

## Mungari operation

Ten year mine life and reliable low cost mill



ALL-IN  
SUSTAINING  
COST

A\$1,233/oz



FY19  
PRODUCTION

120,535oz

[www.evolutionmining.com.au](http://www.evolutionmining.com.au)

Evolution Mining is a leading, growth focused Australian gold company. In FY19 Evolution produced 756,001 ounces of gold at an AISC of A\$924 per ounce to reach eight consecutive years of achieving production guidance. Evolution has guided FY20 Group gold production of around 725,000 ounces at an All-in sustaining cost of A\$940 – A\$990 per ounce of gold.

The Mungari operation has opportunity for high-grade discoveries to increase production, lower costs and extend mine life. The operation is forecast to produce between 115,000oz and 125,000oz in FY20. In FY20, our challenge is to increase our production, a reduction in capital expenditure and investment in discovery.

**Location:** 600km east of Perth, 20km west of Kalgoorlie, Western Australia

**Producing:** Gold

**Management:** Owner operator

**Site management:** Andrew Millar - General Manager

**Mine Site contact number:** +61 8 9268 4000

The operation is a key asset in Evolution's portfolio and consists of underground mining at Frog's Leg, open pit mining at White Foil and a strategically located 1.6Mtpa process plant.

As at December 2019 the Mungari Mineral Resource was 50.92Mt grading 1.47g/t gold for 2,409koz gold. The Ore Reserves was 11.63Mt grading 1.52g/t gold for 568koz gold.

Total gold production for FY19 of 120,535oz was below the bottom end of the 125,000 – 135,000oz guidance range. AISC of A\$1,233/oz was above guidance of A\$1,050 – A\$1,100/oz. Operating mine cash flow in FY19 was A\$64 million and full year net mine cash flow was A\$35.8 million.

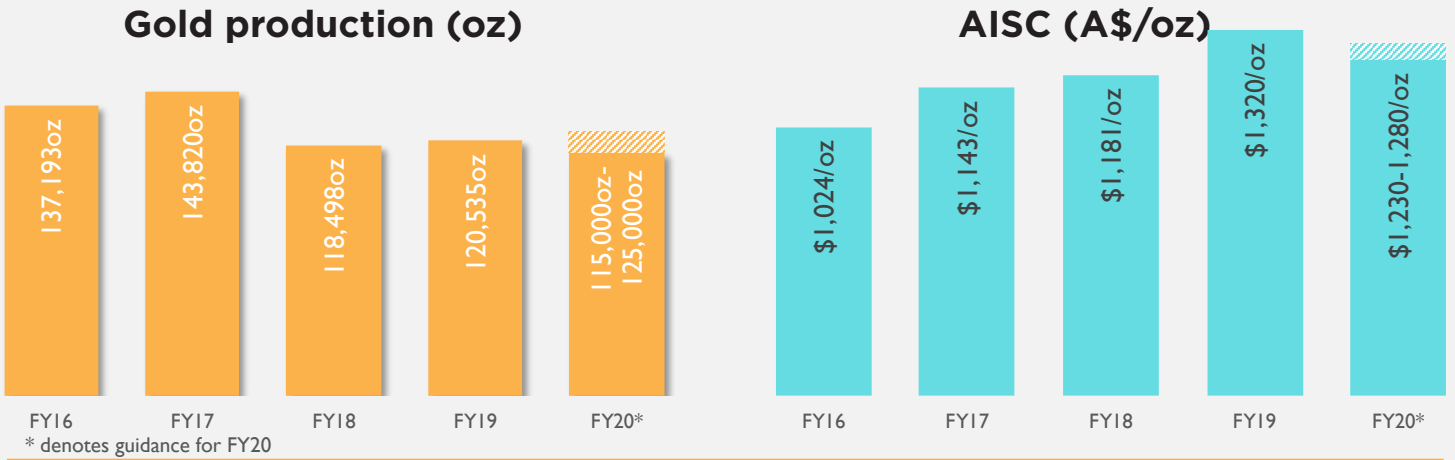
An exploration budget of A\$15 - 22 million to focus on the growth opportunities at Mungari include advancing the Mungari provincial pipeline and continuation of the near-mine drilling programs in FY20.

### ➔ FY19 performance

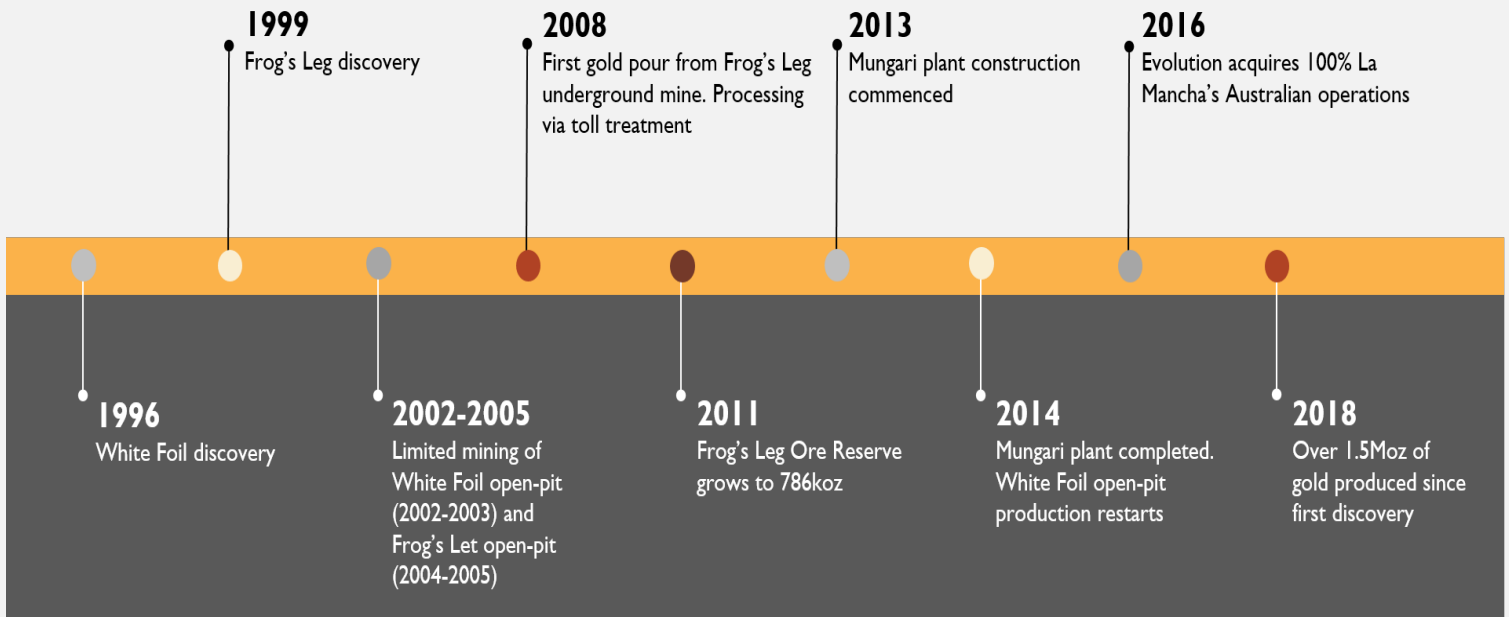
- Strategic footprint in a world-class gold district
- Mine life extension - 10 year base load
- 1.6Mtpa low cost plant consistently performing above nameplate
- Highly skilled local workforce
- FY20 exploration budget A\$15 - 20 million

# STRATEGIC FOOTPRINT IN WO

## Snapshot



## History - Mungari Evolution



## Safety, health and wellness culture

### Safety

- Significant reduction in TRIF under Evolution ownership from 35.0 to 9.95
- Operational personnel seconded to safety; ownership of safety; focus on small things; training commitments

### Community

- Strong local community support: e.g. Hannans Primary School adventure playground completed, Coolgardie Skate Park, South Kal Primary School yarning circle

TRIF: Total recordable injury frequency. The frequency of total recordable injuries per million hours worked. Results above are based on a 12 month moving average

- Native Title and Cultural Heritage agreements signed with Maduwongga

### Environment

- Kalgoorlie Boulder Urban Land Care

### Diversity

- Lead partner in the 2019 Women in Leadership Forum Kalgoorlie
- Return to work program - flexible hours for people returning to the workforce while raising a young family

# WORLD CLASS GOLD DISTRICT

## Mineral Resources (Dec 19)



## Ore Reserves (Dec 19)



(1) See our website for further details of Mungari's Mineral Resources and Ore Reserves

## Geology

The White Foil and Frog's Leg deposits are situated within the Norseman-Wiluna Greenstone Belt of the Yilgarn Craton, Western Australia. White Foil lies three kilometres to the west of the Mungari Shear, a regional scale shear zone, and is hosted within a quartz rich gabbro unit which is part of the Powder Sill intrusive complex. The mineralised zone is 70m wide, 400m long and dips to the WSW and WNS at between 50° to 60° and is open at depth.

The Frog's Leg deposit is located on the sheared contact between the porphyritic "cat rock" (regionally known as the Victorious Basalt) and volcanoclastic rocks of Black Flag Beds. The ore lodes are between 2m and 20m thick and occur as sub-parallel lodes.

The regional tenement package has positions on two main prospective structures:

- Zuleika Shear - Notable deposits include Frogs Leg and Bullant, as well as the Kundana group of Centenary, Strezlecki, Raleigh, Barkers, Hornet and Millenium
- Kunanalling Shear - Notable deposits include Castle Hill, Catherwood and Carbine

## Mining

White Foil is the open pit mine at the Mungari operations and utilises conventional drill and blast, load and haul methods. At our underground mine, Frog's Leg mining methodology is top-down bench stoping with paste fill. White Foil open-pit mine recommenced mid-2014 and in FY19 produced approximately 1,640kt @ 1.61g/t gold. Frog's Leg underground mine produced 391kt @ 4.54g/t gold in FY19.

### Frog's Leg (underground mining)

<b>Mining method/s:</b>	Top-down long hole stoping, with paste fill
<b>Access:</b>	5m x 5.5m decline from portal in pit, then twin declines from 125 metres below surface (mbs) to access north (Mist) and south (Rocket) sections Deepest current level is 700mbs
<b>Ore mined:</b>	FY19: 391kt for 48.5koz contained gold
<b>Workforce:</b>	Owner operation and maintenance
<b>Work roster:</b>	7 on / 7 off and 5/2/4/3
<b>Loading:</b>	2 x Caterpillar R2900G, 1 x Caterpillar R1700G
<b>Trucking:</b>	3 x Caterpillar AD55B
<b>Drilling - development:</b>	1 x Sandvik DD421 twin boom jumbo
<b>Drilling - production:</b>	2 x Sandvik DL421 production drill
<b>Ground support:</b>	Standard: friction bolts and mesh. Additional (as required): cable bolts, dynamic bolts, fibrecrete
<b>Ancillary equipment:</b>	2 x Rocmec charge-up, 3 x integrated tollcarrier
<b>Explosives:</b>	Stoping: emulsion, electronic initiation. Development: ANFO, non-electric initiation
<b>Underground communications:</b>	VHF leaky feeder network (radio and data). Optic fibre to copper LAN (microseismic system, video, data)



# UNLOCKING THE POTENTIAL

10 year mine life

Reliable low cost mill

Strategic footprint in world class gold district

Commitment to exploration

Opportunity for high-grade discoveries to increase production, lower costs and extend mine life



## White Foil (open pit mining)

<b>Mining method/s:</b>	Conventional open pit (drill, blast, load and haul)
<b>Final design:</b>	525m EW, 1,120m NS, 240m deep
<b>Ore mined:</b>	FY19: 1,640kt for 72koz contained gold
<b>Workforce:</b>	Load and haul: owner operator; drill & blast: Ausdrill contractors; maintenance; Emeco contractors
<b>Work roster:</b>	7/3/5/6
<b>Loading:</b>	1 x Hitachi EX2600, 1 x Komatsu PC1250, 1 x Komatsu PC2000
<b>Hauling:</b>	7 x Caterpillar 785C
<b>Dozers:</b>	2 x Caterpillar D10T
<b>Road maintenance:</b>	1 x Caterpillar 16M, 1 x Caterpillar 773D water cart
<b>Drilling equipment:</b>	5 x Sandvik DP1500i
<b>Explosives:</b>	Bulk Watergel

## Processing

The onsite 1.6Mtpa Mungari processing plant was completed on-time and on-budget (A\$110 million) in June 2014. The processing plant consists of three stage crushing and ball milling, followed by conventional leaching.

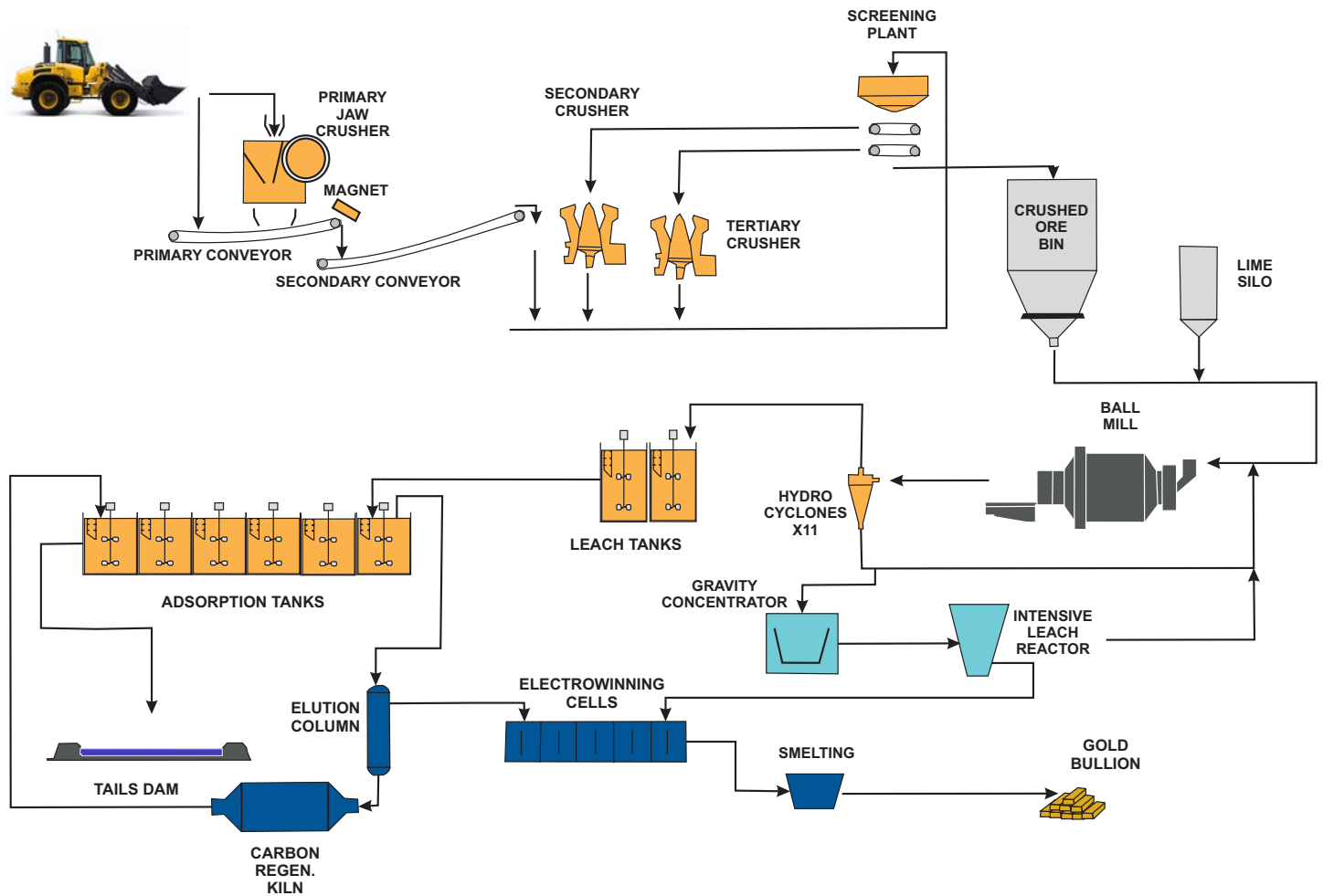
White Foil now benefits from lower processing and haulage costs, making a larger portion of the resource economic. Driven by this ability to process the White Foil ore, exploration resumed in late 2012 and resulted in a 4-fold increase to reach an endowment of nearly 2 Moz.

- **Three stage crushing, ball mill, gravity and carbon-in-pulp (CIP)**
- **Annual average throughput rate**  
1.7Mtpa (nameplate = 1.5Mtpa)
- **Recovery**  
92 - 95%
- **Power**  
Western Power - grid supply
- **Crushing**  
Primary: 220kW Jaw  
Secondary: 315kW Cone  
Tertiary: 315kW Cone
- **Grinding**  
Ball Mill: 4.5MW, 8.7mL x 5.5m. diameter  
Grind Size p80: 106 um
- **Media:** 94mm and 78mm hi-chrome balls
- **Recovery method**  
Gravity and CIP
- **Leaching**  
Leaching: 2 x 1,140 m<sup>3</sup> tanks  
Adsorption: 6 x 750 m<sup>3</sup> tanks  
Elution: split AARL  
Electrowinning: 3 x Consep tanks [2 x carbon-in-leach (CIL), 2 x gravity]
- **Gravity circuit**  
Concentrator: 2 x Knelson  
Intensive Leach: Consep Acacia
- **Work roster**  
7/7 and 8/6



Mungari processing plant

# Process flowsheet



## General

- **Accommodation**  
Residential accommodation in Kalgoorlie
- **Mine workforce**  
~340 employees & contractors
- **Safety / Environment / Community**

Evolution strives to enable all work activities related to its operations to be carried out safely and with all reasonable measures taken to remove or reduce risks to the health, safety and welfare of personnel, plant and equipment.

Evolution is committed to attaining an outstanding level of environmental performance in all of its workplaces and has a strong corporate culture and a commitment to proactively and positively engage with the communities in which we operate. Our local communities are Kalgoorlie and Coogardie. Evolution is committed to building relationships with our community stakeholders based on trust, mutual respect and genuine partnership. We want the communities in which we operate to be better off overall for us having been there. Underpinning this is our desire to always leave a positive legacy.

We are committed to attaining an outstanding level of environmental performance in all our workplaces. Evolution incorporates environmental considerations into all areas of our business to effectively manage environmental impacts and risks. We have developed an Environment and Sustainability Policy that we expect our people and contractors to adhere to. We believe we have an obligation to not only achieve legislative compliance but to strive for best practice and to meet the expectations of the communities we operate within and are part of. We are focussed on enhancing environmental stewardship through the implementation of our Environmental Protocols and Life of Mine Environmental Management Plans across all project sites. For further information please go to our website.





**Evolution**  
MINING