



Unlocking the Nullagine

- ▶ Foundations for sustainable ~80kozpa production
- ▶ Highly leveraged to A\$ gold price
- ▶ Exceptional exploration potential

Warren Hallam, Managing Director

2019 Precious Metals Summit, Beaver Creek

10-13 September 2019

Investment Overview



100%-owner of the Nullagine Gold Project in the world-class Pilbara region of Western Australia

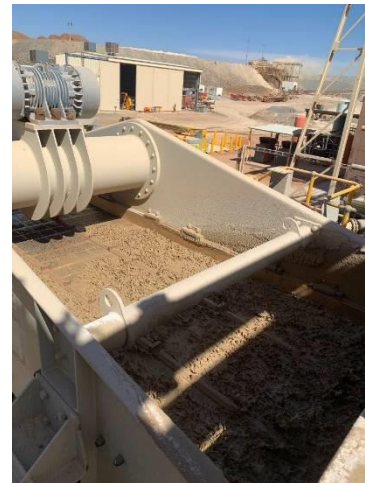
Key growth initiatives unlocking the future – Sulphide Plant expansion, underground mining

Sustainable production of approx. 80,000ozpa

1.2Moz Resource including 375,000oz Ore Reserve

Significant exploration upside – 40Kms strike with focus on higher grade mining centres

Reserve History



Corporate Overview



Shares on Issue

891M

Market Cap (A\$0.10/share)

~A\$89M / US\$60M)

Cash and bullion (30 Jun 19)

A\$4.3M / US\$3M

Debt (31 Aug 19)

A\$35M / US\$24M

ASX Index

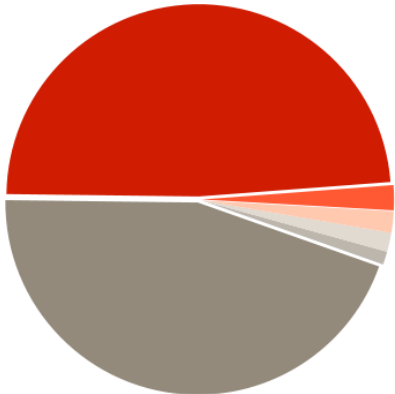
All Ords

ASX Code

MOY



Key Shareholders



IMC Group – **47.9%**
Mr David Teoh – **1.6%**
Directors & Employees – **1.5%**
DWP Bank – **1.1%**
Private Stakeholders – **45.6%**

Board and Management

Greg Bittar	Non-Executive Chairman
Warren Hallam	Managing Director
Peter Lester	Non-Executive Director
Tim Kennedy	Non-Executive Director
Bruno Lorenzon	Non-Executive Director
Ray Parry	Chief Financial Officer
Michael Poepjes	BD and Technical Services
Jason Robertson	General Manager Operations

Key Consultants and Contractors

Ausenco

Western Plant Hire

GBF Underground

Redline Drill & Blast

Rivet Mining Services

KPS Power Generation

Strong gold production in the East Pilbara



✓ A strategy for growth

- ▶ Growth initiatives focused on delivering the long term foundations – increasing head grade and recovery efficiency
- ▶ First UG mine at Bartons now in full production
- ▶ Sulphide plant constructed and commissioned to enable processing of significant sulphide Resource base – additional low cost stages available when required to treat more complex sulphides
- ▶ Sustainable production of approx. 80,000ozs (CY2019 70-75koz)
- ▶ **Driving costs and production**
- ▶ Mining larger scale, longer life open pit deposits
- ▶ Opening up of underground mining and improving head grades
- ▶ Development of Golden Gate mining centre targeted to commence once approvals obtained; multiple other targets to follow
- ▶ Opportunity for strong reduction in OPEX with change to owner mining

✓ Significant Exploration upside

- ▶ Exceptional upside – 40km prospective corridor, majority of drilling less than 60m deep. Historical production scattered across the field from 32 pits
- ▶ Systematic approach targeting additional high-grade open pit and underground ore bodies





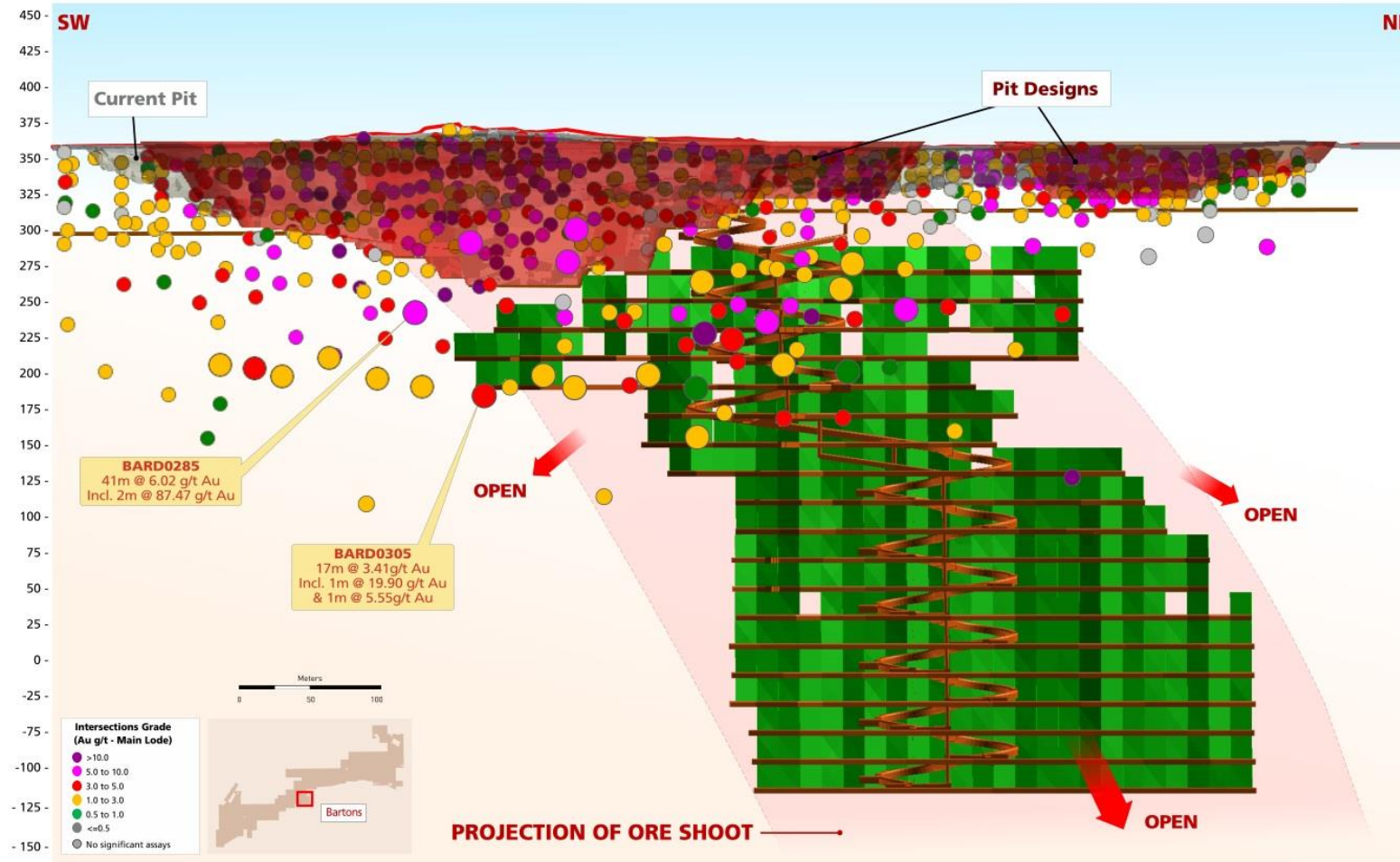
• NULLAGINE

• PERTH



**MOVING
UNDERGROUND**

Bartons – The First Underground Mine at Nullagine



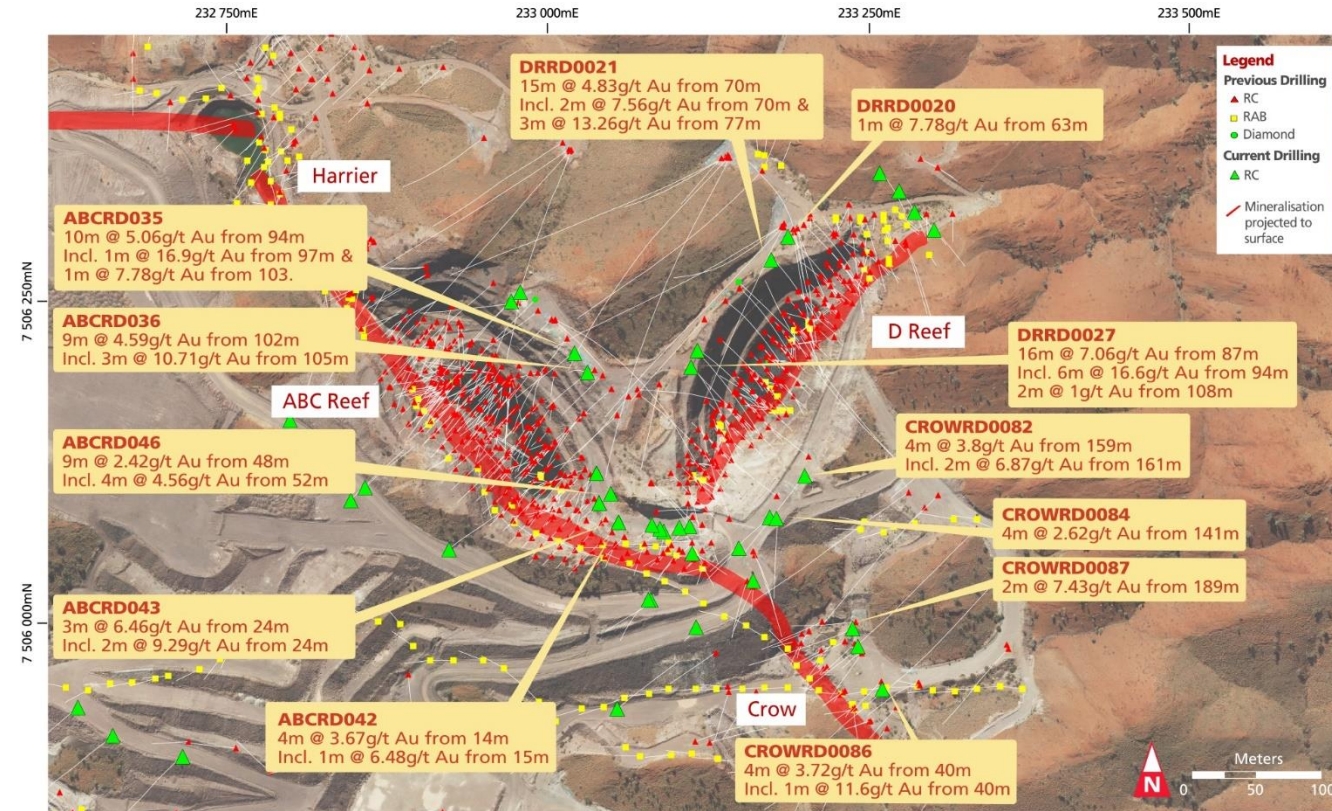
- ▶ Resource of 750,000t @ 4.1g/t Au for 99,400oz
- ▶ Mineralisation open at depth and along strike
- ▶ All deeper holes have successfully intersected the main ore zone and continue to define extensions
- ▶ First phase underground drilling completed targeting depth extensions
- ▶ Bartons Ore Reserve now extends ~300m from surface and is open at depth
- ▶ Second phase depth and strike extension planning underway

Deeper mineralisation at Bartons is free-milling and can be treated through the existing CIL plant with recoveries of up to 90% improving to 92% with plant expansion

Golden Gate – Potential for the next major Mining Hub

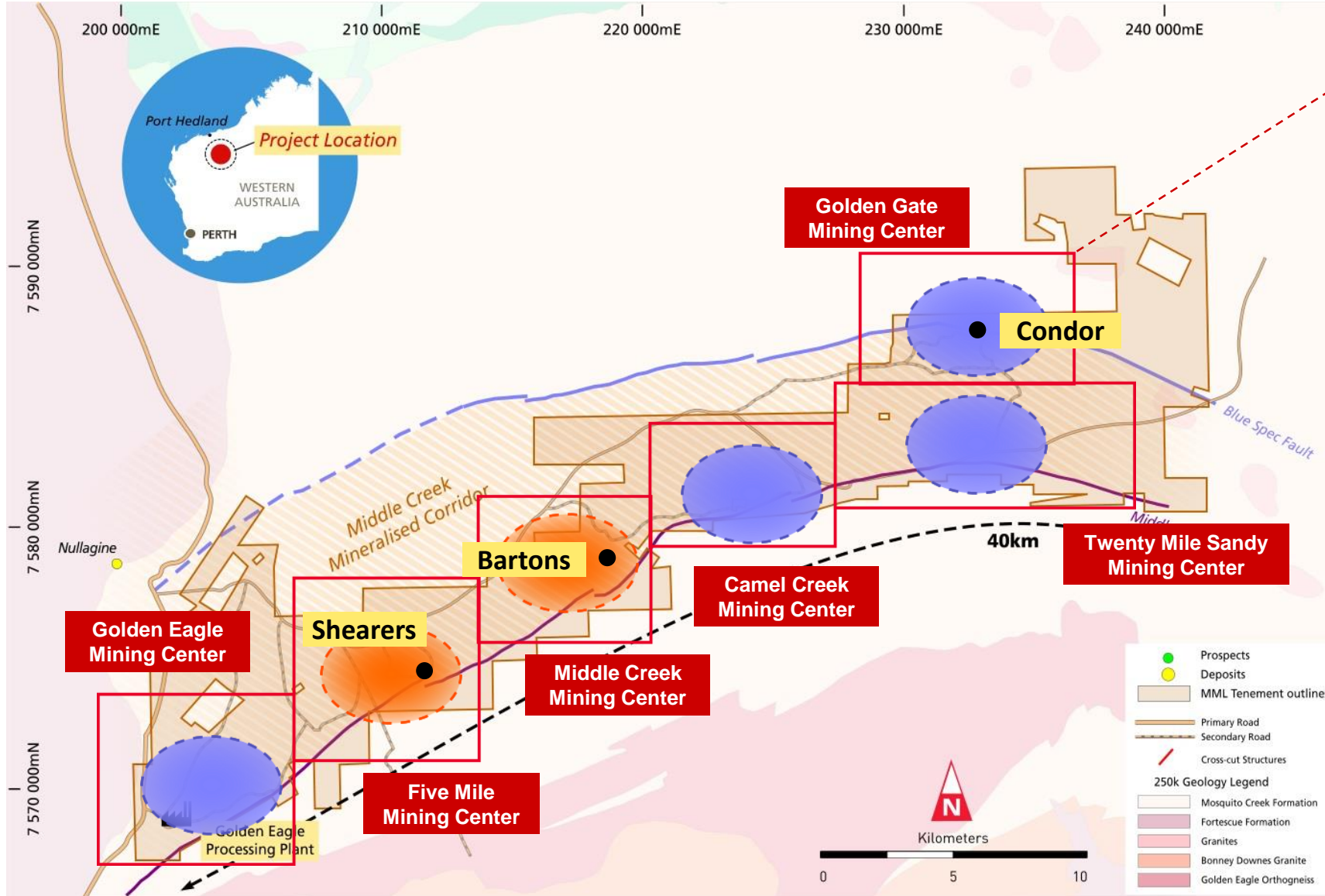


- ▶ One of the highest-grade open pit ore sources ever mined at Nullagine
- ▶ Major drilling program completed to extend high-grade open pit and underground mining potential
- ▶ Outstanding new high-grade drill results confirm potential for next underground mine including:
- ▶ Condor Northwest:
 - ▶ 10m @ 14.52g/t Au incl. 5m @ 26.61g/t Au (CORD049)
 - ▶ 13m @ 7.13g/t Au incl. 2m @ 26.2g/t Au and 2m @ 13.64g/t Au (CORD120)
 - ▶ 7m @ 11.14g/t Au incl. 4m @ 18.33g/t Au (CORD050)
 - ▶ 3m @ 25.16g/t Au incl. 1m @ 73.1g/t Au (CORD072)
- ▶ D Reef
 - ▶ 16m @ 7.06g/t Au incl. 6m @ 16.6g/t Au (DRRD0027)
 - ▶ 15m @ 4.83g/t Au incl. 2m @ 7.56g/t and 3m @ 13.26g/t Au (DRRD0021)
- ▶ Maiden UG Ore Reserve of 220,600t @ 3.8g/t Au for 27,100oz



Results support Millennium's sulphide plant expansion and strategy to increase gold production

Additional Underground Targets – Pipeline of Organic Growth



Golden Gate Mining Centre

Maiden UG Ore Reserve for Golden Gate Mining Centre to underpin second potential UG mine at Nullagine

Of the 30 deep targets identified at Nullagine, only 11 have been tested to date – all delivering highly encouraging results

- Free milling mineralisation at depth
- Sulphide mineralisation at depth



**SULPHIDE
PLANT
EXPANSION**

Sulphide Resources – Processing Breakthrough

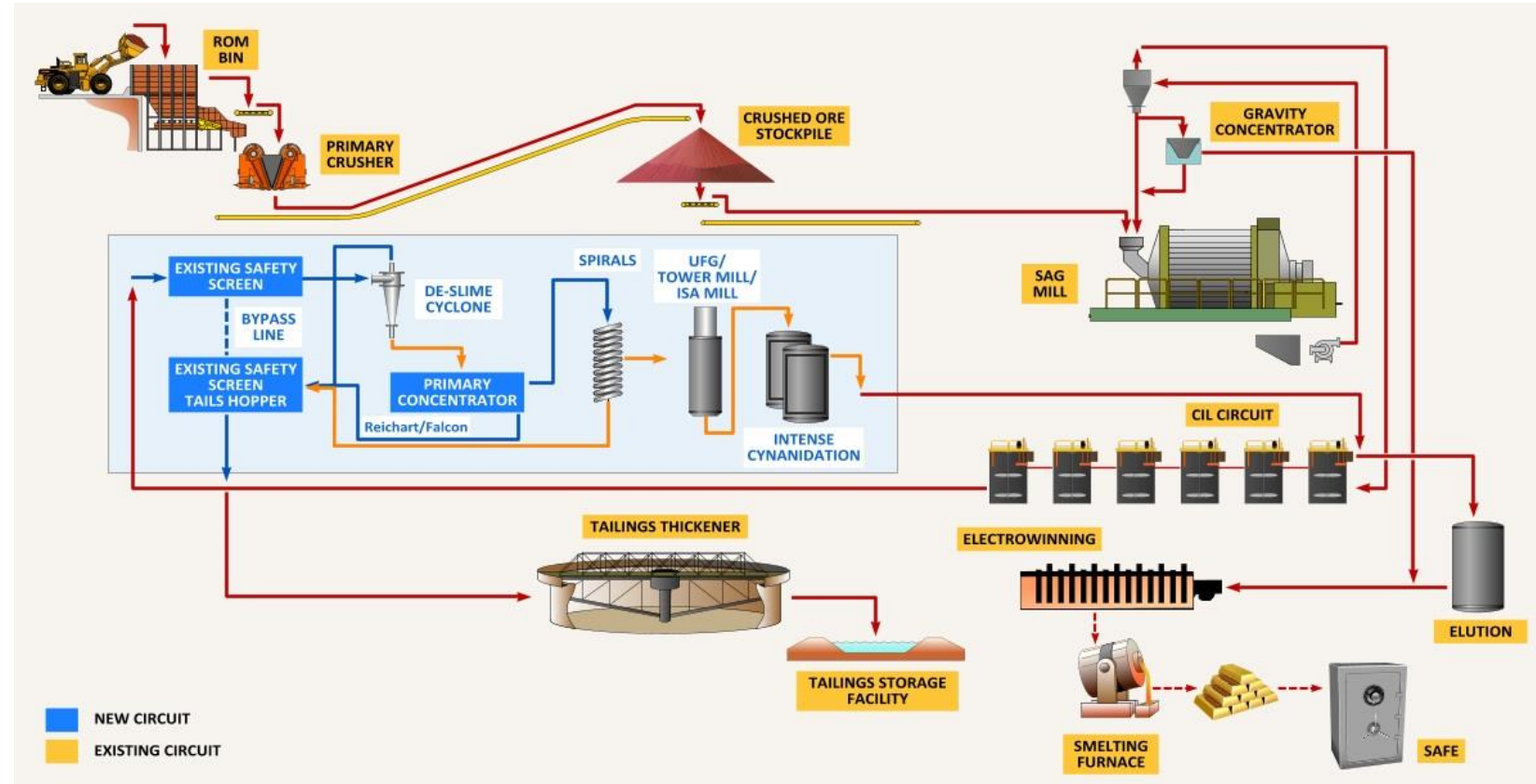


- ▶ Large sulphide resource inventory
- ▶ Processing of pyrite-dominant ore now being achieved through modular concentrating circuit to the tail-end of the existing CIL plant
- ▶ Well-understood process
- ▶ Three phase expansion:

Stage 1a: Concentrator and fine grinding circuit (now operational)

Stage 1b: In-mill oxidation (INOX) to treat blended pyrite/arsenopyrite ore

Stage 2: Pressurised in-mill oxidation (PINOX) to treat arsenopyrite-dominant ore



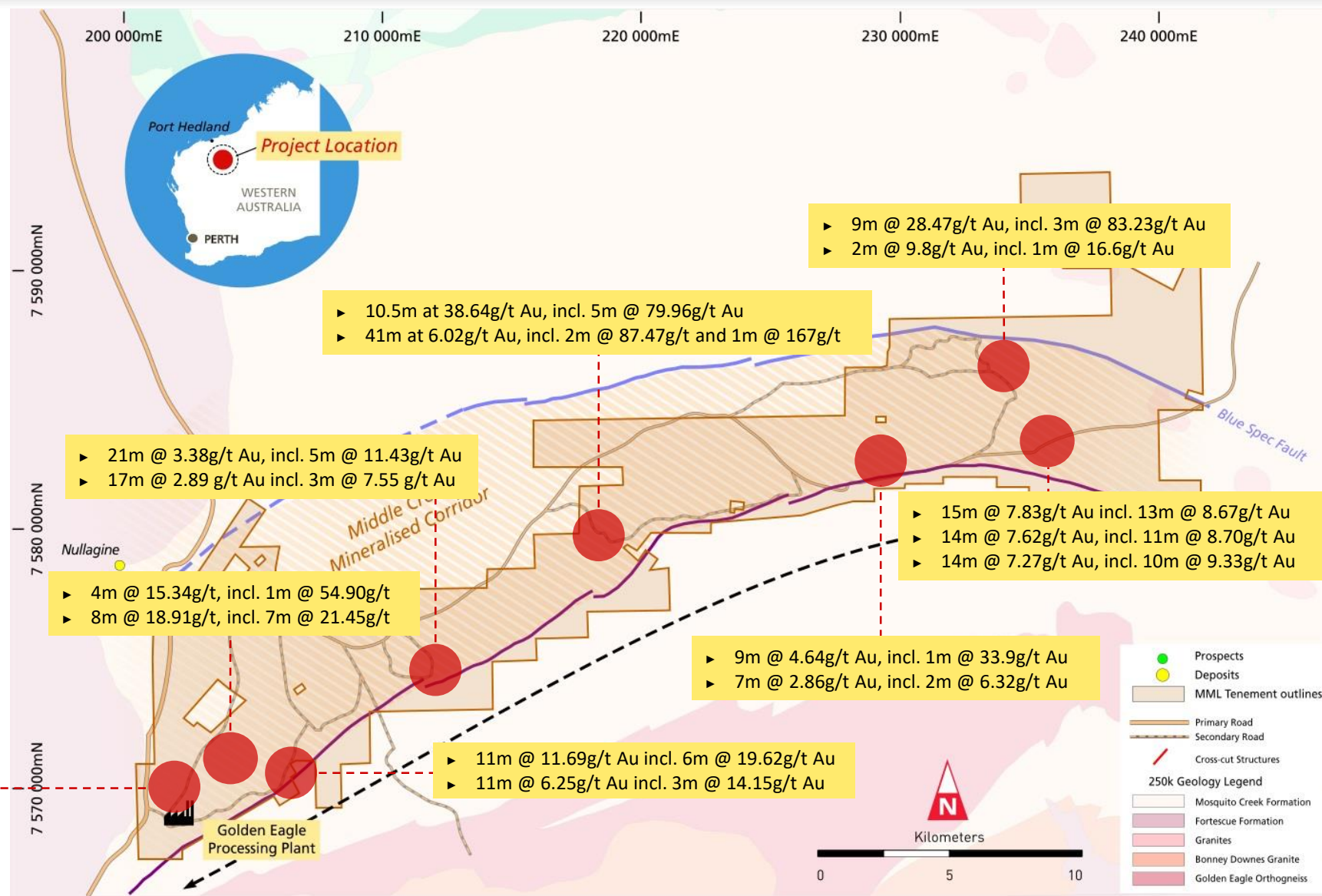
Sulphide Expansion paves the way to increase head grade and lower AISC



Exploration – Targeting + 5 years Mine life



- ▶ Substantial commitment to exploration
- ▶ 40km (25mi) mineralised corridor – high-grade results spanning entire length
- ▶ Reinterpretation of existing exploration datasets delivering new targets
- ▶ Historical mining from 32 pits scattered across the belt, limited drilling below 60m (200ft) depth





- ▶ **Quality-focused mining strategy** – focusing on higher-grade ore sources that will increase head grade and reduce operating costs
- ▶ **Increasing mine life** – ongoing exploration, evolving underground potential
- ▶ **Sulphide Plant installed and commissioned** – unlocking large Sulphide Resource
- ▶ **Expanding Underground** – Bartons UG ramping up, Golden Gate and additional UG deposits to follow
- ▶ **Ongoing exploration program continues to deliver** – high-grade intersections across the entire project, limited drilling below 60m (200ft) depth
- ▶ **Foundations laid** – moving to unlock the significant value



Nullagine Gold Project – Mineral Resource Statement¹ (31 Dec 18)



LOCATION	Measured			Indicated			Inferred			Total		
	Tonnes (M)	Grade	Ounces	Tonnes (M)	Grade	Ounces	Tonnes (M)	Grade	Ounces	Tonnes (M)	Grade	Ounces
GOLDEN EAGLE MINING CENTRE	3.41	1.4	151,200	4.06	1.3	163,600	3.83	1.4	174,900	11.31	1.3	489,600
Golden Eagle	3.26	1.4	144,400	1.69	1.2	65,700	2.70	1.5	127,700	7.65	1.4	337,900
CAMEL CREEK	0.74	1.4	34,100	1.91	1.5	93,000	1.15	1.5	53,500	3.80	1.5	180,500
FIVE MILE	0.67	1.2	24,900	2.15	1.3	89,900	1.68	1.2	67,000	4.50	1.3	181,700
GOLDEN GATE	0.13	3.2	13,100	0.50	3.9	62,300	0.69	3.8	83,700	1.31	3.8	159,100
Golden Gate Underground	0.07	3.4	7,400	0.35	4.2	47,200	0.36	4.7	54,900	0.78	4.4	109,400
MIDDLE CREEK	0.34	4.6	51,100	0.52	3.0	50,000	0.56	1.6	28,400	1.42	2.8	129,500
Bartons Underground	0.34	4.6	51,100	0.35	3.8	42,100	0.06	3.2	6,200	0.75	4.1	99,400
TWENTY MILE SANDY	0.04	2.4	2,700	0.05	1.8	2,800	0.06	0.14	2,500	0.14	1.8	8,100
Sub-total												
Stockpiles	0.37	0.9	10,500							0.37	0.9	10,500
Total Resources	5.69	1.6	287,600	9.19	1.5	461,600	7.97	1.6	410,000	22.85	1.6	1,159,100

Nullagine Gold Project – Ore Reserve Statement (31 Dec 2018)



MINING CENTRE	Proved			Probable			Total		
	Tonnes	Grade	Ounces	Tonnes	Grade	Ounces	Tonnes	Grade	Ounces
GOLDEN EAGLE MINING CENTRE	963,000	1.11	34,400	2,985,000	1.44	138,300	3,949,000	1.36	172,800
Golden Eagle Open Pit	952,000	1.11	33,900	2,226,000	1.46	104,700	3,178,000	1.36	138,600
CAMEL CREEK	-	-	-	805,000	1.64	42,400	805,000	1.64	42,400
FIVE MILE	-	-	-	845,000	1.32	35,800	845,000	1.32	35,800
GOLDEN GATE	-	-	-	424,000	3.31	45,100	424,000	3.31	45,100
Golden Gate Underground	-	-	-	221,000	3.81	27,100	221,000	3.81	27,100
MIDDLE CREEK	251,000	3.62	29,200	493,000	2.50	39,600	744,000	2.88	68,800
Bartons Underground	251,000	3.62	29,200	425,000	2.65	36,200	676,000	3.01	65,400
TWENTY MILE SANDY	-	-	-	-	-	-	-	-	-
Sub-total	1,214,000	1.63	63,600	5,553,000	1.69	301,200	6,767,000	1.68	364,800
Stockpiles							-	-	-
ROM	239,000	0.85	6,500				239,000	0.85	6,500
MOPS	131,000	0.95	4,000				131,000	0.95	4,000
GIC	-	-	-				-	-	-
Sub-total	370,000	0.88	10,500	-		-	370,000	0.88	10,500
Total Ore Reserves	1,584,000	1.46	74,200	5,553,000	1.69	301,200	7,137,000	1.64	375,300

Disclaimer

This presentation contains only a brief overview of Millennium Minerals Limited ("Millennium"). The contents of this presentation, including matters relating to the geology of Millennium's projects, may rely on various assumptions and subjective interpretations which it is not possible to detail in this presentation and which have not been subject to any independent verification.

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AUD currency amounts have been converted to USD at an exchange rate of 0.68.

Competent Person's Statement

The information in this presentation relating to exploration results from the Nullagine Project has been extracted from various Company announcements and are available to view at www.millenniumminerals.com.au.

The information in this presentation relating to Mineral Resources or Ore Reserves is extracted from the announcements titled:

1. Growth strategy gains momentum with maiden underground Resource dated 7 August 2017;
2. Millennium poised to significantly extend mine life at Nullagine as newly-identified processing option cuts costs dated 5 February 2018;
3. Millennium places orders for key long-lead items for Nullagine process plant expansion dated 14 May 2018;
4. Millennium achieves 100,000ozpa production run-rate at Nullagine ahead of schedule dated 17 September 2018;
5. New high-grade intercepts of up to 42.35g/t upgrade discovery potential at Golden Eagle SW dated 17 September 2018;
6. New high-grade drilling results expand open pit and underground potential at Golden Gate dated 6 December 2018;
7. Strong quarter sees Millennium at top of CY18 guidance; Exceptional testwork results as sulphide expansion gathers momentum dated 29 January 2019;
8. Outstanding new high-grade drill results at Golden Gate confirm potential for next underground mine dated 29 January 2019;
9. Strong underground drilling results confirm extensions at Bartons dated 30 January 2019;
10. Latest sulphide metallurgical results confirm potential to grow production, cash flow and mine life dated 1 February 2019; and
11. Millennium delivers 70% increase in Ore Reserves at Nullagine to 375,300oz dated 4 February 2019.

and are available to view at www.millenniumminerals.com.au

The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements and that all material assumptions and technical parameters underpinning the results and estimates in the relevant market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings as presented have not been materially modified from the original market announcement.



MILLENNIUM
MINERALS LIMITED ASX Code: MOY

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