NORTHERN STAR
RESOURCES LIMITED

ASX ANNOUNCEMENT
4 August 2014

Australian Securities Exchange Code: NST

Board of Directors
Mr Chris Rowe
Non-Executive Chairman

Mr Bill Beament
Managing Director

Mr Peter O'Connor
Non-Executive Director

Mr John Fitzgerald
Non-Executive Director

Ms Liza Carpene
Company Secretary

Issued Capital
Shares 587M

Options 1.5M

Current Share Price $1.72

Market Capitalisation
$1.01 Billion

Cash/Bullion and Investments
30 June 2014 - $96.2 million

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CAMPAIGN TO GROW MINE LIVES GAINS MOMENTUM WITH MORE HIGH-GRADE RESULTS AT PEGASUS

Northern Star to spend at least $50m on exploration and drilling as part of its strategy to grow inventories at all projects

KEY POINTS

- **High-grade intersections of up to 31gpt Au recorded from drilling outside the existing resource at the Pegasus deposit within the Kunduna Project (NST: 51%)**
- **Latest intersections are as deep as 100m below the existing resource boundary, pointing to further significant resource increases**
- **Current Pegasus resource stands at 2.1Mt at 11.4gpt for 763Koz (NST 51%) following the 115% increase in June**
- **Pegasus sits on the K2 structure which also hosts the other key Kundana deposits; K2 will be a major part of the $50m FY15 exploration drilling program**
- **Pegasus is set to contribute an additional ~50,000ozpa to Northern Star's production from mid-CY2015**
- **Latest hits at Pegasus include:**
  - **3.2m @ 11.5gpt gold true width 2.2m**
  - **1.2m @ 18.0gpt gold true width 0.9m**
- **Significant new intersections also recorded at Paulsens, highlighting the potential for further mine life increases**
- **Hits at Paulsens include:**
  - **2.7m @ 48.6gpt gold (true width 1.1m) 395mRL**
  - **2.9m @ 16.7gpt gold (true width 2.5m) 372mRL**
  - **4.0m @ 33.5gpt gold (true width 1.6m) 438mRL**
  - **2.9m @ 42.6gpt gold (true width 1.2m) 428mRL**
- **Maiden JORC 2012 combined group resource for the five assets of 6.2Moz at 4.2gpt and a maiden group reserve of 1.2Moz at 5gpt.**
- **Latest Pegasus results follow last week's 68% increase in the Jundee resource to 851,000oz (see ASX announcement dated 30 July 2014)**

Northern Star Resources Limited (ASX: NST) is pleased to announce that its campaign to grow the life of each of its five mines is already gaining momentum, with strong drilling results being recorded outside the existing resources at its Pegasus deposit and Paulsens mine.

The latest results at the Pegasus deposit, which is part of the Kundana Project (NST: 51%) on the outskirts of Kalgoorlie in WA, extend the known mineralisation to 100m below the current resource and expand the known strike length by 150m to 850m.

Northern Star announced a 115 per cent increase in the resource at Pegasus in June this year, taking it to 2.1 million tonnes at 11.4gpt for 763,000oz.

Pegasus will cost Northern Star just $10 million to develop, with first production scheduled for the end of this financial year. It will contribute 50,000oz to the Company's annual production from the middle of 2015.

Pegasus sits on the K2 structure, which runs for 14km and is already known to host many of the key Kundana deposits including Rubicon and Hornet.

The K2 structure will be a key feature in the $50 million exploration and drilling campaign which Northern Star has planned for its five operations.

Northern Star Managing Director Bill Beament said growing the mine life at each asset was now Northern Star's next key priority.

"We have achieved our goal of growing and diversifying our asset base," Mr Beament said. "Now that we have bedded down those acquisitions, our next objective is to extend the mine life at each of those assets."

He said the latest Pegasus results showed there was significant potential for further resource increases at what will be a high-margin operation.

"Pegasus continues to grow with every round of drilling," Mr Beament said. "It is open in every direction and the grades are consistently over 10gpt Au.

"These results also strengthen our belief that the K2 structure is now one of the most prospective exploration addresses in the Australian gold mining industry.

"That's why we will be spending a substantial slice of the $50 million exploration and drilling budget there."

Kundana recorded all-in sustaining costs of A$777/oz in the June Quarter and has an enviable ~80 per cent historical conversion rate from resource to reserve.

First development ore at Pegasus is expected to be intersected in the December Quarter 2014, with production commencing in early 2015 and ramping up to 50,000oz per annum (NST share) by July 2015.

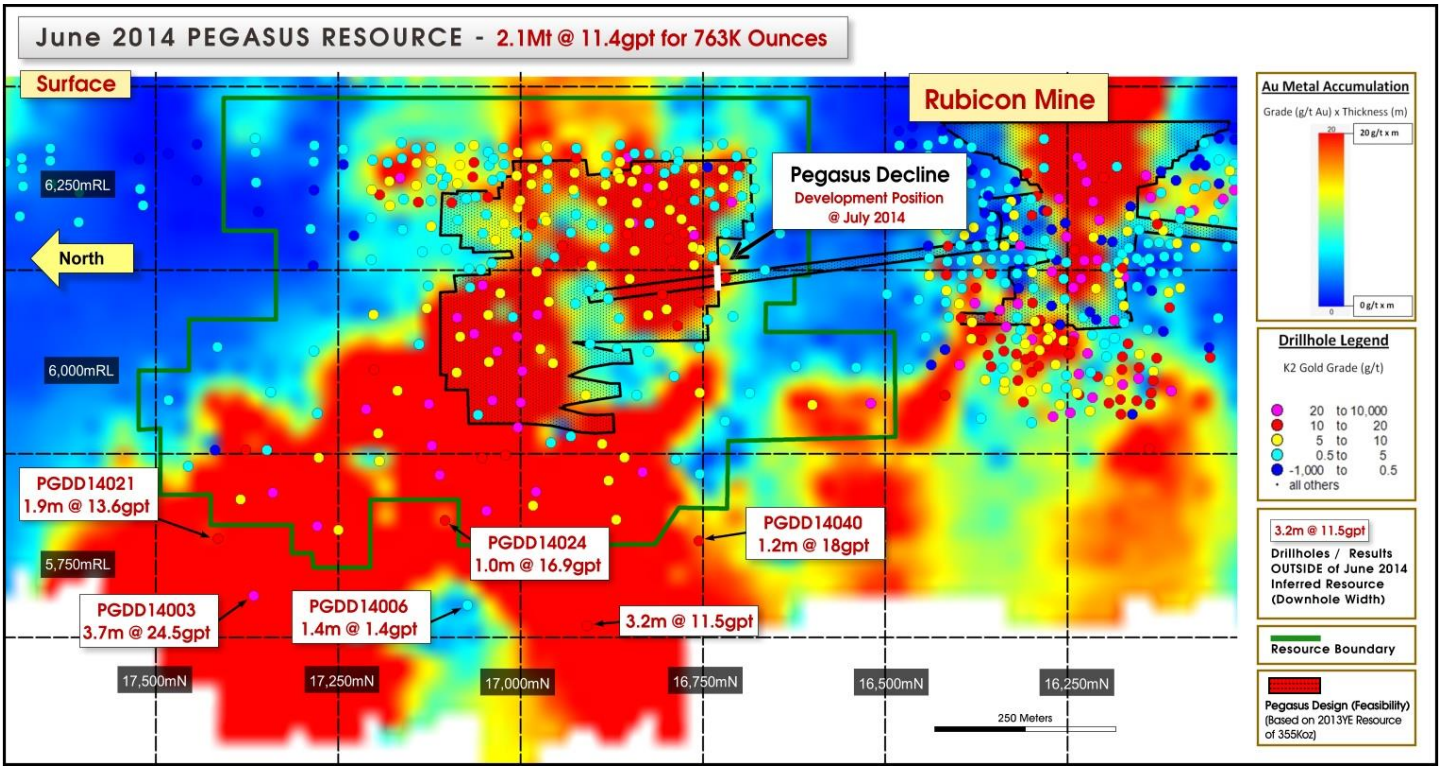

Figure 1:_Long projection of the K2 footwall structure (looking east) showing the June 2014 Pegasus Mineral Resource Boundaries. The significant intersections shown outside of the inferred resource demonstrate the growth potential of the Pegasus Resource. Background shading is metal accumulation (grade x width). Drill hole intersections noted are downhole width.

At Paulsens, drilling in the Voyager 2 lode and new high-grade Titan discovery has returned further significant assays.

The downhole intersections at Titan include the following:

- 2.7m @ 48.6 gpt Au
- 2.9m @ 16.7gpt Au

This confirms the mineralisation continues with mine development recently intersecting the quartz vein.

The downhole intersections at Voyager 2 include the following:

- 3.9m @ 33.5 gpt Au
- 2.9m @ 42.6 gpt Au

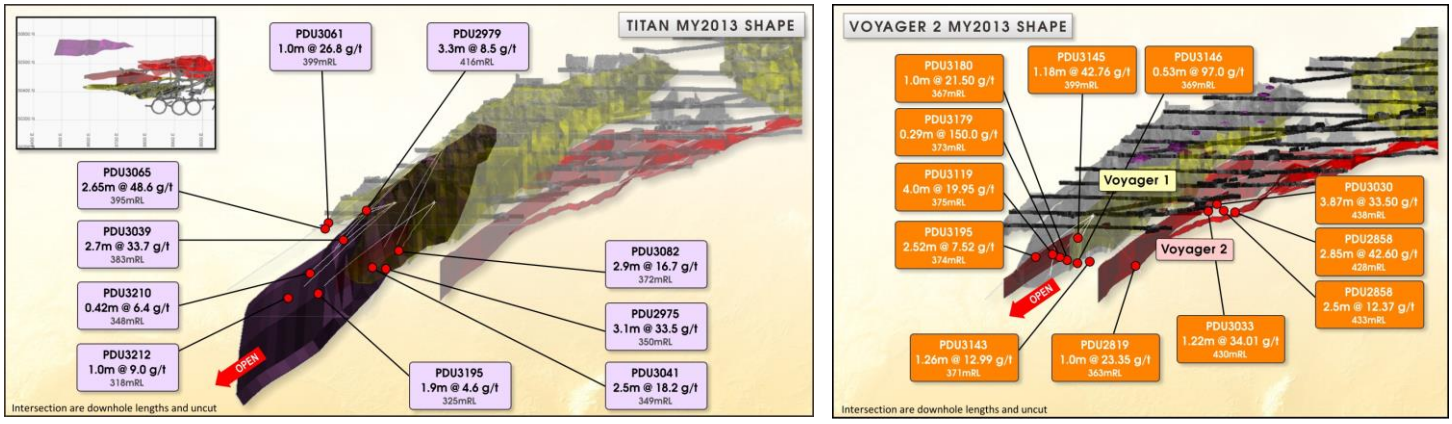

Figure 2: (Long section) Latest drilling intersections at the Titan discovery, and the Voyager 2 lode at Paulsens

Mineral Resource and Reserve Summary

Since the acquisition of the mines, a consolidation of the Mineral Resource and Reserve Estimation has taken place to JORC 2012 reporting standard, effective as at 30 June 2014.

The Group Mineral Resource Estimate is 46 Million Tonnes at 4.2gpt Au for 6.2 Million ounces (Note 1)

The Group Mineral Reserve Estimate is 7.4 Million Tonnes at 5.0gpt Au for 1.2 Million Ounces (Note 2)

These figures, which are estimated to 30 June 2014, represent a maiden JORC 2012 combined resource for the five assets owned by Northern Star.

Yours faithfully

BILL BEAMENT
Managing Director
Northern Star Resources Limited

Competent Persons Statements

The information in this announcement that relates to mineral resource and reserve estimations, exploration results, data quality, geological interpretations and potential for eventual economic extraction, is based on information compiled by Bernd Sostak, (Member Australian Institute of Mining and Metallurgy), who is a full-time employee of Northern Star Resources Limited. Mr. Sostak has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves" for the Group reporting. Mr. Sostak consents to the inclusion in this announcement of the matters based on this information in the form and context in which it appears.

Forward Looking Statements

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NORTHERN STAR RESOURCES LIMITED

GOLD MINERAL RESOURCES As at 30 June 2014 Based on attributable ounces	MEASURED (M)			INDICATED (I)			INFERRED (Inf)			TOTAL (MI&Inf)			
	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)	Competent Person
PAULSENS GOLD PROJECT													
Surface													
Paulsens	-	-	-	573	2.6	47	169	2.6	14	742	2.6	61	3
Belvedere	-	-	-	168	3.5	19	99	5.0	16	267	4.1	35	3
Merlin	-	-	-	-	-	-	523	1.4	24	523	1.4	24	3
Mt Clement (20%)	-	-	-	-	-	-	226	1.8	13	226	1.8	13	7
Underground													
Upper Paulsens	55	9.6	17	135	11.3	49	143	5.4	25	333	8.5	91	1
Voyager (Voy1, Voy2, Titan)	407	8.9	117	111	9.8	35	72	8.6	20	590	9.1	172	1
Stockpiles	161	2.9	15	-	-	-	-	-	-	161	2.9	15	1
Gold in Circuit	-	-	3	-	-	-	-	-	-	-	-	3	1
Subtotal Paulsens	623	7.6	152	987	4.7	150	1,232	2.8	112	2,842	4.5	414	
ASHBURTON GOLD PROJECT													
Surface													
Mt Olympus	-	-	-	6,038	2.3	448	9,138	2.2	632	15,176	2.2	1,080	2
Peake	-	-	-	113	5.2	19	3,544	3.3	380	3,657	3.4	399	2
Waugh	-	-	-	347	3.6	40	240	3.6	28	587	3.6	68	3
Zeus	-	-	-	508	2.1	34	532	2.2	38	1,040	2.2	72	3
Electric Dingo	-	-	-	98	1.6	5	444	1.2	17	542	1.3	22	3
Romulus	-	-	-	-	-	-	329	2.6	27	329	2.6	27	3
Subtotal Ashburton	-	-	-	7,104	2.4	546	14,227	2.5	1,122	21,331	2.4	1,668	
PLUTONIC GOLD PROJECT													
Underground													
Plutonic East	33	6.7	7	89	6.4	18	724	5.8	136	846	5.9	161	4
NW Extension - Indian	11	6.0	2	268	5.6	48	659	5.1	109	939	5.3	159	4
NW Extension - Caspian	-	-	-	361	6.2	72	237	5.2	40	599	5.8	112	4
Zone 19 : Baltic	339	5.6	61	52	6.0	10	703	4.8	108	1,093	5.1	178	4
Zone 19 : Baltic Extended	-	-	-	169	5.0	27	424	5.1	70	593	5.1	96	4
Zone 61 : Caribbean	87	6.3	18	35	6.2	7	428	6.1	84	550	6.1	109	4
Zone 124 : Spur - Area 134	45	9.8	14	845	6.5	177	1,147	4.9	181	2,037	5.7	372	4
Zone 124 : Cortez - Med - Adr	81	6.0	16	94	5.2	16	322	4.1	42	496	4.6	74	4
Zone 124 North : Pacific	-	-	-	107	5.2	18	250	5.1	41	356	5.1	59	4
Zone 124 North : Timor	-	-	-	436	6.1	85	230	4.8	36	666	5.6	121	4
Stockpiles	15	3.6	2							15	3.6	2	4
Gold in Circuit			4							-		4	4
Subtotal Plutonic	611	6.3	123	2,456	6.1	478	5,121	5.1	845	8,188	5.5	1,446	
KALGOORLIE GOLD PROJECT													
Kanowna Belle													
Surface							433	2.8	38	433	2.8	38	5
Underground	1,741	4.8	269	2,875	4.9	455	2,037	4.7	305	6,653	4.8	1,029	5
Stockpiles	66	3.9	8	793	1.0	24				859	1.2	32	5
Gold in Circuit			15							-		15	5
Subtotal KB	1,807	4.8	277	3,668	4.1	479	2,470	4.3	344	7,945	4.4	1,115	
East Kundana Joint Venture													
Surface													
Hornet Pit (51%)				86	3.6	10	2	1.6	0	88	3.6	10	5
Underground													
Raleigh (50%)	30	67.4	65	9	41.5	12	17	47.5	25	56	57.3	102	5
Hornet (51%)	66	24.3	52	63	19.0	38	136	7.5	33	264	14.4	123	5
Rubicon (51%)	5	19.2	3	71	13.4	30	73	11.8	28	148	12.8	61	5
Pegasus (51%)	-	-	-	715	11.9	273	346	10.5	116	1,060	11.4	389	6
Stockpiles	4	15.6	2							4	15.6	2	5
Subtotal EKJV	105	36.1	121	943	12.0	364	572	11.0	202	1,620	13.2	687	
Subtotal Kalgoorlie	1,912	6.7	413	4,611	5.7	843	3,042	5.6	546	9,565	5.9	1,802	
JUNDEE GOLD PROJECT													
Underground													
Barton													
Cardassian	30	6.0	6	58	6.1	11	11	6.7	2	99	6.1	20	3
Gateway	27	5.4	5	429	7.4	102	303	5.3	52	758	6.5	158	3
Hamptons	-	-	-	65	5.8	12	-	-		65	5.8	12	3
Invicta	-	-	-	60	6.6	13	36	20.0	23	96	11.6	36	3
Nexus/Moneyline/Midas	-	-	-	46	8.7	13	1,164	9.4	350	1,210	9.3	363	3
Nim3 / Champagne	100	9.9	32	277	9.1	81	74	6.2	15	450	8.8	127	3
Westside / Lyons	157	8.7	44	118	6.2	24	36	6.1	7	311	7.4	74	3
Wilson	-	-	-	47	7.8	12	18	8.6	5	65	8.0	17	3
Subtotal Jundee Underground	313	8.5	86	1,099	7.6	267	1,641	8.6	454	3,053	8.2	807	
		-											
Stockpiles													
Underground	102	4.3	14							102	4.3	14	3
Open Pit	188	1.0	6							188	1.0	6	3
Low grade	789	0.7	18							789	0.7	18	3
Mill Cone Base	28	2.3	2							28	2.3	2	3
Gold in Circuit			4									4	3
Subtotal Jundee Stockpiles	1,107	1.2	44							1,107	1.2	44	
Subtotal Jundee	1,420	2.8	130	1,099	7.6	267	1,641	8.6	454	4,159	6.4	851	
TOTAL RESOURCES	**4,565**	**5.6**	**818**	**16,257**	**4.4**	**2,283**	**25,263**	**3.8**	**3,079**	**46,085**	**4.2**	**6,181**	

Note :
Mineral Resources are inclusive of Reserves;

1. Mineral Resources are reported at various gold price guidelines (a. $1850-Paulsens, EKJV b.$1650- Plutonic, Kanowna c.$1475- Jundee)
2. Rounding may result in apparent summation differences between tonnes, grade and contained metal content;
3. Numbers are 100 % NST except attributable where noted by East Kundana Joint Venture (EKJV-Rand Mining Company,Tribune for tonnes and contained ounces)

Competent Persons

1. Simon Lawson. 2. Graeme Bland. 3 Brook Ekers. 4. Luke Barbetti. 5. Darren Cooke. 6. Alan Pederson. 7.Artemis Company report

Table 1 – Consolidated Mineral Resource Summary as at 30 June 2014

GOLD MINERAL RESERVES

As at 30 June 2014

Based on attributable ounces	PROVED Tonnes (000's)	PROVED Grade (gpt)	PROVED Ounces (000's)	PROBABLE Tonnes (000's)	PROBABLE Grade (gpt)	PROBABLE Ounces (000's)	PROVED and PROBABLE Tonnes (000's)	PROVED and PROBABLE Grade (gpt)	PROVED and PROBABLE Ounces (000's)	Competent Person
PAULSENS GOLD PROJECT										
Surface										
Paulsens	-	-	-	424	2.3	31	424	2.3	31	2
Belvedere	-	-	-	129	3.2	13	129	3.2	13	2
Merlin	-	-	-	-	-	-	-		-	
Mt Clement (20%)	-	-	-	-	-	-	-		-	
Underground										
Upper Paulsens	1	7.7	0	108	5.3	19	109	5.4	19	1
Voyager (Voy1, Voy2, Titan)	121	5.3	20	117	5.9	22	238	5.6	43	1
Stockpiles	161	2.9	15	-	-	-	161	2.9	15	1
Gold in Circuit	-	-	3	-	-	-	-		3	1
Subtotal Paulsens	282	4.2	39	779	3.4	85	1,061	3.6	124	
ASHBURTON GOLD PROJECT										
Surface										
Mt Olympus	248	3.6	29	113	3.6	13	361	3.6	42	2
Peake	-	-	-	47	5.3	8	47	5.3	8	2
Waugh	-	-	-	-	-	-	-	-	-	
Zeus	-	-	-	-	-	-	-	-	-	
Electric Dingo	-	-	-	-	-	-	-	-	-	
Romulus	-	-	-	-	-	-	-	-	-	
Subtotal Ashburton	248	3.6	29	160	4.1	21	408	3.8	50	
PLUTONIC GOLD PROJECT										
Underground										
Plutonic East	35	5.3	6	101	4.8	16	136	5.0	22	3
NW Extension - Indian	27	5.8	5	46	6.2	9	73	6.1	14	3
NW Extension - Caspian	2	6.3	0	127	6.2	25	129	6.2	26	3
Zone 19 : Baltic	42	4.5	6	0	5.2	0	42	4.5	6	3
Zone 19 : Baltic Extended	-	-	-		-		-	-	-	3
Zone 61 : Caribbean	9	7.3	2	7	7.9	2	15	7.5	4	3
Zone 124 : Spur - Area 134	83	7.9	21		-		83	7.9	21	3
Zone 124 : Cortez - Med - Adr	40	4.9	6	12	4.6	2	52	4.9	8	3
Zone 124 North : Pacific	-	-	-	4	6.7	1	4	6.7	1	3
Zone 124 North : Timor	3	8.6	1	15	10.2	5	17	10.0	6	3
Stockpiles	15	3.6	2				15	3.6	2	3
Gold in Circuit			4						4	3
Subtotal Plutonic	254	6.5	53	313	5.9	60	566	6.2	113	
KALGOORLIE GOLD PROJECT										
Kanowna Belle										
Surface	-		-	-	-	-	-	-	-	
Underground	99	4.5	14	1,115	5.0	178	1,214	4.9	193	5
Stockpiles	66	3.9	8	793	1.0	24	859	1.2	32	5
Gold in Circuit			15				-		15	5
Subtotal KB	165	7.0	37	1,908	3.3	203	2,073	3.6	240	
East Kundana Joint Venture										
Surface										
Hornet Pit (51%)					-		-	-	-	
Underground										
Raleigh (50%)	83	13.2	35	3	2.4	4	86	14.1	39	4
Hornet/Rubicon (51%)	129	14.4	60	159	9.9	51	288	11.9	110	4
Pegasus (51%)		-		403	9.8	127	403	9.8	127	4
Stockpiles	4	15.6	2				4	15.6	2	4
Subtotal EKJV	216	14.0	97	565	10.0	181	781	11.1	278	
Subtotal Kalgoorlie	381	10.9	134	2,473	4.8	384	2,854	5.6	518	
JUNDEE GOLD PROJECT										
Underground										
Barton										
Cardassian	22	5.9	4	64	6.2	13	86	6.1	17	6
Gateway	25	5.2	4	417	7.4	100	442	7.3	104	6
Hamptons	-	-	-	71	5.4	12	71	5.4	12	6
Invicta	-	-	-	65	6.9	14	65	6.9	14	6
Nexus/Moneyline/Midas	-	-	-		-		-	-	-	
Nim3 / Champagne	87	9.8	27	288	8.8	81	375	9.0	109	6
Westside / Lyons	160	8.7	45	129	6.2	26	289	7.6	71	6
Wilson	-	-	-	46	7.9	12	46	7.9	12	6
Subtotal	293	8.6	81	1,080	7.4	258	1,373	7.7	339	
Stockpiles										
Underground	102	4.34	14				102	4.3	14	6
Open Pit	188	1.02	6				188	1.0	6	6
Low grade	789	0.70	18				789	0.7	18	6
Mill Cone Base	28	2.26	2				28	2.3	2	6
Gold in Circuit			4						4	6
Subtotal Jundee Stockpiles	1,107	1.2	44				1,107	1.2	44	
Subtotal Jundee	1,400	2.8	125	1,080	7.4	258	2,480	4.8	383	
TOTAL RESERVES	**2,564**	**4.60**	**380**	**4,805**	**5.23**	**808**	**7,369**	**5.0**	**1,187**	

Note

1. Mineral Reserves are reported at the following gold prices of AUD $1450 . Jundee is the exception at AUD $1415
2. Tonnages include allowances for losses resulting from mining methods with tonnages rounded to the nearest 1,000 tonnes;
3. Ounces are estimates of metal contained in the Mineral Reserve and do not include allowances for processing losses.
4. Numbers are 100 % NST except attributable where noted by East Kundana Joint Venture (EKJV-Rand Mining Company,Tribune for tonnes and contained ounces)

Competent Persons

1. Roger Bryant. 2. Shane Mcleay(Entech Pty Ltd) 3.Jeff Brown 4. Bryn Jones 5. Stasi Capsanis 6.Darren Stralow

Table 2 – Consolidated Reserve Summary as at June 30 2014

PEGASUS K2 - EXTENSION DRILLING (Outside of Dec 2013 Resource)											
Drill Hole #	Collar Easting (Mine Grid)	Collar Northing (Mine Grid)	Collar RL (Mine Grid)	Collar Dip (degrees)	Azimuth (degrees, Mine Grid)	End of hole depth (m)	Downhole From (m)	Downhole To (m)	Downhole Intersection (m)	Au (gpt) uncut	Est True Thickness (m)
PGCD14006	**9502**	**17051**	**6345**	**-65**	**91**	**748.5**	**694.0**	**695.4**	**1.4**	**1.4**	**1.0**
PGCD14007	**9511**	**16915**	**6344**	**-65**	**95**	**759.0**	**724.6**	**727.8**	**3.2**	**11.5**	**2.2**
PGCD14021	**9530**	**17426**	**6343**	**-65**	**90**	**637.7**	**609.4**	**611.3**	**1.9**	**13.6**	**1.4**
PGCD14022	9551	17341	6343	-60	89	564.0	528.2	531.6	3.3	16.0	2.5
PGCD14024	**9547**	**17124**	**6345**	**-66**	**90**	**606.0**	**557.0**	**558.0**	**1.0**	**16.9**	**0.9**
PGCD14025	9535	16960	6344	-63	89	636.0	569.0	571.2	2.2	18.1	1.7
PGCD14025	9535	16960	6344	-63	89	636.0	584.3	588.0	3.7	5.2	2.8
PGCD14026	9567	16842	6345	-61	87	550.1	525.9	526.7	0.8	5.4	0.6
PGCD14027	9566	16842	6345	-64	90	585.7	527.1	531.9	4.8	3.8	3.6
PGCD14027	9566	16842	6345	-64	90	585.7	537.7	542.0	4.3	29.9	3.2
PGDD14029	9586	17128	6343	-65	90	552.0	499.8	500.8	1.1	27.8	0.8
PGDD14029	9586	17128	6343	-65	90	552.0	527.2	528.0	0.7	60.7	0.6
PGDD14030	9595	17415	6343	-65	89	546.0	493.9	495.0	1.1	0.3	0.8
PGDD14031	9603	17340	6343	-65	89	552.0	508.2	510.0	1.8	4.9	1.4
PGDD14032	9674	17138	6343	-66	81	428.3	396.6	404.8	8.2	7.4	6.1
PGDD14033	9586	17128	6343	-62	89	525.1	495.9	497.8	1.9	25.6	1.4
PGDD14035	9661	17205	6343	-67	92	449.9	419.0	422.3	3.3	20.5	2.5
PGDD14040	**9597**	**16792**	**6343**	**-72**	**92**	**621.1**	**580.8**	**582.0**	**1.2**	**18.0**	**0.9**

Table 3: Pegasus Drill intersections outside the December 2013 Resource

PAULSENS RESOURCE DEFINITION DRILLING TITAN											
Drill Hole #	Easting (Mine Grid)	Northing (Mine Grid)	Drill hole collar RL (Mine Grid)	Dip (degrees)	Azimuth (degrees, Mine Grid)	End of hole dept (m)	Downhole From (m)	Downhole To (m)	Downhole Intersection (m)	Au (gpt) uncut	Est True Thickness (m)
PDU2975	8707	50486	498	-55	310	254	107.0	107.5	0.5	4.4	0.3
PDU2975	8707	50486	498	-55	310	254	181.7	184.8	3.1	33.5	1.7
PDU2978	8707	50486	498	-40	300	198	138.8	140.1	1.3	4.4	0.8
PDU2979	8706	50484	498	-36	291	282	132.0	135.3	3.3	8.5	2.7
PDU2979	8706	50484	498	-36	291	282	155.5	156.4	0.9	7.9	0.7
PDU2980	8706	50484	498	-34	283	317	173.8	177.4	3.6	4.6	2.9
PDU2981	8706	50484	498	-42	282	350	216.3	217.0	0.7	2.7	0.4
PDU2981	8706	50484	498	-42	282	350	227.9	229.0	1.1	2.3	0.6
PDU3039	8706	50483	498	-39	291	279	176.3	179.0	2.7	33.7	1.5
PDU3040	8706	50483	498	-47	291	250	209.5	210.0	0.5	2.8	0.3
PDU3040	8706	50483	498	-47	291	250	211.3	212.3	1.0	6.9	0.6
PDU3040	8706	50483	498	-47	291	250	214.0	215.0	1.0	4.6	0.5
PDU3041	8706	50485	498	-51	300	237	187.0	189.5	2.5	18.2	1.3
PDU3041	8706	50485	498	-51	300	237	191.2	192.0	0.8	2.7	0.6
PDU3063	8650	50496	423	-9	294	115	68.1	68.6	0.5	2.1	0.3
PDU3063	8650	50496	423	-9	294	115	76.8	77.3	0.5	3.9	0.3
PDU3071	8645	50502	424	-29	281	251	47.0	47.4	0.4	3.5	0.3
PDU3073	8645	50502	424	-34	282	271	83.0	84.0	1.0	15.3	0.3
PDU3073	8645	50502	424	-34	282	271	210.4	211.1	0.7	2.9	0.3

Table 4: Paulsens Resource Definition Drilling Titan

PAULSENS GRADE CONTROL DRILLING TITAN (inside resource)											
Drill Hole #	Easting (Mine Grid)	Northing (Mine Grid)	Drill hole collar RL (Mine Grid)	Dip (degrees)	Azimuth (degrees, Mine Grid)	End of hole dept (m)	Downhole From (m)	Downhole To (m)	Downhole Intersection (m)	Au (gpt) uncut	Est True Thickness (m)
PDU3061	8645	50502	424	-14	290	106	85.0	86.0	1.0	26.8	0.5
PDU3065	8645	50502	424	-20	294	95	84.9	87.5	2.7	48.6	1.1
PDU3082	8689	50347	424	-14	350	248	226.8	229.6	2.9	16.7	2.5
PDU3195	8688	50347	424	-21	319	275	203.8	205.8	1.9	4.6	0.4
PDU3210	8689	50347	424	-31	290	147	128.7	129.1	0.4	6.4	0.3
PDU3212	8645	50501	424	-39	291	187	165.0	166.0	1.0	9.0	0.4

Table 5: Paulsens Grade Control Drilling Titan (inside resource)

PAULSENS GRADE CONTROL DRILLING VOYAGER 2 (inside resource)											
Drill Hole #	Easting (Mine Grid)	Northing (Mine Grid)	Drill hole collar RL (Mine Grid)	Dip (degrees)	Azimuth (degrees, Mine Grid)	End of hole dept (m)	Downhole From (m)	Downhole To (m)	Downhole Intersection (m)	Au (gpt) uncut	Est True Thickness (m)
PDU2737	8685	50500	426	3	126	60	38.7	43.2	4.5	9.5	4.2
PDU2819	**8685**	**50500**	**426**	**-42**	**125**	**106**	**92.0**	**93.0**	**1.0**	**23.4**	0.9
PDU2858	8811	50497	444	-15	102	80	38.5	41.0	2.5	12.4	1.1
PDU2858	**8811**	**50497**	**444**	**-15**	**102**	**80**	**55.2**	**58.1**	**2.9**	**42.6**	**1.2**
PDU2862	8811	50497	444	-12	108	58	31.7	38.5	6.8	18.3	2.2
PDU3030	**8811**	**50497**	**444**	**-10**	**118**	**52**	**31.1**	**34.5**	**3.9**	**33.5**	**1.6**
PDU3119	**8649**	**50496**	**424**	**-38**	**188**	**126**	**78.0**	**82.0**	**4.0**	**20.0**	**3.0**
PDU3143	**8684**	**50499**	**425**	**-52**	**180**	**78**	**69.0**	**70.3**	**1.3**	**13.0**	**1.1**
PDU3145	8684	50499	426	-33	200	83	71.1	72.1	1.1	6.4	1.0
PDU3146	8684	50499	425	-51	200	101	71.9	72.3	0.5	97.0	0.4
PDU3179	**8689**	**50347**	**424**	**-17**	**344**	**261**	**165.7**	**166.0**	**0.3**	**169.0**	**0.2**
PDU3180	**8689**	**50347**	**424**	**-25**	**344**	**165**	**131.0**	**132.0**	**1.0**	**21.5**	**0.8**
PDU3188	8689	50347	424	-21	323	151	112.4	116.1	3.7	7.1	3.7
PDU3195	**8688**	**50347**	**424**	**-21**	**319**	**275**	**130.5**	**133.0**	**2.5**	**7.5**	2.2

Table 6: Paulsens Grade Control Drilling Voyager 2 (inside resource)

JORC Code, 2012 Edition – Table 1 Report: Pegasus –Rubicon-Hornet-Underground Resource and Drill Update June 30 2014

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 (eg 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 combination of Reverse circulation (RC) and Diamond Drilling (DD). RC drilling was used to drill pre-collars for many of the Resource definition holes with diamond tails. Diamond drilling constitutes the rest of the drilling. Diamond core was transferred to core trays for logging and sampling. Half core samples were nominated by the geologist from both NQ2 and HQ diamond core, with a minimum sample width of either 20cm (HQ) or 30cm (NQ2).
	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 down hole core blocks consistent with industry practice
	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 (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.	Diamond drilling and face sampling are 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), with the ore zone or any samples with observed visible gold assayed via screen fire assay method Face samples are fire assays (30g charge) Visible gold is at times encountered in the core sampling
Drilling techniques	Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg 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 at the K2 Line of Lode Deposits. Diamond drillholes completed pre-2011 were predominantly NQ2 (50.5mm). All resource definition holes completed post 2011 were drilled using HQ (63.5mm) diameter core Core was orientated using the Reflex ACT Core orientation system. RC Drilling was completed using a 5.75" drill bit, downsized to 5.25" at depth. 7 RC pre-collars were drilled followed by diamond tails. Pre-collar depth were to 180m or less if approaching known mineralization.
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed.	Recovery was excellent for diamond core and no specific relationship between grade and recovery was observed. For RC drilling, pre-collars were ended before known zones of mineralization and recovery was very good through any anomalous zones, so no issues occurred.
	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. Moisture content and sample recovery is recorded for each RC sample. No recovery issues were identified during 2013 RC drilling. Recovery was poor at the very beginning of each hole, as is normal for this type of drilling in overburden. 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.	There is no known relationship between sample recovery and grade, 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.	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.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.	All logging is quantitative where possible or else qualitative. A photograph is taken of every core tray.
	The total length and percentage of the relevant intersections logged.	100% of the drill core and RC chips are logged

Criteria	JORC Code explanation	Commentary
Sub-sampling techniques and sample preparation	If core, whether cut or sawn and whether quarter, half or all core taken.	NQ2 core is generally half core sampled. If not whole core sampled, then core is half cut with Almonté diamond core saw and half core sampled. The same half is routinely sampled to sample intervals defined by the Logging Geologist along geological boundaries. The other half is archived. All major mineralised zones are sampled, plus visibly altered material outside the ore zone into what is deemed as barren material, >5m of hangingwall/footwall. All other structures and quartz veining that have observed alteration and/or mineralisation outside of the known orezone is sampled with up to ±5m on either side. Ideally, sample intervals are to be 1m in length, though range from 0.30m to 1.20m in length. Total weight of each sample generally does not exceed 3kg. Sample preparation was conducted at Genalysis Kalgoorlie, commencing with sorting, checking and drying at less than 110°C to prevent sulphide breakdown. 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 pulverized to 90% passing 75µm, using a Labtechnics LM5 bowl pulveriser. 300g Pulp subsamples are then taken with an aluminium scoop and stored in labelled pulp packets. Grind checks are performed at both the crushing stage(3mm) and pulverising stage (75µm), requiring 90% of material to pass through the relevant size.
	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 mineralization and from any areas identified as having anomalous gold. Outside of mineralized zones spear samples were taken over a 4m interval for composite sampling. 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.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	Sample preparation is adequate.
	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
	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 all RC samples (1 in 20 sample). No Field duplicates are submitted for diamond core
	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.	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 (AAS) determination for gold 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.	No geophysical tools were used to determine any element concentrations
	Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie. 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.
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

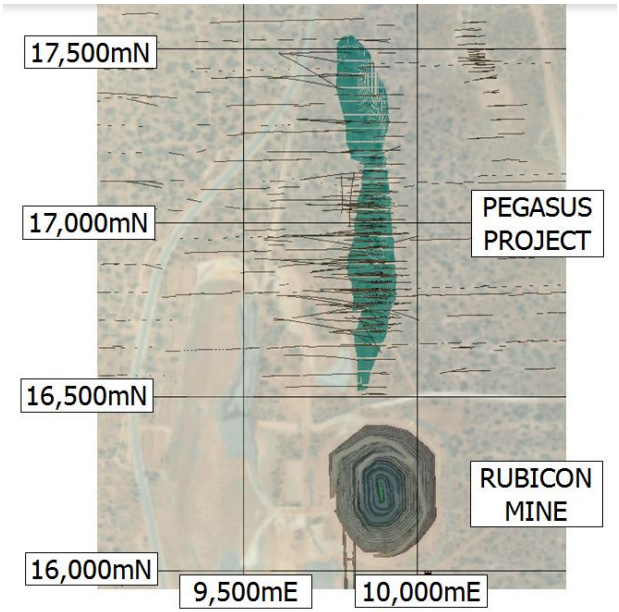
Criteria	JORC Code explanation	Commentary
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	Geological logging was captured using excel templates. Both a hardcopy and electronic copy of these are stored, as well as being loaded in to the database using automatic acquire loaders. Assay files are received in csv format and loaded directly into the database by the Database administrator (DBA). A geologist then checks that the results have inserted correctly. Hardcopy and electronic copies of these are stored. No adjustments are made to this assay data. Data is imported directly from laboratory reports into an Acquire database. Hard copies of RC and core / assays and surveys are kept on site Visual checks are conducted as part of the validation process of the data in Datamine
	Discuss any adjustment to assay data.	Screen fire assays are used as priority over fire assays for diamond core. Comparisons of screen fire and fire assays are completed on a hole-by-hole basis.
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 planned hole is pegged using a Differential GPS by the field assistants Underground diamond holes are picked up by mine surveyors During drilling single-shot surveys are every 30m to ensure the hole remains close to design. This is performed using the Reflex Ez-Trac system. Upon hole completion, a Gyroscopic survey is conducted by ABIMS, taking readings every 5m for improved accuracy. This is done in true north. The final collar is picked up after hole completion by Differential GPS in the MGA 94_51 grid.
	Specification of the grid system used.	A local grid system (Kundana 10) is used. It is rotated 29.25 degrees to the west of MGA94 grid.
	Quality and adequacy of topographic control.	Quality topographic control has been achieved through Lidar data and survey pickups of holes over the last 15 years.
Data spacing and distribution	Data spacing for reporting of Exploration Results.	Exploration result data spacing can be highly variable, up to 100m
	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.	Drillhole spacing across the area varies. For the Resource definition drilling, spacing was typically 40m x 40m, to allow the resource to be upgraded to indicated. For the Pode drilling spacing was approximately 20m x 20m. The HRPD drilling was much more wide spaced, as this is largely unclassified. Spacing is wider than 160m in some areas.
	Whether sample compositing has been applied.	Sampling to geology, 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 the structures in the Kundana camp dip steeply (80°) to WSW. The Pode structure has a much shallower dip in a similar direction, approximately 60°. To target these orientations the drillhole dips of 60-70° towards ~060° achieve high angle intersections on all 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.	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, 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 or reviews have recently been conducted on sampling techniques. Sampling techniques and data handling is considered adequate.

Section 2 Reporting of Exploration Results

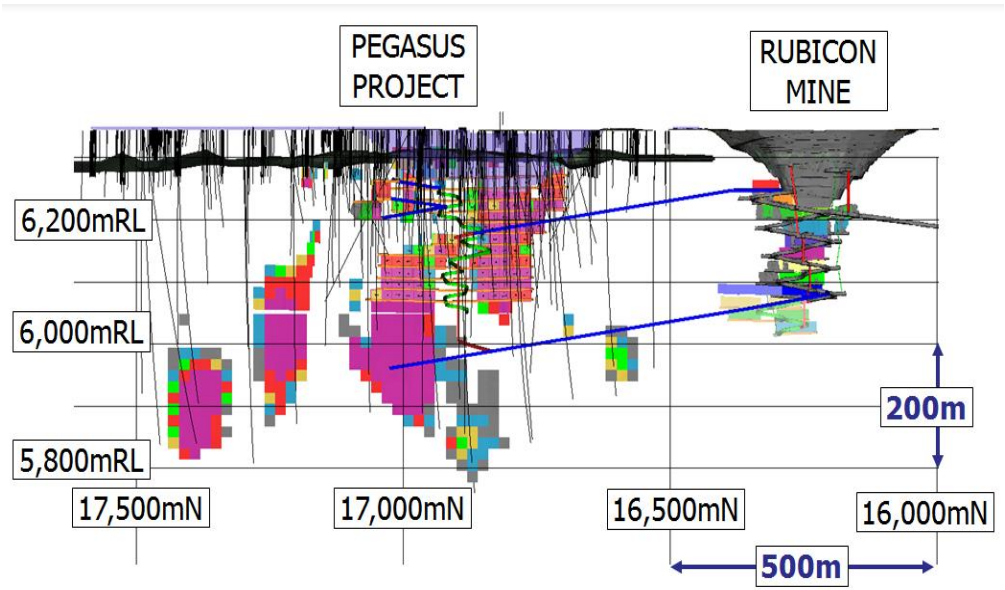
(Criteria listed in the preceding section also apply to this section.)

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.	Pegasus is located within the M16/309 and M16/326 Mining leases and are held by The East Kundana Joint Venture (EKJV). The EKJV is majority owned and managed by Northern Star Resources Limited (51%). The minority holding in the EKJV is held by Tribune Resources Ltd (36.75%) and Rand Mining Ltd (12.25%). Ambition is located on M16/326
	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 on which the Rubicon, Hornet and Pegasus deposits are hosted (M16/309) is subject to two royalty agreements; however neither of these is applicable to the actual Pegasus deposit. The agreements that are on M16/309 but not relevant to the Pegasus project are the Kundana- Hornet Central Royalty and the Kundana Pope John Agreement No. 2602-13. No known impediments exist and the tenements are in good standing
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	The first reference to the mineralization style encountered at the K2 project was the mines department report on the area produced by Dr. I. Martin (1987). He reviewed work completed in 1983 – 1984 by a company called Southern Resources, who identified two geochemical anomalies, creatively named Kundana #1 and Kundana #2. The Kundana #2 prospect was subdivided into a further two prospects, dubbed K2 and K2A. Between 1987 and 1997, limited work was completed. Between 1997 and 2006 Tern Resources (subsequently Rand Mining and Tribune Resources), and Gilt-edged mining focused on shallow open pit potential which was not considered viable. In 2011, Pegasus was highlighted by an operational review team and follow-up drilling was planned through 2012. This report is concerned solely with 2014 drilling that led on from this period.
Geology	Deposit type, geological setting and style of mineralisation.	The Kundana camp is situated within the Norseman-Wiluna Greenstone Belt, in an area dominated by the Zuleika shear zone, which separates the Coolgardie domain from the Ora Banda domain. K2-style mineralisation (Pegasus, Rubicon, Hornet) consists of narrow vein deposits hosted by shear zones located along steeply-dipping overturned lithological contacts. The K2 structure is present along the contact between a black shale unit (Centenary shale) and intermediate volcaniclastics (Spargoville formation). Minor mineralization, termed K2B, also occurs further west, on the contact between the Victorious basalt and Bent Tree Basalt (both part of the regional upper Basalt Sequence). A 60° W dipping fault, offsets this contact and exists as a zone of vein-filled brecciated material hosting the Pode-style mineralisation. Ambition is interpreted similar in style to the north of Pegasus
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: ○ easting and northing of the drill hole collar ○ elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar ○ dip and azimuth of the hole ○ down hole length and interception depth ○ hole length.	Too many holes to practically list the complete dataset, the long section and plan reflect the hole positions used for previous estimation stated.
	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 (eg 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 2m of barren material between mineralized samples has been permitted in the calculation of these widths. No assay results have been top-cut for the purpose of this report. A lower cut-off of 1gpt has been used to identify significant results, although lower results are included where a known ore zone has been intercepted, and the entire intercept is low grade

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.	If present, short length high grades have been length weighted.
	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. Both the downhole width and true width have been clearly specified when used.
	If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.	Due to varying intercept angles the true thickness is manually estimated on a hole by hole basis. Both true width and downhole lengths are reported
	If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').	Reporting of results includes the downhole and true width of the mineralised section.
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 the body of this report Initial discovery and subsequent updates reported in several ASX releases. Latest 25/6/2014
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 drillhole 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.	Metallurgical testwork was conducted on 9 Pegasus samples. The results are summarized as follows: - All Pegasus recoveries were above 91% for the leach tests - Gravity gold recovery estimated at 55% - Cyanide consumption 0.62 kg/t; Lime 2.29 kg/t - Oxygen Consumption 60 gpt per hour - Bond Ball mill work index average 18.1 kWh/t - Bond Abrasion Index average 0.1522
Further work	The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).	Further work will continue in 2014 to extend the indicated resource deeper by additional drilling. Advanced exploration work will also attempt to upgrade an area at depth spanning 1km of strike to an inferred resource. The continuation of the 'HRPD' trend will continue to be drill tested at depth, with the intention of linking the known deposits of Hornet, Rubicon, Pegasus and Drake. Further work will be conducted to test continuity of mineralisation at Ambition.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	As part of this release.



Plan View Pegasus Drilling



Long Section Pegasus Drilling looking East

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 is stored in a digital database with logging of changes and management of data integrity. Validation is enforced when the data is captured. Data is exported to ASCII files before importation into resource modeling software, no manual editing is undertaken on any data during the export/import process
	Data validation procedures used.	All data is manually validated and only approved data is used for resource estimation.
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	Multiple site visits undertaken by the Competent Person, Geologists supervising the drilling programs and preparing the Geological interpretation.
	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.	Extensive experience mining similar deposits immediately along strike supports high confidence in the quality of the Geological interpretation
	Nature of the data used and of any assumptions made.	The interpretation is primarily supported by Geological logging of Diamond Drill core
	The effect, if any, of alternative interpretations on Mineral Resource estimation.	No alternative interpretations have been completed or contemplated.
	The use of geology in guiding and controlling Mineral Resource estimation.	The interpretation of the main K2 structure is based on the presence of Quartz veining and the existence of the K2 structure.
	The factors affecting continuity both of grade and geology.	Structural features are known to offset the veining and K2 structure, these are incorporated into the resource model when they are identified in 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.	Mineralisation has been identified over a strike length approximately of 1000m and over a depth of approximately 600m. Mineralisation typically occurs as distinct domains between 1m and 2m thick
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.	Drill holes were composited into 1m intervals down hole within each interpreted domain. The composite lengths were allowed to vary between 0.5m and 1.5m to ensure that no sampling was lost during the compositing process. The average grade and total length of the composite data was compared against the average grade and total length of the uncomposited 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. Ordinary Kriging was used in areas with good drill coverage, Simple Kriging was used to estimate areas with poor drill coverage The local mean value used for Simple Kriging was calculated from the declustered mean of the top-cut composited sample data. Search distances used for estimation based on variogram ranges and vary by domain. Grades were estimated into 10m(N/S) x 10m(elev) panels. Drill spacing is generally around 20m x 20m for the indicated resource and around 40m x 40m for the inferred resource. The Kriging neighborhood was refined using statistical measures of Kriging quality
	The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.	Post estimation, resource estimations do not have tonnage or grade factors applied.
	The assumptions made regarding recovery of by-products.	No assumptions made and only gold is defined for estimation
	Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).	No deleterious elements estimated in the model

Criteria	JORC Code explanation	Commentary
	In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.	Block size is 5m x 5m sub-blocked to 2.5m x 2.5m to suit the narrow north-south orientation of the majority of the domains Average sample spacing is 3.1m in the case of face samples Search ellipsoids are 50 * 120 * 30m to 75 * 120 * 75m, varying for each zone and the minimum number of samples required on successive passes.
	Any assumptions behind modelling of selective mining units.	No assumptions made
	Any assumptions about correlation between variables.	No assumptions made
	Description of how the geological interpretation was used to control the resource estimates.	One domain is used to constrain the main ore zone with dilution skins of 0.5m used to constrain the immediate footwall and hangingwall outside the main ore zone. Hangingwall lodes were constrained according to geological features. Each domain is validated against the lithology, and then snapped to the drill-hole and face data to constrain the mineralized envelope as a footwall and hangingwall surface. "Ore" wireframes are created within the geological shapes based on drill core logs, face samples and grade. Low grades can form part of an ore wireframe. A dilution 'skin' is translated 0.5m on both the footwall and hangingwall of the main ore wireframe and is estimated separately to the main ore and surrounding waste but not reported.
	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.	The estimated grades were assessed against sample grades and against declustered mean values
Moisture	Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.	Tonnes were assumed to be dry
Cut-off parameters	The basis of the adopted cut-off grade(s) or quality parameters applied.	Cut-off grades for reporting the resource were developed using a Gold Price of $Au1850 and budgeted mining costs for 2014/15 for the adjacent Rubicon mine. A cut-off grade of 3.7gpt was adopted based on calculated costs and revenue
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 was assumed for the evaluation Where required the resource was diluted to the minimum mining width using material with an assumed grade of 0.1gpt Where the diluted grade was above the cut-off the material was added to the resource inventory Dilution material added to make the minimum mining width was not included in the resource inventory.
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. Ore processing throughput and recovery parameters were estimated based on historic performance and potential improvements available using current technologies and practices. Metallurgical recovery factors have been developed based on extensive experience processing similar material from the Kundana Area

Criteria	JORC Code explanation	Commentary
Environmental factors or assumptions	Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	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 borefield 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. 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. The utilization of existing infrastructure will minimize the impact of development of the project Existing waste rock and tailings storage facilities have adequate available capacity to accommodate the project
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 are derived from wet and dry weighting of core no greater than 30cm total length, with core samples selected by changes in lithology/alteration or every 30-40m where no change is evident.
	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 voids are encountered in the ore zones as seen in the underground mines and core
	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, footwall and hangingwall as constrained by the lode wireframes
Classification	The basis for the classification of the Mineral Resources into varying confidence categories.	The classification of the resource was based on a series of factors including: Geological and 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 (ie. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).	
	Whether the result appropriately reflects the Competent Person's view of the deposit.	This mineral resource estimate is considered representative
Audits or reviews	The results of any audits or reviews of Mineral Resource estimates.	The resource model has been reviewed by Northern Star Resources staff
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 Kundana style of mineralisation. The application of geostatistical methods has helped to increase the confidence of the model and quantify the relative accuracy of the 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 estimate is considered to be robust on a local scale for material classified as indicated. Material classified as inferred or sub-inferred is considered to be robustly estimated on a global scale
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	Pegasus is not in a production stage as yet.

JORC Code, 2012 Edition – Table 1 Report: Voyager, Titan and Upper Paulsens Underground Resource and Drill Results Update at June 30 2014

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 (eg 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 and face chip sampling. Sample intervals are defined by the geologist to honour geological boundaries. RC drill results are also used in the Upper Paulsens model.
	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 down hole core blocks consistent with industry practice RC and most surface core drilling completed by previous operators to industry standard at the time (late 1990's to 2011).
	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 (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.	Diamond drilling and face sampling are completed to industry standard using varying sample lengths (0.3 to 1.5m) based on geological intervals, which are then crushed and pulverised to produce a ~200g pulp sub sample to use in the assay process. Pre Jun 2013Diamond core samples are fire assayed (30g charge), post fire assay charge is 40g Face samples are assayed by Leachwell Visible gold is occasionally encountered in core and face sampling
Drilling techniques	Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg 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).	Upper Paulsens model: Surface RC drilling, 176 holes (face sampling hammer, ~5 1/4" bit size), Surface drill core, 110 holes, (NQ2 sized, standard tube), 1304 sludge holes, 1550 Underground DD, 4252 faces. Voyager and Titan model: Surface drill core, 9 holes, Underground drill core, 1905 holes as well as 4,771 faces/rises used to generate sample composite The underground diamond holes are LTK60 and NQ2 size. Surface core is orientated using the EZ ORI-shot device, underground drill core is rarely oriented. Faces are chip sampled aim to sample every ore development cut, but ~10% of ore cuts are missed
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed.	Diamond drill recoveries are recorded as a percentage calculated from measured core versus drilled intervals. Achieving >95% recovery Surface RC drill recoveries are unknown and assumed high
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	Standard diamond drilling practice results in high recovery due to competent nature of the ground. RC drilling by previous operators to industry standard at the 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, 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 Logging is carried out by Company Geologists, who delineate intervals on geological, structural, alteration and/or mineralogical boundaries, to industry standard. Surface core and RC logging completed by previous operators to industry standard.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.	Logging is qualitative and all core is photographed. All sampled development faces are photographed. Visual estimates are made of sulphide, quartz and alteration percentages
	The total length and percentage of the relevant intersections logged.	100% of the drill core is logged. 100% of RC drilling is logged.

Criteria	JORC Code explanation	Commentary
Sub-sampling techniques and sample preparation	If core, whether cut or sawn and whether quarter, half or all core taken.	LTK 60 is generally whole core sampled, NQ2 core is generally half core sampled. If not whole core sampled, then core is half cut with Almonté diamond core saw and half core sampled. The right half is sampled, to sample intervals defined by the Logging Geologist along geological boundaries. The left half is archived. All major mineralised zones are sampled, plus associated visibly barren material, >5m of hangingwall /footwall. As well, quartz veins>0.3m, that are encountered outside the know ore zone and ±1m on either side. Ideally, sample intervals are to be 1m in length, though range from 0.30m to 1.50m in length. Total weight of each sample generally does not exceed 5kg. All samples are oven-dried overnight (max 120^0), jaw crushed to <6mm, and split to <3kg in a static riffle splitter. The coarse reject is then discarded. The remainder is pulverised in an LM5 to >85% passing 75µm (Tyler 200 mesh) and bagged. The analytical sample is further reduced to a 30gm charge weight using a spatula, and the pulp packet is stored awaiting collection by Northern Star Resources Limited(NSR). Post 2013 samples are crushed to 90% passing 3mm before a rotary split to 2.5 kg, all of which is then pulverised to 90% passing 75 micron For older core pre- NSR, best practice is assumed.
	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 >2.5kg. Samples are nominally 1 m in length but are modified to honour geological boundaries, and taken perpendicular to the mineralisation if practical Site lab sample prep has since January 2013 used a Boyd to crush and split to 3mm. Previous to that a jaw crusher (6mm aperture) and 50/50 rifle splitter were used.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	Sample preparation is deemed adequate though further improvement is in progress
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	For drill core the external labs coarse duplicates are used. One face sub sample per day is sent offsite for fire assay analysis to compare to Leachwell assay results. 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, ie. other half of cut core, are not been routinely assayed. For each development face, one field duplicate is taken of the highest grade area, to assess the reproducibility of the assays, and the variability of the samples. Variability is very high due sampling technique and to nuggetty nature of the mineralisation. The variability is accepted, countered by the high density of sampling.
	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 all drill core samples, gold concentration is determined by fire assay using the lead collection technique with a 30 gram sample charge weight. An AAS finish is used and considered to be total gold. A 40gram fire assay charge used post June 2013 Various multi-element suites are analysed using a four acid digest with an ICP-OES finish Face samples are analysed using Leachwell process, and are not considered total gold. RC drill samples by previous operators assumed Fire assay with AAS finished
	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.

Criteria	JORC Code explanation	Commentary
	Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie. lack of bias) and precision have been established.	The QAQC protocols used include the following for all drill samples: Site sourced coarse blanks are inserted at an incidence of 1 in 40 samples. From April 2013 commercial blanks are used. Commercially prepared certified reference materials are inserted at an incidence of 1 in 40 samples. The CRM used is not identifiable to the laboratory. NSR's Blanks and Standards data is assessed on import to the database and reported monthly and yearly. The primary laboratory QAQC protocols used include the following for all drill samples: Repeat of pulps at a rate of 2% Screen tests (percentage of pulverised sample passing a 75µm mesh) are undertaken on 1 in 100 samples. The laboratory reports its own QAQC data on a monthly basis. Failed standards are followed up by re-assaying a second 30g pulp sample of the failed standard ± 10 samples either side by the same method at the primary laboratory One standard is inserted with every face sampling submission to assess site lab performance Both the accuracy component (CRM's and umpire checks) and the precision component (duplicates and repeats) are deemed acceptable. QAQC protocols for Surface RC and diamond drilling by previous operators unknown, assumed to be industry standard.
Verification of sampling and assaying	The verification of significant intersections by either independent or alternative company personnel.	Significant intersections are reviewed by the geology manager and senior northern star personnel
	The use of twinned holes.	Twinned holes are not specifically designed. Occasionally deviating holes could be considered twins, showing similar tenor of mineralisation.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	Until very recently data is hard keyed or copied into excel spreadsheets for transfer and storage in an access database. Hard copies of face and core / assays and surveys are kept on site Internal checks are made comparing database to raw assays files. Visual checks are part of daily use of the data in Vulcan Data from previous operators taken from 2006 database compilation by Maxwell Geoservices and further maintained by a succession of Paulsens owners and now Northern Star Resources limited All data now stored in GBIS and electronically logged and downloaded
	Discuss any adjustment to assay data.	No adjustments are made to any assay data. First gold assay is utilised for the 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.	Drill hole collar positions are picked up by survey using a calibrated total station Leica 1203+ instrument. Drill hole, downhole surveys are recorded at 15m and 30m, and then every 30m after, by calibrated Pathfinder downhole cameras. Face samples are located by laser distance measurement device and digitised into Vulcan software. The faces are represented as "pseudo-drill holes" to allow assignation of survey, lithology, assay, and other relevant information. Underground workings are tied into defined surface survey stations Surface hole collars picked up by the mine surveyors in mine grid Pre - NSR survey accuracy and quality assumed to be industry standard
	Specification of the grid system used.	A local grid system (Paulsen Mine Grid) is used. It is rotated 41.5 degrees to the west of MGA94 grid. Local origin is 50,000N and 10,000E Conversion. MGA E = (East_LOC*0.75107808+North_LOC*0.659680194+381504.5)+137.5 MGA N = (East_LOC*-0.65968062+North_LOC*0.751079811+7471806)+153.7 MGA RL = mRL_LOC-1000

Criteria	JORC Code explanation	Commentary
	Quality and adequacy of topographic control.	Topographic control is not that relevant to the underground mine. For general use, recent Arvista aerial surveys are flown annually. Resolution is +/- 0.5m
Data spacing and distribution	Data spacing for reporting of Exploration Results.	Exploration result data spacing can be highly variable, up to 100m
	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.	Measured data spacing is better than 7m x 7m, and restricted to areas in immediate proximity to mined development. Data spacing for indicated material is approximately, or better than, 20m x 20m. All other areas where sample data is greater than 20m x 20m, or where intercept angle is low, is classified as inferred.
	Whether sample compositing has been applied.	Core and faces are 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 in ores zones above assumed threshold.
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.	Intercept angles are mixed, however, all material remains inferred until reconciled by moderate to high angle (45° to 90°) grade control drilling, or mining activities. Hanging-wall drill drives provide excellent intercept orientation to the geological structures used in the estimate.
	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 drilled with higher intersection angles.
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 transported via freight truck to Perth, with consignment note and receipts. Sample pulp splits are returned to NSR via return freight and stored in shelved containers on site 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.	Recent external review confirmed core and face sampling techniques are to industry standard. Data handling is considered adequate and was further improved recently with a new database. Pre NSR data audits found less QAQC reports ,though in line with industry standards at that 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.	M08/196 and M08/99 are wholly owned by Northern Star Resources (NSR) and in good standing. Surface expression of the Paulsens Gold Mine is on M08/99, most of underground workings are on neighbouring M08/196 There are no heritage issues with the current operation. Relationship with the traditional owners is good.
	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.	M08/196 and M08/99 are valid until 2020 and 2032 respectively
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	Data relevant to these resources was collected by CRA, Hallmark, Taipan, St Barbara, Nustar and Intrepid Mines Ltd previous to NSR. All previous work is accepted as to industry standard at the time.
Geology	Deposit type, geological setting and style of mineralisation.	Paulsens is a high grade, quartz hosted, mesothermal gold deposit within metasediments.

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.	Too many (>6000) holes to practically summarise all information for all drill holes and faces used. Detailed drill hole data is periodically released on ASX with all relevant information attached and can be found on the Northern Star website
	If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	All material data is periodically released on the ASX: 02/08/2013, 29/05/2013, 16/05/2013, 20/01/2013, 12/12/2012, 1/10/2012, 24/8/2012, 04/07/2012, 07/06/12, 29/05/2012, 12/04/2012, 6/03/2012, 25/11/2011, 17/11/2011, 09/11/2011, 13/10/2011, 12/09/11, 30/05/2011, 12/04/2011, 16/03/2011, 06/01/2011, 04/01/2011, 22/12/2010, 10/12/2010, 02/12/2010, 14/10/2010, 04/08/2010
Data aggregation methods	In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.	Length weighted averages are used, cut and uncut 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.	Short high assays are length weighted and aggregated to relevant down hole length
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	No metal equivalents 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.	Due to complex mineralisation geometry and varying intercept angles the true thickness is manually estimated on a hole by hole basis. Both true width and downhole lengths are reported
	If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').	Both true width and 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.	See long section in main release and previous ASX releases. See plan view with drill traces
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.	Grade control results that are deemed material may not be included 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.	Not applicable
Further work	The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).	Drilling will continue down plunge, to the North, and as needed for grade control in line with the mine plan.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Part of this ASX announcement

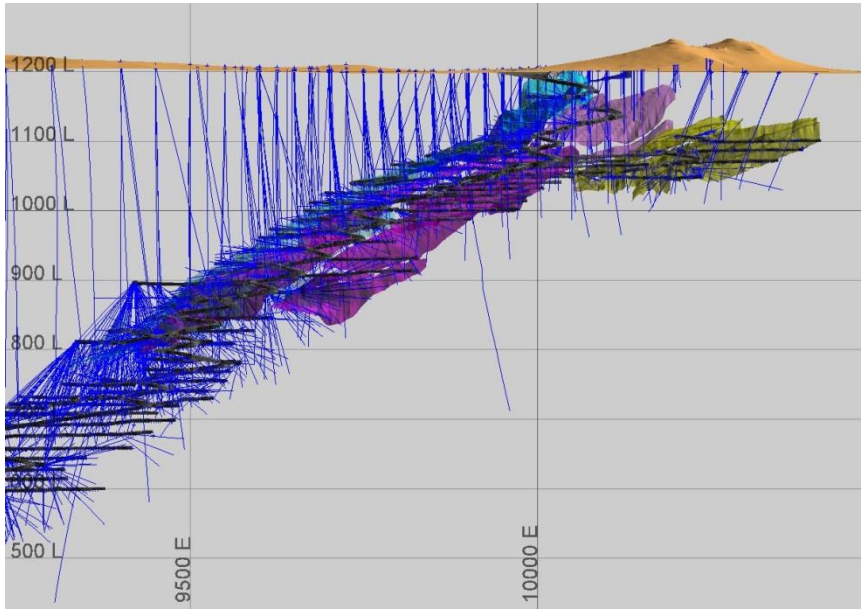
Section 3 Estimation and Reporting of Mineral Resources

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

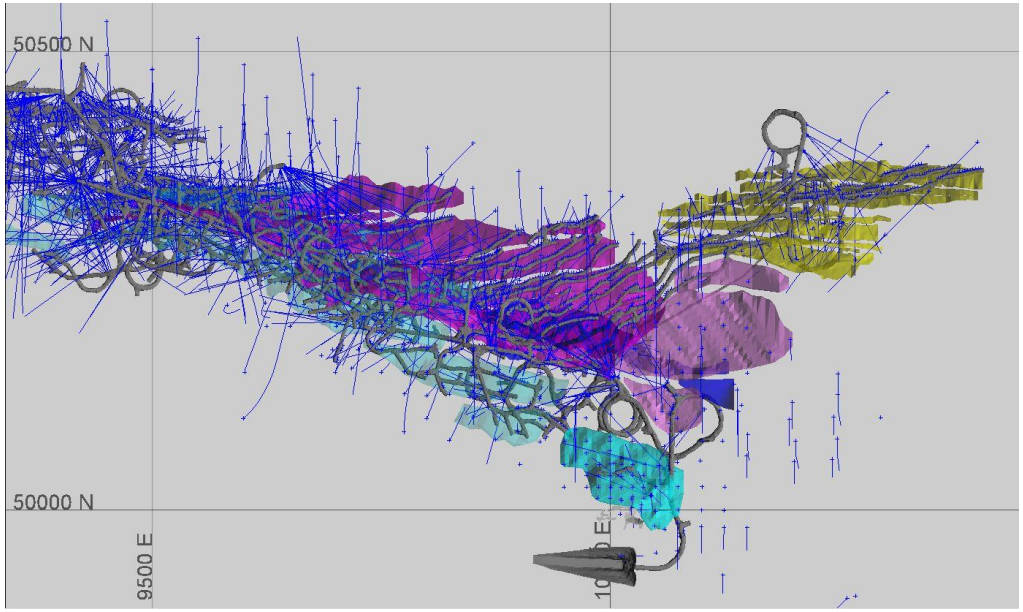
Criteria	JORC Code explanation	Commentary
Database integrity	Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.	Sampling and logging data is entered into excel sheets then transferred to an Access 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 Northern Star Resources (NSR) data assumed valid, this has been maintained by database administrators
	Data validation procedures used.	Random checks through use of the data in Vulcan software. Checks as part of reporting significant intersections and end of program completion reports. Maxwell Geo Services extensively validated the 2006 data compilation
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	This resource estimate has been conducted by geologists working in the mine and in direct, daily contact with the ore body data used in this resource estimate. The competent person works or worked at the Paulsens mine for 3 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. The confidence in the geological interpretation is high with all the information and plus 9 years of operation.
	Nature of the data used and of any assumptions made.	All available geological data was used in the interpretation including mapping, drilling faces, photos, structures.
	The effect, if any, of alternative interpretations on Mineral Resource estimation.	No substantially different, alternative interpretations have been completed or put forward.
	The use of geology in guiding and controlling Mineral Resource estimation.	The majority of mineralisation is located within a large, variably folded and faulted quartz host, close to, or on, the contacts with the surrounding wall rock sediments between an offset Gabbro intrusive. Drill core logging and face development is used to create 3D constrained wireframes.
	The factors affecting continuity both of grade and geology.	Grade continuity is related to the quartz and sulphide events within the boundaries of the gabbro extent. Mineralised veins are also within the gabbro units.
Dimensions	The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.	Upper Paulsens: Strike length = 1,100m down plunge at 30-35deg to the West Width = ~80m (though high grade component ~ 5m wide) Depth = from ~400m below surface to ~800m below surface Voyager: Strike length = 800m down plunge, 30-35deg to grid West Width = ~190m Depth = from ~130m below surface to ~550m 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.	Inverse distance squared (ID2) was used to estimate this resource, using Vulcan 9. 32 domains (in two models) were used to constrain the various lodes, defined by orientation, geological continuity, and grade population. Each domain is validated against the lithology, and then snapped to the drill-hole and face data to constrain the mineralised envelope as a 3D wireframe. Compositing of drill-hole samples was completed against these wireframed domains at 1m (downhole) interval.
	The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.	Recent reconciliations of the area have been in line with the resource estimate expectations
	The assumptions made regarding recovery of by-products.	No assumptions are made, but silver is a by-product that makes up part of the refinery revenue. This is not in the model and only gold is defined for estimation

Criteria	JORC Code explanation	Commentary
	Estimation of deleterious elements or other non-grade variables of economic significance (eg 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.	Block size is 5m x 4m x 5m, sub-blocked to 1m x 0.25m x 1m to suit the narrow east-west orientation of the majority of the domains Average sample spacing is 3m in the case of face samples Search ellipsoids are 25 * 12 * 6m to 50 * 20 * 10 m, varying the minimum number of samples required on successive passes as well as utilizing an octant search to decluster
	Any assumptions behind modelling of selective mining units.	No assumptions made
	Any assumptions about correlation between variables.	No assumptions made
	Description of how the geological interpretation was used to control the resource estimates.	"Ore" wireframes are created within the geological shapes based on drill core logs, mapping and grade. Low grades can form part of an ore wireframe
	Discussion of basis for using or not using grade cutting or capping.	Top-cuts were used as presented by Optiro Pty Ltd in 2012 that ranges from 50 to 200gpt on individual domains Top cuts are set to incorporate approximately 97.5% of the available sample population for each 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 is through swath plots comparing composites to block model grades, along 10m eastings and RL Visually, block grades are assessed against drill hole 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. Moisture content within the ore is low (~1-2 %)
Cut-off parameters	The basis of the adopted cut-off grade(s) or quality parameters applied.	Reporting cut off = 2.5gpt based on breakeven stope grade with development in place. Modelling lower grade cut off = 0.3gpt nominally
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.	Standard Sub Level retreat mining methods are predominantly used. Historical mining and reconciliation data has been taken into consideration but without affecting wire frame interpretation The total model has been coded to identify previously mined areas and only reports remnant mineralisation, most of which was left behind with previous operators due to hedges at $A650/ounce.
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 ore is considered to be free milling (Life of Mine over 9 years 94.5% recovery), average hardness (BWI15-16), and with no significant refractory component. There are few minor deleterious elements, the footwall graphitic shales being the only concern in that this can affect recovery through preg-robbing if processed on its own. This known effect is managed through blending the ROM feed to the crusher prior to milling. In Voyager Extension, more copper is being seen, requiring higher levels of reagents. This is also managed through blending the ROM feed to the crusher prior to 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 greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	Paulsens is an operating mine with 9 years history and all permits and closure plans in place. As with all unweathered, underground deposits, when mined, natural oxidation and weathering occurs, however, the ore and waste material mined at Paulsens has been reviewed several times by both independent and contracted consultants with the overall comment that there appears to be no major effects on the environment outside of the environmental conditions imposed with the granting of the initial mining license.
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.	Over 4,000 bulk density measurements from diamond drill holes have been taken from mineralised and unmineralised intervals within the project area. The bulk densities are derived from laboratory pycnometer readings, with some of the domain densities adjusted over time through mine tonnage reconciliations.

Criteria	JORC Code explanation	Commentary
	The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.	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.	Individual bulk densities are applied to geological units and ore zones
Classification	The basis for the classification of the Mineral Resources into varying confidence categories.	Classification is defined by data spacing of diamond holes, face/wall and rise sampling and reflects the degree of confidence in the areas specified. Measured resource classification is where the estimate is supported by data less than 5m apart and/or within 5-7m of development. Indicated resource classification is where the mineralisation has been sufficiently defined by a drill spacing of 12-15m x 12-15m or better, and/or where development has occurred within 12-15m. Inferred resource is based in addition to the above to a maximum search distance of 50 m from last sample point This Upper Paulsens resource has not been audited externally. Previous estimates of this area utilising the same, or very similar variables, have been reviewed by external parties and internal parties with protocols deemed appropriate. The area has also been externally estimated by Ordinary Kriging (Hellman and Schofield 2007-2010), Inverse distance (ResEval Pty Ltd) 2004-2006, Conditional Simulation and Ordinary Kriging (Golders) 2002
	Whether appropriate account has been taken of all relevant factors (ie. 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).	Classification is primarily based on 9 years of Paulsens mining experience
	Whether the result appropriately reflects the Competent Person's view of the deposit.	This mineral resource estimate is considered representative
Audits or reviews	The results of any audits or reviews of Mineral Resource estimates.	This particular resource has not been audited externally. Previous estimates of this area utilising the same, or very similar variables, have been reviewed by external parties and internal parties with protocols deemed 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.	This resource is one in an iterative, evolutionary approach, attempting to increase confidence with each estimation. Taking account of all reconciliation, audits, mentor, and increased ore body knowledge the qualitative confidence improves with mining and 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.	This resource report relates to the Upper Paulsens, Voyager 1 and 2 and Titan, and will show local variability. The global assessment is more of a reflection of the average tonnes and grade estimate.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	The current Inverse Distance estimation methodology appears to perform sufficiently as an estimation technique for the Paulsens mineralisation.



Paulsens Long Section with drillhole traces and mineralised domains



Upper Paulsens Plan View with drillhole traces and mineralised domains

Section 4 Estimation and Reporting of Ore Reserves-Paulsens

(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 June 2014 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. The competent person is currently engaged to work on site
	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.	Update of previous 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.	Update of previous Ore Reserve
Cut-off parameters	The basis of the cut-off grade(s) or quality parameters applied.	Break even cut off of 3.03 gpt applied

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).	Indicated Resources were converted to Probable Ore Reserves subject to mine design physicals and an economic evaluation. Measured material existed in the Voyager Resource model which subsequently converted to Proven Reserves. Further to this stockpiles and gold in circuit (GIC) and gold in transit (GIT) were considered as Proven.
	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.	Selected mining method deemed appropriate as it has been used at Paulsens since 2005
	The assumptions made regarding geotechnical parameters (eg pit slopes, stope sizes, etc), grade control and pre-production drilling.	Assumptions based on actual mining conditions
	The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).	This table one applies to underground miring only
	The mining dilution factors used.	Based on historical mine performance, mining dilution of 20% for stoping and 17% for development is applied based on historical data
	The mining recovery factors used.	Mining recovery factor of 100%, mining dilution of 20% for stoping and 17% for development is applied based on historical data
	Any minimum mining widths used.	2.0m
	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
	The infrastructure requirements of the selected mining methods.	Infrastructure in place, currently is an operating mine
Metallurgical factors or assumptions	The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.	The Paulsens gold mill utilises a CIL (Carbon In Leach) circuit for the extraction of gold. Reserves are based on historical data from the operation of the plant and a Processing recovery of 93% is used for Paulsens
	Whether the metallurgical process is well-tested technology or novel in nature.	Milling experience gained since 2005, 9 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, 9 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, 9 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.	Paulsens is 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.	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.	Actual mine operating costs used
	The methodology used to estimate operating costs.	Processing, Mining Services, Geology Services and Administration costs have been estimated as a cost per ore tonne based on tracked historical performance. Mining Services fixed cost is based on the monthly lump sum provided in the schedule of rates and then annualised and divided by the budgeted annual processing rate to obtain a cost per ore tonne.
	Allowances made for the content of deleterious elements.	No allowances made for deleterious elements

Criteria	JORC Code explanation	Commentary
	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$1,450 per ounce 2.5% WA State Govt royalty.
	The source of exchange rates used in the study.	All in $A
	Derivation of transportation charges.	Historic performance
	The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.	Refining charge built into the cost model
	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.	Revenue was based on a gold price of AUD $1,450
	The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.	NSR internal resource and reserve guidelines 2014. These are documented in emails and memos
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 market prices with no hedges in place
	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.	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 not assessed
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 land owner 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.	No issues foreseen
	The status of material legal agreements and marketing arrangements.	No issues foreseen
	The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.	As a current operation, all government approvals are in place. No impediments are seen in any of these agreements for the continuation of mining activities.
Classification	The basis for the classification of the Ore Reserves into varying confidence categories.	All Ore Reserves include Proved (if any) and Probable classifications
	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).	None
Audits or reviews	The results of any audits or reviews of Ore Reserve estimates.	There have been no external reviews of this Ore reserve estimate

Criteria	JORC Code explanation	Commentary
Discussion of relative accuracy/ confidence	Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or 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 reasonable 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.	Other than dilution and recovery factors, no additional factors have been applied to the June estimation.
	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 Paulsens has been considered and factored into the reserve assumptions where appropriate.

JORC Code, 2012 Edition – Table 1 Report: Plutonic Gold Mine Resource, Reserve and Drill Result update. June 30 2014

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 (eg 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.	Over its history this deposit has been sampled using numerous techniques by NSR (Northern Star Resources Limited) and previous operators. This is assumed to be to industry standard to that time. Currently diamond drilling and face sampled sections have sample intervals defined by the geologist to honour geological boundaries ranging from 0.3 to 1m in length. Sampling of NQ2 and LTK60 is half core. BQ and LTK48 is sampled as full core. Face chip sampling is completed perpendicular to the lode orientation in the face.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	Core is aligned to orientation markers and measured by tape, comparing back to down hole core blocks consistent with industry practice. All other sampling by previous operators is assumed to be 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 (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.	Diamond drilling completed to industry standard using varying sample lengths (0.3 to 1m) based on geological intervals, which are then crushed and pulverised to produce a ~250g pulp sub sample for use in the assay process. NSR (Northern Star Resources Limited) diamond core samples are fire assayed at the Plutonic Fire Assay Lab (PFAL) facility on site (40g charge). Visible gold is occasionally encountered in core. Underground face chip samples follow the same process. All other sampling by previous operators assumed to be to industry standard at that time.
Drilling techniques	Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg 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).	Over its history this deposit has been drilled and sampled using numerous techniques by NSR (Northern Star Resources Limited) and previous operators. This is assumed to be to industry standard at that time. Underground diamond drilling carried out by using BQ, NQ2, LTK48 and LTK 60. Core is orientated using the Ezy-Mark device.
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed.	Chip sample recoveries not relevant in this instance. No RC drilling has taken place for years at Plutonic and impact on the resource would be minimal. DD recovery is not noted specifically, though core is blocked to meter marks. Discrepancies to core blocks are brought up with the drill contractor. Occasionally core loss blocks are inserted. Overall drill core recovery is very good.
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	NSR diamond drilling practice results in high recovery due to the competent nature of the ground. RC and diamond drilling by previous operators assumed to be 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. Surface core and RC logging completed by previous operators assumed to be to industry standard at that time.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.	Logging is Qualitative and Quantitative and all core is photographed. Visual estimates of sulphide (percentage) and alteration (intensity scale) are recorded. A significant archive is found on site containing previous drilling, sampling and core photography where available. Previous logging assumed to be to industry standard at that time.
	The total length and percentage of the relevant intersections logged.	100% of NSR drill core is logged. Faces are mapped and sampled where access permits.

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.	If the core was BQ or LTK48 it was sampled as full core and dispatched to the laboratory for analysis. If the core was NQ2 or LTK60, it was cut in half with an Almonté diamond core saw; the top half of the core was sent to the laboratory for analysis and the other half was placed back in the core tray, transferred onto pallets, and moved to the core yard library. All other core sampling by previous operators assumed to be to industry standard at that time.
	If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.	Non-core drilling by previous operators assumed to be to industry standard at that time.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	Following drying at 150°C Samples are crushed and split down to <1kg, 90% < 3mm using Essa Jaw crusher and 50:50 riffle splitter or Boyd rotary crusher and 50:50 rotary splitter at the labs discretion. Primary samples 700g – 750g pulverised to 90% passing 75µm in LM2. Use scoop to subset to 250-300g, use scoop to subset to 40g for fire assay. 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 representivity of samples.	Core Field duplicates taken at 1:50 Crusher duplicates taken at 1:50 for core and 1:20 for face chips Pulp duplicates taken at 1:50 for core and 1:20 for face chips
	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.	Limited field duplicates samples were taken in 2013, 121 were assayed by the Plutonic site lab, 11 were analysed offsite. Field duplicate sampling results display inconsistent repeatability. The sub sample for the field residue check sampling does not appear to be representative. The sampling protocol may need to be reviewed. Not enough field residue check samples were taken for the total number of samples. This requires a manual selection of samples by the geologist. An update to make sample allocation digital has resulted in the geology department being unable to select samples for field residue check sampling. This needs to be reviewed.
	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 all NSR drill core and face samples, gold concentration is determined by fire assay using the lead collection technique with a 40g sample charge weight. An AAS finish is used, considered to be total gold. All other laboratory procedures exercised by previous operators assumed to be to industry standard at that time and not reviewed for this resource.
	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.

Criteria	JORC Code explanation	Commentary
	Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie. lack of bias) and precision have been established.	QAQC protocols and performance for Underground data ▪ The field QAQC protocols used include the following for all drill samples: - Duplicate samples are taken from core at a rate of 1 in 50 samples, - Coarse blanks are inserted at an incidence of 1 in 40 samples, after visible gold, and after suspected high grade samples. - Commercially prepared certified reference materials (CRM) are inserted at an incidence of 1 in 20 samples. The CRM used is not identifiable to the laboratory. - NSR's QAQC data is assessed on import to the database and reported monthly and yearly. ▪ The laboratory QAQC protocols used include the following for all drill and face samples: - Repeat analysis of coarse crush and pulp samples occurs at an incidence of 1 in 20 samples for face chips, 1:50 for core, - Sizing checks are performed at all stages of prep (90% passing < 3mm for coarse crush, 90% passing 75µm) are undertaken on 1 in 100 samples, - The laboratories own standards are loaded to the AcQuire database, - The laboratory reports its own QAQC data on a monthly basis. ▪ In addition to the above, about 5% of samples are sent to an umpire laboratory. ▪ Failed standards are followed up by re-assaying a second 50g pulp sample of all samples in the fire above 0.1ppm by the same method at the primary laboratory. Both the accuracy component (CRM's and umpire 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 previous operators (Barrick)are thoroughly documented and of high standard.
Verification of sampling and assaying	The verification of significant intersections by either independent or alternative company personnel.	Significant intersections verified by alternative company personnel.
	The use of twinned holes.	There are no recent purpose twinned holes.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	Drill and face logging is completed electronically onto laptops. Database protocols and rules are applied upon data entry. Visual validation and check logging of face and drill data. Drill data is stored in an acQuire database, face data in a Fusion database (previously Mine Mapper). All maintained on site by NSR company database administrator. All face and drill data within site databases are regularly validated using both internal database systems and external validation tools. Validation of previous operators data is completed periodically.
	Discuss any adjustment to assay data.	Conversion of lab non-numeric code to numeric for 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.	UG hole collar locations picked up regularly by site surveyors Multi shot cameras and gyro units are used for down-hole survey Development faces are spatially located using MineMapper and Vulcan 3 D software Underground development picked up as required in a working mine. Stopes voids are generally all surveyed by CMS (where practical and safe to do so). In 2010, an independent gyro check survey of the underground workings showed very good correlation.

Criteria	JORC Code explanation	Commentary
	Specification of the grid system used.	Drilling collared underground is drilled on the localised (POL) Grid. Rotated 3° west from AMG. The elevation datum used for underground has 1,000 metres added in order to eliminate the possibility of negative RLs at a later stage of mining. Two point conversion from AMG to POL Point 1 AMG N7197660.681, E745533.6 POL N10850.28, E 4122.20 Point 2 AMG N7198362.518 E746350.229 POL N11594.561 E4899.96
	Quality and adequacy of topographic control.	Local topography and pits surveyed by mine site survey department. Accuracy estimated to be within 10cm and is continually updated in light of pit backfill and infrastructure modifications.
Data spacing and distribution	Data spacing for reporting of Exploration Results.	No specific exploration results reported. All reported exploration results by previous operators assumed to be to industry standard at that time and or within existing mineral resource estimates.
	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.	Face samples in combination with drilling determine measured material. This allows for interpretation and data spacing based on underground exposure and the mine development advance length. Average drill spacing is approximately 20m by 20m or better for the main areas of the resource, allowing indicated classification. Spacing increases up to 160m by 80m on the peripheral areas, which is estimated into inferred classification. The data spacing and distribution is sufficient to establish geological and/or grade continuity appropriate for the Mineral Resource and classifications to be applied, with known likelihood of local variability.
	Whether sample compositing has been applied.	The drill core is logged and divided into sample intervals that have a minimum sample length of 0.3m and a maximum sample length of 1.0m. Intervals should honour geological boundaries such as faults and lithological contacts. Most nominal sample lengths were at 1m intervals; sample compositing is not applied until the estimation stage. No recent RC drilling undertaken. 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.	Targets drilled perpendicular where possible. However, orientation to lode may be compromised by access to suitable drill platforms. Drillholes are extended to the Mine Mafic boundary where required and practicable. Face sampling is orientated perpendicular to lode orientation. 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 resource estimation. As the opportunity arises better angled holes are infill drilled.

Criteria	JORC Code explanation	Commentary
Sample security	The measures taken to ensure sample security.	All cut drill core is kept in an unfenced core farm adjacent to the core cutting and processing shed. This is not regarded as a security risk due to the remote location of the mine with no community development near the mine. All core is photographed and records kept electronically. Production Mine Geologists' are responsible for marking the sample intervals and placement of Blanks and Standards within the sampling stream for both faces and core. The Project Geologist and Senior Geologist complete quality control checks on the face data daily. Field Staff are primarily responsible for the collection of samples from the face as chips, as well as the cutting and sampling of core. Also generating the sample numbers for core submission, creating a sample submission sheet for core and faces, randomly selecting and recording the standards to be sent to the laboratory and the transportation of the samples to the laboratory. Once a hole has been sampled, the sample calculation and check geology documents are handed to the Assistant Database Administrator who converts the digital copy of the sample calculation to a .csv file which is then imported into the acQuire database. Upon receiving the digital file for the assay data, the DBAs import the file into the master acQuire database. This data is not accessible for assessment until it has been validated as complete and correct by the QAQC Geologist and DBA. Face data is received in the same format but is entered into the Fusion Database instead. Pulp rejects from assayed samples are kept in wooden boxes on top of the waste dump. These are visited frequently as samples are taken for research and other purposes. Drill logs are kept in hard copy and electronically and are available for checking and due-diligence.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	Previous review by Roscoe Postle Associates concluded the sample preparation, analysis, and security are adequate for Mineral Resource 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.	All mining leases (M52/0148, M52/0149, M52/0150, M52/0170, M52/0171, M52/0222, M52/0223, M52/0263, M52/0264, M52/0289, M52/0295, M52/0296, M52/0300, M52/0301, M52/0308, M52/0309, M52/0591, M52/0592) are in good standing and still officially held by Barrick. Barrick have submitted tenement title transfers for the Plutonic Project, which are currently awaiting assessment at the Office of State Revenue, Western Australia. There are no heritage issues with the current operation.
	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.	Mining leases M52/0148, M52/0149, M52/0150, M52/0170, M52/0171, M52/0222, M52/0223, M52/0263, M52/0264, M52/0289, M52/0295, M52/0296, M52/0300, M52/0301, M52/0308, M52/0309, M52/0591, M52/0592 granted for the next 3 – 20 years.
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	Gold mineralisation was discovered in 1987 by Great Central Mines, with numerous companies exploring and mining prior to Northern Star Resources Limited. All previous work is accepted and assumed to industry standard at that time. Full history of exploration, development and mining documented in the technical report.
Geology	Deposit type, geological setting and style of mineralisation.	The gold deposits at Plutonic are hosted by an Archaean greenstone sequence and occur mainly as a multiple lode systems with variable dip (horizontal to vertical) hosted almost exclusively by a mafic amphibolite sequence that are referred to as the 'Mine Mafics'. Mineralization regularly occurs as shallowly dipping, layer parallel lodes, although steep lodes and minor quartz-vein hosted deposits also occur. Mineralization at Plutonic is characterized by a series of moderately-dipping to very flat-lying, stacked replacement-style lodes, individually up to five metres wide, that are hosted within ductile shear zones, oriented slightly oblique to stratigraphy. Gold bearing laterite deposits occur near surface in association with several of the oxide and primary deposits.

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: ○ easting and northing of the drill hole collar ○ elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar ○ dip and azimuth of the hole ○ down hole length and interception depth ○ hole length.	Exploration results not being released at this time.
	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. Holes are close spaced and tightly constrained to an active mine area.
Data aggregation methods	In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.	Not Applicable. Exploration results previously 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.	Not Applicable. Exploration results previously released.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	No metal equivalents are reported.
Relationship between mineralisation widths and intercept lengths	These relationships are particularly important in the reporting of Exploration Results.	Exploration results not being released at this time. Future exploration results will be released with downhole depth and estimated true thickness.
	If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.	Due to complex mineralisation geometry and varying intercept angles the true thickness is manually estimated on a hole by hole basis.
	If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').	Exploration results not being released at this time. Future exploration results will be released with downhole depth 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.	No significant discovery as only a resource and reserve update for active mining areas. All relevant diagrams contained within available technical documentation.
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.	Exploration results not being released at this time. Future exploration results to include all intersections for the period / area.
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.	Exploration results not being released at this time.
Further work	The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).	Underground grade control and extensional drilling programs are underway, and will continue in line with mine development and production requirements.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Part of main technical documentation

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.	Drill and face logging is completed electronically onto laptops. Database protocols and rules are applied upon data entry. All drillhole logging undergoes check logging before completion. Pre NSR data considered correct, has been maintained by NSR company database administrators. Validation of Pre NSR data is completed periodically.
	Data validation procedures used.	All face and drill data within site databases are regularly validated using both internal database systems and external validation tools. Visual validation and check logging of face and drill data.
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.	Competent Person based on site.
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 high with all the information and over 20 years of open pit and underground operation used in the generation of the models.
	Nature of the data used and of any assumptions made.	All available geological data was used in the interpretation, including drilling and mapping.
	The effect, if any, of alternative interpretations on Mineral Resource estimation.	No alternative interpretations have been completed or put forward outside those at drive and stope scale that will impact the global resource.
	The use of geology in guiding and controlling Mineral Resource estimation.	Drill core logging and mapping used to determine domaining and influence search orientations and distances.
	The factors affecting continuity both of grade and geology.	Mineralization regularly occurs as shallowly dipping, layer parallel lodes, although steep lodes and minor quartz-vein hosted deposits also occur. Due to the discontinuity of mineralisation due to geological features/structures, actual measured lengths of individual lodes have been used to establish continuity. This is preference to variography which demonstrated potential search distances well beyond know lode 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.	Main Mining Area Strike length = 4,150m (north - south) Width = 3,000m (east - west) Depth = surface to 325mRl (~1,200m below surface) Plutonic East Strike length = 3,000m Width = 1,500m (North-south) Depth = surface to 733mRl (~750m below surface)

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.	Drillhole and face sample compositing was completed against geological boundaries originally to 0.5m, with a recent increase to 1m to closer reflect sample size. Top cut values are selected using a lognormal probability plot. Other factors considered when selecting the top cut values are: the coefficient of variation after top cutting and metal lost. Once a suitable top cut is determined it is applied to the assays prior to compositing. In addition to the capping of high grade assays prior to compositing, the Plutonic block models use a high yield exclusion/threshold technique to avoid the impact of high grade values having a disproportionate effect on blocks beyond a reasonable distance. Composites greater than the selected threshold values are restricted to a smaller search ellipse. This technique is only used in the Measured estimation run. Inverse distance interpolation method was used for all estimation passes utilizing tetra surfaces for each domain, or oriented searches where not suitable. No models were completed using ordinary kriging or variography. This is because the known geological conditions do not match the search distances derived from the variograms. Classification is determined based on data type and density. Measured material relies on face samples, and is restricted to immediately around drive locations. Known geological conditions then used to determine indicated search distances, with the final inferred search double the indicated search. *Estimation and modeling techniques unique to Timor, Pacific and Caspian estimations;* • 1m composite capped high grades based on lithology • Indicator estimation run to define mineralization triangulations. Inverse distance interpolation method used to estimate grade within triangulations with search orientations defined per domain. • Classification defined by which pass a block is estimated. Maptek Vulcan software is used to conduct all modelling and estimation.
	The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.	Updates are compared to previous estimates with variances validated against data, interpretation, estimation changes and mining depletion.
	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 (eg 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 size is 10m (Y) x 10m (X) x 10m (Z), with sub-block to 1m x 1m x 1m Timor, Pacific and Caspian estimation parent block size is 6m (Y) x 6m (X) x 6m (Z), with 1m x 1m x 1m within mineralized zones, all sub-block to 0.5m x 0.5m x 0.5m Average drill spacing is 20m x 20m or better for the main areas of the resource, up to 160m by 80m on the peripheral areas. Measured search parameters horizontally are restricted to four metres to allow at least two face samples to influence the grade estimation of a block. For each particular sub-domain within the resource area, the average centre line to centre line between ore development drives was estimated. Half of this average distance is then selected as the lode dip search length. Z search distance across strike is limited by interpreted lode geometry. Indicated search parameters are determined by measuring the length of the individual lodes from hard copy plans of back mapping or mapping completed digitally using visualization software. The cumulative value at the 80th percentile was determined and half this length was used as the Indicated search length for the major and semi-major axes. Z search distance remains the same. Inferred search is set at double the indicated search distance. Z search distance remains the same. Timor, Pacific and Caspian classification defined by which pass a block is estimated.
	Any assumptions behind modelling of selective mining units.	A 1.5m minimum mining width for underground environment is assumed.
	Any assumptions about correlation between variables.	No assumptions are made about correlation between variables for estimation.

Criteria	JORC Code explanation	Commentary
	Description of how the geological interpretation was used to control the resource estimates.	Estimations are constrained by Mine Mafic and Dolerite interpretations. Search orientations closely related to Mine Mafic orientation. Fault surfaces used as domain boundaries as required. Use of lithology during capping and as indicators for estimation of Timor, Pacific and Caspian areas, to create mineralized wireframes.
	Discussion of basis for using or not using grade cutting or capping.	Top cuts are applied to constrain the influence of outlier grades during grade estimation, and are determined by statistical techniques and vary by domain. Top cuts are derived by examining the gold values at the upper end of the distribution on a lognormal probability plot. Timor, Pacific and Caspian estimation top cuts were determine by statistical techniques and vary by domain and lithology.
	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 grades are assessed against previous models and drill hole and face data visually, by using swath plots and grade tonnage curves. Comparisons are made within mining shapes to localised grade control models. Given the localised geological complexity, high spatial variability and significant amount of material mined outside of reserve (40% of ounces), reconciliation of ounces to declared ore mined can be of limited value.
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. Underground 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.	Reporting cut-off varies for each resource area. This is derived using calculation based on mining, process and G&A costs, recovery, metal price and selling costs. Full calculations are documented in the site cut-off grade report.
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 resource has been created on the basis of the currently employed underground mining 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 metallurgical conditions and characteristics of the Plutonic Underground mineralisation are generally known. No Metallurgical assumptions have been built into the 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 greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	The Plutonic Underground operation is a going concern and as such the previous practice have shown to be effective and practical.
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 is determined from drillcore using a weight in air/weight in water method. Samples are taken from every 5th hole. Currently there is a database of 3,429 bulk density measurements which have been taken from mineralised and unmineralised intervals, with an ongoing sampling program in place.
	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.	Samples of between 0.5 and 2.0kg are weighed in air and weighed in water. The following equation is used to derive bulk density Bulk Density = $Wd\ /\ (Wd - Ww)$
	Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	For the purposes of estimating Mineral Resources a global bulk density of 2.9 t/m^3 was applied to all models, with the exception of Plutonic East , which uses 2.8 t/m^3.

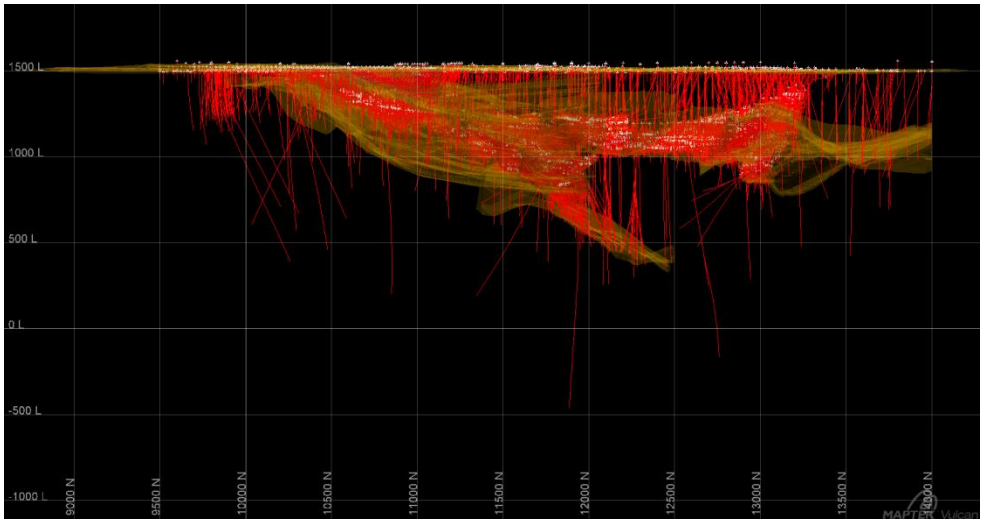
Criteria	JORC Code explanation	Commentary
Classification	The basis for the classification of the Mineral Resources into varying confidence categories.	Resources are classified to reflect the confidence in the grade estimation and geology. This confidence is a reflection of the search strategy and the number of composites used to estimate grade, coupled with an examination of the geological continuity of the deposit and other factors including database integrity, geological interpretation, and estimation techniques.
	Whether appropriate account has been taken of all relevant factors (ie. 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 operations
	Whether the result appropriately reflects the Competent Person's view of the deposit.	This mineral resource estimate is considered globally representative of the Plutonic Underground deposit. It is acknowledged that localised variability is likely. Resource reported at a gold price of AUD$1,650 per ounce. Resource reporting utilises Vulcan Stope Optimiser, creating individual stopes shapes above the applicable resource zone cut-off grade using a standard X:5m x Y:5m stope dimension with a variable Z dimension (5-20m). *Note: To provide better correlation to block size, Plutonic East stope dimensions were increased to 8x8x2*. All resource material is reported from within each shape, excluding depletion and sterilisation. This process allows for the reporting of material closer to that which has a reasonable prospect of economic extraction. As a continuation of the stope optimizer process improvement from 2013, Plutonic Gold Mine is now utilising a depletion factor for reporting resources. It was identified through a recent engineering study that resource reported utilising the stope optimiser method may be overstating material within the vicinity of stoping and development. The most accurate, but time consuming approach to remove this material is a visual assessment of each stope optimiser shape by an engineer to determine its mining potential. This has previously taken approximately 2 months. To expedite this process, this previous historic work completed by Barrick Mining Services Engineering has been used as a basis for creating depletion factors for remaining resource based on the percentage of MY2013 resource removed. *Example*: Baltic Resource area Review isolated the impact of removing ounces associated with mining. Categories such as 'isolated' and 'inaccessible' remain due to their potential if the gold price were to rise further. The percentage of ounces removed due to 'mining' and 'pillars' was used to generate the factor and then applied by determining remaining resource when compared against current reporting methods.

Baltic Resource Area

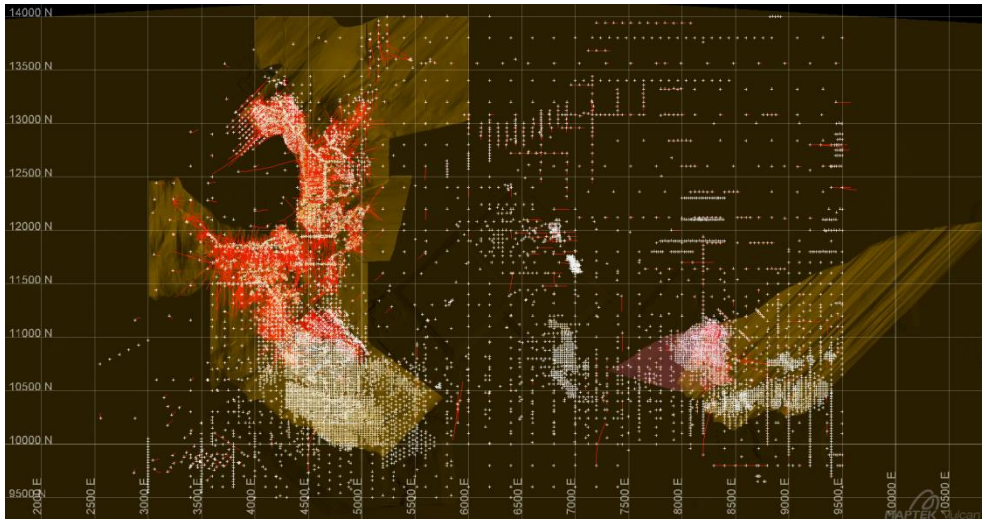
Category	Ounces
Initial Resource	**190,427**
Mined Resource	**-74,540**
Below Site wide RCOG	0
Pillars	**-2,839**
Isolated	-25,091
Inaccessible	-21,727
Reserve - MY2013	-2,483
Uneconomic - MY2013	-1,481
Unmineable - MY2013	-461
Remaining High potential Resource	**61,955**

Initial Resource	**190,427**
Mined Resource	-74,540
Pillars	-2,839
Remaining High potential Resource	**113,048**
Remaining	59%
Removed (**DEPLETION FACTOR**)	**41%**

Criteria	JORC Code explanation	Commentary
Audits or reviews	The results of any audits or reviews of Mineral Resource estimates.	The Mineral resource has been subjected to reviews by Northern Star Resources' senior technical personnel. Audit of the process and validation of Mineral Resource estimates was undertaken by independent consultants from Roscoe Postle Associates. Concluding the Mineral Resource was estimated in a manner consistent with industry practices and meets the requirements of NI 43-101.
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 globally representative of the Plutonic Underground deposit. It is acknowledged that localised variability is likely. As mining progresses throughout all resource areas domains, search orientations and tetra surfaces are updated to reflect new knowledge. Block estimates are compared to input data, both visually and statistically. Reporting techniques utilising stope optimiser tools to more closely represent material with a reasonable prospect of economic extraction increases confidence in the resource tonnes, grade and ounces reported.
	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 all resource areas within the Plutonic Underground mining operations and is likely to have local variability. The global assessment is more of a reflection of the average tonnes and grade estimate.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	Given the localised geological complexity, high spatial variability and significant amount of material mined outside of reserve (40% of ounces), reconciliation of ounces to declared ore mined can be of limited value. However, globally the estimates are considered to be an accurate representation of resource ounces. Resource models are used as a primary source of mine extension targets.



Long Section – Plutonic Underground with drillhole traces and mineralised domains. Surface grade contol holes shown, but not used for estimation



Plan View – Plutonic Underground with drillhole traces and mineralised domains. Surface grade contol holes shown, but not used for estimation

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 on updated or depleted resource models for all areas of Plutonic Underground.
	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.	Competent Person is based on site
	If no site visits have been undertaken indicate why this is the case.	Competent Person is based on site
Study status	The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.	Mineral resource and ore reserve update
	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.	Currently an operating mine, and all resource / reserve work has been conducted on ore zones either within or adjacent to current mine workings (i.e. they are not subject to any further feasibility type study level).
Cut-off parameters	The basis of the cut-off grade(s) or quality parameters applied.	Cut-off grades vary for each resource zone. This is derived using calculation based on historical mining, processing and G&A costs, and incorporates future projections of any major consumable cost increases, metallurgical recovery, metal price and selling costs. Full calculations are documented in the 2014 MY cut-off grade report. Cut-off grades range from 3.15 gpt to 4.18 gpt
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).	Reserve blocks are identified, individually designed and then evaluated using economic parameters as derived from the latest cut-off grade revision. No new or untested techniques were incorporated.
	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.	Based on mining techniques and methodologies currently in use at the operation.
	The assumptions made regarding geotechnical parameters (eg pit slopes, stope sizes, etc), grade control and pre-production drilling.	Plutonic has built up a large knowledge base of geotechnical characteristics and observations, which have led to the establishment of the existing mining practises. These practises are mirrored in the creation of the reserve blocks.
	The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).	The main assumption made revolves around there being no significant deviation from current mining techniques and methodologies. Three general mining methods have been applied: 1. Longhole retreat – this is the predominant method used. Stope dimensions vary with the specific block being mined, but generally range from 4-20m in height, with widths varying from 2-15m. 2. Jumbo stripping – used where ore zones are shallow dipping and limited in extent to the length of a jumbo steel (2.5m) 3. Airleg mining – used for high grade, narrow lenses and occasionally as exploration ventures where the local geology is not well-defined
	The mining dilution factors used.	90% (by ounces) of the current reserves were designed using resource models and have the mining dilution = 10% 10% (by ounces) of the current reserves were designed using localised grade control models. These reserves are "Advanced Planning" reserves and have a range of mining dilutions applied depending on their location. Dilutions range from 5% - 20%
	The mining recovery factors used.	90% (by ounces) of the current reserves were designed using resource models and have the mining recovery = 90% 10% (by ounces) of the current reserves were designed using localised grade control models. These reserves are "Advanced Planning" reserves and have a range of mining recoveries applied depending on their location and mining method. Mining recoveries range from 90% - 100%
	Any minimum mining widths used.	Minimum mining width of 2m is applied to stopes.

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.	New and existing reserves were designed using only measured and indicated resource blocks as a visual guide. Any inferred blocks encapsulated by a reserve are reported in the total reserve tonnage and grade. Total percentage of inferred oz = 19%
	The infrastructure requirements of the selected mining methods.	All the key infrastructure required is currently in place within the underground mine. This includes access declines, ventilation shafts and associated primary fans, service provision (air, water, and power), fuel bays, crib room, workshops, and offices.
Metallurgical factors or assumptions	The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.	The metallurgical process is currently in place and the associated historical metal recoveries have been applied to the different ore types. The current process has been in place since 1990, and is deemed as appropriate for the mineralisation.
	Whether the metallurgical process is well-tested technology or novel in nature.	Well tested for surface and underground ore (in use since 1990).
	The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.	Plutonic has been in operation since August 1990. The metallurgical response of the various ore zones is therefore based on historical operating data and specific metallurgical test work undertaken for selected resource zones. This is the case for all zones reported in the mineral reserve. The zones are geographical in nature and are defined by their mineralogy. The recoveries used to estimate gold recovery by zone are: • Indian (NW Lodes) - 81.9% • Caspian (NW Lodes) - 81.9% • Baltic (Zone 19) - 94.0% • Caribbean (Zone 61) – 70.8% • Spur & Coral (Zone 124) – 88.8% • Cortez (Zone 124) – 88.8% • Timor (Zone 124N) – 93.5% • Pacific (Zone 124N) – 79.3% • Plutonic East – 84.3%
	Any assumptions or allowances made for deleterious elements.	Catered for in the recovery information for each zone. The presence of graphitic shale and high arsenopyrite material has an influence over the plant recovery performance.
	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 reserve material is within previously mined and milled Plutonic ore zones and has associated historical performance characteristics as well as specific metallurgical test work undertaken for selected resource zones.
	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.	Plutonic operates under Department of Environment and Conservation (DEC) Licence L6868/1989/11 in accordance with the Environmental Protection Act WA 1986. Plutonic holds one groundwater licence; GWL 151450(6). The 2012 annual groundwater well licence production report indicates that the aquifers can support the current rate of extraction. Plutonic's mine closure plan has been developed in accordance with the DMP and EPA Guidelines for Preparing Mine Closure Plans June, 2011. The 2012 closure plan was submitted to the DMP and was approved on 5th September 2012.The mine closure plan details studies such as waste rock characterisation that are to be completed before closure of the site.
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 required infrastructure is in place.
Costs	The derivation of, or assumptions made, regarding projected capital costs in the study.	Capital costs used were based on the existing site Life of Mine projection, and due to the existing short mine life only incorporate sustaining capital components. Refer to the 2014 MY cut-off grade report
	The methodology used to estimate operating costs.	Historical operating costs for the 3 month period since NSR took over ownership of the mine from previous operators were used as a baseline. Changes were then applied to major consumable classes based on a flat CPI increase. The revised costs were then compared to both historical and Life of Mine estimated costs to confirm their materiality. Refer to the 2014 MY cut-off grade report

Criteria	JORC Code explanation	Commentary
	Allowances made for the content of deleterious elements.	Nil allowance, none expected.
	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$1,450 per ounce as per NSR corporate guidance
	The source of exchange rates used in the study.	NSR report in Australian dollars. Therefore, no exchange rate is used or required
	Derivation of transportation charges.	All transportation charges are based on historical Plutonic operation costs. This cost component has been used to determine the cut-off grades. Refer to the 2014 MY cut-off grade report
	The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.	Processing and refining costs are based on historical Plutonic processing data. These cost components have been used to determine the cut-off grades. Refer to the 2014 MY cut-off grade report
	The allowances made for royalties payable, both Government and private.	WA State Govt royalty of 2.5%. This cost component has been used to determine the cut-off grades. Refer to the 2014 MY cut-off grade report
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.	Single commodity pricing for gold only, using a long-term gold price of AUD$1,450 per ounce 2.5% WA State Govt royalty.
	The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.	NSR internal resource and reserve guidelines 2014. These are documented in emails and memos
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.	Most of the gold is sold direct at market prices. There is also a minor hedging agreement in place and its influence on the company's revenue is minimal
	A customer and competitor analysis along with the identification of likely market windows for the product.	N/A
	Price and volume forecasts and the basis for these forecasts.	N/A
	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 historical performance from the mine and processing plant. The economic forecast is seen as representative of the current market condition.
	NPV ranges and sensitivity to variations in the significant assumptions and inputs.	Sensitivities were conducted on metal price fluctuations of AUD$1,450 ± $200 per ounce and this is detailed in the 2014 MY cut-off grade report. Due to the current short life, the project is not seen as highlight 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 land owner 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:	Current reserves are low, ostensibly showing a 1 year mine life. However, historically 50% or greater of mined material has been sourced outside of reserves. A planned increase in the rate and amount of diamond drilling will seek to increase reserves in the near future.
	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.	As a current operation, all government approvals are in place. No impediments are seen in any of these agreements for the continuation of mining activities.
Classification	The basis for the classification of the Ore Reserves into varying confidence categories.	All ore reserves include Proved and Probable classifications, which have been derived from the measured and indicated resource categories.

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).	This value has not been compiled for the reserve statement.
Audits or reviews	The results of any audits or reviews of Ore Reserve estimates.	The resource and reserves reporting processes have been subjected to an internal review by Northern Star Resources' senior technical personnel in July 2014.
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.	Historically, mine reconciliation reporting has shown that, when comparing the ore reserve estimation for a given period, to the actual material mined over that period, there is a poor correlation. This is attributed to the complex nature of the ore zones, and the additional information that is gathered between mineral reserve estimation and the final grade control modelling. The impact of this is that a significant portion of material is mined "outside" of reserves – historically greater than 50%. This implies that the reserves statements have underestimated the material that will be available for mining in a given period. In terms of the accuracy of the stated reserves, while a wide variation is experienced on a localised basis, when viewed on a global scale, the variation returns to acceptable levels.
	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.	Reserves designed using global resource models: 485,100t @ 6.16gpt = 96,100 ounces Reserves (referred to as "Advanced Planning") designed using local grade control models: 66,900t @ 4.93gpt = 10,600 ounces
	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, no additional factors have been applied to the June2014 estimation.
	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.	In 2014, a YTD reconciliation shows that 40% of the ounces mined in the year was outside reserve.

JORC Code, 2012 Edition – Table 1 Report: Kanowna Belle Resource, Reserve and Drill Results Update June 30 2014

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 (eg 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 deposit is sampled by diamond drilling and RC drilling. Sample intervals are defined by the geologist to honour geological boundaries in core.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	Diamond drill core was fitted together at breaks, measured and then sampled by cutting the core in half longitudinally using an "almonte" diamond saw. Cutting was along orientation lines, which are retained in the tray or where orientation lines are absent along cutting lines marked on the pieced together core.
	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 (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.	Sample intervals were marked on the core by a geologist typically every 1 metre. Where significant changes to the geology were encountered the sample boundary was marked there. Sample interval lengths were usually kept between 0.3m and 1.2m. The same half of the core was selected for each sample interval and 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. A minor amount of infill or grade control drilling was submitted as whole core Due to the refractory nature of the mineralisation there is very little free, coarse gold. It is considered that the half core samples submitted for assay are representative of the ore being sampled. The main assaying method employed by the company is normal fire assay with a 50g charge and AA finish for Au. All sampling data was entered onto logging sheets or tablet computer and entered into the central acquire database. Some historic RC holes from surface and the pit were also used for resource estimation. These holes typically have 2m sample intervals
Drilling techniques	Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg 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).	679 RC holes and 3112 diamond holes were used for estimation. Diameters for the diamond holes were mostly NQ with some BQ, HQ and LTK60. Depth of diamond tails are generally 20-30m. Where appropriate diamond core was orientated using a spear, Ballmark™, Ezimark™, or ACE multi electronic tool
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed.	Core recovery factors for core drilling were generally very high in excess of 95% recovery. Reverse circulation recovery was also recorded and was good to very good. Historic diamond drilling stored onsite shows excellent recovery. Lost core was measured by comparing the length of each run with the down hole depth of the drill bit and recorded on core blocks by the drillers. This is then checked through measuring and metre marking the core
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	Some loss occurred when drilling through fault zones such as the Kanowna Belle's Fitzroy Fault. Areas of potential lower recovery were generally known beforehand and controlled drilling techniques were employed to maximize 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.	There is no known relationship between sample recovery and grade, 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.	All diamond core was inspected by geologists; lithology, mineralisation, structure, alteration, veining and specific gravity were recorded. Quantitative measures were also recorded where possible such as structural measurements, intensity of alteration, percentage of mineralisation, thickness of veins and veins per metre. Geotechnical measurements on diamond core include RQD, Recovery, and Fracture Frequency. Prior to Apr-12; Joint sets, infill, infill thickness and roughness were also geotechnically measured. Photographs are taken of each core tray when wet. All mineralised intersections are logged and sampled.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.	Logging is qualitative and all core is photographed. Visual estimates are made for mineralisation percentages for core.
	The total length and percentage of the relevant intersections logged.	100% of the drill core is logged

Criteria	JORC Code explanation	Commentary
Sub-sampling techniques and sample preparation	If core, whether cut or sawn and whether quarter, half or all core taken.	Diamond core samples from exploration and resource definition targets are sampled by half-core on intervals controlled by geological domaining represented by mineralisation, alteration and lithology. A selected number of grade control holes were full core sampled. Mineralised intersections are sampled with a maximum and minimum length of 1.2m and 0.2m, respecting lithological or alteration contacts. The down hole depth of all sample interval extents are recorded.
	If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.	Development face samples are chipped directly off the face into a sample bag, aiming for >2.5kg. Samples lengths are a maximum of 1.2m in width and are modified to honour geological boundaries. Samples are taken horizontally across the mineralisation.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	Sample preparation is deemed adequate.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	Samples are periodically resubmitted to the primary laboratory to determine assay similarity.
	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.	Once sampling domains are created, core is photographed and cut. Samples are collected in numbered calico bags, stored securely, and dispatched to the ALS (Australian Laboratory Services) laboratory in Kalgoorlie for sample preparation and analysis.
	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.	All samples from Kanowna Belle are prepared and assayed at commercial laboratories. No Northern Star personnel are involved in the preparation or analysis procedures. Preparation involves crushing/pulverizing the entire sample to 95% minus 75µ, splitting off 200g, and preparing a 50g charge for Kanowna Belle samples. The Kanowna Belle samples are tested by fire assay with an atomic absorption finish (FA/AA) for Au, LECO for S, and inductively coupled plasma (ICP) for As. Monthly QAQC reports are prepared to check for any bias or trends with conclusions discussed with the laboratory management. Holes that do not pass QAQC are not used for 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.	Not applicable to this report.
	Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie. lack of bias) and precision have been established.	Sampling and assaying QAQC procedures include: - Periodical resubmission of samples (umpires) to primary and secondary laboratories in Kalgoorlie (minimum >5%). - Submittal of independent certified reference material - Review of internal laboratory quality control standards - Review of laboratory (analytical) duplicates - Sieve testing to check grind size - Sample recovery checks. - Unannounced laboratory inspections Standard control samples and blanks are inserted into the sample stream at a ratio of 1:20. The samples are purchased from certified commercial suppliers and range from 0.29 gpt Au to 9.85 gpt Au. The standard control samples are changed on a three 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. Primary laboratory ALS meets ISO 9001:2000.
Verification of sampling and assaying	The verification of significant intersections by either independent or alternative company personnel.	Significant intersections are reviewed by the Senior Geologist and Senior Resource Geologist during resource estimation.
	The use of twinned holes.	Twinned holes are not specifically designed.

Criteria	JORC Code explanation	Commentary
	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 sites Acquire database with hard copies of all logging and sample results filed for each hole.
	Discuss any adjustment to assay data.	Holes that cannot be accurately validated or do not meet the requirements of Kanowna QAQC are excluded prior to 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.	All holes were surveyed for collar positions. All recent diamond drill holes were surveyed down hole by various methods; including a single shot down hole camera, EMS (Electric Multi Shot) method, or in-rod gyroscopic survey tools. Holes are typically surveyed at 15m and 30m intervals down hole thereafter. Any poor surveys are re-surveyed and in some cases holes have been gyroscope 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.	A local grid system (KBMINE grid) is used. It is rotated anticlockwise 29.16 degrees to the MGA94 grid. Drill hole collars were located respective to the local mine grid and to the overall property in UTM or Australian grid coordinates.
	Quality and adequacy of topographic control.	Quality topographic control has been achieved through Lidar data and survey pickups of holes over the last 15 years.
Data spacing and distribution	Data spacing for reporting of Exploration Results.	Drill hole spacing is a nominal 40m x 40m that has been in-filled to a nominal 20m x 20m in the main zones of mineralisation at Kanowna Secondary mineralised structures in the hangingwall and footwall are typically narrower and less consistent so have a nominal spacing of 15m x 15m.
	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 above spacing of 20x20 and 15x15 in conjunction with geological continuity and confidence is used to assign classifications of indicated plus in the resource estimation model.
	Whether sample compositing has been applied.	Samples have been composited to reflect the complete ore zone
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 drilled data is perpendicular to the strike of the Kanowna orebodies. Grade continuity follows the plane of mineralisation so no bias is expected from this drilling direction
	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 A Chain of Custody is demonstrated by both Company and ALS Global 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), must also be reported to the Company in the form of a list of samples affected and detailing the nature of the problem(s)

Criteria	JORC Code explanation	Commentary
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 the model peer review process 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.	Mines of the Kanowna Operations operate subject to the requirements of the Western Australian Mining Act 1978 and its amendments, and the Mines Safety and Inspection Act 1994, regulated by the Department of Consumer Protection (DoCEP) and the Department of Industry and Resources (DoIR). Mining leases issued by the DoIR covering mining operations stipulate environmental conditions for operation, rehabilitation, and reporting, as well as the requirement to lodge unconditional performance bonds The mine and associated infrastructure is located on granted mining leases M27/92 and M27/103. Mining lease M27/92 was granted on March 14 1988 and has an area of 972.65 ha. Lease M27/103 was granted on January 12 1989 and has an area of 944.25 ha. Both leases were granted for periods of 21 years after which they can be renewed for a further 21 years. The tenements were surveyed as part of the application process. The mining leases which contain the deposit and most of the surrounding tenement holdings are 100% owned by Northern Star Resources. The mining tenements are located on vacant crown 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.	The leases containing the deposit are pre-1994 leases so are not subject to Native Title claims. Tenements that are not wholly-owned by Northern Star are those within the East Kundana Joint Venture (EKJV). Northern Star owns 51% of the EKJV with the remaining held by Tribune Resources NL (36.75%) and Rand Mining NL (12.25%). Security personnel screen all employees and contractors that enter the Kanowna Belle mine entrance and also conduct searches on the active mining tenements. Mining lease M27/92 and M27/103 are secured by a perimeter fence that only allows unrestricted access to trucks using the haul road.
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	Kanowna was discovered in 1989 by Goldfields Limited, open pit mining commenced between 1993 and 1998 resulting in a 220m deep pit. Underground operation began 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 Barrick. Exploration drilling is ongoing from underground to extend the known mineral resources.

Criteria	JORC Code explanation	Commentary
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, Hilder, Hangingwall and Footwall shoots controlled by sets of structures of various orientations oblique to Lowes. Lowes contains some 80% of known gold mineralization and strikes ENE (mine grid east), dips steeply SSW, and plunges steeply SW. Lowes Shoot has a strike length of 500m, width of 5m to 50m, and down-plunge extent greater than 1250m. The overall steep SE plunge is interpreted to reflect the intersection of D1 (ENE) and D2 (NW) structures Kanowna Belle is one of the only known refractory pyritic orebodies in the Yilgarn Craton. Arsenopyrite is not a major sulphide phase. 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 volcaniclastic 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 temporally distinct stages of deformation, comprising the Fitzroy Mylonite, the Fitzroy Shear Zone and the Fitzroy Fault, which have produced clear structural overprinting relations. Importantly, this structure has localised emplacement of the Kanowna Belle porphyry, which hosts at least 70% of known mineralisation. Localisation of highest grade mineralisation and most intense alteration around the composite structure emphasises its importance for acting as the major plumbing system for auriferous 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 ShearZone, 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
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.	Attached to 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.	All holes drilled by NSR, into the FM33 area are included.
Data aggregation methods	In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.	Intersections are reported as uncut.
	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.	High grades are weighted by length and included in the total intersection.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	No assumptions made
Relationship between mineralisation widths and intercept lengths	These relationships are particularly important in the reporting of Exploration Results.	Reporting of results includes the downhole and true width of the mineralised section
	If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.	Due to varying intercept angles the true thickness is manually estimated on a hole by hole basis. Both true width and downhole lengths are reported

Criteria	JORC Code explanation	Commentary
	If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').	Reporting of results includes the downhole and true width of the mineralised section.
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 significant new discoveries are being 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.	All included for the area and generally within the existing June 2014 resource shapes.
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 to report.
Further work	The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).	Further 20m step out drilling is planned within the mine 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.	Diagram attached.

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 Kanowna-Belle resource data is stored in Acquire database. The Company employs a database administrator to manage the database. Data was logged onto sheets and entered directly into the database by geologists working on the project. User access logs are maintained for all fields in the dataset. Data validation tools and sign off facilities to record data cross-checking have occurred.
	Data validation procedures used.	Original data sheets and files are retained and used to validate the contents of the database against the original logging. Currently designing field level validation tools
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	The CP has been involved with the project in an advisory role with respect to geological modelling.
	If no site visits have been undertaken indicate why this is the case.	Site visits are conducted at least monthly to check and advise on modelling techniques and to introduce more appropriate techniques
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 honouring the continuity of the geology and applying that to the estimation of the mineral resource. The confidence in the geological interpretation is high with the information gained from ore development and underground drilling. Mine to mill reconciliations add strong support to the interpretation.
	Nature of the data used and of any assumptions made.	Interpretations of the mineralized zones were developed from diamond drill data, and further refined with underground geological mapping. Interpretations and confining wireframes are developed using the geology related to the mineralised lode. This includes lithology, alteration, veining, structure and mineralisation. This data is sourced from geological logging of drillholes and mapping.
	The effect, if any, of alternative interpretations on Mineral Resource estimation.	No alternative interpretations have been completed.

Criteria	JORC Code explanation	Commentary
	The use of geology in guiding and controlling Mineral Resource estimation.	Interpretations and confining wireframes are developed using the geology related to the mineralised lode. This includes lithology, alteration, veining, structure and mineralisation. This data is sourced from geological logging of drillholes and mapping.
	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 ore body.
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 zone deposit shows significant gold depletion (averaging <0.01 gpt Au) to at least 35 m above an undulating supergene "blanket" horizon. This mineralized blanket had plan dimensions of 600 m x 250 m and a thickness of one metre to 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, of which 20 are interpolated, have a maximum strike of 240m, width of 2m to 10 m, and a current down plunge extent of no more than 700m. Footwall shoots, of which 16 are interpolated, have a maximum strike of 240 m, width of 2-20 m and a current down plunge extent of no more than 500 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 software. Geostatistical analysis and variography were completed using Snowden's Supervisor software The great majority of estimation was by ordinary block kriging into 10mE 5mN 10mRL parent cells using 1m composites. For footwall and hangingwall lodes that are more oblique to the mine grid 5x5x5 parent cells are used. Estimations are constrained by hard domain boundaries (wireframes) to prevent the overestimation of cells outside of mineralised envelopes. 1m sample composites are used which is the dominant sample length. Domains were further checked to geostatistically contain single grade populations and whether further refinement was required. Search ellipses and ranges were based on the continuity seen in the variograms. Kriging efficiency, slope of regression and the number of negative weights were reviewed to assess the estimation quality and optimize the estimation parameters. For pass 1 estimations a minimum of 10 samples and a maximum of 30 samples were used. Octants were often used to ensure that multiple drillholes were used from multiple directions. If octants were not used the maximum number of composites from a single drillhole was set at 5.
	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 are compared against previous estimates and variances recorded and justified.
	The assumptions made regarding recovery of by-products.	It is assumed that some minor silver will be recovered with the gold. The silver is not estimated as it is not economically significant.
	Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).	Sulphur can be deleterious to the gold extraction process when it exceeds concentrations of 1.6%. Sulphur is therefore estimated using ordinary kriging although it is not constrained by domain wireframes. Over the past 12 months sulphur levels in the processing plant have been 101% of that predicted in the sulphur estimation model.
	In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.	10mE 5mN 10mRL parent cells using 1m composites. For footwall and hangingwall lodes that are more oblique to the mine grid 5x5x5 parent cells are used Search ellipsoids for the main lode are 70 * 50 * 20m and vary down to 50 * 20 * 12m on the narrower and more variable footwall and hangingwall lodes. Drillhole spacing is 20m on the main lode and 15m on the HW and FW splays.
	Any assumptions behind modelling of selective mining units.	No assumptions made
	Any assumptions about correlation between variables.	No assumptions made

Criteria	JORC Code explanation	Commentary
	Description of how the geological interpretation was used to control the resource estimates.	Estimation is constrained within domain wireframes that are developed using the geology related to the mineralised lode. This includes lithology, alteration, veining, structure and mineralisation. This data is sourced from geological logging of drillholes and mapping.
	Discussion of basis for using or not using grade cutting or capping.	As is typical for gold deposits the data distributions are highly skewed and typically have a CV > 1.5 (ratio of standard deviation to the mean). In order to prevent overestimation topcuts were chosen where the geostatistics no longer supported higher grades, typically around the 98th percentile.
	The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.	Swath plots by northing, easting and RL were produced for each lode to verify that the model grades honoured the tenor of the drillhole grades. Production reconciliation data is used to check the accuracy of estimation. Over the past 12 months ounces produced have been 115% of that predicted in the grade estimation 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.	Various cut off grades are calculated including a break even cut off grade (BCOG), incremental cut off grade (ICOG) and Mill Cut-Off grade (MCOG). The BCOG is 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. Kanowna Belle operates at a number of horizons in the mine from as shallow as 170m down to over 1,000m of depth. With depth, come additional costs in terms of haulage and ground support. Consequently, a number of cut-off grades take this into account. Cut-off grades are applied on a block by block basis depending on the relative costs.
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 mineralisation is amenable to open cut and underground mining methodology subject to gold price. Underground operations at Kanowna Belle are limited by mine depth and seismic activity. Mine sequencing is optimized for geotechnical considerations and the mining of individual blocks is constrained by the sequence and stress regime. Ultimately this impacts the operation by limiting the number of small stopes that can be mined in isolation and there is limited ability to leave single low grade stopes as pillars when surrounded by mining areas.
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. Ore processing throughput and recovery parameters were estimated based on historic performance and potential improvements available using current technologies and practices
Environmental factors or assumptions	Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	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 borefield 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 Kanowna operations are fully permitted including groundwater extraction and dewatering, removal of vegetation, mineral processing, and open pits. Kanowna has 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.

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.	A simple water immersion method referred to as the MARCEY Technique was used for the measurements, where the samples are dried and weighed in air then weighed in water.
	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.	The bulk density of all samples is determined using the water displacement method (SG). A global density factor of 2.75 t/m3 is used for the purposes of resource estimation at Kanowna Belle, and represents the average density recorded from core sample measurements. Attempts have been made to improve the density model by correlating SG and rock type. However, no significant differences were found between the various rock types to warrant additional refinement to the resource model.
Classification	The basis for the classification of the Mineral Resources into varying confidence categories.	Classifications of Measured, Indicated and Inferred have been assigned based on data integrity, continuity of mineralisation and geology, drill density and the quality of the estimation (kriging efficiency).
	Whether appropriate account has been taken of all relevant factors (ie. 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 and supported by 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
Audits or reviews	The results of any audits or reviews of Mineral Resource estimates.	2009, NI 43-101 report and reserve audit, conducted by Scott Wilson Roscoe Postle Associates Inc. Concluded industry best practice adhered to. June 2014 model internally reviewed by company principal resource geologist (competent Person). No material issues found.
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.	Swath plots by northing, easting and RL were produced for each lode to verify that the model grades honoured the tenor of the drillhole grades.
	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 entirety of the Kanowna Belle orebody. Each of the estimated lodes will show local variability even though the global estimate reflects the total average tonnes and grade.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	Production reconciliation data is used to check the accuracy of estimation. Over the past 12 months ounces produced have been 115% of that predicted in the grade estimation 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.	Northern Star June 2014 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.	Competent person is based at the site.
	If no site visits have been undertaken indicate why this is the case.	Site visits have been 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 reserves
	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 reserves are re-optimised on a half yearly basis taking the most up to date model, gold price and cost forecasts into account. The Reserve methodology at Kanowna Belle is to complete a full mine design built from the latest block model using calculated cut off as a guide. Stopes are included or excluded from the reserves based on the BCOG for the particular mining area. A stope shape is designed around material at the BCOG and evaluated using the design software. Stope shapes of grade close to the BCOG are assessed using a more detailed financial evaluation to determine if they are to be included in reserves. Design of stopes is also carried out below the BCOG to ensure that sensitivity results are meaningful. Mine planners are supplied with guidelines for blocking out stopes. These guidelines take into account the effect of major structures and their impact on stoping designs. In general, the stope designs will not contain material below the breakeven block cut off unless there is reasonable grounds to mine that material. Exceptions to this include sub-economic material which is encapsulated by payable ore, or unavoidable extraction circumstances. The stope shape does not include dilution, which is factored in numerically at an assumed grade for each individual stope based on the block model. All design work is carried out with the software Studio5D Planner. The existing mine design provides the starting point for the reserves. Planned stope geometry follows geotechnical design guidelines which have been in place for a number of years. As the Reserves form the basis of the Life of Mine plan (LOM), it is important that the stopes are 'realistic mining envelopes' and can form part of the mines extraction sequence. The designs are evaluated for gold sulphur and tonnes by Resource category bins. Consequently, a given stope may contain material in more than one Resource category. In this way, the Measured and Indicated portions of the design can easily be established. The evaluation results are automatically output to the scheduler software EPS. EPS is used as a flagging and calculation tool in the processing of reserves. Factors for dilution and recovery are applied in EPS. The stoping blocks are then classified into a number of Reserve categories based on cut-off. COG margin and reserve code attributes are then attached to the reserve wireframe. The wireframes are then coloured by a legend to allow visual representation of reserve code and stope margins. For a stope or group of stopes to be included in the Reserve, they need to generate enough cash to pay for all applicable costs, including access development to the stopes. If the stopes do not meet these criteria and are mined then value will be destroyed. Consequently, it is possible for stopes to have higher than the block BCOG but to be excluded from Reserves. Conversely, it is possible for stopes with lower than the block BCOG to be included in Reserves. This occurs normally for geotechnical reasons whereby not mining the stopes will create a more hazardous environment than what is acceptable, or whereby very favourable economic circumstances exists which allow to mine a stope profitably despite being below BCOG. Reviewing all the stopes enables the setting of all the Reserve codes. Reserves are reported as Measured and Indicated material with a Reserve code of 1 to 3 inclusive respectivley

Criteria	JORC Code explanation	Commentary
Cut-off parameters	The basis of the cut-off grade(s) or quality parameters applied.	• 12 Month forward looking forecast costs and physicals form the basis of the cut-off grade calculations. • The assumed AUD gold price is the average of the previous 12 months. • Mill recovery factors are based on test work and historical averages. • Various cut off grades are calculated including a break even cut off grade (BCOG), incremental cut off grade (ICOG) and Mill Cut-Off grade (MCOG). The BCOG is 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. • Kanowna Belle operates at a number of horizons in the mine from as shallow as 170m down to over 1,000m of depth. With depth, come additional costs in terms of haulage and ground support. Consequently, a number of cut-off grades take this into account. Cut-off grades are applied on a block by block basis depending on the relative costs.
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 used.
	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. A decline has been developed in the footwall of the orebody to a depth of more than one kilometre below surface. The ore is accessed on a level spacing of 30 m, with development of footwall and ore drives to enable longhole open stoping. The mine is subdivided Vertically in mining blocks of nominally 150 to 250 vertical metres, three to five million tonnes. Ore is mined from the stopes and tipped into an orepass system, before being loaded into 775 haul trucks to bring to surface. Stopes are nominally 30 m by 20 m by 20 m in size. This may be increased or decreased depending on the local ground conditions. Once stopes are emptied of ore, they are backfilled with paste reticulated from a surface paste plant. Kanowna Belle applies a pillarless, bottom up approach for each block. Mining fronts are maintained in a triangular shape in order to push stress out, towards the abutments of the production and mined out areas.
	The assumptions made regarding geotechnical parameters (eg pit slopes, stope sizes, etc), grade control and pre-production drilling.	The design takes geotechnical constraints into account and is reviewed by geotechnical engineers prior to been finalised Underground operations at Kanowna Belle are limited by mine depth and seismic activity. Kanowna Belle has a relatively high stress rock mass and a history of seismic events. Ultimately this impacts the operation by limiting the amount of small stopes that can be mined in isolation and there is limited ability to leave single low grade stopes as pillars when surrounded by mining areas. The environment is controlled by adherence to a geotechnically favourable extraction sequence, and by the application of appropriate ground support. The success of this approach relies on maintaining a highly skilled technical team and scheduling with contingency for undesirable seismic events.
	The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).	This table one 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 and evaluation of the geotechnical block model. Average stope dilution is currently 20.6%.
	The mining recovery factors used.	The recovery factor is reviewed and updated annually. It is based on historical recovery at the site. Average stope recovery is currently 86.3%.
	Any minimum mining widths used.	Standard stope sizes are 15m along strike with a 30m level spacing. Minimum mining width of 4m is assumed.
	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.
	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 shop on the 800 level. 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.

Criteria	JORC Code explanation	Commentary
Metallurgical factors or assumptions	The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.	The Kanowna Belle milling facilities are designed to handle approximately 1.8 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. Between campaigns, the circuit is "cleaned out" using essentially barren ore. The plant is made up of crushing, grinding, gravity gold recovery, flotation, roasting, CIL, elution and gold recovery circuits. 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, 8 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, 8 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, 8 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 Minerals and Petroleum Resources (DMPR) Mines Inspectorate. The Mining Leases issued by the DMPR covering the Kanowna Belle operation stipulate environmental conditions for operation, rehabilitation, reporting and lodgement of unconditional performance bonds. A "Licence to Operate" is held by the operation which is issued under the requirements of the "Environmental Protection Act 1986". Kanowna Belle and East Kundana are prescribed premises requiring Department of Environment (DoE) licences to operate. It covers the following activities: - Crushing plant - CIP process plant - Sulphide concentrate roaster - Tailings dam cells 1 and 2 - Calcine tails dam - Wastewater treatment plant - Arsenic waste stabilization plant and disposal into underground workings - Open cut and underground mines - Paste backfill plant - Batch plant The key environmental areas covered in the licence are: - Air pollution and control conditions - Water pollution control conditions - Solid waste conditions In late September 2001, DoE approval was granted to commence on-site encapsulation and disposal of arsenic trioxide (As2O3). The waste material containing approximately 30% As2O3 to 35% As2O3. In accordance with the licence from the DoE, the encapsulated blocks that are disposed of underground are enclosed in backfill generated from the plant tailings

Criteria	JORC Code explanation	Commentary
Infrastructure	The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.	Access to the Kanowna Belle operation is provided by a series of well-maintained public and private roads. Employees reside in Kalgoorlie and commute to site daily. There are no housing facilities at the operation. Normal communication channels through cellphone, satellite and land-based facilities are available. All of Kalgoorlie's fresh water is pumped along a 540 km pipeline from Mundaring near Perth. Potable water for the Kanowna Belle operations is pumped from Kalgoorlie to a storage facility on site. Non-fresh water requirements are sourced from borefields up to 10 km away from the minesites. 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. Some water is sourced from abandoned pits. This water is hypersaline with total dissolved solids (TDS) levels of up to 150,000 ppm. The primary user of hypersaline water is the Kanowna Belle processing plant. Electricity is provided by the government-owned agency, Western Power, and is sourced via the state electricity grid. A 15 km long 33 kV line from Kalgoorlie provides all electricity requirements of the operations. There are no power generation services on site. 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 a design is completed the mining sequence and processing sequence are scheduled. The schedules are costed in detail using a zero based budgeting system.
	Allowances made for the content of deleterious elements.	
	The derivation of assumptions made of metal or commodity price(s), for the principal minerals and co-products.	The gold price is set by corporate based on the 12 month historical price
	The source of exchange rates used in the study.	All costs and revenues are costed in AUD.
	Derivation of transportation charges.	Historic performance.
	The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.	Not applicable
	The allowances made for royalties payable, both Government and private.	The 2.5% state government royalty is costed.
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.	The gold price is set by corporate based on the 12 month historical price, A$1450per ounce was used
	The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.	Processing plant recovery factors are based on test work and historical recoveries
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 market prices with no hedges in place
	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.	NPV is used during Pre-Feasibility and Feasibility studies as these are required. Economic assumptions such as discount rate and estimated inflation are finalised at the time of the study. NPV is not used in the bi annual reserve optimisation. Cut off grades derived from 12 month forward looking unit costs form the basis of the bi annual reserve optimisation.
	NPV ranges and sensitivity to variations in the significant assumptions and inputs.	Sensitivities have been using gold price ranges of A$1250 to A$1650.

Criteria	JORC Code explanation	Commentary
Social	The status of agreements with key stakeholders and matters leading to social licence to operate.	No issues.
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.	Classifications of Measured, Indicated and Inferred have been assigned based on data integrity, continuity of mineralisation and geology, drill density and the quality of the estimation (kriging efficiency).
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The results accurately 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).	7% of reserve ounces are derived from measured resources.
Audits or reviews	The results of any audits or reviews of Ore Reserve estimates.	Reserve estimates are reviewed and approved by site management prior to release. 2009, NI 43-101 report and reserve audit, conducted by Scott Wilson Roscoe Postle Associates Inc. 2006, AMER Qualified Person's report in support of the declaration of the 2005 EOY Mineral Resources and Mineral Reserves, Ore Reserve Audit, by Kal West
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 reasonable 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 as the mine is currently in operation with appropriate licences in place.
	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 reserve assumptions where appropriate.