 4kg are crushed to <6mm and riffle split first prior to pulverisation. In 2012, Francois-Bongarcon (Agoratek International) conducted a heterogeneity studies, audit of site laboratory, and audit of plant samplers. Confirmed that the sampling protocol currently in use are appropriate to the mineralisation encountered and should provide representative results. For RC samples, all drying at 100°C to constant mass, all samples below approximately 4kg are totally pulverised in LM5's to nominally 85% passing a 75µm screen. The very few samples generated above 4kg are crushed to <6mm and riffle split first prior to pulverisation. For RC samples, no formal heterogeneity study has been carried out or monographed. An informal analysis suggests that the sampling protocol currently in use are appropriate to the mineralisation encountered and should provide representative results. For pre-NSR samples, best practice is assumed.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	Repeat analysis of pulp samples (for all sample types – diamond, RC, rock and soil) occurs at an incidence of 1 in 20 samples. RC drilling by previous operators to industry standard at that 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.	Field duplicates, i.e., other half of cut core, have not been routinely assayed. RC drilling by previous operators assumed to be to industry standard at that time.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Sample sizes are considered 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.	For the majority of drill core samples, gold concentration is determined by fire assay using the lead collection technique with a 30 gm sample charge weight with an AAS or PMAES finish is used to be considered as total gold. In 2021 Photon analysis was introduced at Jundee, the sample is crushed to 85% passing 2mm then split with a 500g sub sample taken for analysis. RC drilling by previous operators to industry standard at the time.
	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.	Not applicable to this report.
	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.	The QAQC protocols used include the following for all drill samples: ■ Commercially prepared certified reference materials (CRM) are inserted at an incidence of 1 in 30 samples. The CRM used is not identifiable to the laboratory, ■ QAQC data is assessed on import to the database and reported monthly, quarterly and yearly. ■ The laboratory QAQC protocols used include the following for all drill samples: ■ Repeat analysis of pulp samples occurs at an incidence of 1 in 20 samples, ■ Screen tests (percentage of pulverised sample passing a 75µm mesh) are undertaken on 1 in 50 samples, ■ The laboratories' own standards are loaded into the database, ■ The laboratory reports its own QAQC data monthly. ■ In addition to the above, ~ 3% of samples are sent to a check laboratory. Samples for check -assay are selected automatically from holes, based on the following criteria: grade above 1g/t or logged as a mineralised zone or is followed by feldspar flush or blank. ■ Failed standards are generally followed up by re-assaying a second 30g pulp sample of samples between the failed standard and the next sequenced standard by the same method at the primary laboratory. Re-assays are dependent on grade above 0.1g/t. Both the accuracy component (CRM's and third party checks) and the precision component (duplicates and repeats) of the QAQC protocols are thought to demonstrate acceptable levels of accuracy and precision. QAQC protocols for Surface RC and diamond drilling by some previous operators is assumed to be industry standard.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
Verification of sampling and assaying	The verification of significant intersections by either independent or alternative company personnel.	Significant intersections are verified by the Senior Resource Geologist.
	The use of twinned holes.	There are no purpose-drilled twinned holes.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	Primary Data imported into SQL database using semi-automated or automated data entry. Hard copies of NSR and previous operators, core assays and surveys are stored at site. Visual checks are part of daily use of the data in Vulcan. Data from previous operators thoroughly vetted and imported to SQL database.
	Discuss any adjustment to assay data.	The first gold assay is almost always utilised for any Mineral Resource estimation. Exceptions occur when evidence from re-assaying and/or check-assaying dictates. A systematic procedure utilizing several re-assays and/or check assays is in place to determine when the final assay is changed from the first gold assay. Some minor adjustments have been made to overlapping data.
Location of data points	Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.	Collar positions are recorded using conventional survey methods based on Leica TS15 3" total stations and Trimble R10 GNSS instruments. The location of each station is referenced to state-wide network of Standard Survey Marks (SSM) established and coordinated by the Department of Land Administration (WA Government). Where regional drill hole positions are distant from the SSM network the worldwide Global Navigational Satellite System (GNSS) network is used. Positional checks are carried out using a combination of existing known positions (usually based on prominent landmarks) and grid referenced information such as ortholinear rectified photogrammetry based on the Australian Map Grid 1994 (MGA94_51). Collar coordinates are recorded in MGA94 or Local Jundee Grid (JUNL4) dependant on the location and orientation of orebodies. Cross checks were made on the survey control points and data in June 2005. Collar information is stored in both local coordinates and MGA94 coordinate in the drilling database. In-mine drill-hole collars are normally accurate to 10 cm. Multi shot cameras and gyro units were used for down-hole survey or were validated by Geologists. Previous drilling has been set-out and picked up in both national and local grids using a combination of GPS and Survey instruments and are assumed to be to industry standards.
	Specification of the grid system used.	Collar coordinates are recorded in MGA94 Zone 51 (AMG GN) and Local Jundee Grid (JUNL4) dependant on the location and orientation of orebodies. The difference between Jundee mine grid (GN) and magnetic north (MN) as of 31 March 2021 is 37º 58' 07" and the difference between magnetic north (MN) and true north (TN) is 1º 02' 00". The difference between true north (TN) and MGA94 Zone 51 (AMG GN) is 1º 06' 26". The difference between true north and GDA is zero.
	Quality and adequacy of topographic control.	Topographic control is from Digital Elevation Contours (DEM) 2010, 1m contour data and site surveyed pit pickups.
Data spacing and distribution	Data spacing for reporting of Exploration Results.	All Ore Reserves are based on a maximum drill hole spacing of 40m x 40m. All Mineral Resources are based on a maximum of 80m x 80m.
	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.	Ore Reserves are generally based on 20m x 20m drilling up to a maximum of 40m x 40m. Mineral Resources are generally based on 40m x 40m drilling up to a maximum of 80m x 80m. The data spacing and distribution is sufficient to establish geological and/or grade continuity appropriate for the Mineral Resource and classifications to be applied.
	Whether sample compositing has been applied.	Core is sampled to geology; sample compositing is not applied until the estimation stage. RC samples initially taken as 4m composites to be replaced by 1 m samples if any 4m composite values returned a gold value > 0.1g/t or intervals containing alteration/mineralisation failed to return a significant 4m composite assay result. No RC samples greater than 1m were used in estimation.
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 orientation of sampling is generally perpendicular to the main mineralisation trends. The orientation achieves unbiased sampling of all possible mineralisation and the extent to which this is known.
	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.	The drill orientation to mineralised structures biases the number of samples per drill hole. It is not thought to make a material difference in the Mineral Resource estimation. As the opportunity arises, better angled holes are infill drilled.
Sample security	The measures taken to ensure sample security.	All samples are selected, cut and bagged in tied numbered calico bags, and placed in large sample cages with a sample submission sheet. The cages are either sent to the site laboratory for sample preparation and then sent to Perth for final analysis or are transported direct via freight truck to Perth, with consignment note and receipted by external and independent laboratory. All sample submissions are documented and all assays are returned via email.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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		Sample pulp splits from the site lab are stored at the Jundee mine site and those from the Intertek Maddington Lab in Perth are stored at the Maddington Lab
		Pre NSR operator sample security assumed to be similar and adequate.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	In 2006, Maxwell conducted an audit of all Jundee data. In 2012, Francois-Bongarcon (Agoratek International) conducted a heterogeneity studies, audit of site laboratory, and audit of plant samplers. Both audits found the sampling techniques and data to be adequate.
		All recent NSR sample data has been extensively QAQC reviewed both internally and externally.
		Pre NSR data audits found to be minimal regarding QAQC though in line with industry standards of the time.
		During 2018, 2019, and 2020 Zaremus Pty Ltd conducted an audit of the site laboratory and audit of the external laboratories. Both audits found the laboratory procedures and performance to be adequate.
		All recent NSR sample data has been extensively QAQC reviewed both internally and externally.

Section 2 Reporting of Exploration Results
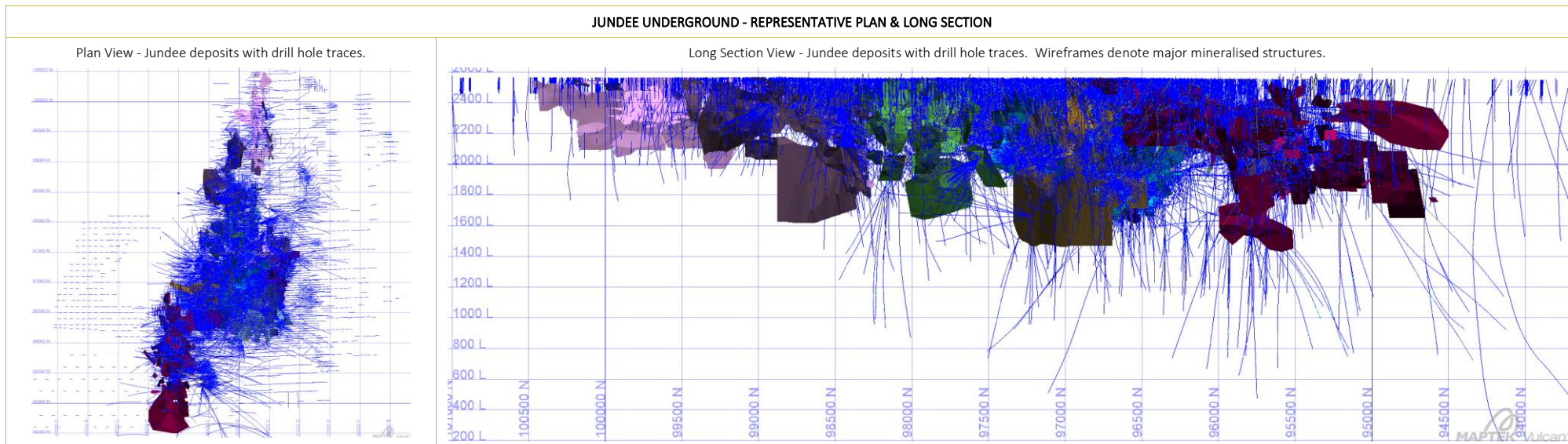(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	The Jundee project consists of 62 granted Mining Leases and 1 Mining Lease Application, and 1 General Purpose Lease covering a totals of approximately 43,859 HA. All granted Leases are registered in the name of Northern Star Resources Limited with the Mining Lease beneficially owned by Northern Star. Jundee also includes 13 Exploration Licences and 1 Prospecting Licence covering a total of approximately 84,122 Ha.
		The project also includes 28 Miscellaneous Licences, 4 Groundwater Licences, a pipeline Licence and the Jundee Pastoral Lease. These cover the Borefields, roads, airstrip and gas pipeline.
		There are no heritage issues with the current operation. The majority of the Jundee leases are granted Mining Leases prior to 1994 (pre-Mabo) and as such Native Title negotiations are not required. During 2004, two agreements were struck between Ngaanyatjarra Council (now Central Desert Native Title Services (CDNTS)) and Newmont Yandal Operations, these agreements being the Wiluna Land Access Agreement 2004 and the Wiluna Claim Heritage Agreement 2004, both agreements were transferred to Northern Star on purchase of the Jundee Operations in 2014.
	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.	All leases and licences to operate are granted and in the order for between 3 and 20 years.
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	Data relevant to this Mineral Resource was predominantly NSR (Northern Star Resources), who have operated the mine since July 1, 2014.
		The Jundee/Nimary Deposits were discovered in the late 1980's/early 1990's after LAG and soil sampling by Mark Creasy (Jundee) and Hunter Resources (Nimary) identified large surface gold anomalies. The deposits were drilled out over the following years by Eagle Mining (which took over Hunter Resources), and Great Central Mines (which formed a joint venture with Creasy and later purchased his share). Open pit operations commenced in mid-1995, with the first gold poured in December 1995. Great Central Mines assumed full control of the field with its successful takeover of Eagle Mining in mid-1997. Great Central Mines was later taken over by Normandy in mid-2000, which in turn was taken over by Newmont in early-2002.
		All previous work is accepted and assumed to industry standard at that time.
Geology	Deposit type, geological setting and style of mineralisation.	Jundee is an Archean lode-gold mineralised deposit that is part of the Northern Yandal Greenstone belt. Gold mineralisation is controlled by a brittle fracture system, is commonly fracture-centred predominantly hosted in dolerite and basalt. Mineralisation can be disseminated or vein style host.
Drill hole Information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: o easting and northing of the drill hole collar o elevation or RL (Reduced Level – elevation above sea level in meters) of the drill hole collar o dip and azimuth of the hole o down hole length and interception depth o hole length.	DD and RC holes have been used in the mineral resource. It is not practical to summarise all the holes here in this release. Future drill hole data will be periodically released or when a result materially changes the economic value of the project.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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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.	All relevant information within appropriate ASX announcements.
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.	Weighted average grade applied for intercepts tables. Results already incorporated in MRE and not impacted by results in this table.
	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.	Method not recorded. Generally compositing of high grade results guided by geological boundaries and a "waste" cutoff. Results already incorporated in MRE.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	Not Applicable
Relationship between mineralisation widths and intercept lengths	These relationships are particularly important in the reporting of Exploration Results:	Results have been reported as downhole lengths, not true widths. Results have already been incorporated into the resource.
	If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.	Not reported. Results already incorporated in MRE, taking geometry into account.
	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').	Not reported. Results already incorporated in MRE, taking geometry and intercept angle into account.
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 drilling for Jundee UG is shown below section 2.
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.	Table shown is of the most significant (higher grade) intercepts for our newest resource area Griffin. All results are incorporated into the MRE regardless of grade.
Other substantive exploration data	Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	No other meaningful data to report.
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).	Further extensional and definition drilling is planned for FY24 from both underground and surface positions.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Representative diagrams are attached with this report.

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F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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JUNDEE UNDERGROUND - REPRESENTATIVE PLAN & LONG SECTION

Plan View - Jundee deposits with drill hole traces.   Long Section View - Jundee deposits with drill hole traces. Wireframes denote major mineralised structures.

Section 3 Estimation and Reporting of Mineral Resources
(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Database integrity	Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.	NSR sampling and logging data is digitally entered into a tablet then transferred to a SQL based database. There are checks in place to avoid duplicate holes and sample numbers. Where possible, raw data is loaded directly to the database from lab, logging and survey derived files. Pre NSR data considered correct.
	Data validation procedures used.	Pre NSR data has been partially validated by internal database administrators.
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	The Competent Person's for this Mineral Resource report have worked on site for extensive periods for the last 10 years
	If no site visits have been undertaken indicate why this is the case.	Site visits have been undertaken.
Geological interpretation	Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.	The interpretation of the deposit was carried out using a systematic approach to ensure continuity of the geology and estimated Mineral Resource using Vulcan software. The confidence in the geological interpretation is relatively high, though a certain degree of uncertainly always remains due to the structurally complex and nuggety nature of the orebody on a local scale. Confidence is supported by all the information and 29 years of open pit and underground operations.
	Nature of the data used and of any assumptions made.	All available geological data was used in the interpretation including mapping, drilling, oxidation surfaces, and underground style high grade ore zone interpretations.
	The effect, if any, of alternative interpretations on Mineral Resource estimation.	No alternative interpretations have been completed or put forward.
	The use of geology in guiding and controlling Mineral Resource estimation.	Drill core logging, pit mapping, and underground mapping used to create 3D constrained wireframes.

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Criteria	JORC Code explanation	Commentary
	The factors affecting continuity both of grade and geology.	Continuity of the grade varies significantly, though lodes with the greatest continuity are generally sub-parallel to the dolerite and basalt packages in which they are hosted. Splays or link lodes coming off this main trend tend to have a shorter continuity.
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.	Mineralised zones are narrow, with true width ranging from 0.3 to 1m, but can be up to 5m. They are extensive along strike and down dip, up to 1000m and 500m, respectively, but are often highly discontinuous, and generally have a tabular geometry. Depth = surface to ~1710mRl (~845m 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. If a computer assisted estimation method was chosen include a description of computer software and parameters used.	Domains are set by grouping lodes as dictated by their structural setting, geological mineralisation, and statistical characteristics. The raw data is subdivided into domains based on geological controls and further analysed for correlation and similarity using statistics. The purpose of this analysis is to determine further domaining of the data for variography purposes (by combining groups of lodes). Seam compositing (from hanging wall to footwall) of drill-hole samples is almost exclusively used. A very small proportion of UG lodes, which exhibit a wider disseminated style of mineralisation, use a nominal 1-metre downhole composite. Detailed exploratory data analysis is carried out on each deposit, using Snowden Supervisor software. The majority of the Mineral Resource is estimated using ordinary kriging (OK). A minor proportion of the Mineral Resource is estimated using inverse distance squared (ID^2) or Nearest Neighbor estimation type used is dictated by the dataset size of the domain. Vulcan software was used for data compilation, domain wireframing, calculating and coding composite values, estimating and reporting. Maximum distance of extrapolation from data points was statistically determined and varies by domain. Block model volumes were compared to wireframe volumes to validate sub-blocking. Where OK or ID^2 estimates were used, treatment of extreme high grades were dealt with by using a cap grade strategy.
	The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.	Reconciled historical production from underground operations is comparable with new estimate.
	The assumptions made regarding recovery of by-products.	No assumptions are made and only gold is defined for estimation.
	Estimation of deleterious elements or other non-grade variables of economic significance (e.g., sulphur for acid mine drainage characterisation).	No deleterious elements estimated in the model.
	In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.	Most underground models use a parent and sub block methodology where the parent block size is 5m in strike, 5m across strike, and 5m in RL. Sub-block sizes are 0.25m in strike, 0.25m across strike, and 0.25m in RL direction.
	Any assumptions behind modelling of selective mining units.	A 3.2m minimum mining width for underground environment is assumed.
	Any assumptions about correlation between variables.	There is no correlation between variables.
	Description of how the geological interpretation was used to control the Resource estimates.	"Mineralised" wireframes are created within the geological shapes based on drill core logs, mapping and grade. Low grades can form part of an ore wireframe. Estimations are constrained by the interpretations.
	Discussion of basis for using or not using grade cutting or capping.	Top cuts were applied in the Estimation stage and determined by a range of statistical techniques including: ■ Disintegration analysis of Histogram, Log-probability and Mean - CV plots ■ Contained metal plots: assessment of contribution of the highest values on the quantity of metal in an estimate. ■ Outlier analysis; removal of outliers and analysis of impact on the CV of domain ■ Interrogation of Disintegration points of seam composites A range of top cuts were selected for each domain utilising the above strategies and an appropriate top cut chosen after further sensitivity analysis against Nearest neighbour estimations to assess sensitivity of selected top cut grades and associated risk. Metal estimated in the Mineral Resource models are finally reconciled with production models of like areas to determine the appropriateness of the high-grade treatment on the assays. No top cutting or capping of high grades is done at the raw sample or compositing stage. For OK and ID^2, treatment of the high-grade assays occurs at the estimation stage. Top cuts vary by domain and range from 10g/t – 1,100g/t.

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PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
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E: info@nsrltd.com
W: www.nsrltd.com

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	The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.	The Mineral Resource estimate was validated using processes that are based on a combination of visual, graphical and reconciliation style validations summarised as: - Visual validation of the lode and lithology coding of both the composite data and the block model. - Comparison of lode wireframe volumes to block model volumes - Visual validation of Mineral Resource estimate against composite data in plan, section, and in 3D. - Sensitivity to top-cut values: a variety of top-cuts are estimated and compared to themselves and to the un-cut nearest neighbor estimate at a variety of cut-offs. - Kriging efficiency and slope of regression interrogated for each material domain. - Comparison of nearest neighbor, inverse distance squared, and ordinary kriged estimates to the final estimate (generally OK or MIK). These comparisons are conducted through visual validation and trend analysis along Northing, Easting, and RL slices. - Comparison with previous Mineral Resource estimates. Global, level and lode tonnages and grades, at various elemental cut-offs were compared, and given the changes in support data, were consistent. - Comparison of Mineral Resource estimate versus grade control models. Local underground GC models are produced using, in addition to the diamond drill holes used in the Mineral Resource estimate, face chip and drive mapping data. These comparisons are done on a level basis at various cut-offs. - Statistical comparison of composites versus all estimates in block model: trend analysis plots for each domain are produced by Northing / Easting / RL. The Mineral Resource estimate generally shows a reasonably reflection of the composites where there are high numbers of composites used in the estimate. When the numbers of samples reduce the accuracy of the estimation suffers and a more significant deviation is noted between the Mineral Resource estimate and associated composite data. These deviations are considered when assigning a Resource classification.
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. Moisture content within the ore is expected to be low.
Cut-off parameters	The basis of the adopted cut-off grade(s) or quality parameters applied.	Underground Resources have been reported through MSO generation using a minimum mining width of 3.2m coupled with cut-off grades calculated on a variable cost basis and an AUD$2,500/oz gold price.
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.	Underground Resources are reported using a minimum mining width of 2.2m inclusive of 0.5m internal dilution on both the hanging wall and footwall.
Metallurgical factors or assumptions	The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	Assumed that material will be trucked and processed in the Jundee Mill. Recovery factors vary for the various mining areas and are based on lab testing and on-going operational experience. No Metallurgical assumptions have been built or applied to the Mineral Resource model.
Environmental factors or assumptions	Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a green fields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	Jundee currently possesses all necessary government permits, licenses and statutory approvals to be compliant with all legal and regulatory requirements.
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 determined using a wet core sample, one bulk density measurement is taken for each lithology per hole per day. An attempt is made to collect a bulk density measurement from every mineralised zone and each lithology represented in drill hole core. These values are also in agreement with over 10 years of production 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.	Bulk density measurements are taken daily using the water displacement technique.
	Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	Individual bulk densities are applied in accordance with specific lithologies, mineralisation, and weathering states.

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T: +61 8 6188 2100
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W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
Classification	The basis for the classification of the Mineral Resources into varying confidence categories.	Measured Resources are defined from grade control models based on geological mapping and surveyed ore outlines in development drives, diamond drill holes and face samples which are imported into Vulcan and modelled in 3D. Indicated Resources are defined by drilling which is predominantly 20m x 20m to 40m x 40m maximum. Lodes classified as Indicated are supported by a minimum of 5 face chips or Diamond drill holes or mapping. Inferred Resources are defined on a nominal 40m x 40m drilling pattern and may range up to 80m x 80m. Resources based on less than 40m x 40m spaced drilling, but which have a low level of confidence in the geological interpretation may also be classified as inferred.
	Whether appropriate account has been taken of all relevant factors (i.e., relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).	Input and geological data is assumed accurate backed up by previous successful mining history at the site on this mineralisation.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	This Mineral Resource estimate is considered representative with comments noted in the discussion below.
Audits or reviews	The results of any audits or reviews of Mineral Resource estimates.	The Mineral Resource estimates, methodology and systems have been subject to three external review through NSR and four internal audits by previous operators and senior technical personnel over the last 10 years.
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.	This Mineral Resource estimate is considered robust and representative of the Jundee mineralisation with local estimates considered variable in nature. The application of geostatistical methods has supported to increase the confidence of the model and quantify the relative accuracy of the Mineral Resource on a global scale and against actual production reconciliation.
	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.	This Mineral Resource report relates to the Jundee deposit and is likely to have local variability. The global assessment is a better reflection of the average tonnes and grade estimate, further supported and reconciled against actual mine production.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	Comparison with previous Mineral Resource estimates and production data was undertaken. Global, level and lode tonnages and grades, at various elemental cut-offs were compared, and given the changes in support data, were consistent.

Section 4 Estimation and Reporting of Ore Reserves
(Criteria listed in section 1, and where relevant in sections 2 and 3, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.	The reported Ore Reserve is based on Mineral Resource and Grade Control models.
	Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.	Mineral Resources are reported inclusive of the Ore Reserves
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	Numerous site visits have been undertaken by the Competent Person. Familiarity with the mine site and historical performance was considered in providing the Ore Reserve Estimate.
	If no site visits have been undertaken indicate why this is the case.	Site visits were undertaken.
Study status	The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.	Detailed mine design and costing based on ongoing mine performance. Since 2017 the Ore Reserve contains a new mining method utilising paste fill to enable access into old mining areas. The current study level is consummate with a pre-feasibility study.
	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.	The Jundee Gold Project is a fully operational mine and has been in operation for over 20 years. As such, for most of the reserve material, current operating design parameters and costs have been used in the generation of these reserves. The reserves associated with paste filling are at a pre-feasibility level, with a practical mine plan and economic assessment underpinning their reserve status.

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ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
Cut-off parameters	The basis of the cut-off grade(s) or quality parameters applied.	Cut-off grades (COGs) are generated for assessing minable shapes. Corporate gold price guidance, historical actual costs and metallurgical recoveries form the basis of all COG calculations. The production inventory is formed by the application of cut-off grades is further assessed by applying relevant modifying factors.
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).	Stope shapes are created either manually or with optimisation tools on all Mineral Resource material as represented in the relevant resource model, using a minimum stope mining width of 2.5m. Access designs are created to allow detailed economic evaluation. Measured Resource material is converted to Proven and Probable Reserve and Indicated Resource is converted to Probable 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.	A top-down narrow vein long hole open stope extraction is currently the primary mining method employed at Jundee. Backfilling of stopes has commenced in the Hampton east orebody to access a high-grade hanging wall lode. Another mining method occasionally used at Jundee is narrow vein airleg stoping. This method aids in the extraction of flat-lying lodes which are considered uneconomic when assessed using mechanised mining methods. Some sections of the resource, including remnant areas, have been assessed with mining methods that utilise paste fill. Detailed tailing characterisation studies have been conducted to allow paste plant selection and application of appropriate capital and operating costs.
	The assumptions made regarding geotechnical parameters (e.g., pit slopes, stope sizes, etc.), grade control and pre-production drilling.	2.5m minimum mining width (stopes) with 85% - 95% stope mining recovery to account for internal pillars, in line with historical performance.
	The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).	2.5m minimum mining width for stopes. Detailed designs were completed for each stope either manually or utilising stope optimisation software. Historical mining costs applied for economic evaluation.
	The mining dilution factors used.	A 10% tonne dilution factor was used for development, whilst 22% was applied for stopes. These values are based on historical mine reconciliation records. For the paste fill assessment areas, a variable dilution factor was applied between 0-15% based on the ore block location in comparison to the fill surface.
	The mining recovery factors used.	85% mining recovery applied to the stope where pillars have not been incorporated into the design and 95% for a detailed design where pillars have been considered. For the paste-filled areas, a variable recovery of between 70%-100% was applied based on the ore block location in comparison to the fill (next to, encompassed within, or located on top of). Averaging 80% mining recovery factor applied to the paste fill areas.
	Any minimum mining widths used.	The minimum mining width for stopes is 2.5m.
	The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.	Inferred material is included within the mine plan however, the material is only classified as Ore Reserve when the Measured and Indicated resource material can cover all costs associated with the mining of that material. Designed stopes with greater than 50% Inferred material are excluded from the reported Ore Reserve.
	The infrastructure requirements of the selected mining methods.	Infrastructure in place, currently an operating mine. This includes underground capital development, accommodation village, workshop, office, water bores, ROM pad, processing facility, and communication networks. Additional infrastructure would be required for the paste-filled areas, comprising a paste plant, surface and underground reticulation and this has been designed and cost to pre-feasibility level.
Metallurgical factors or assumptions	The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.	The material will be trucked and processed in the existing Jundee Mill which is a standard CIP plant with a gravity circuit, operating since 1995.
	Whether the metallurgical process is well-tested technology or novel in nature.	Well-tested technology.
	The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.	Recovery factors vary for the various mining areas and are based on lab testing and ongoing operational experience. Recoveries range from 76.1% up to 91.65% depending on the mine area.
	Any assumptions or allowances made for deleterious elements.	The impact of deleterious elements is not considered to be material to the reserve estimate.
	The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.	All mineralisation systems have significant bulk drill core test work undertaken prior to mining and current resource/reserves have a history of operational experience
	For minerals that are defined by a specification, has the ore Reserve estimation been based on the appropriate mineralogy to meet the specifications?	Not applicable
Environmental	The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options	Jundee is an ongoing operation, currently compliant with all legal and regulatory requirements. All government permits and licenses and statutory approvals are either granted or in the process of being granted.

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E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
	considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.	
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.	As the Jundee mine has been operating for several years, all required surface and underground access infrastructure is already in place to facilitate mining and processing. A paste-fill plant and associated reticulation would be required for the paste-fill ore zones.
Costs	The derivation of, or assumptions made, regarding projected capital costs in the study.	All capital costs have been estimated based on projected requirements and experience of costs incurred through similar activities in the past.
	The methodology used to estimate operating costs.	The operating cost estimates are based on historical costs incurred. Paste-fill costs were determined through benchmarking costs at other paste-fill sites, in conjunction with consultant-recommended rates.
	Allowances made for the content of deleterious elements.	No allowance made - none expected
	The derivation of assumptions made of metal or commodity price(s), for the principal minerals and co-products.	Revenue was based on a gold price of AUD $2,000/oz.
	The source of exchange rates used in the study.	Corporate guidance.
	Derivation of transportation charges.	Mining and haulage costs are based on historical costs incurred in the previous cost periods.
	The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.	Processing costs have been set using historical operating costs data.
	The allowances made for royalties payable, both Government and private.	WA State Govt royalty of 2.5%.
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.	Revenue was based on a gold price of AUD $2,000/oz.
	The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.	Corporate guidance.
Market assessment	The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.	It is assumed all gold is sold directly to market at the corporate gold price guidance of AUD $2,000/oz.
	A customer and competitor analysis along with the identification of likely market windows for the product.	Not applicable.
	Price and volume forecasts and the basis for these forecasts.	Corporate Guidance.
	For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.	Not applicable.
Economic	The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.	All costs assumptions are made based on historical performance from the plant and quotes from experienced mining contractor. The economic forecast is representative of the current market condition. Paste fill costs were sourced from other paste fill sites and consultant recommendations.
	NPV ranges and sensitivity to variations in the significant assumptions and inputs.	The revised business plan, based on the updated Reserves is still in progress, regarding NPV ranges. Jundee Reserves are relatively insensitive to gold price fluctuations due to the higher-grade nature of the mineralised systems.
Social	The status of agreements with key stakeholders and matters leading to social licence to operate.	Agreements are in place and are current with all key stakeholders including traditional landowner claimants.
Other	To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:	

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
	Any identified material naturally occurring risks.	None.
	The status of material legal agreements and marketing arrangements.	None.
	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.	Jundee is a currently operating mine site with all government and third-party approvals in place for the stated Ore Reserves.
Classification	The basis for the classification of the Ore Reserves into varying confidence categories.	Reserve classifications are derived from the underlying Mineral Resource model, with Measured Resource converting to Proved and/or Probable Reserve and Indicated Resource converting to Probable Reserve where applicable and economically justified.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The results appropriately reflect the Competent Person's view of the deposit.
	The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).	Negligible.
Audits or reviews	The results of any audits or reviews of Ore Reserve estimates.	The Ore Reserve has been prepared and peer reviewed internally within Northern Star Resources.
Discussion of relative accuracy/ confidence	Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the Reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.	Confidence in the Ore Reserve is high based on current mine and reconciliation performance.
	The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.	The Ore Reserves are best reflected as global estimates.
	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.	As an operating mine confidence in modifying factors is high.
	It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	Reconciliation results from past mining at Jundee has been considered and factored into the Reserve assumptions where appropriate.

Jundee: Corboys – 31 March 2024

Section 1 Sampling Techniques and Data

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

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.	This deposit is sampled by diamond drilling (DD) and reverse circulation (RC) drilling completed by Northern Star and by previous operators. A total of 1,220 drillholes for a total of 104,932m at depths ranging from 6 to 540.6m. This includes 1167 RC (94,876m), 26 DD (5,613m) and 20 DD with RC pre-collar (4,443m). Included within these figures, Northern Star drilled 290 RC (36,723m) and 21 DD (2719m).
		Northern Star RC samples are collected via rig-mounted static cone splitter with sample falling though inverted cone splitter, splitting the sample in 88%/12% ratio. 12% split retained for 1m composites. 1m samples are sent for further analysis.
		DD sample intervals are based on geological observations. Minimum core width sampled was 0.3m and maximum 1m. Half HQ diamond drill core was submitted for analysis.

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PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
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E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
		RC and DD sampling by previous operators assumed to be to industry standard at that time. Four metre composites taken in a portion of historic drillholes were re-sampled to 1m. It is unknown what grade threshold triggered the 1m re-samples.
	Include reference to measures taken to ensure sample representativity and the appropriate calibration of any measurement tools or systems used.	Core is aligned and measured by tape, comparing back to downhole core blocks consistent with industry practice. RC metre intervals are delineated to determine metres drilled. Sample rejects are left on the sample pad to indicate metres drilled for the hole.
	Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g., 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g., submarine nodules) may warrant disclosure of detailed information.	Diamond drilling completed to industry standard using varying sample lengths (0.3 to 1.2m) based on geological intervals, which are then crushed and pulverised to produce a ~400-650 g pulp sub sample to use in the assay process. RC sampling to industry standard at the time of drilling where ~3-4kg samples are pulverised to produce a ~400-650g pulp sample to utilise in the assay process. RC samples were analysed using Chrysos Photon Assay (PAAU02) for gold.
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.).	RC drilling is carried out using a face sampling hammer and a 130mm diameter bit. Majority of diamond drilling has been carried out in recent times by Echo Resources and Northern Star. DD core is exclusively HQ size, with diamond tails ranging in depth from 119m to 540.6m, and core oriented by ori tool.
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed.	RC – Approximate recoveries are sometimes recorded as percentage ranges based on a visual and weight estimate of the sample. Historic reports state that RC recovery and meterage were assessed by comparing drill chip volumes for individual metres with good recoveries recorded. Routine checks of correct sample depths undertaken every rod (6m) noted. DD – Recoveries are recorded as a percentage calculated from measured core versus drilled intervals.
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	RC drilling recovery is supervised on the rig and any recovery issues are recorded and rectified. Previous operators visually checked for recovery, moisture and contamination. The cyclone was routinely cleaned ensuring no material build up. Diamond drilling shows high core recovery due to the competent nature of the ground.
	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. Drilling conditions have been noted to be dry and competent in historical reports.
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.	DD drillholes have been logged by qualified geologists for recovery, RQD, geology and structure. Structural measurements are taken using a kenometer to record alpha and beta angles relative to a bottom of hole line marked on the oriented core. A sub-set of structural readings are checked with the use of a core orientation device. Logging of RC chips record lithology, mineralisation, weathering, colour and other features of the samples. All samples are wet-sieved and stored in chip trays. These trays are stored on site for future reference. The level of logging detail is considered sufficient to support appropriate Mineral Resource estimation, mining studies and metallurgical studies. RC hole logging were carried out on a metre-by-metre basis at the rig by the geologist. Surface core and RC logging completed by previous operators assumed to be to industry standard.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	Logging is Qualitative and Quantitative; all chip and core trays are photographed wet. Visual estimates are made of sulphide, quartz and alteration as percentages.
	The total length and percentage of the relevant intersections logged.	100% of all RC and DD drilling is logged.
Sub-sampling techniques and sample preparation	If core, whether cut or sawn and whether quarter, half or all core taken.	DD core was cut, with half core sampled and taken, leaving half core remaining. The entire length of hole sampled by Northern Star. View Resources sampled only visibly mineralised sections of core in 6 drillholes.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	RC drilling uses a cyclone mounted inverted cone splitter installed directly below a rig mounted cyclone. A 2-3 kg sub-sample is collected in a calico bag. Most samples were dry. Previous operators have used riffle splitters.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	RC and DD samples are dried at 100°C to constant mass, crushed to <10mm, and pulverised to nominally 85% passing 75µm. For pre-NSR samples, best practice is assumed.

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Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

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E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
	Quality control procedures adopted for all sub-sampling stages to maximise representativity of samples.	Repeat analysis of pulp samples (all sample types) occurs at an incidence 2% of the total samples. Mostly undocumented for previous operators, assumed to be to 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.	Field duplicates, (i.e., other half of cut core) are routinely assayed. NSR routinely collects field duplicates during RC drilling at a rate of 1/20. RC drilling by previous operators assumed to be to industry standard at that time.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Sample sizes are considered appropriate. No formal nomograph study has been conducted on the RC primary sub sample split. Industry standard practice supports splitting of primary sub samples at particle sizes of <6mm and P80 75µm
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.	For RC and DD drill samples, gold concentration was determined by photon assay which detects and counts atoms of gold using a 400-650g sample. This process uses high-energy X-rays causing the excitation of atomic nuclei and allows the analysis of gold in under 2 minutes. Where documented by previous operators, fire assay with AAS finish was carried out.
	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 derived analyses are reported.
	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.	The QAQC protocols used include the following for all drill samples: - Field QAQC protocols used for all drill samples include commercially prepared certified reference materials (CRM) and blank material inserted at an incidence of ~1 in 20 samples. The CRM used is not identifiable to the laboratory, with QAQC data assessed on import to the database and reported monthly, quarterly and yearly. - Laboratory QAQC protocols used for all drill samples include repeat analysis of pulp samples occurs at an incidence 2% of the total samples and screen tests (percentage of pulverised sample passing a 75µm mesh) are undertaken at 2% of the total samples. - The laboratories' own standards are loaded into the database and the laboratory reports its own QAQC data. - Failed standards are generally followed up by double-checking sample submissions and re-assaying the original pot when required (Photon is non-destructive and can sample can be re-assayed). QAQC for previous operators is assumed to be to industry standard at the time.
Verification of sampling and assaying	The verification of significant intersections by either independent or alternative company personnel.	Significant intersections verified by alternative Northern Star Geologists.
	The use of twinned holes.	There are no purpose-drilled twin holes.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	Sampling and logging data are digitally entered into a tablet using Logchief software imported into SQL database using semi-automated or automated data entry. Digital assay files are loaded directly into the database. Visual checks are part of daily use of the data in Vulcan. Data from previous operators thoroughly vetted and imported to SQL database.
	Discuss any adjustment to assay data.	The first gold assay is almost always utilised for any Resource estimation except where evidence from re-assaying and/or check-assaying dictates. A systematic procedure utilizing several re-assays and/or check assays is in place to determine when the final assay is changed from the first gold assay.
Location of data points	Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.	Collar positions are recorded using conventional survey methods based on Leica TS15 3" total stations and Trimble R10 GNSS instruments. The location of each station is referenced to state-wide network of Standard Survey Marks (SSM) established and coordinated by the Department of Land Administration (WA Government). Where regional drill hole positions are distant from the SSM network, the worldwide Global Navigational Satellite System (GNSS) network is used. Positional checks are carried out using a combination of existing known positions (usually based on prominent landmarks) and grid referenced information such as ortho-linear rectified photogrammetry based on the Map Gird of Australia MGA94. Collar coordinates are recorded in MGA2020. Surface collar RL's have been validated utilizing a DGPS survey.

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Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
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E: info@nsrltd.com
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Criteria	JORC Code explanation	Commentary
		Multi shot cameras and gyro units were used for down-hole survey.
		Previous drilling has been set-out and picked up in both national and local grids using a combination of GPS and Survey instruments and are assumed to be to industry standards. Significant work surveying previous drilling was documented by Navigator Resources.
	Specification of the grid system used.	Collar coordinates are recorded in MGA2020 Zone 51. The difference between magnetic north (MN) and true north (TN) is 1º 34' 30". The difference between true north (TN) and AMG84 Zone 51 (AMG GN) is 1º 02' 47". The difference between true north and GDA is zero.
	Quality and adequacy of topographic control.	Topographic control is from Digital Elevation Contours (DEM) 2021 and site surveyed DGPS pickups. A portion of drill collars where collar RL clearly incorrect were updated to match the flyover surface.
Data spacing and distribution	Data spacing for reporting of Exploration Results.	All Ore Reserves are based on a maximum drill hole spacing of 30m x 15m and all Mineral Resources are based on a maximum of 60m x 30m.
	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.	Ore Reserves are generally based on 15m x 15m drilling to a maximum of 30m x 15m. Mineral Resources are generally based on 15m x 15m drilling up to a maximum of 60m x 30m. The data spacing and distribution is sufficient to establish geological and/or grade continuity appropriate for the Mineral Resource and classifications to be applied
	Whether sample compositing has been applied.	Core is sampled to geology; sample compositing is not applied until the estimation stage. RC samples are taken as 1m samples during first pass exploration,1m samples are sent for further analysis. For RC Resource definition and grade control drilling 1m samples are routinely collected. No RC samples greater than 1m were used in estimation. RC samples initially taken as 4m composites by previous operators replaced by 1m samples where composite values returned anomalous results.
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 orientation of sampling is generally on a high angle to the main mineralisation trends. Drill holes are generally drilled on a 60-degree angle, perpendicular to the strike of the mineralisation.
	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.	The drill orientation to mineralised structures is not thought to make a material difference in the Resource estimation as intercept widths are interpreted to be close to true width.
Sample security	The measures taken to ensure sample security.	All samples are selected, cut and bagged in tied, numbered calico bags, grouped in larger tied plastic bags, and placed in large sample cages with a sample submission sheet. The cages are either sent to the site laboratory or are transported via freight truck to Perth, with consignment note and receipted by external and independent laboratory. All sample submissions are documented, and all assays are returned via email and hard copy. Sample pulp splits from the site lab are stored at the Jundee mine site for long term storage. Pre NSR operator sample security assumed to be similar and adequate.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	Regular reviews of RC and DD sampling techniques are completed by Senior Exploration Geologists and Resource Geologists and conclude that sampling techniques are satisfactory and industry standard. All recent NSR sample data has been extensively QAQC reviewed internally and externally. Pre NSR data audits mostly undocumented but expected to be in line with industry standards of the time.

Section 2 Reporting of Exploration Results
(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	The Bronzewing Project consists of 40 Exploration Licenses, 37 Mining Leases and 31 Prospecting Leases covering a total area of over 203,000 Ha. Tenements are variously registered (via Northern Star or wholly-owned subsidiaries), with Northern Star Resources Limited being the 100% registered owner. The Project also includes 54 Miscellaneous Licenses covering the bore fields, roads, airstrip, and gas pipeline. The Corboys Resource is located on M53/15, M53/144 and M53/145, the tenements are registered in the name of Northern Star (MKO) Pty Ltd a wholly owned subsidiary of Northern Star Resources Ltd. The Tenements have a 21-year life (held until 2026, 2031, 2031), renewable for a further 21 years on a continuing basis. M53/15 is subject to a

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
		2% NSR royalty, M53/144 is subject to a 1.5% NSR royalty both payable to Franco-Nevada Australia Pty Ltd. Various Tenements within the Project area lie within the Darlot, Kultju and Tjiwarl#2 Native Title Claim areas.
	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.	All leases and licences to operate are granted and in the order for between 1 and 21 years.
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	Previous exploration has been completed in recent times by Great Central Mines (2004-2005), View Resources (2007), Navigator Mining (2010), Metalliko Resources (2016) and Echo Resources (2018-2019).
Geology	Deposit type, geological setting and style of mineralisation.	The Corboys gold project is located within the Eastern Goldfields Province of the Archaean Yilgarn Block. It lies over a complex north-north-westerly trending shear zone which follows the contact between metamorphosed mafic volcanics of the Yandal greenstone belt to the east and a granitic batholith to the west. This zone is referred to as the Barwidgee Tectonic Lineament. The granodiorite-basalt contact is thought to have provided a focus for structural dilation and fluid flow. Where this contact forms a 130° jog off the NNW regional trend dextral kinematics have created transpressive deformation resulting in complex uplift/pop-up structures and reverse faulting and localised extension/dilation zones favourable to gold deposition in veins. Four mineralisation styles have been recognised: • Moderately to steeply E dipping shear veins • ESE dipping granodiorite hosted extensional vein arrays • Shallowly ESE dipping supergene enriched veins • Bulk granodiorite hosted stockwork veins
Drill hole Information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: o easting and northing of the drill hole collar o elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar o dip and azimuth of the hole o down hole length and interception depth o hole length.	No new significant results included.
	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.	No new significant results included.
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 new significant results included.
	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 new significant results included.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	No new significant results included.
Relationship between mineralisation widths and intercept lengths	These relationships are particularly important in the reporting of Exploration Results.	No new significant results included.
	If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.	No new significant results included.
	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').	No new significant results reported.
Diagrams	Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	No new significant results included.

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PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
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W: www.nsrltd.com

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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.	No new significant results included.
Other substantive exploration data	Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	No other meaningful data to report.
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).	Further extensional and resource definition drilling may occur in the future.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Previous announcements included sufficient detail to clearly illustrate the geometry of the mineralisation.

Section 3 Estimation and Reporting of Mineral Resources
(Criteria listed in section 1, and where relevant in section 2, also apply to this section.

Criteria	JORC Code explanation	Commentary
Database integrity	Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.	NSR sampling and logging data is digitally entered into a tablet then transferred to an SQL based database. There are checks in place to avoid duplicate holes and sample numbers. Where possible, raw data is loaded directly to the database from lab, logging and survey derived files.
	Data validation procedures used.	All holes used in the resource estimate have been validated individually for collar, downhole survey, geology and sample integrity by the Competent Person.
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	The Competent Person visited the deposit site in August 2021. The visit confirmed that the topography resembled the DTM surface used in the MRE, no historic depletion existed that had not been accounted for and that no physical impediments were noted for the reasonable prospects of eventual economic extraction.
	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 confidence in the geological interpretation is reasonable, a significant amount of new diamond drilling with structural data has helped to better understand the mineralization styles enabling more confident wireframing of individual mineralisation domains.

Domains were created based on a lower cut-off of 0.25 g/t Au. This is supported by a weak inflection point in the sample data as well as by contact analysis comparison across a range of cut-offs. In some cases lower grades were included to produce geological continuity. |
	Nature of the data used and of any assumptions made.	All available drilling data was used to inform the interpretation including lithological, weathering, mineralization and structural logging. AC, RAB and costean data were used during wireframing but excluded from the grade estimation.
	The effect, if any, of alternative interpretations on Mineral Resource estimation.	A Leapfrog mineralization inventory model based on the same drillhole dataset was constructed using a numeric model – RBF interpolant to create a single grade envelope.
	The use of geology in guiding and controlling Mineral Resource estimation.	The granodiorite unit was used to constrain the stockwork envelope for estimation purposes. Diamond core enabled characterisation of mineralisation and vein orientation measurements helped to inform orientation of lodes.
	The factors affecting continuity both of grade and geology.	Stockwork and extension veins restricted to inside granodiorite due to brittle nature of the unit. Shear zone veins vary in continuity, splays or link lodes coming off shear zones tend to have a shorter continuity. Moderately dipping, supergene enriched structures are mostly constrained to within the granodiorite in close proximity to the main lithological contact.
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 extent of mineralisation is 2,200m long, 300m wide and to a depth of 350m. The mineralisation is contained within a bulk stockwork envelope and 48 individual tabular lodes that vary between 1 to 20m thick. The deposit remains open at depth with strike potential.
Estimation and modelling techniques	The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.	Leapfrog software was used for geology, weathering and mineralisation domain wireframing.

Domains are set by grouping lodes as dictated by their structural setting, geological mineralisation and statistical characteristics. The raw data is subdivided into domains based on geological controls and high-grade trends and then further analysed for correlation and similarity using statistics. The purpose of this analysis is to determine further domaining of the data for variography purposes (by combining groups of lodes). |

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T: +61 8 6188 2100
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W: www.nsrltd.com

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		The Mineral Resource estimation utilises 1m composites for all RC and DD sampling data, composite residuals smaller than 1m have been weighted by length for the estimation.
		Detailed exploratory data analysis, variography, Kriging Neighbourhood analysis (KNA) and model validation is carried out using Snowden Supervisor software.
		Zones of dominant waste within the stockwork envelope were separated via application of a 0.07 g/t cut off numerical indicator controlled with a trend based on dominant stockwork vein orientation. Resulting low grade and medium grade domains were estimated using multiple indicator kriging (MIK) as this non-linear technique is better suited for grade distributions that have greater variance and a high CV. Datamine software was used for data compilation, calculating and coding composite values, estimating and reporting.
		Tabular lodes are estimated using ordinary kriging (OK). OK estimation was completed using an oriented search ellipsoid. Three estimation passes were used with increasing search ellipsoid radius. Maximum and minimum number of samples for the estimation and ellipsoid search ranges were derived from KNA analysis, variogram ranges and drill hole spacing. Search ellipsoid radius ranges from 30 to 65m. A minimum of 6-10 samples and a maximum of 28-30 samples was used in passes 1 to 3.
		MIK estimation was completed using a search ellipsoid oriented parallel to the dominant vein orientation. Search ellipsoid radius of major 80m, semi-major 40m, min 35m were used for all thresholds. Thirteen thresholds were defined with major variogram ranges from 120 to 25m.
		Block model volumes were compared to wireframe volumes to validate sub-blocking
		Where OK estimates were used, treatment of extreme high grades were dealt with by using a cap grade strategy and high-grade restraining.
	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 large-scale historical mining has taken place at Corboys. Previous resource reports and wireframes have been located and studied to understand the progression of the interpretation. This resource estimate shows a 70% increase in ounces from the previous MRE completed in 2022, related to the extensive infill and extensional drilling that was carried out in late 2022.
	The assumptions made regarding recovery of by-products.	No by-products were considered.
	Estimation of deleterious elements or other non-grade variables of economic significance (e.g., sulphur for acid mine drainage characterisation).	No deleterious elements are present.
	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 of 5m(X) x 10m(Y) x 5m(Z) represents 30 to 50% of the average drill spacing in the zone classified as indicated. Parent blocks have been sub-celled to 1.25m x 2.5m x 1.25m. Search radius was selected based primarily from the variogram range.
	Any assumptions behind modelling of selective mining units.	A 4 x 4 x 5m regularised model was created based on a standard open pit SMU.
	Any assumptions about correlation between variables.	There was no correlation between variables (only gold estimated).
	Description of how the geological interpretation was used to control the Resource estimates.	Discrete, high-grade tabular structures were modelled in Leapfrog using the vein system tool based on interval flagging where drillholes intersect the structure. The stockwork envelope was also modelled in Leapfrog using the intrusion tool based on interval flagging. Both the stockwork domain and extensional lode domains were constrained to the granodiorite unit using the Leapfrog Boolean function.
		The domains acted as a hard boundary to control the gold estimation. Each mineralisation wireframe was used to code the database and the block model, from which the block grade estimate was constrained to only the corresponding top-cut composites for that domain.
	Discussion of basis for using or not using grade cutting or capping.	Top cuts were applied in the Estimation stage and determined by a range of statistical techniques including:
		Disintegration analysis of Histogram, Log-probability, Mean-CV and Cumulative metal plots.
		No top cutting or capping of high grades is done at the raw sample or compositing stage.
		Top cuts vary by domain and range from 12 to 30. Top cuts were not applied to domains that lacked obvious high grade outliers where the CV was less than 2.
		High-yield restrictions were applied to selected domains. The high yield value was based on population dispersal in the cumulative metal plot, typically equating to 60-70% of the top cut selected. A range was chosen based on the 90% threshold variogram generally corresponding to 30 -50% of the major direction variogram range.
	The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.	The Mineral Resource Estimate was validated using processes that are based on a combination of visual, graphical and reconciliation style validations summarised as:
		Visual validation of the lode and lithology coding of both the composite data and the block model.
		Comparison of lode wireframe volumes to block model volumes.
		Visual validation of Mineral Resource Estimate against composite data in plan, section, and in 3D.
		Kriging efficiency and slope of regression interrogated for each material domain.
		Comparison of nearest neighbour, inverse distance squared, and ordinary kriged estimates to the final estimate (generally OK or MIK).

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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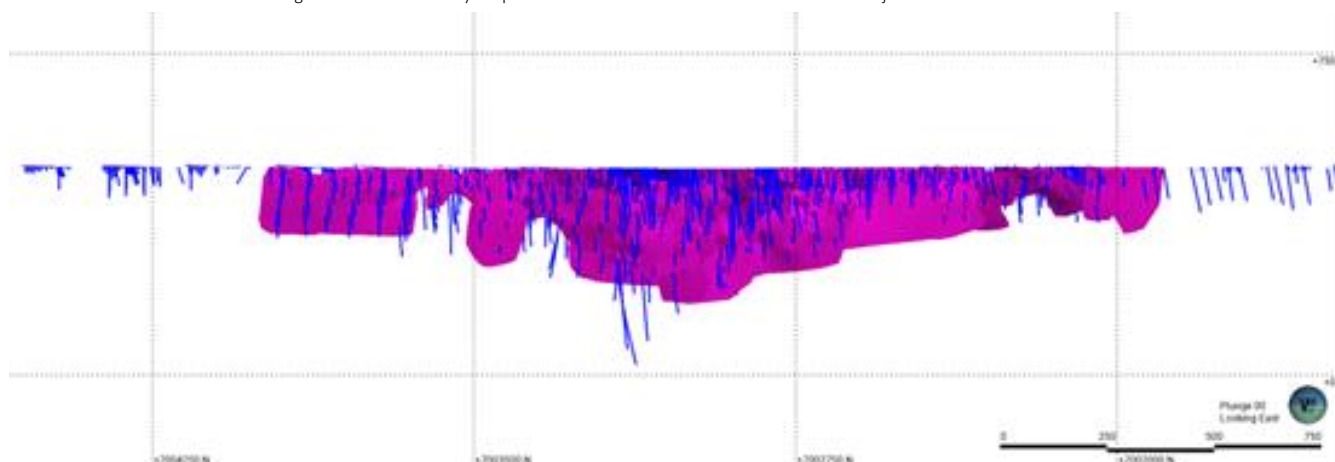| Criteria	JORC Code explanation	Commentary
		Statistical comparison of composites versus all estimates in block model: trend analysis plots for each domain are produced by Northing / Easting / RL. The Mineral Resource Estimate generally shows a reasonably reflection of the composites where there are high numbers of composites used in the estimate. When the numbers of samples reduce the accuracy of the estimation suffers and a more significant deviation is noted between the Mineral Resource Estimate and associated composite data.
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 reported on a dry basis with sampling and analysis having been conducted to avoid water content density issues.
Cut-off parameters	The basis of the adopted cut-off grade(s) or quality parameters applied.	The cut-off grade of 0.5 g/t has been calculated based on the key input components of mining, processing, recovery and administration costs. Forward looking forecast costs and physicals form the basis of the cut-off grade calculations. The AUD $2,500 gold price as per corporate guidance. Mill recovery factors are based on historical data and metallurgical test work. Variable treatment costs to open pit mining for processing is a fundamental premise in the evaluation of open pit projects. Variable cut-off grade is used in the evaluation of open pit projects.
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.	It is assumed mining would be by open-cut. A 2m minimum mining width for ore block environment is assumed and incorporated into the modelling and estimation. UG potential is to be looked at in a future review.
Metallurgical factors or assumptions	The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	Metallurgical analysis was completed by NSR in 2020. Four composite samples taken from granodiorite and basalt lithologies underwent standard gravity separation and leach test work. Recoveries returned ranging from 77 to 88.4 % in the basalt and 89.7 to 94.7% in the granodiorite when the grind size was P80 passing 150 or 106µm. It was concluded that arsenopyrite contains some refractory fine gold unrecoverable at the grind size tested. Granodiorite had lower sulphur and arsenic grades, appearing to be more free milling.
Environmental factors or assumptions	Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a green fields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	It is considered that there are no significant environmental factors, which would prevent the eventual extraction of gold from the Corboys deposit. The project currently possesses all necessary government permits, licenses and statutory approvals to be compliant with all legal and regulatory requirements.
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 data was derived from core collected by both NSR and previous operators (572 measurements). An assumed value was used for oxide due to the shallowness (1 to 3m depth) of this material in the profile resulting in no data able to be collected.
	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 measurements for core samples are taken using the water displacement technique, where the samples are dried and weighed in air then weighed in water.
	Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	Individual bulk densities are applied in accordance with specific lithologies and weathering states based on calculated averages of the overall density dataset.
Classification	The basis for the classification of the Mineral Resources into varying confidence categories.	Mineral Resources have been classified on the basis of confidence in the geological and grade continuity using the drilling density, pass in which the gold was estimated and the distance to sample selections. These were evaluated individually for east mineralisation domain. Indicated Mineral Resources have been defined generally where the OK interpolation made 1 pass and drill density up to 30 x 15m. Inferred Mineral Resources were classified as mostly 1 – 2 passes with a drill density up to 60 x 30m. MIK estimated stockwork was defined as Inferred Mineral Resources where drill density up to 30 x 15m and number of samples used to estimate greater than 20.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
	Whether appropriate account has been taken of all relevant factors (i.e., relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).	This classification is considered appropriate given the confidence that can be gained from the existing data density and results from drilling. Greater confidence has been allowed for lodes where intersected by diamond drilling.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The reported resource appropriately reflect the Competent Person's view of the deposit and the current level of risk associated with the project to date.
Audits or reviews	The results of any audits or reviews of Mineral Resource estimates.	The mineralisation domaining, estimation parameters, classification and reporting have all been internally peer reviewed.
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.	There is good confidence in the data quality, drilling methods and analytical results. The available geology and assay data correlate well, and the geological continuity has been demonstrated. Local variations can be expected such as weathering variations causing density differences or pinch and swell of the mineralised domains. Density test work of the transitional zone within basalt requires further measurements to increase confidence in the reported resource.
	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 Mineral Resources constitute a global resource estimate.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	No production has been undertaken at Corboys deposit.

CORBOYS - REPRESENTATIVE PLAN & LONG SECTION

Plan View - Corboys deposit with drill hole traces.
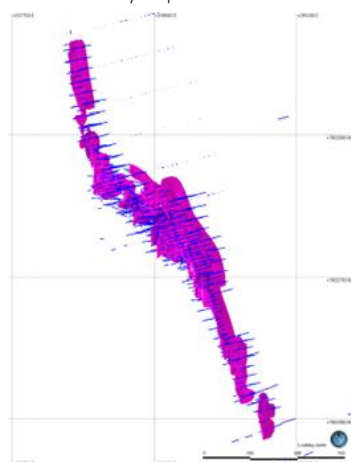
Long Section View - Corboys deposit with drill hole traces. Wireframes denote major mineralised structures.

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Jundee: Julius – 31 March 2024

Section 1 Sampling Techniques and Data

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

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.	Historic sampling was completed using a combination of Reverse Circulation (RC) and Diamond (DD) drilling. RC samples were collected via rig mounted cone splitter. DD samples were HQ half core with sample intervals defined by the geologist to honour geological boundaries. Recently completed drilling by Northern Star Resources (NSR) was by both diamond drilling (DD) and Reverse Circulation (RC). DD samples are HQ or NQ core with sample intervals defined by the geologist to honour geological boundaries ranging from 0.3 to 1.2m in length. RC samples are collected via rig-mounted static cone splitter with sample falling though inverted cone splitter, splitting the sample in 88%/9%/3% ratio. 9% split retained for 1m composites.
	Include reference to measures taken to ensure sample representativity and the appropriate calibration of any measurement tools or systems used.	Recently completed DD core is aligned and measured by tape, comparing back to down hole core blocks consistent with industry practice. RC metre intervals are delineated with spray paint to determine metres drilled. Sample rejects are left on the sample pad to indicate metres drilled for the hole.
	Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g., 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g., submarine nodules) may warrant disclosure of detailed information.	Diamond drilling is completed to industry standard using varying sample lengths (0.3 to 1.2m) based on geological intervals, which are then crushed and pulverised to produce a ~200g pulp sub sample to use in the assay process. Diamond core samples are fire assayed (30 gm or 50 gm charge). RC sampling to industry standard at the time of drilling where ~3-4kg samples are pulverised to produce a ~200 gm pulp sample to utilise in the assay process. RC samples are fire assayed (30 gm charge).
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 work: RC drilling (5 ¼ inch face sampling hammer) from surface HQ Triple Tube from surface (78 mm) Recent Northern Star: RC drilling is carried out using a face sampling hammer and a 130mm diameter bit. Diamond drilling carried used HQ3 (triple tube) and NQ2 techniques. Core is routinely orientated using the ORI-shot device.
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed.	RC – Approximate recoveries are sometimes recorded as percentage ranges based on a visual and weight estimate of the sample. DD – Recoveries are recorded as a percentage calculated from measured core versus drilled intervals.
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	Diamond drilling practice results in high core recovery due to the competent nature of the ground. RC drilling recovery is supervised on the rig and any recovery issues are recorded and rectified.
	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, diamond drill sample recovery is very high.
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.	DD core and RC chip samples have been logged by qualified geologists to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies. RC holes logging were carried out on a metre-by-metre basis and at the time of drilling.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	Logging is Qualitative and Quantitative; all core is photographed wet. Visual estimates are made of sulphide, quartz and alteration as percentages.
	The total length and percentage of the relevant intersections logged.	100% of all DD and RC drilling is logged.
Sub-sampling techniques and sample preparation	If core, whether cut or sawn and whether quarter, half or all core taken.	DD core is halved with an Almonté diamond core saw. The core is quarter cut when metallurgical samples are required. Sample intervals are defined by a qualified geologist to honour geological boundaries. The left half is archived. All mineralised zones are sampled plus associated visibly barren material in contact with mineralised zones. Core is sampled on the width of the geological/mineralised structure with a minimum sample length of 0.3m and a maximum sample length of 1.2m. Total weight of each sample generally does not exceed 5kg.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	RC drilling uses a cyclone mounted inverted cone splitter.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	DD core is dried at 100°C to constant mass, all samples below approximately 4kg are totally pulverised in LM5's to nominally 85% passing a 75µm screen. The few samples generated above 4kg are crushed to <6mm and riffle split first prior to pulverisation. RC samples are dried at 100°C to constant mass, all samples below approximately 3kg are totally pulverised in LM5's to nominally 85% passing a 75µm screen. Samples generated above 4kg are crushed to <6mm and cone split to nominal mass prior to pulverisation. For RC samples, no formal heterogeneity study has been carried out or monographed. An informal analysis suggests that the sampling protocol currently in use are appropriate to the mineralisation encountered and should provide representative results.
	Quality control procedures adopted for all sub-sampling stages to maximise representativity of samples.	Repeat analysis of pulp samples (all sample types) occurs at an incidence of 1 in 20 samples.
	Measures taken to ensure that the sampling is representative of the in-situ material collected, including for instance results for field duplicate / second-half sampling.	Field duplicates, (i.e., other half of cut core) are routinely assayed. NSR routinely collects field duplicates during RC drilling.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Sample sizes are considered appropriate. No formal nomograph study has been conducted on the RC primary sub sample split. Industry standard practice supports splitting of primary sub samples at particle sizes of <6mm and P_{80} 75µm.
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.	Extractions from previous operators are considered are considered near total. For RC drill samples, gold concentration was determined by fire assay using the lead collection technique with a 50-gram sample charge weight. MP-AES instrument finish was used to be considered as total gold. For DD drill samples, gold concentration was determined by fire assay using the lead collection technique with a 30-gram sample charge weight. AAS instrument finish was used to be considered as total gold.
	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 derived analyses are reported.
	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.	Previous operator's QA/QC involved the use of internal lab standards using certified reference material, blanks, splits and duplicates as part of the in-house procedures. Repeat and duplicate analysis for samples shows that the precision of analytical methods is within acceptable limits. The QAQC protocols used include the following for all drill samples: Field QAQC protocols used for all drill samples include commercially prepared certified reference materials (CRM) inserted at an incidence of 1 in 20 samples. The CRM used is not identifiable to the laboratory with QAQC data is assessed on import to the database and reported monthly, quarterly and yearly. NSR RC Resource definition and grade control drilling routinely inserts field blanks and monitor their performance. Laboratory QAQC protocols used for all drill samples include repeat analysis of pulp samples occurs at an incidence of 1 in 20 samples and screen tests (percentage of pulverised sample passing a 75µm mesh) are undertaken on 1 in 40 samples. The laboratories' own standards are loaded into the database and the laboratory reports its own QAQC data monthly. In addition to the above, about 5% of drill samples are sent to a check laboratory. Samples for check -assay are selected automatically from holes based on the following criteria: grade above 0.5g/t or logged as a mineralised zone or is followed by feldspar flush or blank. Failed standards are generally followed up by re-assaying a second 50g or 30g pulp sample of all samples in the fire above 0.1g/t by the same method at the primary laboratory. Both the accuracy component (CRM's and third-party checks) and the precision component (duplicates and repeats) of the QAQC protocols are thought to demonstrate acceptable levels of accuracy and precision.
Verification of sampling and assaying	The verification of significant intersections by either independent or alternative company personnel.	Significant intersections not verified.
	The use of twinned holes.	4 HQ diamond twin holes drilled.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	Sampling and logging data are digitally entered into a tablet using Logchief software imported into SQL database using semi-automated or automated data entry. Digital assay files are loaded directly into the database. Visual checks are part of daily use of the data in Vulcan.
	Discuss any adjustment to assay data.	The first gold assay is almost always utilised for any Mineral Resource estimation except where evidence from re-assaying and/or check-assaying dictates. A systematic procedure utilizing several re-assays and/or check assays is in place to determine when the final assay is changed from the first gold assay.
Location of data points	Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.	Previous operators drillholes have been located by DGPS with precision of sample locations considered +/-1m.

Northern Star Resources Limited
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Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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		Collar positions are recorded using conventional survey methods based on Leica TS15 3" total stations and Trimble R10 GNSS instruments. The location of each station is referenced to state-wide network of Standard Survey Marks (SSM) established and coordinated by the Department of Land Administration (WA Government). Where regional drill hole positions are distant from the SSM network, the worldwide Global Navigational Satellite System (GNSS) network is used.
		Positional checks are carried out using a combination of existing known positions (usually based on prominent landmarks) and grid referenced information such as ortho-linear rectified photogrammetry based on the Map Gird of Australia MGA94.
		Collar coordinates are recorded in MGA94.
		Surface collar RL's have been validated utilizing an airborne elevation survey by Arvista in 2019.
		Multi shot cameras and gyro units were used for down-hole survey.
	Specification of the grid system used.	Collar coordinates are recorded in MGA94 Zone 51. The difference between magnetic north (MN) and true north (TN) is 1º 34' 30". The difference between true north (TN) and AMG84 Zone 51 (AMG GN) is 1º 02' 47". The difference between true north and GDA is zero.
	Quality and adequacy of topographic control.	Topographic control is from Arvista in 2019, 1m contour data and site surveyed pickups.
Data spacing and distribution	Data spacing for reporting of Exploration Results.	All Ore Reserves are based on a maximum drill hole spacing of 25m x 25m and all Mineral Resources are based on a maximum of 60m x 60m. Exploration results in this report range from 25m x 25m drill hole spacing to 60m x 60m.
	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.	Ore Reserves are generally based on 25m x 25m drilling to a maximum of 40m by 40m. Mineral Resources are generally based on 25m x 25m drilling up to a maximum of 60m x 60m.
		The data spacing and distribution is sufficient to establish geological and/or grade continuity appropriate for the Mineral Resource and classifications to be applied.
	Whether sample compositing has been applied.	Core is sampled to geology; sample compositing is not applied until the estimation stage.
		RC samples are taken as 1 m samples and 4 m composites during first pass exploration,1m samples are sent for further analysis if any 4m composites return a gold value > 0.1g/t or intervals containing alteration/mineralisation failed to return a significant composite assay result.
		For RC Resource definition and grade control drilling 1 m samples are routinely collected.
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 orientation of sampling is generally on a high angle to the main mineralisation trends as these are flat to gently dipping.
	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.	The drill orientation to mineralised structures biases the number of samples per drill hole. It is not thought to make a material difference in the Mineral Resource estimation.
Sample security	The measures taken to ensure sample security.	All samples are selected, cut and bagged in tied numbered calico bags, grouped in larger tied plastic bags, and placed in large sample cages with a sample submission sheet. The cages are either sent to the site laboratory or are transported via freight truck to Perth, with consignment note and receipted by external and independent laboratory.
		All sample submissions are documented, and all assays are returned via email and hard copy.
		Sample pulp splits from the site lab are stored at the Jundee mine site and those from the Newburn Lab in Perth are stored at the Newburn Lab.
		RC samples processed at SGS have had the bulk residue discarded and pulp packets sent to Jundee mine site for long term storage.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	Previous Operators had no review or audit of sampling techniques or data compilation has been undertaken at this stage.
		In 2020 Zaremus Pty Ltd conducted an audit of the site laboratory and audit of the external laboratories. Both audits found the laboratory procedures and performance to be adequate.
		All recent NSR sample data has been extensively QAQC reviewed both internally and externally.

Section 2 Reporting of Exploration Results
(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	The Julius Project consists of a single Mining Lease M53/555 covering a total area of approximately 970 Ha. The Mining Lease is 100% registered in the name of Northern Star (MKO) Pty Ltd, wholly owned subsidiary of Northern Star Resources Limited.
		The area is subject to two Native Title agreements with Tarlka Matuwa Piarku Corporation (TMPAC) and Kultju Aboriginal Corporation (RNTBC). The tenement is subject to two third party private royalty agreements; the Red Lake Royalty Agreement held by Franco Nevada and royalty provisions under the agreements with TMPAC.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
	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 impediments to operating on the Tenement are known to exist
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	All the recent exploration work has been completed by NSR.
Geology	Deposit type, geological setting and style of mineralisation.	Julius is an Archean gold mineralised deposit that is part of the Northern Yandal Greenstone belt. Gold mineralisation is controlled by a shear system and is predominantly hosted in ultramafic and granite. Mineralisation can be lateritic or supergene or vein style hosted in nature.
Drill hole Information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: o easting and northing of the drill hole collar o elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar o dip and azimuth of the hole o down hole length and interception depth o hole length.	No new significant results reported;
	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.	No new significant results reported.
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 new significant results reported.
	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 new significant results reported.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	No new significant results reported.
Relationship between mineralisation widths and intercept lengths	These relationships are particularly important in the reporting of Exploration Results.	No new significant results reported.
	If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.	No new significant results 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').	No new significant results reported.
Diagrams	Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	No new significant results reported.
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.	No new significant results reported.
Other substantive exploration data	Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	No other meaningful data to report.
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 future drilling planned.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Previous announcements included sufficient detail to clearly illustrate the geometry of the mineralisation.

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ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Section 3 Estimation and Reporting of Mineral Resources
(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Database integrity	Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.	Sampling and logging data are digitally entered into a tablet using Logchief software and then transferred to an SQL based database. Assay results are returned from the laboratory as digital files and loaded directly into the database. A series of verification validations are performed prior to importing the data in the database. There are checks in place to avoid duplicate holes, sample numbers and missing intervals. There is database manager on site who is responsible for the integrity and use of the data. Only the database manager and the database administrator have access to the database. Where possible, raw data is loaded directly to the database from lab, logging and survey derived files.
	Data validation procedures used.	All the electronic log files are reviewed and validated prior to being imported into the database. Drill hole information is loaded in Vulcan and Leapfrog software for verification and validation of collar, lithology and downhole surveys. Database administrators perform a series of verification validations prior to store the information in the database. There is QA/QC geologist that reviews the QA/QC information daily and ensure that the company QA/QC protocols are followed.
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	The Competent Person for this Mineral Resource report has worked at Jundee between 2019 and 2022.
	If no site visits have been undertaken indicate why this is the case.	Regular site visits have been undertaken.
Geological interpretation	Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.	The interpretation of the deposit was carried out using a systematic approach to ensure continuity of the geology and estimated Mineral Resource using Leapfrog and Vulcan software. The confidence in the geological interpretation is relatively high, though a certain degree of uncertainly always remains due to the structurally complex and nuggetty nature of the ore body on a local scale.
	Nature of the data used and of any assumptions made.	All available geological data was used in the interpretation including mapping, drilling and oxidation surfaces.
	The effect, if any, of alternative interpretations on Mineral Resource estimation.	No alternative interpretations have been completed or put forward.
	The use of geology in guiding and controlling Mineral Resource estimation.	Logging and grade distribution were used to create 3D constrained wireframes. A 0.3 g/t Au was used as a guide to model the mineralised envelopes for the open pit resources. The Modelling cut-off was determined after the statistical analysis of the sample population.
	The factors affecting continuity both of grade and geology.	Continuity of the grade varies significantly, though the main mineralised structures show good continuity downdip and across strike. The geology consists of a stockwork of short-range quartz veins with carbonate, chlorite and sulphides hosted within ultramafic and/or granite. The splays or small lodes coming of this main trend tend to have a shorter continuity.
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.	Mineralized zones are variable with true width ranging from 0.5m to 20m. They are extensive along strike and down dip, and form supergene and laterite horizons, respectively.
		Mineralisation occurs form near surface and is open at depth >200m approximately. The mineralised envelope has been extended down dip for targeting purposes any mineralisation modelled beyond the drilling coverage has not been included in the resource classification or reporting.
Estimation and modelling techniques	The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.	Modelling was completed using Leapfrog and Vulcan software. Domains are set by grouping lodes as dictated by their structural setting, geological, mineralisation and statistical characteristics. The raw data is subdivided into domains based on geological controls and further analysed for correlation and similarity using statistics. The purpose of this analysis is to determine further domaining of the data for variography purposes (by combining groups of lodes). The Mineral Resource estimation utilises 1m composites for all RC and DD sampling data, small intervals up to 0.3m were merged with the nearest composite for the estimation. Detailed exploratory data analysis, variography, Kriging Neighbourhood analysis (KNA) and model validation is carried out using Snowden Supervisor software. The Mineral Resource was estimated using a combination of categorical indicator kriging (CIK) and ordinary kriging (OK). Vulcan software is used for data compilation, calculating and coding composite values, estimating and reporting. CIK Parameters: • 3 Bin CIK was utilised to define internal subdomains (low grade, medium grade and high-grade populations) • Indicator thresholds were determined from log probability analysis and indicator estimation parameters optimised for the X1m x Y1m x Z1.25m sub blocks. • The search ellipse orientation used the Dynamic anisotropy (DA) orientations as calculated by HW and FW surfaces of lodes 3001, 3002 and 4001 in Vulcan. • Vulcan's coalesce function was used to optimise sub domain blocks up to the parent cell size (X5m x Y10m x Z2.5m) where possible. • Low grade, medium grade and high-grade subdomains are back flagged onto the composite and parent cell Ordinary kriging is performed with individually optimised estimation parameter sets, variograms and top cuts applied. OK Parameters: • Estimation was completed using an oriented search ellipsoid. • Three estimation passes were used with increasing search ellipsoid radius. • Maximum and minimum number of samples for the estimation and ellipsoid search ranges were derived from KNA analysis, variogram ranges and drill hole spacing using Supervisor software.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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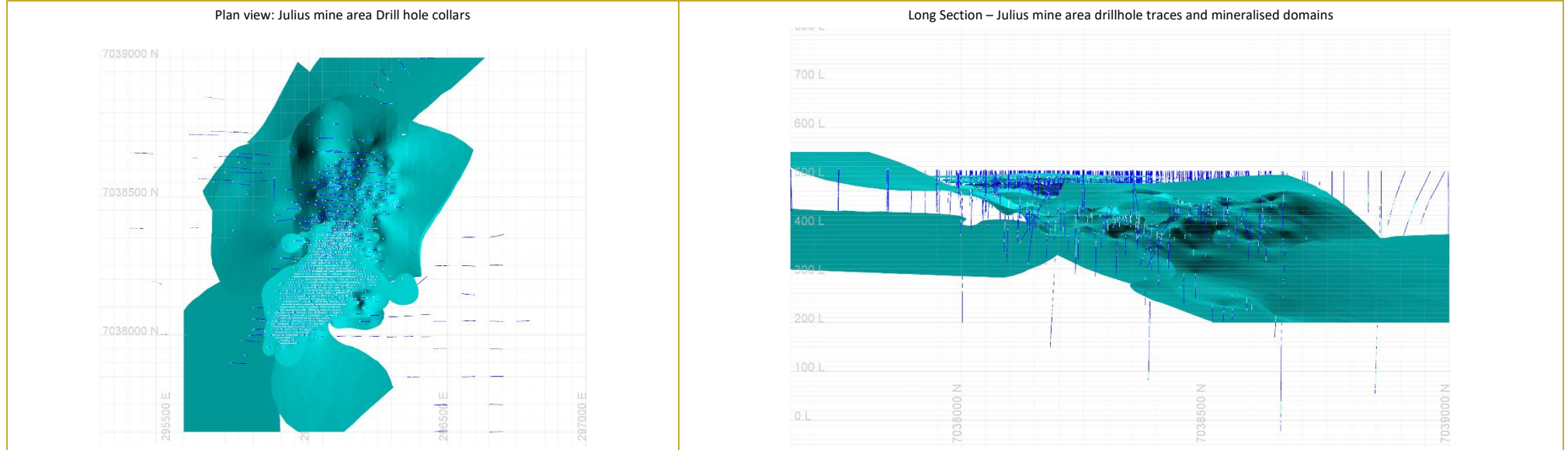| Criteria	JORC Code explanation	Commentary
		• Search ellipsoid radius ranges from 30m to 80m. A minimum of 12 samples and a maximum of 28 was used in the first pass, minimum of 10 samples and a maximum of 28 was used in the second pass and minimum of 6 samples and a maximum of 28 was used in the third pass. Minor variations to the number of samples have been applied in some zones based on drill spacing. Block model volumes were compared to wireframe volumes to validate sub-blocking. For the OK estimates treatment of extreme high grades was dealt with by using a cap grade strategy and high-grade restraining.
	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 are in line with the current estimation for this deposit.
	The assumptions made regarding recovery of by-products.	No assumptions are made and only gold is defined for estimation.
	Estimation of deleterious elements or other non-grade variables of economic significance (e.g., sulphur for acid mine drainage characterisation).	No deleterious elements estimated in the model.
	In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.	The Julius Mineral Resource model uses a 1m straight composite generation based on RC and DD sample length where the parent block sizes are 10 m in strike, 2.5m in RL, and 5m across strike direction. Sub-block sizes are 1m in strike, 1m in RL, and 0.5m across strike direction. Average drill spacing ranges between 25m x 25m and 5m x 10m. Ore Reserves are generally based on 20m x 20m drilling up to a maximum of 40m x 40m. Mineral Resources are generally based on 40m x 40m drilling up to a maximum of 80m x 80m.
	Any assumptions behind modelling of selective mining units.	A 5.0m minimum mining width for ore blocks is assumed.
	Any assumptions about correlation between variables.	There is no correlation between variables.
	Description of how the geological interpretation was used to control the Resource estimates.	Mineralised wireframes are created within the geological shapes based on drill core logs, mapping and grade. A 0.3 g/t Au was used as a guide to model the mineralised envelopes for open pit resources and. Low grades can form part of an ore wireframe. Estimations are constrained by the mineralised envelopes.
	Discussion of basis for using or not using grade cutting or capping.	Top cuts were determined by a range of statistical techniques including analysis of histogram, Log-probability and Mean- CV plots: ▪ Contained Metal Plots assess contribution of the highest values on the quantity of metal in an estimate, ▪ Coefficient of Variation plots analyse impact top cuts have on CV. A range of top cuts are then selected for each domain utilising the above strategies and an appropriate top cut chosen after further examination to assess sensitivity of selected cap grades and associated risk. Metal estimated in the Mineral Resource models are finally reconciled with production models of like areas to determine the appropriateness of the high-grade treatment on the assays. No top cutting or capping of high grades is done at the raw sample or compositing stage. For OK and CIK, treatment of the high-grade assays occurs at the estimation stage. A range of top cuts were used for estimation and a high-grade restraining for high grade samples, limiting their range of influence in the estimation.
	The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.	The Mineral Resource estimate was validated using processes that are based on a combination of visual, graphical and reconciliation validations summarised as: ▪ Visual validation of the lode and lithology coding of both the composite data and the block model. ▪ Comparison of lode wireframe volumes to block model volumes. ▪ Visual validation of Mineral Resource estimate against composite data in plan, section, and 3D. ▪ Sensitivity to top-cut values uses a variety of top-cuts which are compared to themselves and to the un-cut nearest neighbour estimate at a variety of cut-offs. ▪ Comparison of nearest neighbour, ID2 and OK estimates to the final estimate (OK). These comparisons are conducted through visual validation and trend analysis along Northing, Easting and RL slices. ▪ Global, level and lode tonnages and grades, at various elemental cut-offs were compared, and given the changes in support data, were consistent. ▪ Statistical comparison of composites versus all estimates in block model with trend analysis plots for each domain produced by Northing / Easting / RL. ▪ Statistical comparison of composites grades versus lode grades in a lode-by-lode basis. ▪ Change of Support validation The Mineral Resource estimate shows a reasonably reflection of the composites where there are high numbers of composites used in the estimate. Where the numbers of samples reduce, the accuracy of the estimation suffers, and a more significant deviation is noted between the Mineral Resource estimate and associated composite data. These deviations are considered when assigning a Resource classification.
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. Moisture content within the ore is expected to be low.
Cut-off parameters	The basis of the adopted cut-off grade(s) or quality parameters applied.	Open pit resources have been reported using a 0.8 g/t Au cut-off grade. The cut-off grade has been calculated based on the key input components of mining, processing, recovery and administration costs.

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Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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		Forward looking forecast costs and physicals form the basis of the cut-off grade calculations. ▪ The AUD $2,350 gold price as per corporate guidance. ▪ Mill recovery factors are based on historical data and metallurgical test work. ▪ Variable treatment costs to open pit mining for processing is a fundamental premise in the evaluation of open pit projects. Variable cut-off grade is used in the evaluation of open pit projects.
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.	A 5.0m minimum mining width for ore block environment is assumed and incorporated into the modelling and estimation.
Metallurgical factors or assumptions	The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	Assumed all material will be trucked and processed in the Jundee Mill. Recovery factors vary for the various mining areas and are based on lab testing and on-going operational experience. No metallurgical assumptions have been built or applied to the Mineral Resource model
Environmental factors or assumptions	Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a green fields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	The Project currently possesses all necessary government permits, licenses and statutory approvals to be compliant with all legal and regulatory requirements.
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.	RC bulk density values used were based on analysis of grab samples obtained during excavation of open cut mines. Calculated averages were applied to density boundaries for each model. DD bulk density values are based on an updated study of the average lithological densities across the mine site completed in 2013. This study consisted of a detailed statistical analysis of 72,634 measurements that have been recorded from all deposits. These values are also in agreement with over 10 years of production 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.	Bulk density measurements for core samples are taken using the water displacement technique, where the samples are dried and weighed in air then weighed in water.
	Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	Individual bulk densities are applied in accordance with specific lithologies, mineralisation and weathering states.
Classification	The basis for the classification of the Mineral Resources into varying confidence categories.	Measured Resources are defined from grade control models based on geological mapping, diamond and RC drill holes which are imported into Vulcan software and modelled in 3D. Indicated Resources are defined by drilling which is generally 25m x 25m and may range up to 40m x 40m maximum. Material classified as Indicated are supported by a minimum of 5 RC and Diamond drill holes or a minimum of 3 drill holes when drill spacing is 25m x 25m or less and there is grade and geological continuity. Inferred Resources are defined on a nominal 40m x 40m drilling pattern and may range up to 80m x 80m. Resources based on less than 40m x 40m spaced drilling, but which have a low level of confidence in the geological interpretation may also be classified as inferred
	Whether appropriate account has been taken of all relevant factors (i.e., relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).	Input and geological data is accurate based on a long, successful mining history at the site on this mineralisation.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	This Mineral Resource estimate is considered representative with comments noted in the discussion below.
Audits or reviews	The results of any audits or reviews of Mineral Resource estimates.	The Mineral Resource estimates, methodology and systems have been subject to reviews by senior technical personnel.
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.	This Mineral Resource estimate is considered as robust and representative of the Jundee mineralisation with local estimates considered variable in nature. The application of geostatistical methods has supported to increase the confidence of the model and quantify the relative accuracy of the Resource on a global scale and against actual production reconciliation.

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Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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	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.	This Mineral Resource report relates to the Jundee deposits and is likely to have local variability within a global assessment further supported and reconciled against actual mine production.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	Comparison with previous Mineral Resource estimates and production data was undertaken. Global, level and lode tonnages and grades, at various elemental cut-offs were compared, and given the changes in support data, were consistent.

JULIUS RESOURCE

Plan view: Julius mine area Drill hole collars

Long Section – Julius mine area drillhole traces and mineralised domains

Jundee: Ramone – 31 March 2024

Section 1 Sampling Techniques and Data
(Criteria in this section apply to all succeeding sections.)

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 is by both diamond drilling (DD) and Reverse Circulation (RC) drilling completed by NSR. DD samples are HQ and NQ core with sample intervals defined by the geologist to honour geological boundaries ranging from 0.3 to 1m in length. RC samples are collected via rig-mounted static cone splitter with sample falling though inverted cone splitter, splitting the sample in 88%/9%/3% ratio. 9% split retained for 1m composites and 3% split retained for 4m composites. 1m samples are sent for further analysis if any 4m composites return a gold value > 0.1g/t or intervals containing alteration/mineralisation failed to return a significant composite assay result. NSR Resource definition and grade control drilling routinely collects 1m composites.
	Include reference to measures taken to ensure sample representativity and the appropriate calibration of any measurement tools or systems used.	DD core is aligned and measured by tape, comparing back to down hole core blocks consistent with industry practice. RC metre intervals are delineated with spray paint to determine metres drilled. Sample rejects are left on the sample pad to indicate metres drilled for the hole.

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Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
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E: info@nsrltd.com
W: www.nsrltd.com

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	Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g., 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g., submarine nodules) may warrant disclosure of detailed information.	Diamond drilling is completed to industry standard using varying sample lengths (0.3 to 1m) based on geological intervals, which are then crushed and pulverised to produce either a ~200 gm pulp sub sample or 500g 2mm sample depending on assay technique (Fire assay or photon). Diamond core is sampled via both fire assay (30 gm charge) and photon analysis (500g sub sample). Visible gold is occasionally encountered in core and double feldspar flushes are requested to follow. RC sampling to industry standard at the time of drilling where ~3-4kg samples are pulverised to produce a ~200g pulp sample to utilise in the assay process. RC samples are fire assayed (50 gm charge).
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.).	RC drilling is carried out using a face sampling hammer and a 130mm diameter bit. Diamond drilling carried used HQ3 (triple tube) and NQ2 techniques. Core is routinely orientated using the ORI-shot device.
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed.	RC – Approximate recoveries are sometimes recorded as percentage ranges based on a visual and weight estimate of the sample. DD – Recoveries are recorded as a percentage calculated from measured core versus drilled intervals.
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	Diamond drilling practice results in high core recovery due to the competent nature of the ground. RC drilling recovery is supervised on the rig and any recovery issues are recorded and rectified.
	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, diamond drill sample recovery is very high.
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.	DD core and RC chip samples have been logged by qualified geologists to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies. Percussion holes logging were carried out on a metre by metre basis and at the time of drilling.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	Logging is qualitative and quantitative; all core is photographed wet. Visual estimates are made of sulphide, quartz and alteration as percentages.
	The total length and percentage of the relevant intersections logged.	100% of all DD and RC drilling is logged.
Sub-sampling techniques and sample preparation	If core, whether cut or sawn and whether quarter, half or all core taken.	DD core is both half cored and full cored for sampling purposes, with core cut using an Almonté diamond core saw. The core is quarter cut when metallurgical samples are required. Sample intervals are defined by a qualified geologist to honour geological boundaries. The left half is archived. All mineralised zones are sampled plus associated visibly barren material in contact with mineralised zones. Core is sampled on the width of the geological/mineralised structure with a minimum sample length of 0.3m and a maximum sample length of 1m. Total weight of each sample generally does not exceed 7kg when full core sampled.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	RC drilling uses a cyclone mounted inverted cone splitter.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	DD core is sampled by both fire assay and photon analysis. Fire assay samples are dried at 100°C to constant mass, samples below approximately 4kg are totally pulverised in LM5's to nominally 85% passing a 75µm screen. The few samples generated above 4kg are crushed to <6mm and riffle split first prior to pulverisation. Photon samples are dried at 100°C to constant mass, crushed to 85% passing 2mm, and split with a 500g sub sample for analysis. RC samples are dried at 100°C to constant mass, all samples below approximately 3kg are totally pulverised in LM5's to nominally 85% passing a 75µm screen. Samples generated above 4kg are crushed to <6mm and cone split to nominal mass prior to pulverisation. For RC samples, no formal heterogeneity study has been carried out or monographed. An informal analysis suggests that the sampling protocol currently in use are appropriate to the mineralisation encountered and should provide representative results.
	Quality control procedures adopted for all sub-sampling stages to maximise representativity of samples.	Repeat analysis of pulp samples (all sample types) occurs at an incidence of 1 in 20 samples. Analysis of 2mm coarse crush and split has been completed for three RC bulk cone splitter rejects each of them divided into 32 equal splits.
	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 duplicates, (i.e., other half of cut core) are routinely assayed. NSR routinely collects field duplicates during RC drilling.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Sample sizes are considered appropriate. Recent DD core has been whole core sampled to increase sample size. No formal nomograph study has been conducted on the RC primary sub sample split. Industry standard practice supports splitting of primary sub samples at particle sizes of <6mm and P_{80} 75µm.
	The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.	For RC drill samples, gold concentration was determined by fire assay using the lead collection technique with a 50 gm sample charge weight. MP-AES instrument finish was used to be considered as total gold.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Quality of assay data and laboratory tests		For DD drill samples, gold concentration was determined by both fire assay using the lead collection technique with a 30 gm sample charge weight, and photon analysis. Both AAS instrument and photon analysis finish was used to be considered as total gold. Various multi-element suites are analysed using a four-acid digest with an AT/OES finish. Between 2021 and 2023 Northern Star commenced assay by Photon Analysis across majority of its operations. This method requires a sample to be crushed with 85% passing 2mm then split into a 500g sub-sample for analysis. Quality checks using Certified Reference Material and blank material are completed. No current external checks are completed for Photon Analysis.
	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.	Not applicable to this report.
	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.	The QAQC protocols used include the following for all drill samples: Field QAQC protocols used for all drill samples include commercially prepared certified reference materials (CRM) inserted at an incidence of 1 in 30 samples. The CRM used is not identifiable to the laboratory with QAQC data is assessed on import to the database and reported monthly, quarterly and yearly. NSR RC Resource Definition and Grade Control drilling routinely inserts field blanks and monitor their performance. Laboratory QAQC protocols used for all drill samples include repeat analysis of pulp samples occurs at an incidence of 1 in 20 samples and screen tests (percentage of pulverised sample passing a 75µm mesh) are undertaken on 1 in 50 samples. The laboratories' own standards are loaded into the database and the laboratory reports its own QAQC data monthly. In addition to the above, about 5% of drill samples are sent to a check laboratory. Samples for check -assay are selected automatically from holes based on the following criteria: grade above 0.5g/t or logged as a mineralised zone or is followed by feldspar flush or blank. Failed standards are generally followed up by re-assaying a second 50 gm or 30 gm pulp sample of all samples in the fire above 0.1g/t by the same method at the primary laboratory. Both the accuracy component (CRM's and third-party checks) and the precision component (duplicates and repeats) of the QAQC protocols are thought to demonstrate acceptable levels of accuracy and precision.
Verification of sampling and assaying	The verification of significant intersections by either independent or alternative company personnel.	Significant intersections are verified by the Senior Resource Geologist.
	The use of twinned holes.	Some recent DD twinned around earlier RC.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	Sampling and logging data is digitally entered into a laptop using acQuire software using semi-automated or automated data entry. Digital assay files are loaded directly into the database. Visual checks are part of daily use of the data in Datamine.
	Discuss any adjustment to assay data.	The first gold assay is almost always utilised for any Mineral Resource estimation except where evidence from re-assaying and/or check-assaying dictates. A systematic procedure utilizing several re-assays and/or check assays is in place to determine when the final assay is changed from the first gold assay.
Location of data points	Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.	Collar positions are recorded using conventional survey methods based on Leica TS15 3" total stations and Trimble R10 GNSS instruments. The location of some stations are referenced to state-wide network of Standard Survey Marks (SSM) established and coordinated by the Department of Land Administration (WA Government). Where regional drill hole positions are distant from the SSM network, the worldwide Global Navigational Satellite System (GNSS) network is used. Positional checks are carried out using a combination of existing known positions (usually based on prominent landmarks) and grid referenced information such as ortho-linear rectified photogrammetry based on the Map Gird of Australia MGA94 and a conversion to a Ramone specific local grid. Collar coordinates are recorded in both MGA94 and a Ramone specific local grid. Surface collar RL's have been validated utilising an airborne elevation survey by Arvista in October 2017. Multi shot cameras and gyro units were used for down-hole survey.
	Specification of the grid system used.	Collar coordinates have been recorded in both MGA94 Zone 51 and a Ramone specific local grid. Collars picked up in MGA have been converted to a Ramone local grid. The difference between magnetic north (MN) and true north (TN) is 1º 34' 30". The difference between true north (TN) and AMG84 Zone 51 (AMG GN) is 1º 02' 47". The difference between true north and GDA is zero.
	Quality and adequacy of topographic control.	Topographic control is from Digital Elevation Contours (DEM) 2017, 1m contour data and site surveyed pickups.
Data spacing and distribution	Data spacing for reporting of Exploration Results.	All Ore Reserves are based on a maximum drill hole spacing ranging from 15m x 15m to 40m x 40m and all Mineral Resources are based on a maximum of 60m x 60m. Exploration results in this report range from 15m x 15m drill hole spacing to 80m x 80m.

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Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
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W: www.nsrltd.com

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	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.	Ore Reserves are generally based on 15m x 15m drilling to a maximum of 40m x 40m. Mineral Resources are generally based on 25m x 25m drilling up to a maximum of 60m x 60m. The data spacing and distribution is sufficient to establish geological and/or grade continuity appropriate for the Mineral Resource and classifications to be applied.
	Whether sample compositing has been applied.	Core is sampled to geology; sample compositing is not applied until the estimation stage. RC samples are taken as 1 m samples and 4 m composites during first pass exploration,1m samples are sent for further analysis if any 4m composites return a gold value > 0.1g/t or intervals containing alteration/mineralisation failed to return a significant composite assay result. For RC Resource definition and grade control drilling 1 m samples are routinely collected. No RC samples greater than 1m were used in estimation.
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 orientation of sampling is generally on a high angle to the main mineralisation trends as these are vertical to sub-vertical.
	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.	The drill orientation to mineralised structures biases the number of samples per drill hole. It is not thought to make a material difference in the Mineral Resource estimation.
Sample security	The measures taken to ensure sample security.	All samples are selected and bagged in tied numbered calico bags, grouped in larger tied plastic bags, and placed in large sample cages with a sample submission sheet. The cages are either sent to the site laboratory or are transported via freight truck to Perth, with consignment note and receipted by external and independent laboratory. All sample submissions are documented, and all assays are returned via email and hard copy. Sample pulp splits from the site lab are stored at the Jundee mine site and those from the Newburn Lab in Perth are stored at the Newburn Lab. RC samples processed at SGS have had the bulk residue discarded and pulp packets sent to Jundee mine site for long term storage.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	Historical audits of all Jundee data were carried out by previous operators. During 2018 and 2019, Bruce van Blommestein (Zaremus Pty Ltd) conducted an audit of the site laboratory and audit of the external laboratories. Both audits found the laboratory procedures and performance to be adequate. All recent NSR sample data has been extensively QAQC reviewed both internally and externally.

Section 2 Reporting of Exploration Results
(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	Ramone is located on Mining Lease M53/347 which is registered 100% in the name of Northern Star Resources Limited. The tenement in good standing There are no heritage issues with the current operation. The Mining Lease is subject of two agreements between Ngaanyatjarra Council (now Central Desert Native Title Services (CDNTS)) and Newmont Yandal Operations, these agreements being the Wiluna Land Access Agreement 2004 and the Wiluna Claim Heritage Agreement 2004, both agreements were transferred to Northern Star on purchase of the Jundee Operations in 2014.
	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 impediments to operating on the Mining Lease are known to exist.
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	Not applicable, all the exploration work has been completed by NSR.
Geology	Deposit type, geological setting and style of mineralisation.	Ramone is Archean gold mineralised deposit that is part of the Northern Yandal Greenstone belt. Gold mineralisation is hosted by a granite and controlled by a brittle stockwork fracture-system within a north-easterly trending shear zone. The mineralisation formed by a stockwork of veins with smoky quartz, sulphides, minor carbonate, chlorite and sericite hosted by a monzonitic granite. The mineralisation is intruded by an east-west striking (about 096 degrees) vertical dolerite dyke that cross cuts the mineralisation and is part of a suite of magnetic dolerite dykes that intrudes the Yandal belt in an east-west direction.
Drill hole Information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: o easting and northing of the drill hole collar o elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar o dip and azimuth of the hole o down hole length and interception depth o hole length.	No new significant results reported.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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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.	Not applicable.
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 new significant results reported.
	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 new significant results reported.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	No new significant results reported.
Relationship between mineralisation widths and intercept lengths	These relationships are particularly important in the reporting of Exploration Results.	No new significant results reported.
	If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.	No new significant results 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').	No new significant results reported.
Diagrams	Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	No new significant results reported.
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.	No new significant results reported.
Other substantive exploration data	Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	No other meaningful data to report.
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).	Northern Star Resources is currently planning follow-up drilling programs to test the downdip extensions of mineralisation at depth for the Ramone prospect.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Previous announcements included sufficient detail to clearly illustrate the geometry of the mineralisation.

Section 3 Estimation and Reporting of Mineral Resources
(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Database integrity	Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.	Sampling and logging data are digitally entered into a tablet using acQuire software, validated each day. Assay results are returned from the laboratory as digital files and loaded directly into the database. A series of verification validations are performed prior to importing the data in the database. There are checks in place to avoid duplicate holes, sample numbers and missing intervals. There is a database manager who is responsible for the integrity and use of the data. Only the database manager and the database administrator have access to the database. Where possible, raw data is loaded directly to the database from lab, logging and survey derived files.
	Data validation procedures used.	All the electronic log files are reviewed and validated prior to being imported into the database. Drill hole information is loaded in Datamine and Leapfrog software for verification and validation of collar, lithology, assay and downhole surveys. Database administrators perform a series of verification validations prior to store the information in the database. There is QA/QC geologist that reviews the QA/QC information daily and ensure that the company QA/QC protocols are followed.
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	Competent person based on site.
	If no site visits have been undertaken indicate why this is the case.	NA

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PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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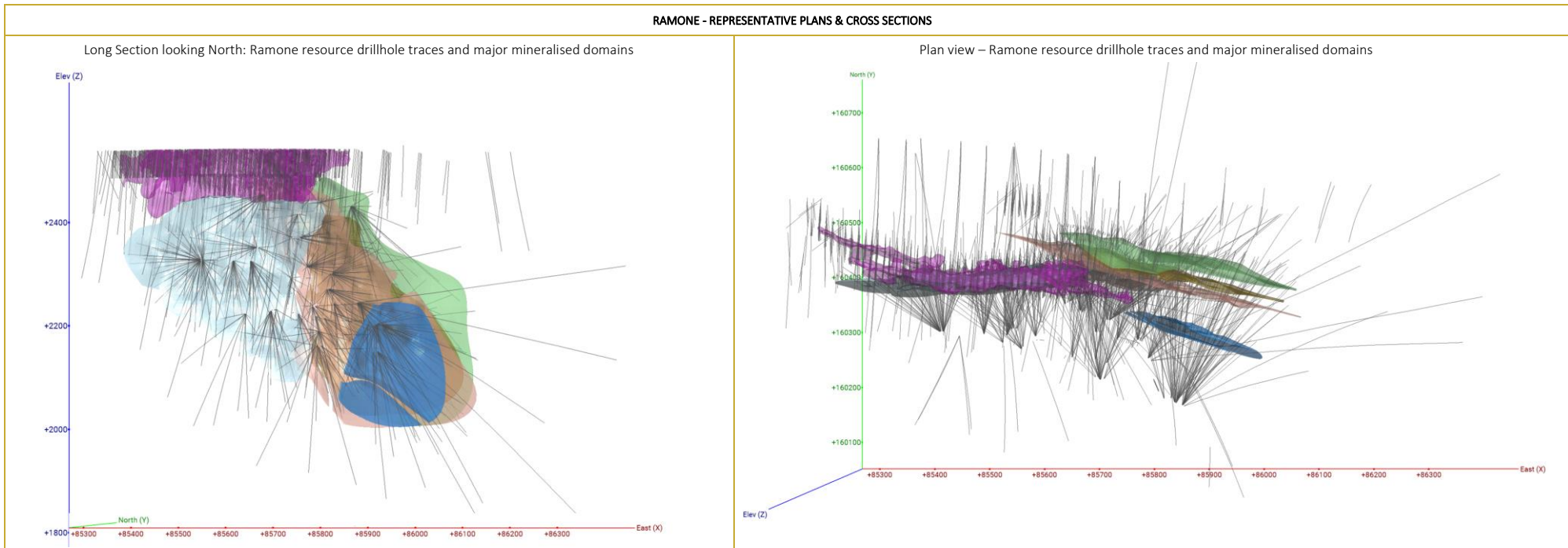| Criteria	JORC Code explanation	Commentary
Geological interpretation	Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.	The interpretation of the deposit was carried out using a systematic approach to ensure continuity of the geology and estimated Mineral Resource using Leapfrog and Datamine software. The confidence in the geological interpretation is relatively high, though a certain degree of uncertainly always remains due to the structurally complex and nuggetty nature of the ore body on a local scale.
	Nature of the data used and of any assumptions made.	All available geological data was used in the interpretation including mapping, drilling and oxidation surfaces.
	The effect, if any, of alternative interpretations on Mineral Resource estimation.	No alternative interpretations have been completed or put forward.
	The use of geology in guiding and controlling Mineral Resource estimation.	Logging, UG mapping, grade distribution and structural controls & relationships define the geological framework on which the mineralised domains are modelled.
	The factors affecting continuity both of grade and geology.	Continuity of the grade varies significantly, though the main mineralised structures show good continuity downdip and across strike. The geology consists of a stockwork of short-range quartz veins with carbonate, chlorite and sulphides hosted by a granite. Lesser splays or small lodes coming off these main trends tend to have a shorter continuity.
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.	Mineralised zones are variable with true width ranging from 0.5m to 20m. They are extensive along strike and down dip, up to 600m and 400m, respectively.
		Depth from surface is 400m approximately. Recent exploration drilling which is currently not estimated shows continuation at depth down to 500m.
Estimation and modelling techniques	The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.	All domain wireframes are constructed in Leapfrog and used as hard boundaries for the estimations using a combination of structural setting, geological, mineralisation and statistical characteristics. Block estimation using a combination of ordinary kriging (OK) and categorical indicator kriging (CIK) has been completed in Datamine for all lodes. CIK is utilised to define subdomains in serval lodes where sufficient data is present and a clear linear sub-domain trend has been identified. Univariate statistical analysis of length weighted (1m) downhole composites are completed for all domains. Extreme grades can be common in the data set, with all domains analysed individually to determine specific top-cut values for each lode an applied to the downhole composites. 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. Block model volumes are compared to wireframe volumes to validate sub-blocking.
	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 and grade control models are in line with the current estimation for this deposit.
	The assumptions made regarding recovery of by-products.	No assumptions are made and only gold is defined for estimation.
	Estimation of deleterious elements or other non-grade variables of economic significance (e.g., sulphur for acid mine drainage characterisation).	No deleterious elements estimated in the model.
	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 5m(Y) by 5m (Z) for lodes estimated using ordinary kriging (OK). In lodes using categorical indicator kriging (CIK), a block size of 1m(X) by 1m(Y) by 1m (Z) is utilised during the estimation process.
		Parent blocks are further sub-celled 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 size 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.
		Block size is approximately a quarter to half of the drill spacing across strike. Average drill spacing ranges from 25m x 25m to 10m x 5m for the open pit resources. Average drill spacing ranges from 15m x 15m to 40m x 40m for the underground resources.
		Ore Reserves are generally based on 40m x 40m to 10m x 5m drill spacing. Mineral Resources are generally based on a 40m x 40m drilling up to a maximum of 60m x 60m drill spacing.
	Any assumptions behind modelling of selective mining units.	A 2.5m minimum mining width for open pit environment is assumed.
	Any assumptions about correlation between variables.	There is no correlation between variables.
	Description of how the geological interpretation was used to control the Resource estimates.	All mineralised wireframes are created in Leapfrog using a combination of structural setting, geological, mineralisation and statistical characteristics. A 0.3 g/t Au was used as a guide to model the mineralised envelopes for open pit resources, with low grades can form part of an ore wireframe in the open pit resource. Estimations for underground are constrained by the mineralised envelopes and used as hard boundaries. Where required, late intrusives and fault structures such as the Proterozoic dolerite dyke and Vinyl fault were used to sterilise the mineralisation.
	Discussion of basis for using or not using grade cutting or capping.	Top cuts were determined by a range of statistical techniques including analysis of histogram, Log-probability and Mean- CV plots: ▪ Contained Metal Plots assess contribution of the highest values on the quantity of metal in an estimate, ▪ Coefficient of Variation plots analyse impact top cuts have on CV.

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PO Box 2008
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T: +61 8 6188 2100
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E: info@nsrltd.com
W: www.nsrltd.com

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		A range of top cuts are then selected for each domain utilising the above strategies and an appropriate top cut chosen with further examination to assess sensitivity of selected cap grades and associated risk. Metal estimated in the Mineral Resource models are finally reconciled with production models of like areas to determine the appropriateness of the high-grade treatment on the assays. No top cutting or capping of high grades is done at the raw sample.
	The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.	The Mineral Resource estimate was validated using processes that are based on a combination of visual, graphical and reconciliation validations summarised as: ▪ Visual validation of the lode and lithology coding of both the composite data and the block model. ▪ Comparison of lode wireframe volumes to block model volumes. ▪ Visual validation of Mineral Resource estimate against composite data in plan, section, and 3D. ▪ Sensitivity to top-cut values uses a variety of top-cuts which are compared to themselves and to the un-cut nearest neighbour estimate at a variety of cut-offs. ▪ Comparison of nearest neighbour, CIK and OK estimates to the final estimate (generally OK & ID2). These comparisons are conducted through visual validation and trend analysis along Northing, Easting and RL slices. ▪ Global, level and lode tonnages and grades, at various elemental cut-offs were compared, and given the changes in support data, were consistent. ▪ Statistical comparison of composites versus all estimates in block model with trend analysis plots for each domain produced by Northing/Easting/RL. ▪ Statistical comparison of composites grades versus lode grades in a lode by lode basis. ▪ Change of Support validation The Mineral Resource estimate shows a reasonably reflection of the composites where there are high numbers of composites used in the estimate. Where the numbers of samples reduce, the accuracy of the estimation suffers, and a more significant deviation is noted between the Mineral Resource estimate and associated composite data. These deviations are considered when assigning a Resource classification.
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. Moisture content within the ore is expected to be low.
Cut-off parameters	The basis of the adopted cut-off grade(s) or quality parameters applied.	Mineral Resources are reported at a 1.18g/t cut-off grade and 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.	Underground resources have been reported through MSO generation using a minimum mining width of 2.5 m coupled with 1.18g/t Au cut-off grade and an AUD$2,500/oz gold price.
Metallurgical factors or assumptions	The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	Ramone ore is currently being trucked and processed in the Jundee Mill. Metallurgical test work was initiated in October 2017 to determine ore characteristics and expected recovery figures from processing material from this ore body. The ore from Ramone orebody does not contain any elements of significant quantity which would adversely affect processing by conventional leach and gravity. Current Ramone ore being treated at the Jundee mill show plant recoveries above 92%.
Environmental factors or assumptions	Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a green fields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	The Project currently possesses all necessary government permits, licences, and statutory approvals to be compliant with all legal and regulatory requirements.
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 have been obtained from a detailed statistical analysis of 309 measurements that have been recorded from surface diamond core samples taken at Ramone and nearby Deep Well that is hosted by the same geological formation. Approximately one sample was taken every 5 meters for previous surface drilling. These values are also in agreement with 72,634 bulk density measurements that been taken in the Jundee district and over 10 years of historical production data from several pits in the regional district. Several bulk density samples are taken on each recent underground DD hole with data in agreement with previous bulk density values.
	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 measurements for core samples are taken using the water displacement technique, where the samples are dried and weighed in air then weighed in water.
	Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	Individual bulk densities are applied in accordance with specific lithologies, mineralisation and weathering states.
Classification	The basis for the classification of the Mineral Resources into varying confidence categories.	The classification of Mineral Resources was based on the geological complexity, drill hole spacing, number of drill samples, sample distribution and estimation performance, The Competent Person is satisfied that the result appropriately reflects his view of the deposit.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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		Indicated open pit Resources are defined by RC drilling which ranges between 10m x 5m and 25m x 25m drill spacing where there is grade and geological continuity. Small lodes or mineralised zones within 25m x 25m drill spacing are classified as Indicated when there is evidence of grade and geological continuity and they intersected by a minimum of 3 drill holes, otherwise inferred. Inferred open pit Resources are defined on a nominal 50m x 50m drilling pattern where there is evidence of grade and geological continuity. Indicated underground Resources are defined by DD drilling which generally in a 40m x 40m or tighter drill spacing where there is grade and geological continuity. Inferred underground Resources are defined by DD drilling that ranges between a 40m x 40m and 60m x 60m drilling pattern where there is evidence of grade and geological continuity. Classification has been extended half the drill hole spacing past the last mineralised intercept in a regular drilling grid for each category. Any mineralised zone not falling within the criteria described in the previous paragraphs have the unclassified resource category.
	Whether appropriate account has been taken of all relevant factors (i.e., relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).	Input and geological data is assumed to be accurate. All the relevant factors have been considered in the classification of the Mineral Resource.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	This Mineral Resource estimate is considered representative with comments noted in the discussion below.
Audits or reviews	The results of any audits or reviews of Mineral Resource estimates.	The Mineral Resource estimate have been internally reviewed by NSR personnel. No external audits and reviews have been completed.
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.	This Mineral Resource estimate is considered as robust and representative of the Ramone mineralisation with local estimates considered variable in nature. The application of geostatistical methods has supported to increase the confidence of the model and quantify the relative accuracy of the Resource on a global 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.	This Mineral Resource report relates to the Ramone deposit and is likely to have local variability within a global assessment further supported and reconciled against actual mine production.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	Current production and grade control data is line with the model expectations and supports the accuracy and confidence in the resource model.

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Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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RAMONE - REPRESENTATIVE PLANS & CROSS SECTIONS

Long Section looking North: Ramone resource drillhole traces and major mineralised domains	Plan view – Ramone resource drillhole traces and major mineralised domains

Section 4 Estimation and Reporting of Ore Reserves

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

Criteria	JORC Code explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.	Reported Ore Reserve is based the 2024 Ramone Resource model.
	Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.	Mineral Resources are reported inclusive of the Ore Reserves
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	Site visits have been undertaken by the Competent Person.
	If no site visits have been undertaken indicate why this is the case.	Site visits were undertaken.
Study status	The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.	Feasibility Study. Ramone is currently an operating mine.
	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.	Current Underground Reserves are based on Budget level analysis – with a completed 3D design. Modifying Factors were additionally applied to these designs, based upon complimentary feasibility documents and historical experience.

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Criteria	JORC Code explanation	Commentary
Cut-off parameters	The basis of the cut-off grade(s) or quality parameters applied.	A cut-off grade is generated, and all potential Reserve material is evaluated, based on the direct costs of all tasks involved and corporate gold price guidance. Historical costs as well as mining contractor tender schedule of rates costs were used.
Mining factors or assumptions	The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e., either by application of appropriate factors by optimisation or by preliminary or detailed design).	Mineral Resource is converted to Ore Reserve after completing a detailed mine design and associated financial assessment.
	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.	A top-down long hole open stope extraction leaving support pillars is currently the main mining method of Ramone.
	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. Reviews of designed stopes has been performed by Northern Star's geotechnical team and external consultants have also provided recommendation for stope design parameters. 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).	For Ramone Underground, a 2.5m minimum mining width has been applied.
	The mining dilution factors used.	For Ramone Underground, a 15% Stope dilution factor was applied.
	The mining recovery factors used.	For Ramone Underground, a recovery of 70% has been applied to stoping blocks to allow for pillars in line with geotechnical parameters. Where pillars have been designed for the stope blocks a mining recovery factor of 95% is applied
	Any minimum mining widths used.	For Ramone Underground, a 2.5m minimum mining width has been applied.
	The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.	Inferred material is included within the mine plan; however, material is only classified as Reserve when the Measured and Indicated material can cover all costs associated with the mining of that material. Designed stopes with greater than 50% Inferred material are excluded from the reported Ore Reserve.
	The infrastructure requirements of the selected mining methods.	Ramone is currently an operating mine with all infrastructure established, including mine development, power, water, compressed air, and ventilation for the underground workings.
Metallurgical factors or assumptions	The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.	Material will be trucked and processed in the existing Jundee Mill which is a standard CIP plant with gravity circuit, operating since 1995.
	Whether the metallurgical process is well-tested technology or novel in nature.	Well tested technology.
	The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.	Recovery factors vary for the various mining areas and are based on lab testing and recent surface mining operational experience. Metallurgical recovery of 90% has been used for Reserve estimation.
	Any assumptions or allowances made for deleterious elements.	No allowances made and considered immaterial to the mineralisation reported.
	The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.	All mineralisation systems have significant bulk drill core test work undertaken prior to mining and current resource/Reserves have a history of operational experience.
	For minerals that are defined by a specification, has the ore Reserve estimation been based on the appropriate mineralogy to meet the specifications?	Not applicable
Environmental	The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.	Ramone is an ongoing operation, currently compliant with all legal and regulatory requirements. All government permits and licenses and statutory approvals are either granted or in the process of being granted.
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.	Surface infrastructure is currently in place. This includes workshop, office, water bores, and communication networks. Ramone utilises existing infrastructure from Jundee such as accommodation village, airstrip, ROM pad, and processing facility. Underground infrastructure required includes mine development, power, water, compressed air and ventilation for the underground workings. All ore will be hauled to the Jundee processing facility
Costs	The derivation of, or assumptions made, regarding projected capital costs in the study.	All capital costs have been estimated based upon projected requirements and experience of costs incurred through similar activities in the past.
	The methodology used to estimate operating costs.	The operating cost estimates are based upon historical costs incurred.
	Allowances made for the content of deleterious elements.	No allowance made - none expected

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Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
	The derivation of assumptions made of metal or commodity price(s), for the principal minerals and co-products.	Revenue was based on a gold price AUD $2,000/oz.
	The source of exchange rates used in the study.	Corporate guidance.
	Derivation of transportation charges.	Mining and Haulage costs are based on historical costs incurred in the previous cost periods.
	The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.	Processing costs have been set using the forecast costs in line with the recent increase in processing throughput at Jundee, coupled with the historical operating costs data.
	The allowances made for royalties payable, both Government and private.	WA State Govt royalty of 2.5%.
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.	Revenue was based on a gold price of AUD $2,000/oz.
	The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.	Corporate guidance.
Market assessment	The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.	It is assumed all gold is sold directly to market at the corporate gold price guidance of AUD $2,000/oz.
	A customer and competitor analysis along with the identification of likely market windows for the product.	Not applicable.
	Price and volume forecasts and the basis for these forecasts.	Corporate Guidance.
	For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.	Not applicable.
Economic	The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.	All costs assumptions are made based on historical performance from the plant and quotes from experienced mining contractor. The economic forecast is representative of the current market condition.
	NPV ranges and sensitivity to variations in the significant assumptions and inputs.	The Ore Reserve Estimation is based on detailed life of mine 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.
Social	The status of agreements with key stakeholders and matters leading to social licence to operate.	Agreements are in place and are current with all key stakeholders including traditional landowner claimants.
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.	None.
	The status of material legal agreements and marketing arrangements.	None.
	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.	Ramone is an ongoing operation, currently compliant with all legal and regulatory requirements. All government permits and licenses and statutory approvals are either granted or in the process of being granted.
Classification	The basis for the classification of the Ore Reserves into varying confidence categories.	Reserve classifications are derived from the underlying Mineral Resource model, with Measured Resource converting to Proved and/or Probable Reserve and Indicated Resource converting to Probable Reserve where applicable and economically justified.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The results appropriately reflect the Competent Person's view of the deposit.
	The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).	Negligible.
Audits or reviews	The results of any audits or reviews of Ore Reserve estimates.	The Ore Reserve has been prepared and peer reviewed internally within Northern Star Resources.
	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	Confidence in the Ore Reserve is high based on current mine and reconciliation performance.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
Discussion of relative accuracy/ confidence	application of statistical or geostatistical procedures to quantify the relative accuracy of the Reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.	
	The 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 Ore Reserves are best reflected as global estimates.
	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.	Reconciliation results from past mining at Ramone has been considered and factored into the Reserve assumptions where appropriate.
	It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	Reconciliation results from past mining at Ramone has been considered and factored into the Reserve assumptions where appropriate.

Thunderbox: North Well – 31 March 2024

Section 1 Sampling Techniques and Data

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

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). Northern Star 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 Northern Star 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 30g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. 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. Northern Star 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 pre-collars). Limited historic diamond core hole was oriented by unknown methods. Northern Star 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.
	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 Northern Star was photographed in both dry and wet state

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Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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	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 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.
	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.
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 Northern Star 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 drill holes (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.

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E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
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.
	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.
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 deposit is drilled towards grid west 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.
	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 listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	The North Well resource is located on M37/358, M37/359 and M37/465. The tenements are held by Northern Star (Thunderbox) Pty Ltd, a wholly owned subsidiary of Northern Star Resources Ltd. The mining leases have a 21 year life: Mining Lease M37/465 is held until 2036 and Mining Leases 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). A single Aboriginal Heritage site exists within M37/340 The tenements lie within the Darlot Native Title Claim area.
	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 1800's 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 sequences, confined to the west by basement (pre-tectonic) granitoid, gneiss, smaller syntectonic granitoid stocks, and batholiths, generally occupy the core of anticlinal

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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		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.
Drill hole Information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: o easting and northing of the drill hole collar o elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar o dip and azimuth of the hole o down hole length and interception depth o hole length.	No new significant results reported;
	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.	No new significant results reported.
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 new significant results reported.
	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 new significant results reported.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	No new significant results 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.	No new significant results 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').	No new significant results reported.
Diagrams	Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	No new significant results reported.
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.	No new significant results reported.
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 new significant results reported.
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 future drilling planned.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Previous announcements included sufficient detail to clearly illustrate the geometry of the mineralisation.

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ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Section 3 Estimation and Reporting of Mineral Resources
(Criteria listed in section 1, and where relevant in section 2, also apply to this section).

Criteria	JORC Code explanation	Commentary
Database integrity	Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.	The database provided to Northern Star 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.	The Competent person together with Northern Star'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.
	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 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 $^{\circ}$) south plunging shoots that form en echelon zones along strike and down dip of the shear zone.
	Nature of the data used and of 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 used 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 effect, 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 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 $^{\circ}$) 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.
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. If a computer assisted estimation method was chosen include a description of computer software and parameters used.	Grade estimation using Ordinary Kriging (OK) was completed for North Well. Datamine 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 Northern Star 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 Northern Star's mineralisation envelopes which were constructed using a nominal 0.5 g/t Au cut-off.

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ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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		Although there are 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. Northern Star 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 an 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 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 Northern Star'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 $2500 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 processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	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.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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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 green fields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	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 Northern Star 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 Northern Star 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 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.
	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.	Northern Star 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, Northern Star 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.	No accurate records at of production data is available at North Well to say to a give a realistic comparison with this resource estimate

Thunderbox: Rainbow – 31 March 2024

Section 1 Sampling Techniques and Data

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

Criteria	JORC Code explanation	Commentary
	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,	Sampling methods undertaken at Rainbow by previous owners have included rotary air blast (RAB), reverse circulation (RC) and diamond drillholes (DD).

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
Sampling techniques	or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.	Northern Star has not carried out any sampling activities at Rainbow since the project was acquired in 2014.
	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 30g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. 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.	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.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	It is unknown if any diamond core was photographed.
	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.
	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.

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Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
Verification of sampling and assaying	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 drill holes (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.
	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.
	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.
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 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.
	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. Northern Star has not had access to this information during the acquisition process.

Section 2 Reporting of Exploration Results
(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	The 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 Northern Star (Thunderbox) Pty Ltd, a wholly owned subsidiary of Northern Star Resources Ltd. The mining leases have a 21 year life: Mining Leases M36/541 and M36/476 are held until 2042 and Mining Leases M36/462 is held until 2043. 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. A single Aboriginal Heritage site exists within M36/541 The tenements lie within the Darlot Native Title Claim area.
	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.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
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.
Drill hole Information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: o easting and northing of the drill hole collar o elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar o dip and azimuth of the hole o down hole length and interception depth o hole length.	No new significant results reported.
	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.	No new significant results reported.
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 new significant results reported.
	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 new significant results reported.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	No new significant results 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.	No new significant results 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').	No new significant results reported.
Diagrams	Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	No new significant results reported.
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.	No new significant results reported.
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 new significant results reported.
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 future drilling planned.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Appropriate diagrams and maps of future extensions and work are available in the appropriate ASX announcements.

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Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Section 3 Estimation and Reporting of Mineral Resources

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

Criteria	JORC Code explanation	Commentary
Database integrity	Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.	The database provided to Northern Star 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 Northern Star 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 of 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.
	The effect, 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 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 on a MGA North grid from 6886000mN to 6888000mN, 302900mE to 303900mE and 100 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. If a computer assisted estimation method was chosen include a description of computer software and parameters used.	Grade estimation using Ordinary Kriging (OK) was completed at Rainbow. Datamine software was used to estimate gold into 10m x10m 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 Northern Star 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 Northern Star'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.

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ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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	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 10 mN by 5 mRL parent block size with sub-celling to 2 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 at Rainbow 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 un-changed 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 8 and a maximum of 32 samples were applied. A maximum of 4 samples per hole were used. In the majority of domains, 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 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 Northern Star's current economic evaluations, 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 metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	It is expected that any future mining of the Rainbow deposit will be processed at the Thunderbox 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. Northern Star has been operating the Mill successfully since 2015. 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 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 green fields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	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.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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		At this point Northern Star 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 Northern Star 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. Northern Star 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 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.
	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.	Northern Star 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, Northern Star 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.

Thunderbox: Otto Bore –31 March 2024

Section 1 Sampling Techniques and Data

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

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 Northern Star Resources at Otto Bore include reverse circulation (RC) and diamond (DD) drillholes. Within this reporting period all drilling samples were RC. 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 Northern Star Resources 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 30g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent	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. Northern Star Resources 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.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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	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 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 for the past year at Otto Bore was limited to grade control RC holes. Limited historic diamond core hole was oriented by unknown methods. Previous year's diamond core drilling completed by Northern Star includes NQ and HQ drilling for the purposes of ore definition and geotechnical analysis and was orientated using a REFLEX 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 pre-collars 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. 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.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	Core has been photographed in both dry and wet state and accessible through the imago software. 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 Northern Star Resources 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 historic 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.
	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.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
Quality of assay data and laboratory tests	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.	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. Between 2021 and 2023 Northern Star commenced assay by Photon Analysis across majority of its operations. This method requires a sample to be crushed with 85% passing 2mm then split into a 500g sub-sample for analysis. Quality checks using Certified Reference Material and blank material are completed. No current external checks are completed for Photon Analysis.
	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.	Other assay methods utilised for gold determination include BETA, atomic absorption spectrometry and unknown methods.
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.
	Discuss any adjustment to assay data.	Data from previous owners was taken from a database compilation and validated as much as practicable before entry into the Northern Star Resources acQuire database
Location of data points	Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.	Exploration drillholes are located using a Leica 1200 GPS with an accuracy of +/- 10mm.
	Specification of the grid system used.	Downhole surveys are carried out using a hired Reflex EZ-gyro by the respective drilling companies on a regular basis, between 10-30m.
	Quality and adequacy of topographic control.	The survey quality and control is unknown for the majority of historic drilling.
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.
	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.
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 deposit is mostly drilled towards grid east at angles varying from –60 and -90 to intersect the mineralised zones at a close to perpendicular relationship for the bulk of the deposit. Holes drilled in an unfavourable orientation were assessed for biased sampling and excluded from subsequent modelling and estimation processes if necessary.
	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 Northern Star Resources 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 listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	The 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 2043, M36/421 is held until 2044, and Mining Lease M36/177 is held until 2032. All are renewable for a further 21 years on a continuing basis. The tenements are 100% held by Northern Star (Thunderbox) Pty Ltd, a wholly owned subsidiary of Northern Star Resources Ltd. M36/177 is subject to a 2% of the Net Smelter Return (NSR) from mine ore over 20,000 ounces of gold payable to Agnew Gold Mining Company Pty Ltd. 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 Vox Royalty Australia Pty Ltd. All production is subject to a Western Australian state government NSR royalty of 2.5%. The tenements are subject to a

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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		pastoral compensation agreement between Northern Star (Thunderbox) Pty Ltd and Weebo Station. The tenements lie within the Darlot Native Title Determination area. 4% of the total reported ounces for Otto Bore fall within forementioned title area.
	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.
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 higher grade mineralisation is typically associated with pervasive quartz veining and form short range southerly plunging shoots.
Drill hole Information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: o easting and northing of the drill hole collar o elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar o dip and azimuth of the hole o down hole length and interception depth o hole length.	Previous announcements included sufficient detail to clearly illustrate the geometry of the mineralisation.
	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 relevant information within appropriate ASX announcements.
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 new significant results reported.
	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 new significant results reported.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	No new significant results reported.
Relationship between mineralisation widths and intercept lengths	These relationships are particularly important in the reporting of Exploration Results.	No new significant results reported.
	If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.	No new significant results 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').	No new significant results reported.
Diagrams	Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	No new significant results reported.
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.	No new significant results reported.

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Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
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E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
Other substantive exploration data	Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	No other meaningful data to report.
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).	Grade control drilling planned.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Appropriate diagrams and maps of future extensions and work are available in the appropriate ASX announcements.

Section 3 Estimation and Reporting of Mineral Resources
(Criteria listed in section 1, and where relevant in section 2, also apply to this section).

Criteria	JORC Code explanation	Commentary
Database integrity	Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.	The historic database provided to Northern Star Resources 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.
	Data validation procedures used.	All data collected and drilled by Northern Star Resources 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.
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	The competent person has undertaken site visits to Otto Bore. 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 Northern Star Resources. 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 or highly deformed network within the sheared package. The geology model is used to guide the estimation and estimation methodology of the resources.
	Nature of the data used and of any assumptions made.	The interpretations are constructed using all available geological logging descriptions including but not limited to, stratigraphy, lithology, texture, veining, veining intensity, 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 effect, if any, of alternative interpretations on Mineral Resource estimation.	The Otto Bore deposit is generally sub-vertical in geometry with short range southerly plunging ore shoots in the main body of the deposit. Infill drilling done over the years supports the current global interpretation which defines the deformation package. 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 Mineral Resource estimation.	Geological controls and relationships are used to define mineralised domains with short range southerly plunging ore shoots. The Otto Bore deposit is hosted within a sequence of sheared Hg-mag basalts and basalts, bounded by an ultramafic and basaltic footwall and a basalt to dolerite hangingwall. To south is a felsic to intermediate intrusive.
	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 short-range 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 more erratic, weaker away from the plunging shoots, and more 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 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. If a computer assisted estimation method was chosen include a description of computer software and parameters used.	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

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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		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 Northern Star Resources. The current resource estimate was updated with all the recent drilling done by Northern Star Resources between 2019 and 2022. 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.
	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 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 were 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 Northern Star Resources' current economic operations at 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 case, this should be reported with an explanation of the basis of the mining assumptions made.	To best capture "reasonable prospects of eventual economic extraction", the mineral resource is reported within an optimised pit shell at $2,500 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.
Metallurgical factors or assumptions	The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and	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. Northern Star has been successfully operating the Thunderbox mill since 2015.The conventional plant displayed excellent performance with gold

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ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
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E: info@nsrltd.com
W: www.nsrltd.com

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	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.	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 recovery 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 green fields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	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 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. Northern Star Resources has validated these historical values by taking its own bulk density samples from the more recent diamond drilling in 2019, 2020 and 2021. 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 Northern Star Resources 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 Northern Star Resources 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, Northern Star Resources manages porous or clay which oxide samples by coating the dried samples in paraffin wax prior to the water displacement technique. Northern Star Resources 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.
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 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 Northern Star Resources, 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 Northern Star Resources 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.	Supported and reconciled against actual mine production.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

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Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Section 4 Estimation and Reporting of Ore Reserves
(Criteria listed in section 1, and where relevant in sections 2 and 3, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.	The Mineral Resource 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 Northern Star 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 March 2024 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.	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 close proximity to Thunderbox operations, which operates open pit, underground mine and 6Mt processing facility. Otto bore is an operating mine. The 2024 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. Northern Star 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 pit cut-off grade has been calculated based on the key input components (processing, recovery, and administration) Forward looking forecast costs and physicals form the basis of the cut-off grade calculations. The AUD gold price as per corporate guidance. Mill recovery factors are based on metallurgical test work.
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.	Mining method to be employed at 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.
	The assumptions made regarding geotechnical parameters (e.g. pit slopes, stope sizes, etc.), grade control and pre-production drilling.	Life of mine Reserve pit has been designed following appropriate geotechnical recommendation. The geotechnical guidelines were prepared by site geotechnical team by reviewing geotechnical drill holes results and conducting further assessment on wall stability performance and long term stability aspects. The Grade control method to be employed at Otto Bore will use RC drilling and sampling method. The method and practice has been utilised successfully at all current and past mining operations at Northern Star.
	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.
	The mining dilution factors used.	Physicals are reported within the generated mining shapes for the open pit Ore Reserve. SMU shapes have been generated for the reporting of Ore Reserve physicals. Dilution is accounted for within the SMU; that is waste material carried within the mining shape.
	The mining recovery factors used.	A mining ore loss factor of 5% is estimated using the MSO method. The resultant estimation reflects the mining performance based in ore body characteristic, 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, thereby incurring mining cost but is not processed and does not generate any revenue. The final pit reserve inventory has excluded any inferred mineral resources.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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	The infrastructure requirements of the selected mining methods.	The selected mining method and location of the deposit is close to operating Thunderbox operations, which consists of open pit, underground and 6Mt 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 Thunderbox 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 deposits around 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 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.
	Any assumptions or allowances made for deleterious elements.	There are no known deleterious elements present in Otto Bore ore.
	The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.	Number of samples of each expected rock type has been sampled through the Thunderbox processing plant for trial test work. These bulk samples/pilot test work is 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?	Not applicable.
Environmental	The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.	All required Environment studies have been completed and relevant vegetation clearance, dewatering permit has been granted. The Mining Proposal has been approved, however it will be revised and resubmitted to accommodate extension of 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 lay on granted mining leases. The gas spur pipeline, the bore field and the airstrip at Thunderbox are all on granted miscellaneous licences. Waste rock characteristic study has been carried out is expected to be representative of overall 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 Otto Bore operation will require minimum infrastructure given close proximity to well established and maintained Thunderbox operation. The ore will be transported to 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 is included in the financial modelling. A haul road is planned to be upgraded 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$2,000/oz has been adopted for the financial modelling.
	The source of exchange rates used in the 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 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 Thunderbox operation.
	The allowances made for royalties payable, both Government and private.	Royalty costs are the WA state government royalty of 2.5% is payable. Applicable third party royalty of 2% of net smelter return after first 20,000 oz.
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$2,000/oz has been adopted for financial modelling.

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Level 4, 500 Hay Street
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PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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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.	Not applicable.
Economic	The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.	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.	Both Otto Bore and Thunderbox mine/processing plant 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 Northern Star is having a good relationship with neighbouring stakeholders, including local pastoralists and the traditional owners. Aboriginal heritage surveys have been conducted and the operation has avoided the impact area within mining lease.
		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:	Not applicable.
	Any identified material naturally occurring risks.	Water inrush is identified as naturally occurring risk within the operation and will be addressed at the commencement of the operation by constructing appropriate water diversion bunds to provide 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 2% of net smelter return after first 20,000 ounces 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.	All required Environment studies have been completed and relevant vegetation clearance, dewatering permit has been granted. The Mining Proposal has been approved, however it will be revised and resubmitted to accommodate extension of the new reserve pit.
Classification	The basis for the classification of the Ore Reserves into varying confidence categories.	The Ore Reserve Estimate classification for Otto Bore has been in accordance with the JORC code 2012. Ore Reserve Estimate is 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 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 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 Northern Star 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 geostatistical procedures to quantify the relative accuracy of the Reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.	The Ore Reserve estimate has been prepared in accordance with the guideline of the 2012 JORC Code. The relative confidence of the estimate complies with the criteria of 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 appropriate and confidence in the resulting reserve estimate is reasonable. All of the parameters assumed and adopted in the financial analysis have been based on current and past Thunderbox operations mining performance. The Otto Bore operation will use the same grade control methods that are widely utilised at other Northern star open pit operations.
	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.	As above

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E: info@nsrltd.com
W: www.nsrltd.com

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	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.	As above
	It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	As above

Thunderbox: Orelia – 31 March 2024

Section 1 Sampling Techniques and Data

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

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 is by both diamond drilling (DD) and Reverse Circulation (RC) drilling completed by NSR. DD samples are HQ and NQ core with sample intervals defined by the geologist to honour geological boundaries ranging from 0.3 to 1.2m in length. Core was orientated where possible. RC samples are collected via rig-mounted static cone splitter with sample falling though inverted cone splitter, splitting the sample in 91% / 9% ratio. 9% split retained for 1m composites. NSR Resource definition and grade control drilling routinely collects 1m composites. Approximately 3-4kg samples, collected via the onboard cone splitter. Drilling completed by the previous owners Echo Resources was in line with the Northern Star sampling techniques and protocols. Historical drilling at Orelia completed between 1988-2013 targeted in the current Resource area appears to have followed the sampling industry standards.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	DD core is aligned and measured by tape, comparing back to down hole core blocks consistent with industry practice. RC metre intervals are delineated with spray paint to determine metres drilled. Sample rejects are left on the sample pad to indicate metres drilled for the hole.
	Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.	Diamond drilling is completed to industry standard using varying sample lengths (0.3 to 1.2m) based on geological intervals, which are then crushed and pulverised to produce a ~200g pulp sub sample to use in the assay process. Diamond core samples are fire assayed (30g charge). Visible gold is occasionally encountered in core. RC sampling to industry standard at the time of drilling where ~3-4kg samples are pulverised to produce a ~400-650g pulp sample to utilise in the assay process. RC samples are analysed using Chrysos Photon (PAAU02) Northern Star diamond core samples of were routinely assayed by multielement ICP-MS/OES and XRF.
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.).	RC drilling is carried out using a face sampling hammer and 5 ¼ inch or 133mm diameter bit. Diamond drilling carried used HQ3 (triple tube) and NQ2 techniques. Core is routinely orientated using the ORI-shot device.
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed.	RC – Approximate recoveries are sometimes recorded as percentage ranges based on a visual and weight estimate of the sample. DD – Recoveries are recorded as a percentage calculated from measured core versus drilled intervals.
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	Diamond drilling practice results in high core recovery due to the competent nature of the ground. RC drilling recovery is supervised on the rig and any recovery issues are recorded and rectified.
	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, diamond drill sample recovery is very high.
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.	DD core and RC chip samples have been logged by qualified geologists to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies Percussion holes logging were carried out on a metre by metre basis and at the time of drilling.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	Logging is Qualitative and Quantitative with relevant features recorded; lithology, mineralogy, mineralisation, structural, weathering, alteration, colour and other features of the samples. Visual estimates are made of sulphide, quartz and alteration as percentages. All core is photographed dry and wet, RC chips are photographed wet.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
	The total length and percentage of the relevant intersections logged.	100% of all DD and RC drilling is logged.
Sub-sampling techniques and sample preparation	If core, whether cut or sawn and whether quarter, half or all core taken.	DD core is halved along orientation lines with an Almonté diamond core saw. The core is quarter cut when metallurgical samples are required. Sample intervals are defined by a qualified geologist to honour geological boundaries. The left half is archived. All mineralised zones are sampled plus associated visibly barren material in contact with mineralised zones. Core is sampled on the width of the geological/mineralized structure with a minimum sample length of 0.3m and a maximum sample length of 1.2m. Total weight of each sample generally does not exceed 5kg.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	RC drilling uses a cyclone mounted inverted cone splitter.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	RC and DD samples are dried at 100°C to constant mass, crushed to <10mm, and pulverised to nominally 85% passing 75µm. For pre-NSR samples, best practice is assumed.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	Repeat analysis of pulp samples (all sample types) occurs at an incidence of 1 in 20 samples.
	Measures taken to ensure that the sampling is representative of the in-situ material collected, including for instance results for field duplicate / second-half sampling.	Field duplicates, (i.e. other half of cut core) are routinely assayed. NSR routinely collects field duplicates during RC drilling.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Sample sizes are considered appropriate. No formal nomograph study has been conducted on the RC primary sub sample split. Industry standard practice supports splitting of primary sub samples at particle sizes of <6mm and P80 75µm.
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.	For RC drill samples, gold concentration was determined by photon assay which detects and counts atoms of gold using a 400-650g sample. This process uses high-energy X-rays causing the excitation of atomic nuclei and allows the analysis of gold in under 2 minutes. For DD drill samples, gold concentration was determined by fire assay using the lead collection technique with a 30-gram sample charge weight. AAS or MP-AES instrument finish was used to be considered as total gold. Various multi-element suites are analysed using a four-acid digest by ICP MS/OES.
	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.	Determination of elements by pXRF was completed at SGS laboratory using the Olympus Vanta instrument following loose / pressed pellet preparation of pulp. SGS' geochemical laboratory group inserts QA/QC materials in all analytical jobs in a programmed way. SGS's routinely completes calibration in the instrument and their laboratories has been accredited to the ISO/IEC 17025 standard.
	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.	The QAQC protocols used include the following for all drill samples: - Field QAQC protocols used for all drill samples include commercially prepared certified reference materials (CRM) inserted at an incidence of 1 in 20 samples. The CRM used is not identifiable to the laboratory with QAQC data is assessed on import to the database and reported by drill campaign. - NSR RC Resource definition and grade control drilling routinely inserts field blanks and monitors their performance. - Laboratory QAQC protocols used for all drill samples include repeat analysis of pulp samples occurs at an incidence of 1 in 20 samples and screen tests (percentage of pulverised sample passing a 75µm mesh) are undertaken on 1 in 40 samples. - The laboratories' own standards are loaded into the database and the laboratory reports its own QAQC data. - Failed standards are generally followed up by re-assaying a second 50g or 30g pulp sample of all samples in the fire above 0.1ppm by the same method at the primary laboratory. For more recent samples analysed using Photon, failed standards were followed up by double-checking sample submissions, and re-assaying the original pot when required (Photon is non-destructive and can sample can be re-assayed). Both the accuracy component (CRM's and third-party checks) and the precision component (duplicates and repeats) of the QAQC protocols are thought to demonstrate acceptable levels of accuracy and precision. Historical reports by previous operators have been reviewed and no major red flags have identified. Coffey Mining completed a review all the historical QAQC data in 2011 with the following summary. "Coffey Mining considers that the available quality control assay data show acceptable levels of precision for the field duplicates with the standards data indicating within tolerance accuracy." Coffey Mining noted that an incomplete standards database exists, notably lacking some of the Arimco data, however Arimco data is broadly consistent with other exploration phases, and assay quality was not flagged as an issue during production.
	The verification of significant intersections by either independent or alternative company personnel.	The significant intersections have been reviewed and verified by alternative Northern Star geologists.
	The use of twinned holes.	There are no purpose drilled twin holes.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
Verification of sampling and assaying	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	Sampling and logging data is digitally entered into a tablet using Logchief software imported into SQL database using semi-automated or automated data entry. Digital assay files are loaded directly into the database. Visual checks are part of daily use of the data in Vulcan and Leapfrog. The historical data had been established and verified by Maxwells Geoservices in 2005, and regenerated by CSA Global as part of their QA/QC work on behalf of Echo Resources.
	Discuss any adjustment to assay data.	The first gold assay is almost always utilised for any Resource estimation except where evidence from re-assaying and/or check-assaying dictates. A systematic procedure utilizing several re-assays and/or check assays is in place to determine when the final assay is changed from the first gold assay.
Location of data points	Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.	Collar positions are recorded using conventional survey methods based on Leica TS15 3" total stations and Trimble R10 GNSS instruments. The location of each station is referenced to state-wide network of Standard Survey Marks (SSM) established and coordinated by the Department of Land Administration (WA Government). Where regional drill hole positions are distant from the SSM network, the world wide Global Navigational Satellite System (GNSS) network is used. Positional checks are carried out using a combination of existing known positions (usually based on prominent landmarks) and grid referenced information such as ortho-linear rectified photogrammetry based on the Map Gird of Australia MGA94. Collar coordinates are recorded in MGA94. Surface collar RL's have been validated utilizing an airborne elevation survey by Arvista in September 2020. Multi shot cameras and gyro units were used for down-hole survey.
	Specification of the grid system used.	Collar coordinates are recorded in MGA94 Zone 51.
	Quality and adequacy of topographic control.	Topographic control is from Digital Elevation Contours (DEM) 2020, 1m contour data and site surveyed pickups.
Data spacing and distribution	Data spacing for reporting of Exploration Results.	All Ore Reserves are based on a maximum drill hole spacing of 25m x 25m and all Mineral Resources are based on a maximum of 50m x 50m. Exploration results in this report range from 25m x 25m drill hole spacing to 50m x 50m.
	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.	Ore Reserves are generally based on 25m x 25m drilling. Mineral Resources are generally based on 25m x 25m drilling up to a maximum of 50m x 50m. The data spacing and distribution is sufficient to establish geological and/or grade continuity appropriate for the Mineral Resource and classifications to be applied.
	Whether sample compositing has been applied.	Core is sampled to geology; sample compositing is not applied until the estimation stage. RC samples are taken as 1 m samples and 4 m composites during first pass exploration,1m samples are sent for further analysis if any 4m composites return a gold value > 0.1ppm or intervals containing alteration/mineralisation failed to return a significant composite assay result. For RC Resource definition and grade control drilling 1 m samples are routinely collected. No RC samples greater than 1m were used in estimation.
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 orientation of sampling is generally perpendicular to the main mineralisation trends as these strike north-west and dip approximately 60 degrees to the west. Drill holes are drilled on perpendicular to the strike of the mineralisation. Some early historical drill holes were drilled in a suboptimal orientation to the mineralisation before the there was clear understating of the mineralisation controls. A small number of modern holes with suboptimal orientation to the mineralised structures are due to the lack to available drilling platforms but ensuring that the drill spacing is maintained.
	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.	The drill orientation to mineralised structures biases the number of samples per drill hole. Potentially biased drillholes shave been identified and this has be factored during the modelling and estimation stages.
Sample security	The measures taken to ensure sample security.	All samples are selected, cut and bagged in tied, numbered calico bags, grouped in larger tied plastic bags, and placed in large sample cages with a sample submission sheet. The cages are either sent to the site laboratory or are transported via freight truck to Perth, with consignment note and receipted by external and independent laboratory. All sample submissions are documented, and all assays are returned via email and hard copy. Sample pulp splits from the site lab are stored at the Jundee mine site for long term storage. Pre NSR operator sample security assumed to be similar and adequate.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	Numerous reviews and audits of the historical sampling techniques and data validation has been undertaken by many independent consulting groups over the years, including CSA, Snowden, RSG, Coffey and Widenbar and Associates, with no major concerns identified. All recent NSR sampling data has been QAQC reviewed internally.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Section 2 Reporting of Exploration Results
(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	The Orelia gold deposit is situated within M36/146 and is 100% registered in the name of Northern Star (MKO) Pty Ltd, wholly owned subsidiary of Northern Star Resources Limited. The tenement is in good standing. The Tenement is subject to a 1.5% NSR royalty payable to Franco-Nevada Australia Pty Ltd and is subject to a Pastoral Compensation agreement. The Tenement lies within the Darlot Native Title Claim area.
	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 impediments to operating on the permit are known to exist.
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	Gold production began at Orelia-Cockburn in 1991 by Arimco Mining Pty Ltd, who had previously operated under the name of Australian Resources Limited, who were subsequently purchased by Great Central Mines. Normandy Mining acquired Great Central Mines in 1998 who acquired the Orelia-Cockburn mine at the same time, although it had closed only a short time previously.
		The Orelia-Cockburn operations were continued under the ownership of Normandy Mining until 2002 when Newmont Mining acquired the whole package. View Resources acquired the operation in 2004 and began developing an open pit and underground mine that took in a number of ore bodies including Orelia-Cockburn, but the low price of gold and the shortage of capital forced the closure of the project in early 2008.
		Navigator (Bronzewing) Pty Ltd, completed the purchase from the administrators in September 2009 and they re-commissioned the processing plant in April 2010, with production continuing until 2013.
		The Bronzewing Gold Project (along with the Mt. McClure project) was acquired by Metaliko Resources in 2014, and no further activities were completed between 2014 and 2017. In February 2017, MKO and Echo completed a merger that included the entirety of the Mt McClure operation. Echo resources completed ~13,700 metres of reverse circulation and diamond drilling to assess the full potential of the Orelia deposit. Echo Resources conducted these drill programs to produce a robust resource estimate in preparation for mining. In February 2019, a mining proposal was submitted.
Geology	Deposit type, geological setting and style of mineralisation.	Orelia is Archean gold mineralized deposit that is part of the Yandal Greenstone belt.
		The stratigraphy dips approximately 60 degrees towards the west and strikes north-south. The oldest and the most western unit is the ultramafic sequence, towards the east, the komatiite unit has a sharp contact with a 2-5m massive sulphide/breccia unit. This contact is the Calista shear. The stratigraphic sequence east of the Calista shear and massive sulphide unit consists of a series of basaltic units. This includes massive and pillowed tholeiitic basalt, basaltic lithic lapilli tuff, and interflow sedimentary rocks. In the middle of this sequence lies the Orelia dolerite that has been classified as an ophitic basalt. Further towards the east the next unit is a felsic zone dominated by sandstones, siltstones and mudstones with intercalations poorly sorted volcaniclastics tuffs of dacitic composition. This felsic unit is intruded by 2 dolerites Cumberland in the east and Lotus in the west. The whole Orelia stratigraphy is intruded by a suite of late intermediate dioritic to lamprophyric dykes ranging from 0.5m to 2-3m in width. The sequence appears to be upright with the older Ultramafic member thrusted over the basaltic and felsic units.
		The main host rocks of mineralisation at Orelia-Cockburn are deformed and altered tholeiitic basalts, and intermediate to felsic volcaniclastic rocks. It appear that the structures in the main mineralised corridors exploit the rheological contacts between the different units geological units.
		There are three main mineralised zones within the Archaean sequence; Orelia, Cumberland, and Calista.
		Calista has two styles of mineralisation one shear hosted within the massive sulphides breccia unit in the contact between the ultramafic unit and the basalt and a stockwork of quartz-carbonate-sulphide veins within the basalt.
		Orelia mineralisation consist mainly in a stockwork of quartz-carbonate-sulphide veins along the contacts of the Orelia dolerite and interflow sediment units that form a cigar/pipe like ore shoots.
		Cumberland has two styles of mineralization: the narrow high-grade often presenting boudinage and inch and swell withe quartz veins with minor sulphides and low grade stockworks of quartz and quartz-carbonate veins related to the main veins.
Drill hole Information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: o easting and northing of the drill hole collar o elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar o dip and azimuth of the hole o down hole length and interception depth o hole length.	No new significant results reported.
	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.	Not Applicable, no new significant results reported.

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Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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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.	Not Applicable, no new significant results reported.
	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.	Not Applicable, no new significant results reported.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	Not Applicable, no new significant results reported.
Relationship between mineralisation widths and intercept lengths	These relationships are particularly important in the reporting of Exploration Results:	Not Applicable, no new significant results reported.
	If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.	Not Applicable, no new significant results 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').	Not Applicable, no new significant results reported.
Diagrams	Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	Not Applicable, no new significant results reported.
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.	Not Applicable, no new significant results reported.
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 BFS was completed by Echo Resources in 2018 there showing positive results for the development of Orelia.
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).	The project is well drilled only a small program of infill drilling is planned to be completed to bring some inferred resources to the indicated category.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Previous announcements included sufficient detail to clearly illustrate the geometry of the mineralisation.

Section 3 Estimation and Reporting of Mineral Resources
(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Database integrity	Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.	Sampling and logging data is digitally entered into a tablet using Logchief software and then transferred to an SQL based database. Assay results are returned from the laboratory as digital files and loaded directly into the database. A series of verification validations are performed prior to importing the data in the database. There are checks in place to avoid duplicate holes, sample numbers and missing intervals. There is database manager on site who is responsible for the integrity and use of the data. Only the database manager and the database administrator have access to the database. Where possible, raw data is loaded directly to the database from lab, logging and survey derived files.
	Data validation procedures used.	All the electronic log files are reviewed and validated prior to being imported into the database. Drill hole information is loaded in Vulcan and Leapfrog software for verification and validation of collar, lithology and downhole surveys. Database administrators perform a series of verification validations prior to store the information in the database. There is QA/QC geologist that reviews the QA/QC information daily and ensure that the company QA/QC protocols are followed.
		Historical data validation has been undertaken by many independent consulting groups over the years, including CSA, Snowden, RSG, Coffey and Widenbar and Associates, with no major concerns identified.
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	The competent person, alongside other geology personnel from Northern Star, has conducted multiple site visits. They have thoroughly examined the deposit and developed a robust understanding of its geological characteristics. All geological procedures performed by Northern Star have adhered to the company's standard protocols.
	If no site visits have been undertaken indicate why this is the case.	Not applicable

Northern Star Resources Limited
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Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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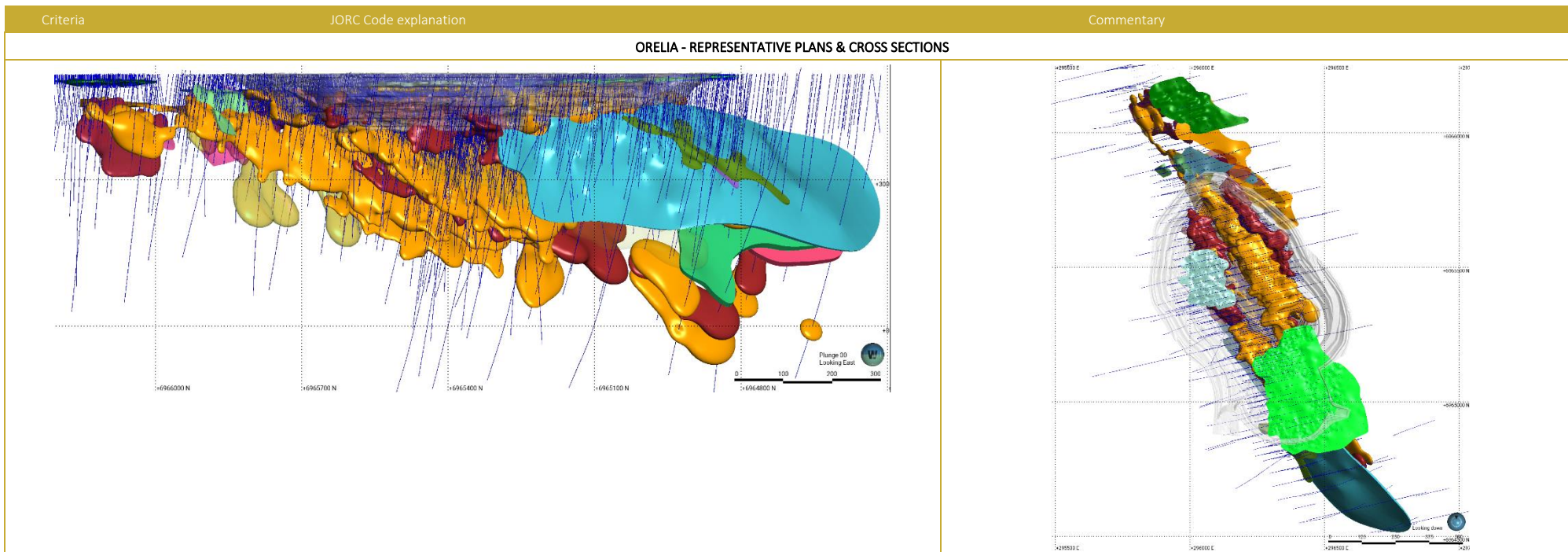| Criteria	JORC Code explanation	Commentary
Geological interpretation	Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.	The interpretation of the deposit was carried out using a systematic approach to ensure continuity of the geology and estimated mineral Resource using Leapfrog and Datamine software. The confidence in the geological interpretation is relatively high, though a certain degree of uncertainly always remains due to the structurally complex and nuggetty nature of the ore body on a local scale.
	Nature of the data used and of any assumptions made.	All available geological data was used in the interpretation including mapping, drilling and oxidation surfaces.
	The effect, if any, of alternative interpretations on Mineral Resource estimation.	NSR has generated a new interpretation superseding the previous interpretation completed by Widenbar and Associates after completing a full geological review and including 169 RC and 6 DD additional drillholes.
	The use of geology in guiding and controlling Mineral Resource estimation.	Geochemistry, mapping and geological logging have been used to assist identification of lithology and mineralisation contacts. Logging and grade distribution were used to create 3D constrained mineralisation wireframes. A 0.25 gpt Au was used as a guide to model the mineralised envelopes for the open pit resources. The Modelling cut-off was determined after the statistical analysis of the sample population. The lithological units were used as guide for the modelling on the mineralisation wireframes.
	The factors affecting continuity both of grade and geology.	Continuity of the grade varies significantly, though the main mineralized structures show good continuity downdip and across 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 Orelia Mineral Resource has an overall north-south strike, the mineralised corridor length is approximately 2,000m. The overall mineralised width of Orelia ranges between 100m and 400m, the majority is approximately 200m wide. Mineralized zones are variable with true width ranging from 0.5m to 20m. They are extensive along strike and down dip, raging 100m up to 1000m along strike in case of the Cumberland mineralisation. The down dip extends range form 50m to 300m. Some of the lode present cigar like shapes. Depth from surface is form 100m up to 500m approximately as the mineralisation plunges 30 degrees towards the south. The mineralised envelope has been extended down dip and long strike for targeting purposes any mineralisation modelled beyond the drilling coverage has not been included in the resource classification or reporting.
Estimation and modelling techniques	The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.	Thirty-eight mineralisation envelopes were completed in Seequent Leapfrog software and imported into Datamine software to guide the estimation. The estimation was completed using Datamine software while the geostatistical analysis was completed using Snowden's Supervisor software. Sample data was composited to 1 metre intervals, small intervals up to 0.3m were merged with the nearest composite. After are review of the composite orientation and distribution a weight factor was applied to composites drilled in a suboptimal orientation as a conservative measure to reduce the effect of potential sampling bias. A review of the summary statistics for the mineral domains indicated skewed data and high coefficients of variation for the majority of the lodes confirming Multiple Indicator Kriging (MIK) is an appropriate modelling technique. Top cuts were applied to the composites. CIK was used to estimate domains within an area drilled out to GC drill spacing of 10 x 5m. Outside this area CIK was implemented for lode 2 domain due to the existence of localised high-grade zones within the broader low-grade zones. MIK parameters: 11 to 13 bins or grade intervals were used for the indicators depending on the grade distributions of each lode. - A two pass search strategy was completed with a maximum of 28 samples and minimum of 8 for the first pass and a maximum of 28 samples and minimum of 6 to 8 for the second pass. A maximum of 3 composites per drill hole was used. - The first pass used a search ellipse with X, Y and Z dimensions of 60 by 50 by 14m and the second pass a search ellipse with X, Y and Z dimensions of 120 by 100 by 28m. Minor adjustments were applied to individual lodes to suit drill density and orientation. - The search ellipse orientation was adjusted for each individual lode based in the lode geometry, visual inspection of the composites informing the blocks, grade trends and variogram ranges. Ordinary kriging was used to estimate lodes with either lower statistical variability or those with low drilling density and wide drill spacing, variograms from the adjacent lodes within the domain were used for the estimation where there weren't enough samples to produce a variogram. All the lodes completed under this procedure fall within the sub inferred resource category. CIK Parameters: 2 Bin CIK was primarily utilised to define internal subdomains with 3 bin CIK applied to lode 2 (low grade, medium grade and high-grade populations). - Indicator thresholds were determined from log probability analysis and indicator estimation parameters optimised for the X1m x Y1m x Z1.25m sub blocks. - Datamine's optimise function was used to optimise sub domain blocks up to the parent cell size (X5m x Y5m x Z5m) where possible. - Low grade, medium grade and high-grade subdomains are back flagged onto the composite and parent cells. Ordinary kriging is performed with individually optimised estimation parameter sets, variograms, top cuts and high-yield restrictions applied.
	The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.	Estimates were compared against previous estimated completed by Echo resources there, the current MRE is within a 20% of the previous estimate and is considered reasonable due to the updated geological model, mineralisation wireframes and additional drilling.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
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E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
		The MRE was compared to previous production data, grade and total metal are within 2-10% of past production data, tonnage around 10 to15 % depending on the cut-off. It needs to be noted that over the last 25 years the project was intermittently mined and modelled at different cut-off grades depending on the gold price at the time so these comparisons are only indicative.
	The assumptions made regarding recovery of by-products.	No by-products were modelled.
	Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).	No deleterious elements were estimated.
	In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.	A parent block size of 10 mE x 10 mN x 5 mRL was chosen for the Orelia MRE, which is about half the drill hole spacing. Within the insitu area drilled to a GC spacing the block size is 5 mE x 5 mN x 5 mRL. The parent blocks were sub-blocked down to 1 mE x 1 mN x 1.25 mRL for accurate volume representation of the lodes. Estimation was completed on parent blocks, with sub blocks assigned the parent block grade. The model was left unrotated.
	Any assumptions behind modelling of selective mining units.	A 4 m minimum mining width for open pit environment is assumed with an expected minimum size SMU of 4 mE x 4 mN x 5 mRL.
	Any assumptions about correlation between variables.	There is no correlation between variables.
	Description of how the geological interpretation was used to control the resource estimates.	Mineralised wireframes are created within the geological shapes based on drill core logs, mapping and grade. A 0.25 gpt Au was used as a guide to model the mineralised envelopes for open pit resources. Geological domains were used to guide the strike a geometry of the mineralised envelopes. Estimations are constrained by the mineralised envelopes.
	Discussion of basis for using or not using grade cutting or capping.	Top cuts were applied to the composite data in the MIK estimate. CIK estimation applied top cuts and high-yield restrictions to internal subdomains (low grade, medium grade and high-grade) based on a range of analysis completed in supervisor software.
	The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.	The Mineral Resource estimate was validated using processes that are based on a combination of visual, graphical and reconciliation validations summarised as: • Visual validation of the lode and lithology coding of both the composite data and the block model. • Comparison of lode wireframe volumes to block model volumes. • Visual validation of Mineral Resource estimate against composite data in plan, section, and 3D. • Global, level and lode tonnages and grades, at various elemental cut-offs were compared, and, given the changes in support data, were consistent. • Statistical comparison of composites versus all estimates in block model with trend analysis plots for each domain produced by Northing / Easting / RL. • Statistical comparison of composites grades versus lode grades in a lode by lode basis. • Change of Support validation The Mineral Resource estimate shows a reasonably reflection of the composites where there are high numbers of composites used in the estimate. Where the numbers of samples reduce, the accuracy of the estimation suffers, and a more significant deviation is noted between the Mineral Resource estimate and associated composite data. These deviations are considered when assigning a Resource classification.
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. Moisture content within the ore is expected to be low.
Cut-off parameters	The basis of the adopted cut-off grade(s) or quality parameters applied.	Mineral Resources are reported at a 0.5gpt cut-off grade. The pit cut-off grade has been calculated based on the key input components of mining, processing, recovery and administration costs. Forward looking forecast costs and physicals form the basis of the cut-off grade calculations. • The AUD gold price as per corporate guidance. • Mill recovery factors are based on historical data and metallurgical test work. • Variable treatment costs to open pit mining for processing is a fundamental premise in the evaluation of open pit projects.
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.	A 4m minimum mining width for Open Pit environment is assumed and incorporated into the modelling and estimation. All the resources have been reported at a 0.5 gpt Au within the optimisation pit shell using $2,500 AUD gold price.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
Metallurgical factors or assumptions	The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	Metallurgical test work has confirmed good gold recoveries, via conventional CIP/CIL gold treatment. Test work to date has shown that the gold mineralisation is amenable to conventional recoveries via gravity and leaching with approximately 30% to 40% of the total gold content recovered via gravity separation. A total gold recovery of 88% to 95% was achieved after cyanidation of gravity tails, which is consistent with previous recoveries from the Orelia deposit through the Bronzewing mill, during previous treatment regimes. Historical plant gold recovery ranges from 88% to 93% The gold extraction was good with +92% of the gold recovered by gravity separation followed by 18-24 hours of cyanide leaching. No recovery factors are applied to the MRE.
Environmental factors or assumptions	Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a green fields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	It is considered that there are no significant environmental factors, which would prevent the eventual extraction of gold from the Orelia deposit. The project currently possesses all necessary government permits, licenses and statutory approvals to be compliant with all legal and regulatory requirements.
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 have been obtained from a detailed statistical analysis of 1,628 bulk density values for the Orelia mine deposit were reviewed using data gathered from 7 diamond drillholes drilled between 2020-2021 geological formation. Approximately 2 samples were taken for bulk density for every 6 meters or core. These values are also in agreement with 167 historical bulk density 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.	Bulk density measurements for core samples are taken using the water displacement technique (Archimedes Method), where the samples are dried and weighed in air then weighed in water.
	Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	Individual bulk densities are applied in accordance with each of the specific lithologies, mineralisation and weathering states.
Classification	The basis for the classification of the Mineral Resources into varying confidence categories.	The Mineral Resource estimate is reported here in compliance with the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves' by the Joint Ore Reserves Committee (JORC) The classification of Mineral Resources was based on the geological complexity, drill hole spacing, number of drill samples, sample distribution and estimation performance, The Competent Person is satisfied that the result appropriately reflects his view of the deposit. Indicated Resources are defined by drill spacing which ranges between 7.5m x 5m and 25m x 25m, where there is grade and geological continuity. Small lodes or mineralised zones within 25m x 25m drill spacing are classified as Indicated when there is evidence of grade and geological continuity and they intersected by a minimum of 4 drill holes, otherwise inferred. Inferred Open Pit Resources are defined on a nominal 50m x 50m drilling pattern where there is evidence of grade and geological continuity.
	Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).	Input and geological data is assumed to be accurate. All the relevant factors have been considered in the classification of the Mineral Resource.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	This Mineral Resource estimate is considered representative with comments noted in the discussion below.
Audits or reviews	The results of any audits or reviews of Mineral Resource estimates.	The Mineral Resource estimate have been internally reviewed by NSR personnel. No external audits and reviews have been completed.
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.	This Mineral Resource estimate is considered as robust and representative of the Orelia mineralisation with local estimates considered variable in nature. The application of geostatistical methods has supported to increase the confidence of the model and quantify the relative accuracy of the Resource on a global 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.	This Resource report relates to the Orelia deposit and is likely to have local variability within a global assessment further supported and reconciled against actual mine production.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	Historical production data is line with the model expectations and supports the accuracy and confidence in the resource model.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
	ORELIA - REPRESENTATIVE PLANS & CROSS SECTIONS	

Section 4 Estimation and Reporting of Ore Reserves
(Criteria listed in section 1, and where relevant in sections 2 and 3, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.	The Mineral Resource estimate for the Orelia Project was used as a basis for the conversion to the Ore Reserve estimate reported and was compiled by Northern Star Resources (NSR). Reported ore reserves are based on updated or depleted resource models for all project areas.
	Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.	Mineral Resources are reported inclusive of ore Reserves.
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	The competent person has conducted multiple site visits. They have thoroughly examined the deposit and developed a robust understanding of its geological characteristics. All geological procedures performed by Northern Star have adhered to the company's standard protocols.
	If no site visits have been undertaken indicate why this is the case.	Not applicable
	The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.	A minimum Pre-Feasibility level study is completed prior to converting an ore zone into ore Reserve.

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Subiaco WA 6904

T: +61 8 6188 2100
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E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
Study status	The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.	Ore Reserves have been calculated by generating detailed mining shapes for the proposed open pits. A series of nested optimised pit shells were generated using Whittle software, an analysis of the shells was completed to select one which was then used to complete a detailed pit design to closely resemble the selected whittle shell. The Whittle optimisation used parameters generated from NSR technical personnel and technical consultants. A detailed mine schedule and cost model has been generated using an excel spreadsheet model. Appropriate ore dilution and recoveries have been applied within the excel spreadsheet model. The processing parameters have been based on metallurgical test work and actual costs of the Thunderbox processing plant. The current study level demonstrates high confidence that the projects can achieve the mine plan and be operated in a technically sound and economically viable manner.
Cut-off parameters	The basis of the cut-off grade(s) or quality parameters applied.	The pit cut-off grade has been calculated based on the key input components (processing, recovery, and administration) Forward looking forecast costs and physicals form the basis of the cut-off grade calculations. The AUD gold price as per corporate guidance. Mill recovery factors are based on metallurgical test work.
Mining factors or assumptions	The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design).	Mineral Resource is converted to Ore Reserve after completing a detailed mine design complete with a detailed financial assessment. A series of nested optimised pit shells were generated using Whittle software, an analysis of the shells was completed to select one which was then used to complete a detailed pit design to closely resemble the selected whittle shell. The Whittle optimisation used costs and inputs derived from current operational data, contractors, and independent consultant recommendations. Ore Reserves have been calculated by generating detailed mining shapes for the proposed pit design. Open pit planned and unplanned dilution (waste material that is located within the minable shape) has been modelled within the mining shapes.
	The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc.	The selected mining method for the Orelia deposit is of a bench mining open pit method. The open pit cutback is being mined using conventional open pit mining methods (drill, blast, load and haul) utilising similar class excavators and trucks used in other NSR open pit mining operations. This provides good operating dataset for production and productivity rate measurement and financial modelling.
	The assumptions made regarding geotechnical parameters (e.g. pit slopes, stope sizes, etc.), grade control and pre-production drilling.	Independent Geotechnical Consultants Dempers & Seymour Pty Ltd completed a geotechnical study for the Orelia project. Recommended wall angles were applied to the Whittle optimisation and subsequent detailed pit designs. The Grade control method to be employed at Orelia is Reverse circulation drilling to obtain samples.
	The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).	
	The mining dilution factors used.	Physicals are reported within the generated mining shapes for the open pit Ore Reserve. SMU shapes have been generated for the reporting of Ore Reserve physicals. Dilution is accounted for within the SMU; that is waste material carried within the mining shape.
	The mining recovery factors used.	A mining recovery factor of 95% has been applied reporting of Open pit Reserve physicals.
	Any minimum mining widths used.	The SMU dimensions for the Reserve Estimate are 5 m Wide x 5m High x 5.0 m Long. A minimum mining width down to 25 m for final pit extraction from the base of pit has been used.
	The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.	Inferred material has not been included within this Reserve estimate (treated as waste) but has been considered in LOM planning. The amount of inferred material has no impact on the sensitivity of the project.
	The infrastructure requirements of the selected mining methods.	Infrastructure required for the proposed Orelia Project has been accounted for and included in all work leading to the generation of the Ore Reserve estimate. Ore from the Orelia Project will be processed through the Thunderbox Processing Plant; hence no processing infrastructure is required. The Orelia Project is connected by public roads and internal private haul road to Thunderbox. Infrastructure established at Orelia includes Offices, workshops and associated facilities, dewatering pipeline, Waste Rock Storage Dump; and ROM Pad.
Metallurgical factors or assumptions	The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.	Material will be trucked and processed 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.
	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 metallurgical recoveries for the Orelia project were set at 94% for oxide, 94% for transitional, 94% for fresh rock, which corresponds with metallurgical test work undertaken.

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Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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	Any assumptions or allowances made for deleterious elements.	There has been no allowance for deleterious elements. Test work indicates there are no deleterious elements.
	The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.	Based on metallurgical test work carried out and milling experience gained through processing similar material through the Thunderbox Processing Plant.
	For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?	Not applicable, gold only.
Environmental	The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.	All required Environment studies have been completed and relevant vegetation clearance, dewatering permit has been granted. The Mining Proposal and Mine Closure Plan for the Orelia project has been approved by DEMIRS. The Orelia operation will utilise the existing Thunderbox processing facility, and TSF storage facilities that are all lay on granted mining leases. The gas spur pipeline, the bore field and the airstrip at Thunderbox are all on granted miscellaneous licences. Waste rock characteristic study has been carried out is expected to be representative of overall 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.	All processing infrastructure is in place at Thunderbox. The Orelia Project is a satellite pit operation and extension of the Thunderbox Gold Mine. The project areas will be connected to Thunderbox by a private haul road constructed for road train haulage. Minor infrastructure required at the project areas has been allowed for in the cost model.
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 is included in the financial modelling. A private haul road connecting Orelia to the Thunderbox operation is currently being constructed.
	The methodology used to estimate operating costs.	A capital and operating cost model has been developed in Excel and has been used to complete a life of mine cash flow estimate. The estimation of Open pit mine operating costs was based on a dry-hire mining, contract drilling, and contractor maintenance operation using first principles to determine equipment productivities and associated operating hours to generate mine schedules. Provided contract pricing were than applied to the schedule to calculate all unit costs.
	Allowances made for the content of deleterious elements.	Nil allowance, none expected based on metallurgical test work.
	The derivation of assumptions made of metal or commodity price(s), for the principal minerals and co-products.	Single commodity pricing for gold only, using a gold price of AUD$2,000 per ounce as per NSR corporate guidance
	The source of exchange rates used in the study.	Corporate guidance.
	Derivation of transportation charges.	Transportation costs for ore haulage from Orelia to Thunderbox have been based on current NSR contractor quotes. Transportation costs also include an allowance haul road maintenance and dust suppression.
	The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.	Processing costs are based on historic and actual Thunderbox plant processing costs. This cost component has been used to determine the cut-off grades as well as applied to the operating cash flow estimate.
	The allowances made for royalties payable, both Government and private.	WA State Government royalty of 2.5%, a Private royalty totalling 2.0% NSR, and a Private royalty of $2/ounce.
Revenue factors	The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc.	All financial analysis and gold price have been expressed in Australian dollars and no direct exchange rates have been applied. Revenue factors within the whittle optimisation process were used. A revenue factor shell was selected and used to complete a detailed pit design. A gold price of AUD$2,000 per ounce has been used in the optimisation of the Orelia Project.
	The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.	Corporate guidance.
Market assessment	The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.	Gold doré from the mine is to be sold at the Perth mint.
	A customer and competitor analysis along with the identification of likely market windows for the product.	Not Applicable.
	Price and volume forecasts and the basis for these forecasts.	Not Applicable.
	For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.	Not Applicable.

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Subiaco WA 6904

T: +61 8 6188 2100
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E: info@nsrltd.com
W: www.nsrltd.com

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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 estimate is based on a financial model that is reflective of current operational costs and contract conditions. All inputs from mining operations, processing, transportation and sustaining capital as well as contingencies have been scheduled and evaluated to generate a full life of mine cost model.
	NPV ranges and sensitivity to variations in the significant assumptions and inputs.	Sensitivities were conducted on metal price fluctuations of AUD$2,000 ± $250 per ounce.
Social	The status of agreements with key stakeholders and matters leading to social licence to operate.	Agreements are in place and are current with all key stakeholders including traditional landowner claimants.
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.	None
	The status of material legal agreements and marketing arrangements.	None
	The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.	No issue – Orelia is an operating mine.
Classification	The basis for the classification of the Ore Reserves into varying confidence categories.	The classification of Open Pit Ore Reserves has been carried out in accordance with the JORC code 2012.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The results appropriately reflect the Competent Persons view of the deposit.
	The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).	No Measured Mineral Resource contributes to Probable Ore Reserves.
Audits or reviews	The results of any audits or reviews of Ore Reserve estimates.	The Reserve has been internally reviewed in line with Northern Star Resources governance standard for Reserves and Resources. There have been no external reviews of this Ore Reserve estimate.
Discussion of relative accuracy/ confidence	Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.	The design, schedule and financial model on which the Orelia Ore Reserve is based has been completed to a "pre-feasibility study" standard, with a corresponding level of confidence.
	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.	All modifying factors have been applied to design mining shapes on a global scale.
	Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.	Not applicable.
	It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	Not applicable.

Thunderbox: Dragon Venus – 31 March 2024

Section 1 Sampling Techniques and Data
(Criteria in this section apply to all succeeding sections.)

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 is by both diamond drilling (DD) and Reverse Circulation (RC) drilling completed by NSR. DD samples are HQ and NQ core with sample intervals defined by the geologist to honour geological boundaries ranging from 0.3 to 1.2m in length. Core was orientated where possible.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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		RC samples are collected via rig-mounted static cone splitter with sample falling though inverted cone splitter, splitting the sample in 91% / 9% ratio. 9% split retained for 1m composites. NSR Resource definition and grade control drilling routinely collects 1m composites. Approximately 3-4kg samples, collected via the onboard cone splitter.
		Drilling completed by previous owners were largely in line with the Northern Star sampling techniques and protocols. 16 RC holes with survey data that was unable to be retrieved or validated were removed from the database for the purposes of interpretation and estimation. An additional 54 historic holes have had their collars adjusted to reflect the most recent drone flight completed by Northern Star in January 2022. This adjustments had a minor impact on the final model. All historic aircore and RAB holes have been removed from the estimation database.
		Northern Star conducted drilling between October and November of 2020; consisting of 68 RC holes for a total of 9,879m.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	RC metre intervals are delineated with spray paint to determine metres drilled. Sample rejects are left on the sample pad to indicate metres drilled for the hole.
		Minimal structure downhole data has been recorded, with one historic diamond hole containing structural data. This information has been compared to the model, but knowledge on the quality of the downhole structural data is sparse so the influence of this structural data is limited.
	Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. 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 or 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.
		NST sample chain of custody was managed by North Star exploration personnel. Samples were stored on site and delivered by McMahon's Burnett freight to McMahon's Burnett depot in Perth, and then to the assay laboratory in Perth.
		Gold (Au) concentration was determined by ICP-AAS (Atomic Adsorption Spectrometry), after conventional Lead Button Fusion and HCl/HNO3 digestion of a nominal 40g charge sample, with at least 170g of litharge based flux at the MinAnalytical Canning Vale facility.
		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 46 RAB holes, 1795 RC holes (assumed standard 5 ¼" face sampling hammer bit).
		In the period since Northern Star Resources has taken ownership 68 RC drillholes complete.
		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 – Approximate recoveries are sometimes recorded as percentage ranges based on a visual and weight estimate of the sample.
		DD – Recoveries are recorded as a percentage calculated from measured core versus drilled intervals.
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	Diamond drilling generally results in high recoveries when best practice is followed within competent ground.
		RC drilling recovery is supervised on the rig and any recovery issues are recorded and rectified.
	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, diamond drill sample recovery is very high.
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 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.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	Logging is Qualitative and Quantitative with relevant features recorded; lithology, mineralogy, mineralisation, structural, weathering, alteration, colour and other features of the samples. Visual estimates are made of sulphide, quartz and alteration as percentages. All core is photographed dry and wet, RC chips are photographed wet.
	The total length and percentage of the relevant intersections logged.	100% of all DD and RC drilling is logged.
Sub-sampling techniques and sample preparation	If core, whether cut or sawn and whether quarter, half or all core taken.	DD core is halved along orientation lines with an Almonté diamond core saw. The core is quarter cut when metallurgical samples are required. Sample intervals are defined by a qualified geologist to honour geological boundaries. The left half is archived.
		All mineralised zones are sampled plus associated visibly barren material in contact with mineralised zones.
		Core is sampled on the width of the geological/mineralized structure with a minimum sample length of 0.3m and a maximum sample length of 1.2m. Total weight of each sample generally does not exceed 5kg.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	RC drilling uses a cyclone mounted inverted cone splitter.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	Northern Star Resources core and chip samples are crushed, dried to 85% passing 2mm then split with a 500g sub sample taken for analysis. For pre-NSR samples, best practice is assumed.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	Repeat analysis of pulp samples (all sample types) occurs at an incidence of 1 in 20 samples.
	Measures taken to ensure that the sampling is representative of the in-situ material collected, including for instance results for field duplicate / second-half sampling.	Field duplicates, (i.e. other half of cut core) are routinely assayed. NSR routinely collects field duplicates during RC drilling.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	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, the sample is crushed to 85% passing 2mm then split with a 500g sub sample taken for analysis.
	The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.	Gold (Au) concentration was determined by ICP-AAS (Atomic Adsorption Spectrometry), after conventional Lead Button Fusion and HCl/HNO3 digestion of a nominal 40g charge sample, with at least 170g of litharge based flux at the MinAnalytical Canning Vale facility.

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Quality of assay data and laboratory tests	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 or geochemical data has been collected by NSR.
	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 grind size of 90% passing 75 microns for fire assay/ digest and 85% passing 2mm then split with a 500g for photon
		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.	The significant intersections have been reviewed and verified by alternative Northern Star geologists.
	The use of twinned holes.	There are no purpose drilled twin holes.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	Sampling and logging data is digitally entered into a tablet using Logchief software imported into SQL database using semi-automated or automated data entry. Digital assay files are loaded directly into the database.
		Visual checks are part of daily use of the data in Vulcan and Leapfrog.
		The historical data had been established and verified by Maxwells Geoservices in 2005, and regenerated by CSA Global as part of their QA/QC work on behalf of Echo Resources.
	Discuss any adjustment to assay data.	The first gold assay is almost always utilised for any Resource estimation except where evidence from re-assaying and/or check-assaying dictates. A systematic procedure utilizing several re-assays and/or check assays is in place to determine when the final assay is changed from the first gold assay.
Location of data points	Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.	Collar positions are recorded using conventional survey methods based on Leica TS15 3" total stations and Trimble R10 GNSS instruments. The location of each station is referenced to state-wide network of Standard Survey Marks (SSM) established and coordinated by the Department of Land Administration (WA Government). Where regional drill hole positions are distant from the SSM network, the world wide Global Navigational Satellite System (GNSS) network is used.
		Positional checks are carried out using a combination of existing known positions (usually based on prominent landmarks) and grid referenced information such as ortho-linear rectified photogrammetry based on the Map Gird of Australia MGA94.
		Collar coordinates are recorded in MGA94.
		Surface collar RL's have been validated utilizing an airborne elevation survey by Arvista in September 2020.
		Multi shot cameras and gyro units were used for down-hole survey.
	Specification of the grid system used.	Collar coordinates are recorded in MGA94 Zone 51.
	Quality and adequacy of topographic control.	Topographic control is from Digital Elevation Contours (DEM) 2020, 1m contour data and site surveyed pickups.
Data spacing and distribution	Data spacing for reporting of Exploration Results.	All Ore Reserves are based on a maximum drill hole spacing of 25m x 25m and all Mineral Resources are based on a maximum of 50m x 50m. Exploration results in this report range from 25m x 25m drill hole spacing to 50m x 50m.
	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.	Ore Reserves are generally based on 25m x 25m drilling. Mineral Resources are generally based on 25m x 25m drilling up to a maximum of 50m x 50m.
		The data spacing and distribution is sufficient to establish geological and/or grade continuity appropriate for the Mineral Resource and classifications to be applied.
	Whether sample compositing has been applied.	Core is sampled to geology; sample compositing is not applied until the estimation stage.
		RC samples are taken as 1 m samples and 4 m composites during first pass exploration,1m samples are sent for further analysis if any 4m composites return a gold value > 0.1ppm or intervals containing alteration/mineralisation failed to return a significant composite assay result.
		For RC Resource definition and grade control drilling 1 m samples are routinely collected. No RC samples greater than 1m were used in estimation.
Orientation of data in relation to	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.

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W: www.nsrltd.com

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geological structure	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 Northern Star Resources geological staff. Samples are selected, bagged into tied numbered calico bags then grouped into secured cages and collected by the laboratory personnel.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	Numerous reviews and audits of the historical sampling techniques and data validation has been undertaken by many independent consulting groups over the years, including CSA, Snowden, RSG, Coffey and Widenbar and Associates, with no major concerns identified. All recent NSR sampling data has been QAQC reviewed internally.

Section 2 Reporting of Exploration Results

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

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	The Dragon-Venus Deposits are located on M36/107, 203, 244 & 615 and are 100% registered in the name of Northern Star (MKO) Pty Ltd, wholly owned subsidiary of Northern Star Resources Limited. The Tenements are s subject to a 2% Royalty payable to Franco-Nevada and a $2.00 per ounce of gold derived payable to the Wongatha Native Title trust. The Tenements are also subject to a Pastoral Compensation Agreement. The Tenements lie within the Darlot Native Title Claim area. A report provided by Terra Rosa Consulting in October of 2020 demonstrated no heritage or cultural impediments for Dragon Venus.
	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 impediments to operating on the Tenements are known to exist.
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	The Dragon Mine is the most southerly deposit in the Mt McClure trend, located 30km south of Bronzewing. It consists of two open pits, the northern Dragon Pit partially back-filled by waste from the later Venus Pit, located immediately to the south. The earliest work on the deposit consisted of shallow workings developed in the late 1940's by Wright, Sanderson and Metzke, who obtained several good crushings at the Darlot state battery through to 1951. The area was explored through the mid-1980's as part of the Mt McClure Project, and the Dragon Pit was mined by Arimco from 1992-94, producing 42.0Koz gold (at 3.6g/t Au), with the Venus Pit mined in 2007 by View Resources, producing 18.3Koz gold (at 2.5g/t Au).
Geology	Deposit type, geological setting and style of mineralisation.	The Dragon-Venus Pits are the most southerly deposits in the Mt McClure trend, located 30km south of Bronzewing. Consisting of two open pits, the northern Dragon Pit and the later Venus Pit, located immediately to the south. The earliest work on the deposit consisted of shallow workings developed in the late 1940's by Wright, Sanderson and Metzke, who obtained several good crushings at the Darlot state battery through to 1951. The area was explored in the mid-1980's as part of the Mt McClure Project, and the Dragon Pit was mined by Arimco from 1992-94, producing 42.0Koz gold (at 3.6g/t Au), with the Venus Pit mined in 2007 by View Resources, producing 18.3Koz gold (at 2.5g/t Au). The deposit is hosted by rocks slightly higher in the stratigraphy than the deposits to the north (Challenger, Parmelia & Success Pits). The footwall is tholeiitic basalt, with breccia & carbonate alteration common in the south, with the northern part typically mylonitised. Overlying this is a coarse-grained ultramafic schist up to 25m thick, (with bands of graphitic schist), displaying talc/chlorite/carbonate/anthophyllite/phlogopite alteration. Gold mineralisation is found within both the ultramafic and graphitic schist units, as well as in the immediate footwall/hangingwall tholeiitic basalts, and is associated with thin quartz veins, sub-parallel to the foliation, containing up to 5% disseminated pyrite and arsenopyrite. The continuity of the host ultramafic/sediment member has been shown by drilling to be very consistent/predictable, and has resulted in a consistently dipping body of mineralisation. The hangingwall is dominantly basalt and dolerite, with thin interflow sediments and minor ultramafic flows.
Drill hole Information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: o easting and northing of the drill hole collar o elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar o dip and azimuth of the hole o down hole length and interception depth o hole length.	DD and RC holes have been used in the mineral resource. It is not practical to summarise all the holes here in this release. Future drill hole data will be periodically released or when a result materially changes the economic value of the project.
	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 relevant information within appropriate ASX announcements.
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.	Weighted average grade applied for intercepts tables. Results already incorporated in MRE and not impacted by results in this table.

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Subiaco WA 6008, Australia

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Subiaco WA 6904

T: +61 8 6188 2100
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E: info@nsrltd.com
W: www.nsrltd.com

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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.	Method not recorded. Generally compositing of high grade results guided by a "waste" cutoff. Also should be guided by geological boundaries. Results already incorporated in MRE.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	Not Applicable
Relationship between mineralisation widths and intercept lengths	These relationships are particularly important in the reporting of Exploration Results:	Results have been reported as downhole lengths, not true widths. Results have already been incorporated into the resource.
	If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.	Not reported. Results already incorporated in MRE, taking geometry into account.
	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').	Not reported. Results already incorporated in MRE, taking geometry and intercept angle into account.
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 new drilling released.
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.	Table shown is of the most significant (higher grade) intercepts. All results are incorporated into the MRE regardless of grade.
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.	None reported
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).	Further drilling is planned to determine potential down dip mineralisation
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Previous announcements included sufficient detail to clearly illustrate the geometry of the mineralisation.

Section 3 Estimation and Reporting of Mineral Resources
(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Database integrity	Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.	Sampling and logging data was digitally entered into a tablet using Logchief software and then transferred to an SQL based database. Assay results are returned from the laboratory as digital files and loaded directly into the database. A series of verification validations are performed prior to importing the data in the database. There are checks in place to avoid duplicate holes, sample numbers and missing intervals. There is database manager on site who is responsible for the integrity and use of the data. Only the database manager and the database administrator have access to the database. Where possible, raw data is loaded directly to the database from lab, logging and survey derived files.
	Data validation procedures used.	All the electronic log files are reviewed and validated prior to being imported into the database. Drill hole information is loaded in Vulcan and Leapfrog software for verification and validation of collar, lithology and downhole surveys. Database administrators perform a series of verification validations prior to store the information in the database. There is QA/QC geologist that reviews the QA/QC information daily and ensure that the company QA/QC protocols are followed.
		Historical data validation has been undertaken by many independent consulting groups over the years, including CSA, Snowden, RSG, Coffey and Widenbar and Associates, with no major concerns identified.
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	The competent person, alongside other geology personnel from Northern Star, has conducted site visits. They have thoroughly examined the deposit and developed a robust understanding of its geological characteristics. All geological procedures performed by Northern Star have adhered to the company's standard protocols.
	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 of the deposit was carried out using a systematic approach to ensure continuity of the geology and estimated mineral Resource using Leapfrog and Datamine software. The confidence in the geological interpretation is relatively high, though a certain degree of uncertainly always remains due to the structurally complex and variable nature of the ore body on a local scale.

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Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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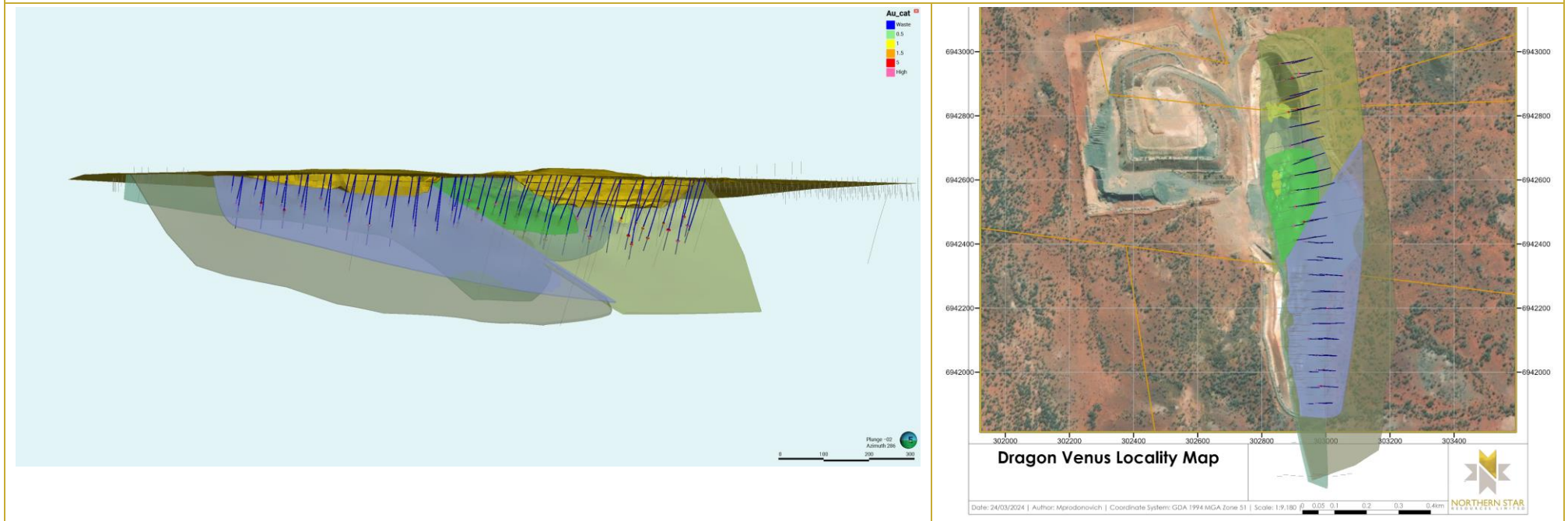| Criteria	JORC Code explanation	Commentary
	Nature of the data used and of any assumptions made.	All available geological data was used in the interpretation including mapping, drilling and oxidation surfaces.
	The effect, if any, of alternative interpretations on Mineral Resource estimation.	NSR has generated a new interpretation superseding the previous interpretation completed by Echo Resources in 2019, including 68 RC and a minor collar RL update for 54 historic holes following a drone scan of the region.
	The use of geology in guiding and controlling Mineral Resource estimation.	Geochemistry, mapping and geological logging have been used to assist identification of lithology and mineralisation contacts. Logging and grade distribution were used to create 3D constrained mineralisation wireframes. A 0.25 gpt Au was used as a guide to model the mineralised envelopes for the open pit resources. The Modelling cut-off was determined after the statistical analysis of the sample population. The lithological units were used as guide for the modelling on the mineralisation wireframes.
	The factors affecting continuity both of grade and geology.	Continuity of the grade varies significantly, though the main mineralized structures show good continuity downdip and across 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 Dragon Venus Mineral Resource has an overall north-south strike, the mineralised corridor length is approximately 1,430m. The overall mineralised width of Dragon Venus ranges between 1m and approximately 40m. Mineralized zones are variable with true width ranging from 0.5m to 10m. They are extensive along strike and down dip. The down dip extents range from 100m to 500m. Depth from surface is from 50m up to 300m. The mineralised envelope has been extended down dip and long strike for targeting purposes any mineralisation modelled beyond the drilling coverage has not been included in the resource classification or reporting.
Estimation and modelling techniques	The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.	Mineralisation envelopes were completed in Seequent Leapfrog software and imported into Datamine software to guide the estimation. The estimation was completed using Datamine software while the geostatistical analysis was completed using Snowden's Supervisor software. Sample data was composited to 1 metre intervals, small intervals up to 0.3m were merged with the nearest composite. A review of the summary statistics for the mineral domains indicated skewed data typical of Yilgarn gold deposits. Ordinary Kriging was chosen to estimate all mineralisation domains. Top cuts were applied to the composites.
	The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.	Estimates were compared against previous estimated completed by Echo resources there, the current MRE is within 20% of the previous estimate and is considered reasonable due to the updated geological model, mineralisation wireframes and additional drilling.
	The assumptions made regarding recovery of by-products.	No by-products were modelled.
	Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).	A shale has been modelled in the HW of the deposit, however does not modelled to interact with the mineralisation envelope.
	In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.	A parent block size of 15 mE x 15 mN x 10 mRL was chosen for the Dragon Venus MRE, which is about half the drill hole spacing. The parent blocks were sub-blocked down to 1 mE x 1 mN x 1 mRL for accurate volume representation of the lodes. Estimation was completed on parent blocks, with sub blocks assigned the parent block grade. The model was left unrotated.
	Any assumptions behind modelling of selective mining units.	No assumptions made on SMU.
	Any assumptions about correlation between variables.	There is no correlation between variables.
	Description of how the geological interpretation was used to control the resource estimates.	Mineralised wireframes are created within the geological shapes based on drill core logs, mapping and grade. A 0.5 gpt Au was used as a guide to model the mineralised envelopes for open pit resources. Geological domains were used to guide the strike a geometry of the mineralised envelopes. Estimations are constrained by the mineralised envelopes.
	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-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.	The Mineral Resource estimate was validated using processes that are based on a combination of visual, graphical and reconciliation validations summarised as: • Visual validation of the lode and lithology coding of both the composite data and the block model. • Comparison of lode wireframe volumes to block model volumes. • Visual validation of Mineral Resource estimate against composite data in plan, section, and 3D. • Global, level and lode tonnages and grades, at various elemental cut-offs were compared, and, given the changes in support data, were consistent. • Statistical comparison of composites versus all estimates in block model with trend analysis plots for each domain produced by Northing / Easting / RL. • Statistical comparison of composites grades versus lode grades in a lode by lode basis. • Change of Support validation

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Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
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T: +61 8 6188 2100
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E: info@nsrltd.com
W: www.nsrltd.com

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		The Mineral Resource estimate shows a reasonably reflection of the composites where there are high numbers of composites used in the estimate. Where the numbers of samples reduce, the accuracy of the estimation suffers, and a more significant deviation is noted between the Mineral Resource estimate and associated composite data. These deviations are considered when assigning a Resource classification.
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. Moisture content within the ore is expected to be low.
Cut-off parameters	The basis of the adopted cut-off grade(s) or quality parameters applied.	Mineral Resources are reported at a 0.5gpt cut-off grade. The pit cut-off grade has been calculated based on the key input components of mining, processing, recovery and administration costs. Forward looking forecast costs and physicals form the basis of the cut-off grade calculations. • The AUD gold price as per corporate guidance. • Mill recovery factors are based on historical data and metallurgical test work. • Variable treatment costs to open pit mining for processing is a fundamental premise in the evaluation of open pit projects.
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.	No mining assumptions have been made outside of using a 39 degree pit wall slope. All the resources have been reported at a 0.5 gpt Au within the optimisation pit shell using $2,500 AUD gold price.
Metallurgical factors or assumptions	The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	Metallurgical test work has confirmed good gold recoveries, via conventional CIP/CIL gold treatment. A small amount of test work conducted by Newmont on material from the Dragon Venus stockpile at the Bronzewing Mill demonstrated that gold mineralisation is amenable to conventional recoveries via gravity and leaching with approximately 35% to 50% of the total gold content recovered via gravity separation. A total gold recovery of 88% to 98% was achieved after cyanidation of gravity tails. The gold extraction was good with +95% of the gold recovered by gravity separation followed by 8-48 hours of cyanide leaching. A mill recovery of 92% and a mining recovery of 95% with 10% dilution has been applied to the MRE.
Environmental factors or assumptions	Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a green fields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	A report completed for NSR by Terra Rosa Consulting in October 2020 declared no registered Aboriginal or Other Heritage Places (OHPs) within the Dragon Venus survey area.
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 have been compiled for the various regolith profiles in a 2004 Newmont report, however densities were adjusted for fill material due to ambiguity in the report. Regionally understood density values have also been assigned by rocktype for the estimate.
	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.	Methodology is unknown. Density values are generally measured using the water displacement technique.
	Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	Individual bulk densities are applied in accordance with each of the specific lithologies, mineralisation and weathering states. Density values sourced from regionally understood values.
Classification	The basis for the classification of the Mineral Resources into varying confidence categories.	The Mineral Resource estimate is reported here in compliance with the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves' by the Joint Ore Reserves Committee (JORC) The classification of Mineral Resources was based on the geological complexity, drill hole spacing, number of drill samples, sample distribution and estimation performance, The Competent Person is satisfied that the result appropriately reflects his view of the deposit.
	Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).	Input and geological data is assumed to be accurate. All the relevant factors have been considered in the classification of the Mineral Resource.

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PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
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W: www.nsrltd.com

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	Whether the result appropriately reflects the Competent Person's view of the deposit.	This Mineral Resource estimate is considered representative with comments noted in the discussion below.
Audits or reviews	The results of any audits or reviews of Mineral Resource estimates.	The Mineral Resource estimate have been internally reviewed by NSR personnel. No external audits and reviews have been completed.
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.	This Mineral Resource estimate is considered as robust and representative of the Dragon Venus mineralisation with local estimates considered variable in nature. The application of geostatistical methods has supported to increase the confidence of the model and quantify the relative accuracy of the Resource on a global 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.	This Resource report relates to the Dragon Venus deposit and is likely to have local variability within a global assessment further supported and reconciled against actual mine production.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	Historical production data is line with the model expectations and supports the accuracy and confidence in the resource model.
DRAGON VENUS - REPRESENTATIVE PLANS & CROSS SECTIONS		

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Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Thunderbox: Bannockburn – 31 March 2024

Section 1 Sampling Techniques and Data

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

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 Northern Star 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 Northern Star sampling and QAQC procedures as per industry standard. RC, RAB, and DD core drilling are 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 30g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g., submarine nodules) may warrant disclosure of detailed information.	RC chips are cone split, 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. Northern Star core and chip samples are crushed to 85% passing 2mm then split with a 500g sub sample taken for analysis by Photon. 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). Northern Star has completed campaign programs consisting of RC, RC-precollar Diamond, Diamond, and regional Air Core drilling. 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
	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.	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.
	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 drillholes completed by Northern Star have been logged in full.
Sub-sampling techniques and	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

Northern Star Resources Limited
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Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
sample preparation		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.	Only nationally accredited laboratories are used for the analysis of the samples collected at Bannockburn Current sample preparation and assay procedures employed by Northern Star Resources are considered as following industry standard practice. All assay determinations are conducted by internationally recognised laboratories. For fire assay samples (pre-2020), the primary samples were analysed through Bureau Veritas. For preparation, samples are oven dried to 90% < 3mm then fine grind to ()% <75 micron. Approximately 250g – 300g of the pulp is retained and a 40 gm catch weight for fire assay is extracted. Samples are tested for sulphides and flux adjusted, flux is added at a ratio of 1:4. Samples are fired, hammered and cupelled. Prills placed in tubes, dissolved on hotplates, and analysed using AA finish with over-range dilutions. For photon samples (2022 onwards), the primary samples are analysed through Intertek. For preparation, samples are oven dried at 105 degrees the sample is crushed to 85% passing 2mm then split with a 500 gm quotient. The 500 gm jar is analysed using PAA finish.
	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 grind size of the sample is crushed to 85% passing 2mm then split with a 500g sub sample taken for analysis. 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 Northern Star 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 drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.	Northern Star 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.

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Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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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.	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 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 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.
	Whether sample compositing has been applied.	RC and AC 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.
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.	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 Northern Star 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 listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	The Bannockburn pit and associated infrastructure is located across M37/339, M37/340, M37/360, and M37/361. The tenements are 100% held by Northern Star (Thunderbox) Pty Ltd, a wholly owned subsidiary of Northern Star Resources 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 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. All production from the Tenements are 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. The tenements lie within the Darlot Native Title Claim area.
	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 was discovered at Bannockburn in the late 1800s with small scaled working occuring on 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.

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ABN: 43 092 832 892

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Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
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.
Drill hole Information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: o easting and northing of the drill hole collar o elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar o dip and azimuth of the hole o down hole length and interception depth o hole length.	DD and RC holes have been used in the mineral resource. It is not practical to summarise all the holes here in this release. Future drill hole data will be periodically released or when a result materially change the economic value of the project.
	If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	Exclusion of the drilling information will not detract from the reader's view of the report. Material data has been previously released to the ASX: 15/11/2022, 03/05/2022, 30/04/2019, 18/02/2019, 27/11/2018
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 weighted by an estimated true width of intersect 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.	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
	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').	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 Northern Star 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.	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. Waste rock characterisation is underway. Geotechnical drilling and groundwater drilling studies are anticipated to occur during the next financial year.
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).	Northern Star is currently reviewing its recent exploration programs and identifying further opportunity to extend the Bannockburn deposit distal to the known mineral resource. Resource infilling has also been planned based on the recent success of the project.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Appropriate diagrams and maps of future extensions and work are available in the appropriate ASX announcements.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Section 3 Estimation and Reporting of Mineral Resources
(Criteria listed in section 1, and where relevant in section 2, also apply to this section).

Criteria	JORC Code explanation	Commentary
Database integrity	Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.	Bannockburn- The historic database provided to Northern Star 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 Northern Star 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 Northern Star 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 Northern Star 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 Northern Star'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.
	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 Northern Star, but also as it has been mined previously by open pit and underground methods.
	Nature of the data used and of 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 effect, 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 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. Recent drilling has significantly extended mineralisation domains to the north, including a thick high-grade zone associated with the intersection between the steeply dipping Irvine structure and low dipping shales. To this end, Bannockburn has been categorised into two ore bodies; Bannockburn North and Bannockburn South, with an apparent natural break in mineralisation forming a boundary between the ore bodies for separation of domains.
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 6853100mN, 292500mE to 294500mE and 150 meters below surface.

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W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
		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.
Estimation and modelling techniques	The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.	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. Estimation of parent blocks are interpolated and assigned to sub-cells. The maximum distance of extrapolation is less than 150m. 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. Additionally, graphitic shale horizons have been identified within Bannockburn North and will require further definition prior to mining.
	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) while block sizes for the resource domain model are split into two sizes,, X (5m) by Y (10m) by Z (5m) in a southern zone and X (5m) by Y (20m) by Z (10m) in a northern zone. These are deemed based on KNA and drill spacing for the two zones.. 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.
	Discussion of basis for using or not using grade cutting or capping.	Statistical analysis of all domains highlights 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 Northern Star's current economic operations at Thunderbox Operations, and the natural grade distinction above background, a grade of 0.5g/t has been chosen. When appropriate continuity of geological host of mineralisation was used to justify modelling at cut-off grades as low as 0.3g/t.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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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.	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 $2,500 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 processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	It is expected that any future mining of the Bannockburn deposit will be processed at the Thunderbox 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. Test work by Ammtec completed historically suggests Bannockburn 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 green fields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	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. Bulk density values have been re-evaluated based on 841 measurements collected since 2014. Assigned densities have been adjusted as suggested by the latest data, this has resulted in a small overall reduction to total tonnages and ounces.
	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.	Recent diamond drill campaigns have allowed collection of density measurements spread across the length of the Bannockburn deposit and include both ore and waste intervals. Drilling during 2023 focused on Bannockburn North, subsequently majority of the density measurements collected (300 total) are associated with Bannockburn North.
	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 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.	Northern Star 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.
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.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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

Criteria	JORC Code explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.	The Mineral Resource estimate for the Bannockburn gold deposit is a robust global estimate that was used as a basis for conversion to the Ore Reserve estimate. Resource estimate was compiled by Northern Star 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 contain water were flagged in the estimate to allow for conservative evaluations during the optimisation. Reported ore reserves are based on depleted resource models for all project areas.
	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.	Competent Person has conducted several site visits to the Bannockburn 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.	Site visits undertaken.
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 as both open pit and underground method in the past. More recently Northern Star has conducted revised Pre-Feasibility level study with a view to bring Bannockburn open pit into operation. The 2024 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.	Ore Reserves have been calculated by generating detailed mining shapes for the proposed open pits. A series of nested optimised pit shells were generated using Whittle software, an analysis of the shells was completed to select one which was then used to complete a detailed pit design to closely resemble the selected whittle shell. The Whittle optimisation used parameters generated from NSR technical personnel and technical consultants. A detailed mine schedule and cost model has been generated using an excel spreadsheet model. Appropriate ore dilution and recoveries have been applied within the excel spreadsheet model. The processing parameters have been based on metallurgical test work and actual costs of the Thunderbox processing plant. The current study level demonstrates high confidence that the projects can achieve the mine plan and be operated in a technically sound and economically viable manner.
Cut-off parameters	The basis of the cut-off grade(s) or quality parameters applied.	The pit cut-off grade has been calculated based on the key input components (processing, recovery, and administration). Forward looking forecast costs and physicals form the basis of the cut-off grade calculations. The AUD gold price as per corporate guidance. Mill recovery factors are based on metallurgical test work.
Mining factors or assumptions	The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design).	Mineral Resource is converted to Ore Reserve after completing a detailed mine design complete with a detailed financial assessment. A series of nested optimised pit shells were generated using Whittle software, an analysis of the shells was completed to select one which was then used to complete a detailed pit design to closely resemble the selected whittle shell. The Whittle optimisation used costs and inputs derived from current operational data, contractors, and independent consultant recommendations. Ore Reserves have been calculated by generating detailed mining shapes for the proposed pit design. Open pit planned and unplanned dilution (waste material that is located within the minable shape) has been considered in the financial evaluation.
	The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc.	Mining method to be employed at 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. That way it provides good operating dataset for production and productivity rate measurement and financial modelling. Bannockburn reserve pit is designed as large pit and will be mined in multiple phases to manage 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 applied to maintain effective operation delay and production rate between stages.

Northern Star Resources Limited
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Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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	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 independent external consultants following site visits, inspection of drill core, and a review of the geotechnical data gathered during earlier operations. The geotechnical consultant was engaged to assist geotechnical aspect of technical studies. It is expected that once the pit is in operation there may be some need for additional geotechnical input and reflect any changes into life of mine pit design. The Grade control method to be employed at Bannockburn will use RC drilling and sampling method. The method and practice has been utilised successfully at all current and past mining operations at Northern Star.
	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.
	The mining dilution factors used.	A mining dilution factor of 10% is applied in the Ore Reserve estimation and reflect the mining performance based in ore body characteristic, mining method and equipment utilised.
	The mining recovery factors used.	A mining ore loss factor of 5% is applied in the Ore Reserve estimation and reflect the mining performance based in ore body characteristic, 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 do not generate any revenue. Therefore, final pit reserve inventory has excluded any inferred mineral resources.
	The infrastructure requirements of the selected mining methods.	Infrastructure required for the Project has been accounted for and included in all work leading to the generation of the Ore Reserve estimate. Ore from Bannockburn will be processed through the Thunderbox Processing Plant; hence no processing infrastructure is required. Current roads connecting the Bannockburn Project to Thunderbox will require upgrading for road train haulage. Planned infrastructure to be established at Bannockburn will include Offices, workshops and associated facilities, dewatering pipeline, Waste Rock Storage Dump, and ROM Pad.
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 since being in operation with average gold recovery typically between 93% to 95% for deposits around 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 Bannockburn deposit is estimated at 94%. The recovery estimation is based on metallurgical test work and ongoing long term actual average recovery data collected at Thunderbox Plant. Metallurgical test work has been carried out on samples from the Bannockburn deposit; 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 orebody as a whole.	Number of samples of each expected rock type has been sampled through the Thunderbox processing plant for trial test work. These bulk samples/pilot test work is 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?	Not applicable.
Environmental	The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.	The pit is currently on 'care and maintenance'. All required Environment studies and Statutory Government Approvals including works approvals and clearing permit are ongoing. A Mining Proposal and Mine Closure Plan is currently being assessed by DEMIRS. 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. The gas spur pipeline, the bore field and the airstrip at Thunderbox are all on granted miscellaneous licences. Waste rock characteristic study has been carried out and it is expected to be representative of Bannockburn 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 Bannockburn operation is a satellite open pit project and extension the Thunderbox operations. The Thunderbox Operation comprises of a 6Mtpa CIL ore processing facility, airstrip, associated tailings storage facilities, power station, water supply, workshops, administration offices and accommodation camp. The project area is connected to Thunderbox by an existing road. However, this will require upgrading for road train haulage.

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		Minor infrastructure required at the project area has been allowed for in the cost model.
Costs	The derivation of, or assumptions made, regarding projected capital costs in the study.	Capital costs relating to the establishment, mobilisation and pre-stripping of the pit is 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.	A capital and operating cost model has been developed in Excel and has been used to complete a life of mine cash flow estimate.
The estimation of Open pit mine operating costs was based on a dry-hire mining, contract drilling, and contractor maintenance operation using first principles to determine equipment productivities and associated operating hours to generate mine schedules. Provided contract pricing were than applied to the schedule to calculate all unit costs.
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$2,000/oz has been adopted for the financial modelling.
No allowance is made for silver by-products.
	The source of exchange rates used in the 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.	Royalty costs are the WA state government royalty of 2.5% and a Third Party Royalty component per 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.	All financial analysis and gold price have been expressed in Australian dollars and no direct exchange rates have been applied.
Revenue factors within the whittle optimisation process were used. A revenue factor shell was selected and used to complete a detailed pit design.
A gold price of AUD$2,000 per ounce has been used in the optimisation of the Bannockburn Project
	The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.	Corporate guidance.
Market assessment	The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.	There is a transparent quoted market for the sale of gold.
	A customer and competitor analysis along with the identification of likely market windows for the product.	There is a transparent quoted market for the sale of gold.
	Price and volume forecasts and the basis for these forecasts.	Corporate guidance.
	For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.	Not applicable.
Economic	The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.	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.	Both Bannockburn and Thunderbox mine/processing plant 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 Northern Star is having a good relationship with neighbouring stakeholders, including local pastoralists and the traditional owners. Aboriginal heritage surveys have been conducted and maintain no negative impact within mining lease.
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 within the operation and will be managed by the construction of appropriate water diversion bunds to provide 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 component per 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	All required Environment studies and Statutory Government Approvals including works approvals and clearing permit are ongoing. A Mining Proposal and Mine Closure Plan is currently being assessed by DEMIRS.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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	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 Reserves into varying confidence categories.	The Ore Reserve Estimate classification for Bannockburn has been in accordance with the JORC code 2012. Ore Reserve Estimate is 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 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 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 Northern Star 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 geostatistical procedures to quantify the relative accuracy of the Reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.	The Ore Reserve estimate has been prepared in accordance with the guideline of the 2012 JORC Code. The relative confidence of the estimate complies with the criteria of 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 appropriate and confidence in the resulting reserve estimate is reasonable. All of the parameters assumed and adopted in the financial analysis have been based on current and past Thunderbox operations mining performance. The Bannockburn operation will use the same grade control methods that are widely utilised at other Northern Star open pit operations.
	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.	All modifying factors have been applied to design mining shapes on a global scale.
	Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.	Not applicable.
	It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	Not applicable.

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Section 1 Sampling Techniques and Data

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

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 Northern Star Resources 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, 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 Northern Star Resources 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 30g charge for fire assay').	RC chips are cone split and sampled into 4m or 1m intervals with total sample weights under 3kg

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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	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 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 3kg to ensure total sample inclusion at the pulverisation stage. Northern Star Resources 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 3kg 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 of the diamond drilling carried out for geotechnical work was oriented (the method is unknown), it is unknown if other core was oriented. Further 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. Further 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 pre-collars 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
	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, site standards 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.	Logging of RC chips and diamond drill core records lithology, mineralogy, texture, mineralisation type, 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.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	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 Northern Star Resources 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, 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.

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PO Box 2008
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T: +61 8 6188 2100
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W: www.nsrltd.com

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		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 in 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, UG face chip samples and diamond core, gold concentration was determined by photon assay which detects and counts atoms of gold using a 400-650g sample. This process uses high-energy X-rays causing the excitation of atomic nuclei and allows the analysis of gold in under 2 minutes .
	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.	Photon assay which detects and counts atoms of gold using a 400-650g sample was used to determine the gold concentration for all grade control samples. This process uses high-energy X-rays causing the excitation of atomic nuclei and allows the analysis of gold in under 2 minutes .
	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.	Methods for exploration RC, RAB and DD drilling included fire assay with AAS finish, BAAS and unknown m ethods. The QAQC protocols used include the following for all drill samples: - Field QAQC protocols used for all drill samples include commercially prepared certified reference materials (CRM) inserted at an incidence of 1 in 20 samples. The CRM used is not identifiable to the laboratory with QAQC data is assessed on import to the database and reported by drill campaign. - NSR RC Resource definition and grade control drilling routinely inserts field blanks and monitors their performance. - Laboratory QAQC protocols used for all drill samples include repeat analysis of pulp samples occurs at an incidence of 1 in 20 samples and screen tests (percentage of pulverised sample passing a 75µm mesh) are undertaken on 1 in 40 samples. - The laboratories' own standards are loaded into the database and the laboratory reports its own QAQC data. - Failed standards are generally followed up by re-assaying a second 50g or 30g pulp sample of all samples in the fire above 0.1ppm by the same method at the primary laboratory. For more recent samples analysed using Photon, failed standards were followed up by double-checking sample submissions, and re-assaying the original pot when required (Photon is non-destructive and can sample can be re-assayed). Both the accuracy component (CRM's and third-party checks) and the precision component (duplicates and repeats) of the QAQC protocols are thought to demonstrate acceptable levels of accuracy and precision.
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 Northern Star Resources 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 drill holes (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 20m x 20m to 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.	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.
	Whether sample compositing has been applied.	RC pre-collar sampling was composted into 4m samples.

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W: www.nsrltd.com

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		Historic RAB drilling was sampled with 4m composite samples. Historic grade control RC drilling was carried out on 2m composite samples, while blast hole sampling was carried out on 2.5m composites. Any RC grade control conducted by Northern Star Resources was sampled at 1m intervals
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 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 Northern Star Resources geological staff. Samples are selected and placed 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 listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	The Thunderbox Project consists of 2 Exploration Licences, 83 Mining Leases and 7 Prospecting Licences, the Project also includes 26 Miscellaneous Licences covering the bore fields and roads and a Pipeline Licence. The Thunderbox resource is located on M36/504 which has a 21-year life (held until 2042), renewable for a further 21 years on a continuing basis.
		The tenements are all held by Northern Star (Thunderbox) Pty Ltd, Northern Star (SR Mining) Pty Ltd and Northern Star (Talisman) Pty Ltd which are all wholly owned subsidiaries of Northern Star Resources Ltd. All production from the Project is subject to the Western Australian state government NSR royalty of 2.5%. The tenements lie within the Darlot Native Title Claim area.
	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 more uniform and ubiquitous than in other areas.
Drill hole Information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: o easting and northing of the drill hole collar o elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar o dip and azimuth of the hole o down hole length and interception depth o hole length.	No new significant results reported.

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	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.	No new significant results reported.
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 new significant results reported.
	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 new significant results reported.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	No new significant results reported.
Relationship between mineralisation widths and intercept lengths	These relationships are particularly important in the reporting of Exploration Results.	No new significant results reported.
	If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.	No new significant results 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').	No new significant results reported.
Diagrams	Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	No new significant results reported.
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.	No new significant results reported.
Other substantive exploration data	Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	No other meaningful data to report.
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).	Grade Control drilling planned.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Previous announcements included sufficient detail to clearly illustrate the geometry of the mineralisation.

Section 3 Estimation and Reporting of Mineral Resources
(Criteria listed in section 1, and where relevant in section 2, also apply to this section).

Criteria	JORC Code explanation	Commentary
Database integrity	Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.	The historic database provided to Northern Star Resources 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 Northern Star Resources 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.

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W: www.nsrltd.com

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		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 Northern Star Resources 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 Northern Star Resources concerning the Thunderbox Resource are done using Northern Star Resources' 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 Northern Star Resources 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. Northern Star Resources 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 of 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.
	The effect, if any, of alternative interpretations on Mineral Resource estimation.	Interpreted cross cutting faults are observed and are used to guide disruptions in the position of the key mineralised domains.
	The use of geology in guiding and controlling Mineral Resource estimation.	Open pit mapping was historically included in the interpretation.
	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 strikes 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. If a computer assisted estimation method was chosen include a description of computer software and parameters used.	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 x 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. 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 life of the project, the resource has reconciled in line with estimation.
	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., sulphur for acid mine drainage characterisation).	No assumptions are made with respect to deleterious elements.

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	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) x 20m(Y) x 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) x 5m(Y) x 2.5m (Z) is utilised during the estimation process.
		Parent blocks are sub-celled to 1m(X) x 2m(Y) x 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 size 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.
	The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.	The Mineral Resource Estimate was validated using processes that are based on a combination of visual, graphical and reconciliation validations summarised as: • Visual validation of the lode and lithology coding of both the composite data and the block model. • Comparison of lode wireframe volumes to block model volumes. • Visual validation of Mineral Resource Estimate against composite data in plan, section, and 3D. • Kriging efficiency and slope of regression interrogated for each material domain. • Sensitivity to top-cut values uses a variety of top-cuts which are compared to themselves and to the un-cut nearest neighbour estimate at a variety of cut-offs. • Comparison with the previous Mineral Resource Estimate. • Statistical comparison of composites versus all estimates in block model: trend analysis plots for each domain are produced by Northing / Easting / RL. The Mineral Resource Estimate generally shows a reasonable reflection of the composites where there are high numbers of composites used in the estimate. When the number of samples is reduced the accuracy of the estimation suffers and a more significant deviation is noted between the Mineral Resource Estimate and associated composite data. • Change of Support validation
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 Northern Star Resources' current economic operations at Thunderbox, and the natural grade distinction above background, a grade of 0.5g/t has been chosen for Open Pits and underground operations. A recommendation has been made to review the cut-off grade for underground through contact analysis.
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.
Metallurgical factors or assumptions	The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	The deposit has successfully been mined by open pit in the past between 2002 and 2007. Saracen/Northern Star Resources has successfully mined the C-Zone and D-Zone pit using Open pit methods, since 2015 and the C-Zone and A-Zone using underground methods.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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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 green fields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	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.
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 samples 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 metre 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 adopted by the previous owners included the coating of dried samples in paraffin wax where the samples had some degree of weathering and/or were porous or clay rich. These coated samples were then tested using the water displacement technique as previously mentioned. Northern Star Resources 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 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.	Northern Star Resources has adopted a process for geological modelling, estimation and reporting of mineral resources that meets high industry standards. At the completion of resource estimation Northern Star Resources 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. The last external review by Coupland Consulting Services was completed in 2022 on the Thunderbox UG and OP resource estimates, 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.	Since Northern Star Resources restarted mining and processing ore at Thunderbox the Mine Call Factor (MCF) has been in line within 5% for the operation.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Section 4 Estimation and Reporting of Ore Reserves
(Criteria listed in section 1, and where relevant in sections 2 and 3, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.	The 2024 Mineral Resource estimate forms the basis of the current Ore Reserve estimate. The Resource estimate was compiled by Northern Star using exploration, resource definition, and grade control drilling and assay data, geological mapping and historical mining records. This information, in combination with various kriging methods, was used to develop a resource model that informed both the Resource estimate and Ore Reserve Estimate.
	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 The Competent Person conducts 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 Northern Star competent person has visited site a number of times in the past year and works directly with the mining team onsite to determine the appropriateness of key assumption and determinants of the mine plan that supports the Ore Reserve estimate.
	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 the region. A full-scale feasibility study was conducted prior to commencement of the operation by Northern Star and subsequently it came into full operation in 2015. The 2024 Ore Reserve has updated important operational inputs such as production parameters, operating costs of mining, processing, general administration, and environment management related costs. Underground Reserve The 2024 Ore Reserve has considered all aspects of operational inputs including actual production parameters, operating costs of mining, processing, general administration and environment management related costs. The current contractor schedule of rates was used to estimate the mining 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.	Open Pit Reserve Modifying factors have been considered in the optimisation study and Reserve design work to ensure compliance with the JORC 2012 code. Operational costs and production parameters have been used based on actual and ongoing mining and processing performance. Northern Star 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.	Open Pit Reserve The Ore Reserve estimated at cut-off grade of 0.50g/t, estimated using assumed gold price of AUD$2,000/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 For the underground Ore Reserve Estimate a variable cut-off grade of 1.28 g/t was applied based upon an assumed gold price of AUD$2,000/oz, and applicable mining, processing, and administration costs. A spatial economic assessment of stoping and development was also completed to ensure that the planned mining of the reserve met NSR's economic criteria.
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 TBO UG 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 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. As such the current operations provide a 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.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Criteria	JORC Code explanation	Commentary
		Underground Reserve Underground mechanised mining for development, ground support, and open stoping is utilised at Thunderbox. 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** Life of mine Reserve pit has been designed using appropriate geotechnical guidance. 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 uses RC drilling and sampling method. The method and practice has been utilised successfully at all current and past mining operations at Northern Star. **Underground Reserve** Assumptions are based upon actual mining conditions. A review of the designed stopes was completed by Northern Star's geotechnical team to ensure compliance with current guidelines. Several external consultants have also reviewed the mine plan and found key aspects and assumptions were acceptable. Sub-level open stoping (SLOS) with paste fill, and LHOS have been selected as the preferred mining methods. Geotechnical assessments based on rock mass characterisation, empirical methods and numerical modelling analysis have been completed. These studies to have considered mining methods and sequencing, stope spans and dilution expectations, pillar stability in both up hole stoping and crown pillars. The results of these studies have been used to development ground support and reinforcement requirements, and stand-off distances for underground infrastructure. 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).	**Open Pit Reserve** 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. **Underground Reserve** The relevant resource model has been used as the basis of the Ore Reserve estimate. Mining recoveries, dilution, COGs, minimum mining widths and other key determinants of the reserve have considered when interrogating the resource model.
	The mining dilution factors used.	**Open Pit Reserve** To determine dilution the MSO method was implement. The model was then created using the mineable MSO shapes with the element of minimum mining width and mineralisation width to determine planned and unplanned dilution. The final estimated mining dilution is approximately 15%. **Underground Reserve** An allowance for mining dilution has been incorporated into the mine designs. The dilution factors used have been based on geotechnical parameters in different areas of the deposits, these range from 10-30%.
	The mining recovery factors used.	**Open Pit Reserve** A mining ore loss factor of 4% is estimated using the MSO method. The resultant estimation reflects the mining performance based in ore body characteristic, mining method and equipment utilised. **Underground Reserve** The mining recovery used ranges from 85-90% and is based on stope width. These factors applied are based on historic stope performance. 50% mining recovery is related with crown pillar extraction due to this style of mining has yet to be executed at Thunderbox underground however has been completed at other projects in the goldfields in Western Australia
	Any minimum mining widths used.	**Open Pit Reserve** 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. **Underground Reserve** Minimum mining widths of 3 m, this is based on the current stope performance to date, and mining method considerations.

Northern Star Resources Limited
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Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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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.	**Open Pit Reserve** Inferred material is excluded from the ore reserves and has been treated as waste material. As such inferred material 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. **Underground Reserve** A small proportion of material classed as inferred in the resource model is captured in reserve shapes. This material does not contribute to the economics of the Ore Reserve estimate and thus the estimate itself is not sensitive to its inclusion.
	The infrastructure requirements of the selected mining methods.	**Open Pit Reserve** Thunderbox Gold Mine is in operation and operates both open pit, underground mines along with 7Mt process plant. All adequate infrastructure is in place and available to support current and future mine plan. **Underground Reserve** The selected mining method requires the development of an access decline, ventilation raises, and associated electrical, paste fill plant and dewatering infrastructure. All of the required infrastructure is currently operational.
Metallurgical factors or assumptions	The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.	The Ore Reserve is 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 tested technology. Since being in operation with average gold recovery typically between 93% to 95% for deposits around 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.	**Open Pit Reserve** An average gold recovery for Thunderbox deposit is estimated at 94%. The recovery estimation is based on actual average recovery data collected from ongoing test work at Thunderbox plant. **Underground Reserve** An average plant processing recovery of 93.5% 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 orebody as a whole.	All Thunderbox ore mined by Northern Star 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	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 currently an operating mine with all required Environmental studies completed. Mining Proposal and management plan for both open pit and underground operation have been granted. All other statutory government approvals including clearing permit and groundwater licences are in place. 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 7Mtpa 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.	**Open Pit Reserve** All major capital works relate to mine site infrastructure and development of the cutback have been completed. **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.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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	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, actuals and the current scheduled contract. 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$2,000/oz has been adopted for the financial modelling. No allowance is made for silver by-products.
	The source of exchange rates used in the 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$2,000/oz has been adopted for financial modelling. No allowance is made for silver by-products.
Market assessment	The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.	There is a transparent quoted market for the sale of gold.
	A customer and competitor analysis along with the identification of likely market windows for the product.	There is a transparent quoted market for the sale of gold.
	Price and volume forecasts and the basis for these forecasts.	There is a transparent quoted market for the sale of gold.
	For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.	N/A
Economic	The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.	**Open Pit Reserve** The Ore Reserve Estimation is based on detailed life of mine pit design and reflects positive economic outcomes. All relevant capital and operating costs as well as revenue and royalty factors have been included with appropriate discount factor for cash flow analysis. **Underground Reserve** The Ore Reserve Estimate is based on detailed underground design using AUD$ 2,000/oz gold price.
	NPV ranges and sensitivity to variations in the significant assumptions and inputs.	**Open Pit Reserve** A full financial model is developed with sensitivities applied to all key inputs and assumptions (+/- 15%). **Underground Reserve** Sensitivities have been used with gold price ranges of AUD$ 1,750/oz to AUD$ 2,250/oz
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 Northern Star has 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:	

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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	Any identified material naturally occurring risks.	Water inrush is identified as naturally occurring risk within the operation and has been addressed by the construction of appropriate water diversion bunds to provide 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 W.A. 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 Reserves into varying confidence categories.	The Ore Reserve estimate classification for Thunderbox has been 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).	Open Pit 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. Underground Reserve 100% of Proved ore from Ore Reserve Estimate has been derived from Measured ore of the Mineral Resource. 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 Northern Star 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 geostatistical procedures to quantify the relative accuracy of the Reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.	The Ore Reserve estimate has been prepared in accordance with the guideline of the 2012 JORC Code. The relative confidence of the estimate complies with the criteria of Ore Reserves. Based upon; - Resource estimate - significant operating history, - application of current industry practices, - appropriate operating and capital costs, Open Pit Reserve The range of the modifying factors and mining parameters applied are appropriate and confidence in the resulting reserve estimate is reasonable. All of the parameters assumed and adopted in the financial analysis have been based on current and past Thunderbox operations mining performance. The Ore Reserve estimation have been the subject to peer review internally, and the Competent Person is confident that it is an accurate estimation of the reserve. Thunderbox operation uses the same grade control methods that are widely utilised at other Northern star open pit operations. Underground Reserve The range of the modifying factors and mining parameters applied are appropriate and confidence in the resulting reserve estimate is considered reasonable. All of the parameters assumed and adopted in the estimate have been based on current and past Thunderbox operations mining performance and also mining performance within the Northern star group.
	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.	Although detailed designs and assessment have been used to identify those parts of the resource model that informs the reserve estimate, given the nature of estimating gold resources the Ore Reserve estimate should be considered largely global in nature.
	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.	As noted above
	It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	All relevant assumption upon which the ore reserve estimate depends fall within the confidence intervals of current operating mines in the region of similar type and scale.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Thunderbox: Wonder – 31 March 2024

Section 1 Sampling Techniques and Data

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

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.	Northern Star Resources 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 Northern Star Resources 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 30g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. 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 or 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. Between 2021 and 2023 Northern Star commenced assay by Photon Analysis across majority of its operations. This method requires a sample to be crushed with 85% passing 2mm then split into a 500g sub-sample for analysis. Quality checks using Certified Reference Material and blank material are completed. No current external checks are completed for Photon Analysis. 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. In the period since the previous resource estimate release Northern Star Resources completed 42 diamond holes and 8 RC drillholes at Wonder North. The RC rig was equipped with an external auxiliary booster utilizing a 5.5-inch diameter RC hammer. 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 appropriate Mineral Resource estimation, mining studies and metallurgical studies.	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.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	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 Northern Star Resources 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.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	The sampling method for historic drill core is half or quarter core sampled, with some remaining unknown
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	All RC samples are cone split. Occasional wet samples are encountered.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	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
	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.	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.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	The sampling techniques for historic RAB, RC and DD drilling are unknown, best practice is assumed.
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.
	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.	Methods for historic RC, RAB and DD drilling included fire assay, aqua regia and unknown methods.
	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.
		Between 2021 and 2023 Northern Star commenced assay by Photon Analysis across majority of its operations. This method requires a sample to be crushed with 85% passing 2mm then split into a 500g sub-sample for analysis. Quality checks using Certified Reference Material and blank material are completed. No current external checks are completed for Photon Analysis.
		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 crush size of 85% passing 2m is achieved.
		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 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.
	Discuss any adjustment to assay data.	Data from previous owners was taken from a database compilation and validated as much as practicable before entry into the Northern Star Resources acQuire database
Location of data points	Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.	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.
	Specification of the grid system used.	Some historic drillholes were surveyed via Eastman or gyroscopically surveyed and many survey methods remain unknown.
	Quality and adequacy of topographic control.	MGA Zone 51 grid coordinate system is used
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 1500m strike length, therefore the 40m x 40m exploration drill spacing effectively defines the continuity.
	Whether sample compositing has been applied.	RC pre-collars 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.
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.	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.

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Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
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E: info@nsrltd.com
W: www.nsrltd.com

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Sample security	The measures taken to ensure sample security.	Samples are prepared on site under supervision of Northern Star Resources geological staff. Samples are selected, bagged into tied numbered calico bags then grouped into secured cages and collected by the laboratory personnel.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	Sample submissions are documented via laboratory tracking systems and assays are returned via email

Section 2 Reporting of Exploration Results
(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	The Wonder resources are located on M37/513 held by Northern Star (SR Mining) Pty Ltd which is a wholly owned subsidiary of Northern Star Resources Ltd. Mining Lease 37/513 has a 21-year life held until 2042 and is renewable for a further 21 years on a continuing basis. M37/513 is subject to a 1.5% of the Royalty Base payable to International Royalty Corporation. The tenement lies within the Darlot Native Title Claim area. 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%.
	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 impediments to operating on the Mining Lease are known to exist.
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. Northern Star Resources 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 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 ~1,500m. 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.
Drill hole Information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: o easting and northing of the drill hole collar o elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar o dip and azimuth of the hole o down hole length and interception depth o hole length.	DD and RC holes have been used in the mineral resource. It is not practical to summarise all the holes here in this release. Future drill hole data will be periodically released or when a result materially change the economic value of the project.
	If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	Exclusion of the 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 weighted by an estimated true width of intersect with a minimum Au grade of 1ppm for RC and DD 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.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	There are no metal equivalents reported in this release.
	These relationships are particularly important in the reporting of Exploration Results.	This announcement includes sufficient detail to clearly illustrate the geometry of the mineralisation and the recent drilling.

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Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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Relationship between mineralisation widths and intercept lengths	If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.	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.
	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 estimated true width intersection 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 Northern Star Resources 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. In the event of extremely high assay results a smaller inclusion sub-set interval shall be provided.
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 recent drone magnetic survey was conducted over the exploration area highlighting prospective anomaly's for future exploration. Metallurgical, bulk density and waste rock characterisation studies were completed. Groundwater and geotechnical studies are underway.
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).	Northern Star Resources is currently planning follow-up drilling programs to test the extension of intersected mineralisation at depth for the Golden Wonder prospect which sits to the SE of the Wonder North project area.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Appropriate diagrams and maps of future extensions and work are available in the appropriate ASX announcements.

Section 3 Estimation and Reporting of Mineral Resources
(Criteria listed in section 1, and where relevant in section 2, also apply to this section).

Criteria	JORC Code explanation	Commentary
Database integrity	Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.	The historic data was provided to Northern Star Resources 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 Northern Star Resources 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 rigor 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 Northern Star Resources 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
	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.	Previous owners, Bligh Resources, initially influenced the interpretation of Wonder. Northern Star Resources has since 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 Northern Star Resources 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

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

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Subiaco WA 6904

T: +61 8 6188 2100
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		main Wonder Shear. In addition, since acquisition, Northern Star Resources continued to drill diamond holes, RCDD holes, (all diamond is oriented), and RC holes into Wonder North allowing greater clarity on the local geology, which broadly matched the previous interpretation. All interpretations and estimations have been completed in an MGA grid. In 2023, the mine grid was established using MGA94 easting and northings with a RL lifted by 2000m. This coordinate change will be adapted in the upcoming FY24-25 resource update.
	Nature of the data used and of 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 Leapfrog domain modelling.
	The effect, if any, of alternative interpretations on Mineral Resource estimation.	Due to a well-understood geological and structural setting, there are no alternative interpretations on the Mineral Resource estimation. The holes drilled by Northern Star Resources have confirmed the global geological understanding, with local changes reflecting the improved knowledge with increased drill density and oriented diamond core.
	The use of geology in guiding and controlling 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 controlled by the cross-cutting lamprophyres and andesites. The main lodes make up approximately 91% of the resource estimate.
	The factors affecting continuity both of grade and geology.	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 Leapfrog, defines these domains which only make up 1% of the total resource.
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, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.	All geological and mineralisation domains were created using Leapfrog Geo software, version 2023.2.1. Grade estimation for gold was completed using Datamine Studio RM software, version 2.0.66.0. Geostatistical analysis and variography were completed using Snowden's Supervisor software, version 8.15.1.1. Domains were extrapolated beyond data to varying degrees. In areas of sufficient data the half-distance method would be applied. Otherwise domains were extended sufficiently far enough to allow for extensional targeting and assessment for potential. 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 is used in the formation of the subdomains. Where geologically plausible, internal high-grade subdomains are preferably domained with hard boundaries. The method of estimating subdomains using CIK is more reliable where geological continuity is tenuous. The variography and search parameters honour the southerly plunge of the mineralisation. 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 FY20 Northern Star Resources estimate, (similar footprint), which came in 10% under in tonnes and 20% under in ounces. Additional 'Northern Star Resources" drill results, a change in top cuts, sub-domaining, 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., sulphur 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.

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		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 size 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 sub-domaining 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 Northern Star Resources' 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 1.0g/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. Underground activities commenced at Wonder North in 2023. The primary method to be employed will be access to lateral ore drives by a decline, with the bulk of ore extraction through longhole stoping. Underground trucks will be used to transport mined material.
		To best capture "reasonable prospects of eventual economic extraction", the mineral resource is reported within an optimised pit shell at $2500 at a 0.5g/t cut off for the open pit resources, and for the underground resource, within MSO underground shells generated at a 1.0g/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 processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	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.
Environmental factors or assumptions	Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a green fields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	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.

Northern Star Resources Limited
ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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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.	Dry bulk density values extrapolated from the CSA resource global report were validated and confirmed against the dry bulk density samples collected by Northern Star Resources during the diamond drill programs. The average of these values were applied to geology and regolith profile.
	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. Given the reconciliation of the historic values with those, collected by Northern Star Resources it is assumed that the historic bulk density values are accurate. Historic mining reports indicated that there were no issues with reconciling tonnes. Northern Star Resources routinely dries samples and weathered porous or clay rich samples are coated in paraffin wax prior to the collection of dry bulk density measurements using the water displacement method.
	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 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 Northern Star Resources. Recent drilling activity conducted by Northern Star Resources 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.	Northern Star Resources has adopted a process for geological modelling, estimation and reporting of mineral resources that meets high industry standards. Entech conducted an external audit of the Wonder Resource in 2023, and it found no fatal flaws with the QAQC, geostatistics, estimation and estimate methodology and categorisation.
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.	Inline with historical production figures.

Section 4 Estimation and Reporting of Ore Reserves
(Criteria listed in section 1, and where relevant in sections 2 and 3, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.	The 2024 Mineral Resource estimate forms the basis of the current Ore Reserve estimate. The Resource estimate was compiled by Northern Star using exploration, resource definition, and grade control drilling and assay data, geological mapping and historical mining records. This information, in combination with various kriging methods, was used to develop a resource model that informed both the Resource estimate and Ore Reserve Estimate. The block model was depleted with end of September 2021 survey pickup for Reserve Estimation. Minimum underground activities have occurred at Wonder since this depletion (as of 31/03/24).
	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.	Competent Person has conducted several site visits. The purpose of these visits was to collect information for optimisation work, validate appropriateness of some input parameters and visual inspection. Further discussions around current mining performance, wall conditions and overall stability and groundwater conditions have been conducted.
	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 Wonder deposit is located close proximity to Thunderbox operations which operates both open pit and underground mines.

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Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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		Open Pit Northern Star has completed relevant pre-feasibility level study with a view to bring Wonder open pit into operation and has positively passed through all economic and social risk management criteria. The 2024 Ore Reserve has validated operational inputs such as production parameters, modifying factors, operating costs of mining, processing, general administration and environment management related costs. **Underground** The 2024 Ore Reserve is based on a pre-feasibility level study completed by Northern Star. 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 considered in the optimisation study and Reserve design work to ensure compliance with the JORC 2012 code. Operational costs and production parameters have been used based on actual and ongoing mining and processing performance. Northern Star 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.	**Open Pit** The Ore Reserve is estimated at cut-off grade of 0.60g/t, estimated using assumed gold price of AUD$2,000/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** For the Ore Reserve Estimate a variable cut-off grade of 1.58g/t was used based upon an assumed gold price of AUD$2,000/Oz and applicable mining, processing and administration costs. A spatial economic assessment of stoping and development was also completed to ensure the planned mining of the reserve met NSR's economic criteria.
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** 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 Wonder Reserve. **Underground** The Wonder underground ore reserve has been estimated using detailed mine development and stope designs. Modifying factors for Ore loss due to mining recovery and unplanned dilution 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** The selected mining method for the Wonder deposits is a bench mining open pit method. The open pit cutback is being mined using conventional open pit mining methods (drill, blast, load and haul) utilising similar class excavators and trucks used in other NSR open pit mining operations. This provides good operating dataset for production and productivity rate measurement and financial modelling. Wonder Reserve pit Pit will be mined in multiple phases to manage 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 applied to maintain effective operation delay and production rate between stages. **Underground** Underground mechanised mining for development, ground support, and production stoping is planned to be used at Wonder. Mining and geotechnical studies determined the preferred mining method is Long hole open stoping with remnant in-situ pillars to be appropriate for the deposit. In those areas where stope widths are greater than 15m, sub-level stoping with cemented aggregated fill is used. Both methods have been used at other operations in Western Australia with a similar geometry to Wonder.
	The assumptions made regarding geotechnical parameters (e.g., pit slopes, stope sizes, etc.), grade control and pre-production drilling.	**Open Pit** Life of mine Reserve pit has been designed following appropriate geotechnical recommendation. The geotechnical guidelines were prepared by site geotechnical team by reviewing geotechnical drill holes 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 reflect any changes to into life of mine pit design. The geotechnical team will oversee all geotechnical aspect of technical study and provide ongoing site support. The Grade control method to be employed at Wonder is Reverse circulation drilling to obtain samples. **Underground** The Northern Star Geotechnical team have reviewed the deposit. Recommendations regarding mine design and production mining methods have been incorporated within the mine design. In-situ pillars have been incorporated into the mine design (accounted for with recovery factors) to control hangingwall stability and prevent unplanned dilution. A grade control program with associated grade control drilling designs, and sampling costs have been included in the mine design, mine schedule and economic analysis.

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Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
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E: info@nsrltd.com
W: www.nsrltd.com

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	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. The relevant resource model has been used as the basis of the Ore Reserve estimate. Mining recoveries, dilution, COGs, minimum mining widths and other key determinants of the reserve have considered when interrogating the resource model.
	The mining dilution factors used.	Open Pit To determine dilution the MSO method was implemented. The model was then created using the mineable MSO shapes with the element of minimum mining width and mineralisation width to determine planned and unplanned dilution. The final estimated mining dilution is approximately ~15%. Underground An allowance for mining dilution was incorporated into the mine design. An additional unplanned dilution factor of 15-20% has been assumed for all stopes as all planned dilution has been accounted for in the stope design shape.
	The mining recovery factors used.	Open Pit A mining recovery factor of 95% has been applied reporting of Open pit Reserve physicals. Underground A mining recovery factor of 90% has been assumed for all stopes, while a mining recovery factor of 100% has been assumed for all development activities.
	Any minimum mining widths used.	Open Pit 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. Underground A minimum stope width of 3.0m 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.	Open Pit 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. Underground 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.
	The infrastructure requirements of the selected mining methods.	Open Pit The selected mining method and location of the deposit is close to operating Thunderbox operations, which consists of open pit, underground and 6Mt processing plant, modern camp site and all other required infrastructure to support current and future mine plan. Underground 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 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 a proven technology since being in operation with average gold recovery typically between 93% to 95% for treating deposits around 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 Wonder deposit is estimated at 93.5%. The recovery estimation is based on metallurgical test work and ongoing long term actual average recovery data collected at Thunderbox Plant. Metallurgical test work has been carried out on samples from the Wonder deposit by processing and test lab and indicates the estimated recovery is in line with expectation.
	Any assumptions or allowances made for deleterious elements.	There are no known deleterious elements present in Wonder ore.

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PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
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E: info@nsrltd.com
W: www.nsrltd.com

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	The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.	Number of samples of each expected rock type has been sampled through the Thunderbox processing plant for trial test work. This test work is considered as sufficient to represent the Wonder ore body as a whole for the purpose of Ore Reserve estimation.
	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	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 Environment studies and Statutory Government Approvals including works approvals and clearing permit are ongoing. The Wonder mine is located ~30km from Thunderbox operation and connected to the processing plant via Goldfields Highway and site internal access haul road. The Wonder operation will utilise the existing Thunderbox processing facility, and TSF storage facilities that are all lay on granted mining leases. The gas spur pipeline, the bore field and the airstrip at Thunderbox are all on granted miscellaneous licences. Waste rock characteristic study has been carried out is expected to be representative of overall 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 Wonder operation will require minimum infrastructure given close proximity to well established and maintained Thunderbox operation. Allowance has been made for the new and refurbishment of the facilities like workshop, offices, site access and accommodation facilities for the Wonder operation. The mined ore will be transported to Thunderbox processing plant via 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 Thunderbox open 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.	Open Pit Capital costs relating to the establishment, mobilisation and pre striping of the pit is included in the financial modelling. A minor haul road will need to be upgraded at the commencement of operation to facilitate better connectivity to Thunderbox operation. Underground Capital costs relate to establishment of capital infra-structure and continuing expansion of capital works for Wonder underground. The cost estimates are based on historical costs for similar work undertaken at Northern Star for the establishment and operation of the Deep South, Karari, Whirling Dervish, Ramone, Porphyry underground mines.
	The methodology used to estimate operating costs.	Open Pit A capital and operating cost model has been developed in Excel and has been used to complete a life of mine cash flow estimate. The estimation of Open pit mine operating costs was based on a dry-hire mining, contract drilling, and contractor maintenance operation using first principles to determine equipment productivities and associated operating hours to generate mine schedules. Provided contract pricing were than applied to the schedule to calculate all unit costs Operating costs for ore processing, haulage and administration have been derived from known parameters at Thunderbox Operations. Underground Operating costs for underground mining have been derived from a combination of actual costs from Thunderbox Operations and contractor costs based on equipment, labour and development requirements for all production activities indicated in the mine schedule. Operating costs for ore processing have been derived from known parameters at Thunderbox, with additional costs such as labour sourced from current operational data.
	Allowances made for the content of deleterious elements.	Met test work carried out for Wonder 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$2,000/oz has been adopted for the financial modelling. No allowance is made for silver by-products.
	The source of exchange rates used in the 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 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 Thunderbox operation.
	The allowances made for royalties payable, both Government and private.	Royalty costs payable are the WA state government royalty of 2.5% and a 1.5% third party royalty.
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$2,000/oz has been adopted for financial modelling. No allowance is made for silver by-products.

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ABN: 43 092 832 892

Level 4, 500 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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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 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.	Sensitivities have been used with gold price ranges of AUD$ 1,750/oz to AUD$ 2,250/oz.
Social	The status of agreements with key stakeholders and matters leading to social licence to operate.	Both Wonder and 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 Northern Star is having a good relationship with neighbouring stakeholders, including local pastoralists and the traditional owners.
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 naturally occurring risk within the operation and will be addressed at the commencement of the operation by constructing appropriate water diversion bunds to provide safe and risk-free work environment. A containment pond and dewatering infrastructure has been 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 Thunderbox 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.	All required Environment studies, relevant applications for approval permits are ongoing.
Classification	The basis for the classification of the Ore Reserves into varying confidence categories.	The Ore Reserve Estimate classification for Wonder has been in accordance with the JORC code 2012. Ore Reserve Estimate is 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 factors applied to the open pit and underground project were derived from a combination of historical site data, current operational data relating to Thunderbox 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 Wonder 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 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 Northern Star 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 geostatistical procedures to quantify the relative accuracy of the Reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.	The Ore Reserve estimate has been prepared in accordance with the guideline of the 2012 JORC Code. The relative confidence of the estimate complies with the criteria of 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 appropriate and confidence in the resulting reserve estimate is considered reasonable. All of the parameters assumed and adopted in the estimate have been based on current and past Thunderbox operations mining performance and also mining performance within the Northern star group. The Wonder operation will use the same grade control methods that are widely utilised at other Northern star operations.

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	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.	Although detailed designs and assessment have been used to identify those parts of the resource model that informs the reserve estimate, given the nature of estimating gold resources the Ore Reserve estimate should be considered largely global in nature.
	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.	As noted above
	It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	All relevant assumption upon which the ore reserve estimate depends fall within the confidence intervals of current operating mines in the region of similar type and scale.

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Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrltd.com
W: www.nsrltd.com

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