



# MINERAL RESOURCES AND MINERAL RESERVES REPORT

for the year ended 30 June 2019

**PROFITABLE • SUSTAINABLE • STAKEHOLDERS • GROWTH**



# BARBERTON'S HIGH-GRADE MINING FUTURE

Our Barberton mines are characterised by discrete, high-grade, shear zone-hosted vein and lode gold deposits formed in flexures in the regional dip and strike of major shear zones or faults. These structures generally extend from the surface down-dip at angles of up to 70°. The orebodies are defined as lensoidal shapes and have a strike length of between 40m and 80m, with thicknesses ranging between 1m (for the vein type deposits) up to 10m (for the lode type deposits). These are the deposits traditionally mined throughout the history of the Barberton gold field.

Grades in these deposits are known to be highly 'nuggety', due to the presence of free gold, although individual stope sample sections are assayed at over 1,100g/t over the full width of the orebody. These extreme grades occur in the centre of the deposits and are flanked by grades between 5g/t and 50g/t. The average mining grade of these high-grade deposits, over the total width, ranges between 10g/t and 40g/t on a weekly to monthly basis.

Pan African Resources has a strategy of examining the down-dip extent of the orebodies by means of deep drilling within 300m of the current mining horizon down-dip. Infill drilling of 30m x 30m is then conducted for five years following the proofing. This effectively serves to de-risk the strategic approach.

Once the development intersects the mineralisation, the orebody is sampled on a 2m grid through channel sampling. These samples, along with the infill- and down-dip drilling, inform the planned grades of the mining unit. During stoping, the channel sampling procedure is continued and the mining unit grades are updated on a monthly basis for operational planning purposes.

Existing drilling on both the Proven and Probable Mineral Reserves, for three of the highest grade orebodies define life of the orebody as follows:

- ▮ Fairview's 66 Level Main Reef Complex: 20 years
- ▮ Fairview's 54 Level Rossiter Reed: 17 years
- ▮ Sheba's 36 Level ZK Reef: 10 years.

Orebody scheduling does not include the Inferred Mineral Resources, which are continuously upgraded to the Indicated Mineral Resource category through the down-dip extension drilling. The upgraded Inferred Mineral Resource is scheduled in the life-of-mine plan, thereby extending the life of linked operations.

Barberton Mines utilises three processing circuits to process varied forms of gold-bearing material:

- ▮ Free milling/gravity recovery circuit
- ▮ Carbon in leach cyanidation circuit
- ▮ BIOX® with a carbon in pulp, elution and regeneration circuit.

Pan African Resources recovers over 94% of its gold production by utilising this combination of metallurgic processes.







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# ABOUT THIS REPORT



**Hendrik Pretorius**  
Group project geologist

## ABOUT THIS REPORT

Pan African Resources uses the internationally recognised procedures and standards of the SAMREC Code, 2016 edition.

## SCOPE OF REPORT

This version of the Pan African Resources Mineral Resources and Mineral Reserves Report 2019 conforms to the standards determined by the SAMREC Code and forms part of Pan African Resources' integrated annual report, including the annual financial statements for the year ended 30 June 2019. The entire suite of documents is available on our website at [www.panafricanresources.com](http://www.panafricanresources.com).

The Mineral Resource component is inclusive of Mineral Reserves, unless otherwise stated. Information in this report is presented by operation, mine or project on an attributable basis. The tables and graphs used to illustrate developments across the operations of Pan African Resources include:

- ▶ Mineral Resource tables
- ▶ Mineral Reserve modifying factors
- ▶ Mineral Reserve tables
- ▶ An annual comparison of the Mineral Resource and Mineral Reserve estimates
- ▶ Mineral Resource and Mineral Reserve risk tables
- ▶ Appointed competent persons.

Matters discussed in detail in this report include regional geology, location, exploration drilling and organic Mineral Reserve projects. Rounding of numbers in this document may result in minor computational discrepancies.

## REPORTING CODE

The guiding principle of the Mineral Resources and Mineral Reserves report is to ensure integrity, transparency and materiality in informing all stakeholders on the status of the group's mineral asset base. Pan African Resources uses the SAMREC Code, 2016 edition, which sets out internationally recognised procedures and standards for reporting Mineral Resources and Mineral Reserves, developed by the South African Institute of Mining and Metallurgy as the recommended guideline for Mineral Reserve and Mineral Resource reporting for JSE-listed companies. Furthermore, the group also complies with JSE Section 12 and AIM Rules for Mining, Oil and Gas Companies of the LSE during the reporting of Mineral Resources and Mineral Reserves.

## PAN AFRICAN RESOURCES' REPORTING IN COMPLIANCE WITH THE SAMREC CODE

In order to meet the requirement of the SAMREC Code that the material reported as a Mineral Resource should have 'reasonable and realistic prospects for eventual economic extraction,' Pan African Resources has determined an appropriate cut-off grade, which has been applied to the quantified mineralised orebody. In determining the Mineral Resource cut-off grade, Pan African Resources uses a gold price of R700,000/kg (USD 1,534/oz at ZAR 14.19:USD 1). At our underground mines, the optimal cut-off grade is defined as the lowest grade at which an orebody can be mined, such that the total profits, under a specified set of mining parameters, are maximised. The Mineral Resources optimiser tool, developed in-house, was applied to the Mineral Resource inventory and evaluates each block of the orebody based on its financial viability.

The optimiser programme requires the following inputs to convert Mineral Resources to Mineral Reserves and to optimise the economic cut-off grade:

- ▶ Database inventory of all Mineral Resource blocks
- ▶ An assumed gold price – R600,000/kg (USD 1,315/oz at ZAR 14.19:USD 1) for Mineral Reserves
- ▶ Planned production rates for each mine
- ▶ Mine call factors based on current and historical results
- ▶ Plant recovery factors based on current and historical results
- ▶ Planned cash operating costs
- ▶ Anticipated capital requirements.

▼ Barberton Mines – chairlift at Fairview Mine



Mineral Reserves represent the portion of the Measured and Indicated Mineral Resource above an economic cut-off in the life-of-mine plan. These Mineral Reserves have been estimated after considering all modifying factors affecting extraction. A range of disciplines is involved at each mine in the life-of-mine planning process, including geology, surveying, planning, mining design and engineering, rock engineering, metallurgy, financial management, human resources management and environmental management.

The competent person for Pan African Resources, Hendrik Pretorius, the group project geologist, signs off the Mineral Resources and Mineral Reserves for the group. He is a member of the South African Council for Natural Scientific Professions (SACNASP 400051/11 – Management Enterprise Building, Mark Shuttleworth Street, Innovation Hub, Pretoria, South Africa), as well as a member in good standing of

the Geological Society of South Africa (CSIR Mining Precinct, Corner Rustenburg and Carlow Roads, Melville, South Africa). Hendrik has 16 years' experience in economic geology and mineral resource management (MRM). He is based at The Firs Office Building, 2nd Floor, Office 204, corner Cradock and Biermann Avenues, Rosebank, Johannesburg, South Africa. He holds a BSc (Hons) Geology from the University of Johannesburg as well as a Graduate Diploma in Engineering from the University of the Witwatersrand. Hendrik has reviewed and approved the information contained in this document as it pertains to Mineral Resources and Mineral Reserves and has provided written confirmation to Pan African Resources that the information is compliant with the SAMREC Code and, where applicable, the relevant Table 1 of the SAMREC Code, and may be published in the form and context in which it appears.

Hendrik is supported by key personnel and task experts for each discipline. Key personnel and their relevant experience are listed in the table below:

Name	Designation	Operation	Professional registration and qualification	Relevant experience
Bert van den Berg	Group mining engineer	Group	Mine Managers Association of South Africa, the South African Institute of Mining and Metallurgy BSc (Engineering) Mining engineering	>16 years
Barry Naicker	Group mineral resource and reserve manager	Group	SACNASP (400234/10) MEng Mineral Resource Management BSc (Hons) Geology	>18 years
Roelf le Roux	Mineral resource manager	Barberton Mines	BSc (Hons) Geology	>31 years
Ronnie Fraser	Chief surveyor	Barberton Mines	Institute of Mine Surveyors South Africa Mine surveyors certificate of competency	>46 years
Walter Seymore	Ore reserve manager	Evander Mines	ND Geotechnology	>21 years

# WHO WE ARE

Pan African Resources PLC (Pan African Resources) is a mid-tier African-focused gold producer with a production capacity in excess of 170,000oz of gold per annum. We own and operate a portfolio of high-quality, low-cost operations and projects, which are located in South Africa.

## OUR PURPOSE

To safely extract gold from mineral deposits in a manner that creates sustainable value for our stakeholders.

## OUR VISION

To continue to build and grow a mid-tier gold producer that delivers on its purpose.

## OUR VALUES



## WHAT WE DO



### GROWTH

We grow our business in a value-accretive manner to benefit all stakeholders and we prioritise:

- ▶ organic growth projects within our portfolio
- ▶ feasible and production-enhancing projects.

As a business seeking sustainable growth, we continually look for value-accretive opportunities that meet our stringent investment criteria.



### PROFITABILITY

We mine gold from our underground and surface tailings operations and strive to be the lowest all-in sustaining cost producer of gold in Southern Africa.



### SUSTAINABILITY

We focus on sustainable, low-cost and safe gold production.



### STAKEHOLDERS

We adopt an integrated approach to operate sustainably for the benefit of all stakeholders.

## OUR STRATEGIC PILLARS



# HOW WE CREATED VALUE IN 2019

## GOLD PRODUCED

Gold sold\*

**171,706oz** (2018: 111,879oz)

Revenue\*

**USD217.4 million** (2018: USD145.8 million)

## FOR OUR EMPLOYEES

Total number of employees

**2,148 employees** (2018: 2,069 employees)

**USD50.3 million** (2018: USD44.3 million)  
in salaries, wages and benefits\*

Invested

**USD1.0 million** (2018: USD1.8 million)  
in skills and development training

## FOR OUR COMMUNITIES

Invested

**USD1.9 million** (2018: USD1.1 million)  
in corporate social investment (CSI), local economic development (LED) projects and bursaries

## FOR THE GOVERNMENT

Paid

**USD14.1 million** (2018: USD17.4 million)  
in South African government taxes (excluding value-added tax (VAT))

## FOR OUR PROVIDERS OF CAPITAL

Profit after tax

**USD38.0 million**  
(2018: USD122.8 million loss after tax)

Return on shareholder funds

**23.0%** (2018: loss 57.9%)

Earnings per share

**1.97 USD cents per share**  
(2018: loss of 6.79 USD cents per share)

Headline earnings

**USD22.9 million** (2018: USD17.9 million)

Net asset value

**USD183.6 million** (2018: USD147.0 million)

Interest paid to debt funders

**USD14.1 million** (2018: USD7.0 million)

All-in sustaining costs

**USD988/oz** (2018: USD1,358/oz)  
or R450,564/kg (2018: R561,468/kg)

## FOR OUR SUPPLIERS

Spent

**USD137.8 million** (2018: USD104.1 million)  
in local procurement expenditure

\* Refers to gold sold, revenue or salaries, wages and benefits paid for continuing operations. In the prior financial year, the group reclassified Evander Mines' large-scale underground operations as a discontinued operation.

▼ Elikhulu Plant – process water dam in foreground



# OUR OPERATING ASSETS AND WHERE WE OPERATE






The group's assets at the end of the financial year include:








## BARBERTON MINES

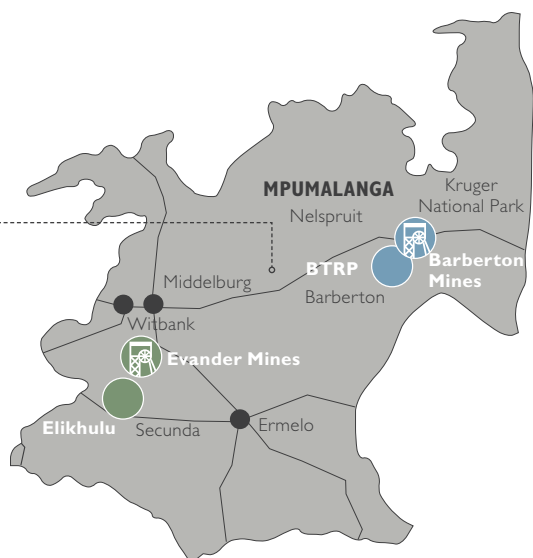
Three underground gold mines: Fairview Mine, Sheba Mine and New Consort Mine

Barberton Tailings Retreatment Plant (BTRP)

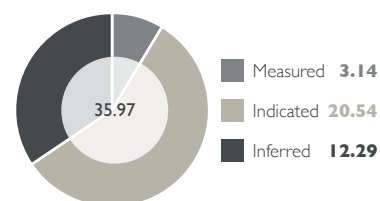
BARBERTON MINES		 Employees 1,875	 Contractors 620	 Life-of-mine 20 years
	Located in a greenstone belt, this is a low-cost, high-grade operation comprising three underground mines: Fairview, Sheba and New Consort.			
	Production (tonnes milled)	293,264 (2018: 237,831)		
	Produced (oz/annum)	75,356 (2018: 73,125)		
	Capacity (oz/annum)	110,000		
	Tonnage (capacity per annum)	432,000		
	Sustaining capital	USD9.9 million (2018: USD8.7 million)		
	Acquired	74% from Metorex in 2007 and then the remaining 26% from PAR Gold Proprietary Limited (PAR Gold) in 2009		
	Mineral Resources	12.1Mt @ 7.85g/t (3.1Moz)		
	Mineral Reserves	8.0Mt @ 5.65g/t (1.4Moz)		
	Recovered grade	8.0g/t (2018: 9.6g/t)		
	Cash cost	USD1,046/oz (2018: USD1,053/oz)		

BARBERTON TAILINGS RETREATMENT PLANT		 Employees 75	 Contractors –	 Life-of-mine 9 years
	Located at Barberton Mines, the R325.7 million BTRP commenced construction in April 2012, was completed on schedule and achieved its inaugural gold pour in June 2013.			
	Production (tonnes milled)	1,114,923 (2018: 858,967)		
	Produced (oz/annum)	24,007 (2018: 17,504)		
	Capacity (oz/annum)	25,000		
	Tonnage (capacity per annum)	1,200,000		
	Sustaining capital	–		
	Developed	Steady-state production commenced in 2013		
	Mineral Resources	21.6Mt @ 1.28g/t (0.9Moz)		
	Mineral Reserves	9.9Mt @ 1.66g/t (0.5Moz)		
	Recovered grade	0.7g/t (2018: 0.6g/t)		
	Cash cost	USD552/oz (2018: USD691/oz)		

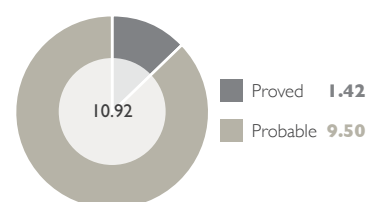




## Group Mineral Resources (Moz)



## Group Mineral Reserves (Moz)



## EVANDER MINES

Elikhulu Tailings Retreatment Plant (Elikhulu)

8 Shaft pillar mining

## ELIKHULU TAILINGS RETREATMENT PLANT

Employees  
91Contractors  
287Life-of-mine  
13 years

Elikhulu exploits historically generated gold tailings deposited in the Kinross, Leslie/Bracken and Winkelhaak tailings storage facilities (TSFs).



Production (tonnes milled)	10,848,209
Produced (oz/annum)	46,201
Capacity (oz/annum)	75,000
Tonnage (capacity per annum)	14,400,000
Sustaining capital	–
Developed	Inaugural gold pour achieved on 16 August 2018
Mineral Resources	203.6Mt @ 0.29g/t (1.9Moz)
Mineral Reserves	170.6Mt @ 0.27g/t (1.5Moz)
Recovered grade	Tailings: 0.13g/t
Cash cost	USD555/oz

## EVANDER MINES' 8 SHAFT PILLAR MINING

Employees  
90Contractors  
586Life-of-mine  
3 years

Evander Mines' 8 Shaft pillar mining is expected to contribute 20,000oz to 30,000oz per annum for three years, with first gold produced in August 2019.



Production (tonnes milled)	113,000 planned
Produced (oz/annum)	30,000 at steady state
Capacity (oz/annum)	40,000
Tonnage (capacity per annum)	138,000
Sustaining capital	R18 million over the project's life
Developed	Primary pillar development completed in February 2019 and initial mining commenced in July 2019
Mineral Resources	17.3Mt @ 11.53g/t (6.4Moz)
Mineral Reserves	0.4Mt @ 8.54g/t (0.1Moz)
Recovered grade	8.60g/t planned over the life-of-mine
Cash cost	Below USD1,000/oz

# OPERATIONAL PRODUCTION

	Year ended 30 June	Units	Mining operations			Tailings operations				Total operations		
			Barberton Mines	Evander Mines	Total	BTRP	ETRP	Elikhulu	Total	Barberton Mines total	Evander Mines total	Group total
Tonnes milled – underground	2019	(t)	247,635	63,971	311,606	–	–	–	–	247,635	63,971	311,606
	2018	(t)	237,831	272,124	509,955	–	–	–	–	237,831	272,124	509,955
Tonnes milled – surface	2019	(t)	45,629	–	45,629	–	–	–	–	45,629	–	45,629
	2018	(t)	–	–	–	–	327,109	–	327,109	–	327,109	327,109
Tonnes milled – total underground and surface	2019	(t)	293,264	63,971	357,235	–	–	–	–	293,264	63,971	357,235
	2018	(t)	237,831	272,124	509,955	–	327,109	–	327,109	237,831	599,233	837,064
Tonnes processed – tailings (note 4)	2019	(t)	–	–	–	1,114,923	918,809	10,848,209	12,881,941	1,114,923	11,767,018	12,881,941
	2018	(t)	–	–	–	858,967	1,855,249	–	2,714,216	858,967	1,855,249	2,714,216
Tonnes processed – surface feedstock	2019	(t)	–	–	–	–	153,224	–	153,224	–	153,224	153,224
	2018	(t)	–	–	–	–	327,109	–	327,109	–	327,109	327,109
Tonnes processed – total tailings and surface feedstock	2019	(t)	–	–	–	1,114,923	1,072,033	10,848,209	13,035,165	1,114,923	11,920,242	13,035,165
	2018	(t)	–	–	–	858,967	2,182,358	–	3,041,325	858,967	2,182,358	3,041,325
Tonnes milled and processed – total	2019	(t)	293,264	63,971	357,235	1,114,923	1,072,033	10,848,209	13,035,165	1,408,187	11,984,213	13,392,400
	2018	(t)	237,831	272,124	509,955	858,967	2,182,358	–	3,041,325	1,096,798	2,454,482	3,551,280
Overall recovered grade	2019	(g/t)	8.0	8.2	8.0	0.7	0.3	0.1	0.2	2.2	0.2	0.4
	2018	(g/t)	9.6	5.6	7.4	0.6	0.3	–	0.4	2.6	0.9	1.4
Overall recovery – underground	2019	(%)	94	94	94	–	–	–	–	94	94	94
	2018	(%)	93	98	95	–	–	–	–	93	98	95
Overall recovery – tailings	2019	(%)	–	–	–	45	49	49	48	45	49	48
	2018	(%)	–	–	–	46	39	–	44	46	39	44
Gold produced – underground	2019	(oz)	72,864	16,879	89,743	–	–	–	–	72,864	16,879	89,743
	2018	(oz)	73,125	48,565	121,690	–	–	–	–	73,125	48,565	121,690
Gold production – surface operations	2019	(oz)	2,492	–	2,492	–	–	–	–	2,492	–	2,492
	2018	(oz)	–	–	–	–	–	–	–	–	–	–
Gold produced – tailings	2019	(oz)	–	–	–	24,007	3,762	46,201	73,970	24,007	49,963	73,970
	2018	(oz)	–	–	–	17,504	7,128	–	24,632	17,504	7,128	24,632
Gold produced – surface feedstock	2019	(oz)	–	–	–	–	6,237	–	6,237	–	6,237	6,237
	2018	(oz)	–	–	–	–	14,122	–	14,122	–	14,122	14,122
Gold produced – total	2019	(oz)	75,356	16,879	92,235	24,007	9,999	46,201	80,207	99,363	73,079	172,442
	2018	(oz)	73,125	48,565	121,690	17,504	21,250	–	38,754	90,629	69,815	160,444
Gold sold – total (note 1)	2019	(oz)	75,356	16,879	92,235	24,007	9,999	45,465	79,471	99,363	72,343	171,706
	2018	(oz)	73,125	48,565	121,690	17,504	21,250	–	38,754	90,629	69,815	160,444
Average rand gold price received	2019	(R/kg)	577,902	573,722	577,137	578,146	560,446	581,920	578,078	577,961	577,039	577,573
	2018	(R/kg)	534,288	537,161	535,434	535,055	555,870	–	546,469	534,436	542,856	538,100
Average USD gold price received	2019	(USD/oz)	1,267	1,258	1,265	1,267	1,228	1,267	1,267	1,267	1,265	1,266
	2018	(USD/oz)	1,292	1,299	1,295	1,294	1,344	–	1,322	1,293	1,299	1,301
Rand cash cost*	2019	(R/kg)	477,109	803,183	536,781	251,624	265,210	254,925	255,222	422,630	384,266	406,466
	2018	(R/kg)	435,368	695,246	539,082	285,593	305,108	–	296,294	406,441	576,497	480,439
Rand all-in sustaining costs*	2019	(R/kg)	567,947	806,630	611,626	251,973	265,210	269,442	263,633	491,605	394,193	450,564
	2018	(R/kg)	507,130	853,797	645,481	287,390	306,120	–	297,661	464,690	687,098	561,468
Rand all-in cost *	2019	(R/kg)	602,601	879,188	653,216	262,779	265,210	647,489	483,175	520,497	648,711	574,516
	2018	(R/kg)	513,553	963,882	693,274	443,188	306,120	–	368,029	499,963	763,675	614,713

\* Refer to  APMs on  pages 220 to 225 of the 2019 integrated annual report.



	Year ended 30 June	Units	Mining operations			Tailings operations				Total operations		
			Barberton Mines	Evander Mines	Total	BTRP	ETRP	Elikhulu	Total	Barberton Mines total	Evander Mines total	Group total
USD cash cost*	2019	(USD/oz)	1,046	1,761	1,177	552	581	555	559	926	842	891
	2018	(USD/oz)	1,053	1,682	1,304	691	738	–	717	983	1,394	1,162
USD all-in sustaining cost*	2019	(USD/oz)	1,245	1,768	1,341	552	581	587	578	1,078	864	988
	2018	(USD/oz)	1,227	2,065	1,561	695	740	–	720	1,124	1,662	1,358
USD all-in cost*	2019	(USD/oz)	1,321	1,927	1,432	576	581	1,410	1,059	1,141	1,422	1,259
	2018	(USD/oz)	1,242	2,331	1,677	1,072	740	–	890	1,209	1,847	1,487
Rand cash cost per tonne*	2019	(R/t)	3,813	6,592	4,311	169	77	33	48	928	72	162
	2018	(R/t)	4,163	3,859	4,001	181	92	–	117	1,045	510	675
Capital expenditure	2019	(R million)	221.2	38.1	259.3	8.1	–	534.6	542.7	229.3	572.7	802.0
	2018	(R million)	125.0	181.5	306.5	85.4	–	1,256.1	1,341.5	210.4	1,437.6	1,648.0
Revenue	2019	(R million)	1,354.5	301.2	1,655.7	431.7	174.3	822.9	1,428.9	1,786.2	1,298.4	3,084.6
	2018	(R million)	1,215.2	811.4	2,026.6	291.3	367.4	–	658.7	1,506.5	1,178.8	2,685.3
Cost of production	2019	(R million)	1,118.3	421.7	1,540.0	187.9	82.5	360.5	630.9	1,306.2	864.7	2,170.9
	2018	(R million)	990.2	1,050.2	2,040.4	155.5	201.7	–	357.2	1,145.7	1,251.9	2,397.6
All-in sustaining cost*	2019	(R million)	1,331.2	423.5	1,754.7	188.1	82.5	381.0	651.6	1,519.3	887.0	2,406.3
	2018	(R million)	1,153.4	1,289.7	2,443.1	156.5	202.3	–	358.8	1,309.9	1,492.0	2,801.9
All-in cost*	2019	(R million)	1,412.4	461.6	1,874.0	196.2	82.5	915.6	1,194.3	1,608.6	1,459.7	3,068.3
	2018	(R million)	1,168.0	1,456.0	2,624.0	241.3	202.3	–	443.6	1,409.3	1,658.3	3,067.6
Adjusted EBITDA*	2019	(R million)	277.9	(32.9)	245.0	178.0	65.0	441.4	684.4	455.9	473.5	929.4
	2018	(R million)	247.0	(270.0)	(23.0)	94.6	150.6	–	245.2	341.6	(119.4)	222.2
Average exchange rate	2019	(R/USD)	14.19	14.19	14.19	14.19	14.19	14.28	14.19	14.19	14.19	14.19
	2018	(R/USD)	12.85	12.85	12.85	12.85	12.85	12.85	12.85	12.85	12.85	12.85

Note 1: Gold sold excludes 736oz produced by Elikhulu during August 2018. The associated gold revenue and costs were capitalised for accounting purposes, prior to Elikhulu achieving commercial production on 1 September 2019.

\* Refer to  APMs on  pages 220 to 225 of the 2019 integrated annual report.

▼ Fairview underground conveyor



# BUSINESS MODEL

High-grade  
mining

Long-life mining  
operations

Cash flow  
generative in any  
commodity cycle

Excellent  
safety record

Profitable  
mining

## INPUTS

We use our capital resources to realise our purpose:  
To extract gold from mineral deposits in a manner  
that creates sustainable value for our stakeholders



### FINANCIAL CAPITAL

Our financial capital includes equity, cash generated from our operating activities and our debt facilities

To drive sustainable cash flows and create value for our stakeholders, we have a disciplined approach to financial capital management



### MANUFACTURED CAPITAL

Our manufactured capital includes our underground mining infrastructure at Barberton Mines and Evander Mines, our two surface tailings operations (Elikhulu and BTRP) and our Biological Oxidation (BIOX®) plant in Barberton

Through our mining and prospecting rights we have access to Mineral Reserves and Mineral Resources. These orebodies are a key and critical resource to the group



### INTELLECTUAL CAPITAL

We invest in our employees and our intellectual capital through developing our management expertise and training our employees. We have a unique talent mix and more than 130 years of mining experience on the Barberton Greenstone Belt orebodies. This is currently the only Greenstone gold complex actively being mined on a large scale in South Africa



### HUMAN CAPITAL

Our people are fundamental to the sustainability of our business and are key enablers in the execution of our strategy. To achieve our strategic objectives, we focus on ensuring that we have the necessary skills, culture and employees in place



### SOCIAL AND RELATIONSHIP CAPITAL

Our licence to operate depends on the quality of our relationships with our various stakeholders. Building and maintaining relationships based on trust, mutual respect and credibility is integral to our growth, value creation and long-term sustainability



### NATURAL CAPITAL

We require natural capital such as water, air, land and fuel for energy to operate our manufactured capital

We rank among South Africa's lowest-cost gold producers, with all-in sustaining costs per ounce improving to USD988/oz (2018: USD1,358/oz)

We have used our competitive advantage of agility and flexibility to strategically position ourselves as a relatively low-cost, long-life gold producer – 46.5% of the group's production is from low-cost surface tailings operations

We pride ourselves on a track record of designing, building and commissioning tailings retreatment plants on time and on budget



### GROWTH

- ▶ Evander Mines
  - 8 Shaft pillar mining
  - Egoli project
- ▶ Barberton Mines
  - Royal Sheba project
  - New Consort exploration project
  - Sub-vertical shaft project at Fairview
  - Project Dibanisa



## VALUE PROPOSITION

Pan African Resources is committed to producing low-cost ounces and optimising safety and mining efficiencies, while minimising environmental impacts and investing in local communities.

Key value contributors are:

## BUSINESS ACTIVITIES

Through carefully executing our business activities, we have positioned Pan African Resources as a relatively low-cost, long-life gold producer, with employee health and safety as an operational imperative



Our active management of gold mining operations to ensure a focus on reducing and managing operational costs

Our competitive portfolio of underground and tailings operations

Our focus on sustainable and safe gold production

Our ability to meet and exceed our production guidance of 170,000oz

We expect to produce approximately 185,000oz for the 2020 financial year

## WHAT DIFFERENTIATES US

## OUR STRATEGIC PILLARS

We strategically execute our business activities to align with our vision:  
To continue to build and grow a mid-tier gold producer that delivers on its purpose



### PROFITABILITY

- ▶ Long-life profitability
- ▶ High-grade orebodies
- ▶ Low-cost mining operations



### SUSTAINABILITY

- ▶ Long-life orebodies
- ▶ Environmentally compliant
- ▶ Job creation
- ▶ Fully funded environmental fund



### STAKEHOLDERS

- ▶ Providers of capital
- ▶ Investors
- ▶ Shareholders
- ▶ Finance institutions
- ▶ Employees
- ▶ Unions
- ▶ Suppliers
- ▶ Communities
- ▶ Government and regulatory bodies
- ▶ Customers
- ▶ Listing exchanges

Rand hedge

Organic growth  
projectsExperienced  
management team170,000oz of gold sold per annum  
(2020: production guidance – 185,000oz)

## OUR OPERATING ENVIRONMENT

Our operating environment impacts us through:

- Economic factors
- Political factors
- Social factors
- Legislative factors

We impact our operating environment through our contribution to:

- The economy
- Society
- Our employees
- The environment

## OUR REVENUE

Our revenue is impacted by:

- Gold price
- Gold production volume
- ZAR:USD exchange rate

## OUTCOMES

The use of our capital resources to position Pan African Resources as a low-cost, long-life gold producer; with employee safety at the operational forefront



### FINANCIAL CAPITAL

We focus on managing our operational costs, achieving our production targets and optimising the performance and stability of our mining operations. We seek to improve the long-term outcomes of our activities while meeting the short-term expectations of our stakeholders



### MANUFACTURED CAPITAL

The pursuit of excellence in mining operations underpins cost-effectiveness and safety performance



### INTELLECTUAL CAPITAL

Investments into technology, processes and our employees ensure sustainability and competitive advantage



### HUMAN CAPITAL

A safer working environment through the expansion of tailings operations, with competencies and values built around safety, operational excellence and innovation



### SOCIAL AND RELATIONSHIP CAPITAL

Investment in stakeholder engagement and socio-economic development builds trust and secures our social licence to operate



### NATURAL CAPITAL

Reducing our environmental footprint as tailings retreatment initiatives are expanded. Responsible extraction is supported by our environmental management programme and rehabilitation strategy

## MANAGING OUR RISKS

Pan African Resources has an established risk management philosophy. Our understanding of our identified risks informs our strategy and our prioritisation of our material matters

Our top risks include:

- Interruption to stable electricity supply
- Illegal mining and heightened criminal activity
- Regulatory changes

## OUR MATERIAL MATTERS

Material matters are a summation of our key risks and opportunities that have the potential to impact our ability to create sustainable value for all stakeholders over the short, medium and long term:

- Health and safety
- Capital allocation and capital structure



### OUR COSTS

To maintain and sustain operations, our cost of production includes:

- Salaries and wages
- Electricity
- Mining
- Processing and metallurgy
- Engineering and technical services
- Administration and other
- Security

To expand our operation, our costs include:

- Expansionary capital
- Exploration costs

- Reduced working time impacting productivity
- Health and safety incidents
- Financial sustainability in a volatile environment
- Tailings dam or mine shaft failure, fire or flooding
- Operational execution
- Governance and regulatory compliance
- Strategic capital allocation
- Environmental damage
- Declining Mineral Resource and Mineral Reserve base

- Economic and social factors not in our control
- Mining operations
- Value-accretive growth
- ESG compliance
- Mineral Reserves and Mineral Resources
- Laws and regulations



### EXPLORE

On-mine growth projects contribute to our Mineral Resources, which potentially extend the life of our underground mining operations



### DEVELOP

Successful development of our orebodies and execution of our capital projects improves our costs and production profile and increases the economic life of our operations



### MINE

We extract gold-bearing ore through underground mining and vamping

We re-mine gold-bearing tailings through hydro mining. Gold is extracted from the concentrate after being processed through our plants at Elikhulu and BTRP

Third-party gold-bearing ore is processed on a toll treatment agreement at our Evander Mines' Kinross plant. We also treated, on a trial basis, third-party gold-bearing ore at the New Consort Mine plant in the 2019 financial year



### PROCESS

Refractory gold-bearing ore is treated by our BLOX® plant at Barberton Mines. Specialised bacteria break down insoluble sulphide minerals, which expose the gold for efficient extraction. The BLOX® concentrate is sent to the cyanide circuit at Fairview Mine for chemical processing where gold doré is produced

Non-refractory gold-bearing ore undergoes physical and chemical processing at our Fairview, Consort, Sheba, BTRP, Elikhulu or Kinross plants into gold doré

Gold doré is transported to Rand Refinery Limited (Rand Refinery) where it is refined into gold bullion



### SALES

Gold sales transactions are entered into with authorised bullion banks and other credible parties. Our customers and gold investors include the gold bullion export market, Rand Refinery, Gold Exchange Traded Funds (ETFs), and the makers of Krugerrands and gold jewellery



### END OF LIFE

The group's rehabilitation liability is fully funded. Our rehabilitation funds have been invested in a Cenviro Solutions insurance investment product underwritten by Centriq Insurance Company Limited. Our funds are invested in interest-bearing accounts and equity investments:

- To prepare for the inevitable closure of our mines as the orebodies are exhausted, social and economic stability requires consultation with affected communities during the life-of-mine
- Ongoing community consultations contribute to developing initiatives through our mine SLPs to prepare for post-closure economic sustainability
- At the end of the life-of-mine, we responsibly and safely manage the closure of our mines to ensure minimal disruption to our natural resources post mine closure

# HOW WE SUSTAIN VALUE

## INPUTS

The six capital resources embedded in our business activities to create and preserve value

## OUTPUTS

Our outputs result from and support our vision of growing a sustainable gold producing business in Africa

## BALANCING OUR CAPITALS

Capital stocks are traded, depleted, grown or combined as strategy is executed. For example, creating manufactured capital through infrastructure development decreases financial capital during that period



## FINANCIAL CAPITAL

Shareholder equity	<b>USD183.6 million</b> (2018: USD147.0 million)	Revenue	<b>USD217.4 million</b> (2018: USD145.8 million)	<ul style="list-style-type: none"> <li>Managing long-term strategy against short-term stakeholder expectations is an ongoing trade-off. Investment decisions made today for the group's long-term sustainability may take months or years to bear fruit</li> <li>The group has no control over the gold price, or the ZAR:USD exchange rate received on our gold sales. We mitigate their impact through strict cost management, strategic currency and commodity price hedging and disciplined financial capital management</li> <li>Increased debt resulted in increased payments to debt funders</li> <li>USD37.7 million (2018: USD97.8 million) was invested in the construction of Elikhulu, which has restored the profitability of Evander's operations</li> </ul>
		South African government taxes paid (excluding VAT)	<b>USD14.1 million</b> (2018: USD17.4 million)	
		Paid to suppliers	<b>USD137.8 million</b> (2018: USD104.1 million)	
		Dividend	<b>USD3.4 million</b> (2018: nil)	
Cash generated by/ (utilised in operating) activities	<b>USD37.7 million</b> (2018: USD13.4 million utilised in operating activities)	Profit after taxation	<b>USD38.0 million</b> (2018: USD122.8 million loss after tax)	
Debt facilities	<b>R1 billion revolving credit facility (RCF)</b> (2018: R1 billion) or <b>USD71.0 million</b> (2018: USD72.9 million) <b>R1 billion term loan facility for the Elikhulu plant</b> (2018: R1 billion) or <b>USD71.0 million</b> (2018: USD72.9 million) <b>R140 million in general banking facilities (GBP)</b> (2018: R140 million) or <b>USD9.9 million</b> (2018: USD10.2 million)	Interest payments to debt funders	<b>USD14.1 million</b> (2018: USD7.0 million)	
		Net debt	<b>USD129.9 million</b> (2018: USD118.0 million)	



## MANUFACTURED CAPITAL

Mineral Reserves	<b>Gold 10.92Moz</b> (2018: 11.22Moz)	Gold production	<b>172,442oz per annum</b> (2018: 160,444oz per annum)	<ul style="list-style-type: none"> <li>Safety performance and cost effectiveness underpins excellence in operational performance</li> <li>Elikhulu was commissioned ahead of schedule</li> <li>BTRP production increased to 24,007oz (2018: 17,504oz) following our investment into the BTRP regrind mill</li> <li>Incorporated Evander Tailings Retreatment Plant (ETRP) throughput capacity of 0.2 million tonnes per month into Elikhulu's processing capacity</li> </ul>
Mineral Resources	<b>Gold 35.97Moz</b> (2018: 33.30Moz)		<b>All-in sustaining cost USD988/oz</b> (2018 USD1,358/oz)	
Investment in infrastructure	<b>USD56.7 million</b> (2018: USD128.4 million)		<b>Tonnes milled and processed increased to 13,392,400 tonnes</b> (2018: 3,551,280 tonnes)	
Low-cost producer				
Mining flexibility at high-grade Fairview 272 and 358 mining platforms				
Life-of-mine				
<ul style="list-style-type: none"> <li>Barberton Mines</li> <li>BTRP</li> <li>Elikhulu</li> <li>Evander Mines' 8 Shaft pillar mining</li> </ul>	20 years 9 years 13 years 3 years			



**INPUTS**

The six capital resources embedded in our business activities to create and preserve value

**OUTPUTS**

Our outputs result from and support our vision of growing a sustainable gold producing business in Africa

**BALANCING OUR CAPITALS**

Capital stocks are traded, depleted, grown or combined as strategy is executed. For example, creating manufactured capital through infrastructure development decreases financial capital during that period

**INTELLECTUAL CAPITAL**

Mining and prospecting rights			
Technical know-how			
Key personnel for managing the BIOX <sup>®</sup> process		Maximised resource utilisation	
Management and the board's combined expertise		Effective and efficient technology at Elikhulu	
Expansion and integration of technologies at our operations			
Ethical and effective leadership			
			<ul style="list-style-type: none"> <li>Investing in technology and processes underpins the group's sustainability and competitive advantage</li> <li>We are growing our tailings processing expertise due to financial capital allocations to manufacturing capital that funded Elikhulu and the BTRP regrind mill</li> </ul>

**HUMAN CAPITAL**

Employees' skills and experience	<b>2,148 employees</b> (2018: 2,069 employees)	Zero fatalities	<b>Improved total injury frequency rate to 10.71 per million man hours</b> (2018: 12.71 per million man hours)	
Skilled and experienced board		Skills development and training	<b>USD1.0 million</b> (2018: USD1.8 million)	
Labour stability		Employee remuneration	<b>USD50.3 million</b> (2018: USD44.3 million)	
Investment in skills development and training		Women employed at our mines	<b>223 women</b> (2018: 200 women)	
				<ul style="list-style-type: none"> <li>Tailings retreatment is not as labour intensive, with less risk of injury, compared to underground mining</li> <li>Safety performance improved significantly</li> <li>Employee earnings are a major source of income for local communities, which strengthens our social and relationship capital</li> <li>A three-year wage agreement at Barberton Mines, concluded during September 2018 without industrial action, allows for human capital stability</li> </ul>

**SOCIAL AND RELATIONSHIP CAPITAL**

Social licence to operate	CSI, LED projects and bursaries	<b>USD1.9 million</b> (2018: USD1.1 million)	
Investing in our communities – SLP investment			
Ongoing stakeholder engagement with a focus on community engagement	Stakeholder relations	Regular union meetings, fulltime community liaison officers appointed	
			<ul style="list-style-type: none"> <li>Continually improving stakeholder engagement</li> <li>Investing in socio-economic development reduces short-term financial capital yet secures our social licence to operate</li> <li>Investing in social and relationship capital enables stable long-term operations and financial investments</li> </ul>

**NATURAL CAPITAL**

Stewardship of our Mineral Reserves and Mineral Resources	Energy consumption	<b>1,228,501 GJ</b> (2018: 1,397,695GJ)	
Complying with applicable environmental legislation and regulations	Water consumption	<b>13,369m<sup>3</sup></b> (2018: 16,675m <sup>3</sup> )	
	Carbon emissions	<b>0.03 Co<sub>2</sub> e/t milled</b> (2018: 0.12 CO <sub>2</sub> e/t milled)	
		Independent rehabilitation closure cost assessments conducted at all operations	
			<ul style="list-style-type: none"> <li>We extract Mineral Resources through responsible mining techniques while mitigating the environmental impacts of mining through land rehabilitation</li> <li>Our environmental footprint reduces as tailings retreatment initiatives are expanded</li> <li>Rehabilitation programmes increase social and relationship capital through local supplier development and job creation</li> <li>As tailings dams are rehabilitated, land becomes available for agricultural use and human settlements</li> </ul>

<sup>1</sup> Employee remuneration for continuing operations.

# MATERIAL MATTERS

Pan African Resources applies integrated thinking and a pragmatic approach in defining material matters, which forms an integral part of our strategic planning activities. We define material matters as those areas with the potential to substantially impact our performance or ability to create value in the short, medium and long term.

## OUR PROCESS

Pan African Resources conducted an in-depth and externally facilitated materiality assessment in March 2019 to determine the matters most material to the group. The following process was followed:

- ▶ Through market research, consultation with the board and the executive management team, and an understanding of the group's stakeholders, we identified matters that may have a financial, reputational, operational, environmental, social, strategic or regulatory impact on the group
- ▶ The identified matters were collated, analysed and measured against our risk register, as determined by the group's risk management process
- ▶ Material matters were identified according to their ability to impact the group's performance or create and sustain value over the short, medium and long term.

We track our performance against these material matters through key performance indicators (KPIs), which are also linked to our remuneration policy and framework.



### HEALTH AND SAFETY

Consistently high health and safety standards are fundamental to retaining the support of regulators, investors and employees in our mining activities. Achieving zero harm is the ultimate aim of responsible miners



### CAPITAL ALLOCATION AND CAPITAL STRUCTURE

Through a disciplined approach to financial capital management and capital allocation, we carefully deploy and manage our capital for a sustainable business, which creates value for all our stakeholders. We continuously consider mechanisms to improve our capital structure



### ECONOMIC AND SOCIAL FACTORS NOT IN OUR CONTROL

Pan African Resources has little or no control over changes in global economic and market conditions, the South African political environment and socio-economic conditions. Changes in these factors can lead to volatile commodity prices and currency exchange rates, security concerns and a lack of government action and service delivery, including electricity supply, which all impact on our business



### MINING OPERATIONS

As a mid-tier gold mining company, we have used our competitive advantage of being agile and flexible to strategically position ourselves as a relatively low-cost, long-life gold producer

We constantly manage our gold mining operations to ensure a focus on improving underground mining flexibility at Barberton Mines, reducing and managing operational costs, achieving operational targets and optimising the performance of our tailings operations



### VALUE-ACCRETIVE GROWTH

Pan African Resources has an attractive pipeline of near- to medium-term value-accretive internal growth projects, which we advance in a considered manner to create sustainable stakeholder value over the medium to long term

We evaluate acquisition opportunities, particularly in other African jurisdictions, in accordance with our rigorous capital allocation criteria



### ESG COMPLIANCE

To support the long-term sustainability of our business, we are committed to and focused on how we manage and report on our ESG compliance



### MINERAL RESERVES AND MINERAL RESOURCES

The group's Mineral Reserves and Mineral Resources underpin the enterprise value of Pan African Resources and enable us to deliver on our relatively low-cost, long-life gold producing strategy

Exploration and the development of organic projects are essential to the sustainability of Pan African Resources. It enables Mineral Reserve replacement to sustain the life-of-mine of our continuing operations



### LAWS AND REGULATIONS

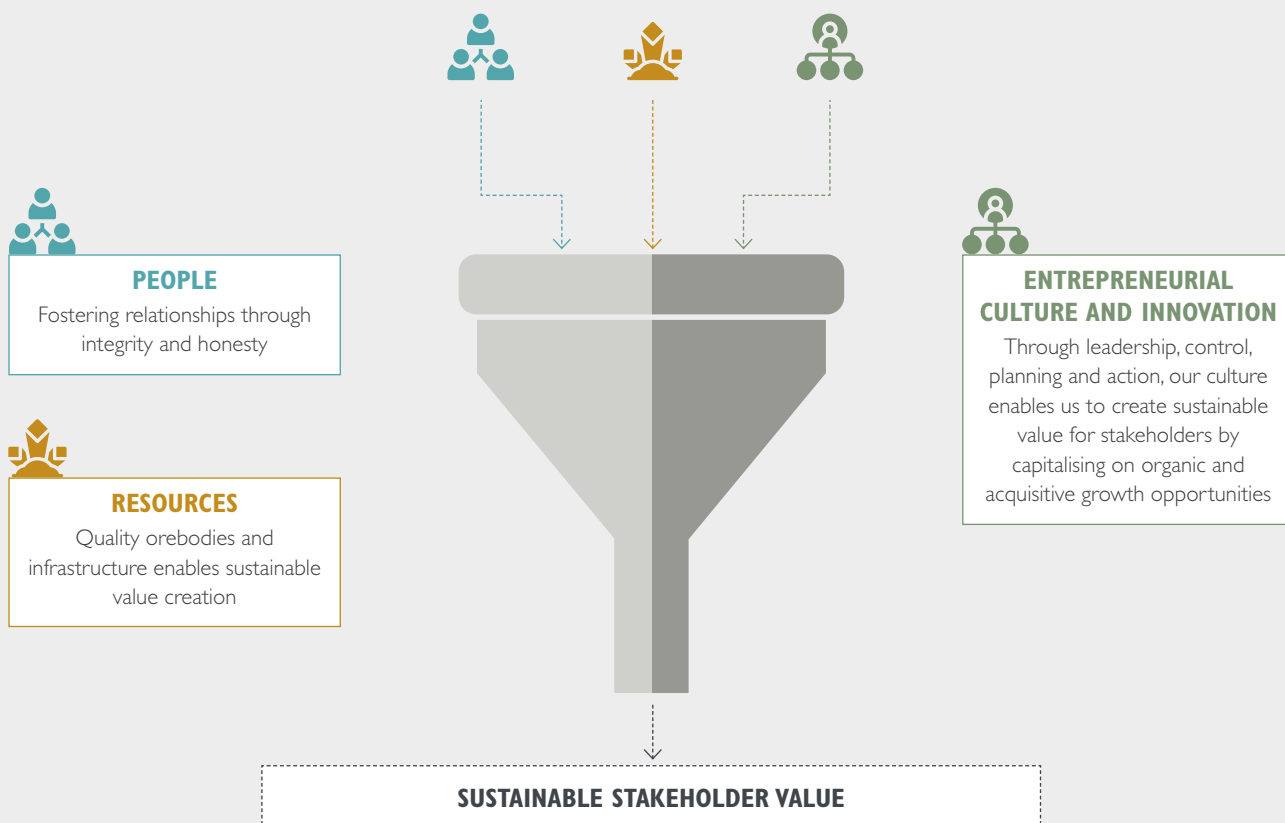
South African mines are subject to a number of laws and regulations. We monitor compliance to all legal requirements on an ongoing basis, however, certain Mining Charter III provisions are ambiguous or controversial in their interpretation and practical application

# STRATEGY

Our business strategy is to identify and execute into organic and acquisitive growth opportunities which will create sustainable stakeholder value by focusing on:



## THE KEY ENABLERS OF OUR STRATEGY ARE:



## OUR SHORT-, MEDIUM- AND LONG-TERM STRATEGY

To fulfil our purpose, we have considered our material matters and the long-term trends in the mining industry that impact Pan African Resources, such as scarce natural resources, a politically and regulatory challenging environment, lack of capital investment into the industry, escalating costs and socio-economic and infrastructure challenges.

Material matters are a summation of key risks and opportunities that have the potential to impact our ability to create sustainable value for all stakeholders over the short, medium and long term. Our strategy considers our material matters through an integrated approach.



# OPERATING ENVIRONMENT



## HOW OUR OPERATING ENVIRONMENT IMPACTS US

### Economic factors

South Africa's economy experienced a shock contraction of 3.2% in Q1 2019, but reversed this trend by growing at 3.1% in Q2 2019. While the country avoided a recession in 2019, the economic outlook and debt levels remain subdued.

Following three consecutive quarters of negative growth, the country's mining industry rebounded in Q2 2019 with an improvement of 14.4% which contributed 1% towards GDP growth. Gold is currently trading at its highest level in six years.

In early June 2019, the International Monetary Fund stated that South Africa's growth outlook depended on the pace of reforming long-standing structural constraints and that delayed reforms would demotivate investors, inhibit growth and continue reducing per-capita income.

One of South Africa's biggest economic problems is to keep Eskom, the national power utility, financially stable and functional until its operational problems can be addressed, and it becomes sustainable as the country's primary power generator. Healthy GDP growth is not possible until consistent and affordable power is guaranteed.

At the same time, input costs are rising, particularly the cost of mining at depth, salaries and wages, capital expenditure and electricity.

Gold's supply and demand fundamentals, however, support the belief that the gold price should continue to improve over the next few years, despite periods of short-term volatility driven by market sentiment and geopolitical developments. Pan African Resources is well positioned to weather a lower gold price and capitalise on a future upside when it occurs.

### Political factors

South Africa's May 2019 national general election, which saw President Cyril Ramaphosa elected as president, albeit with the ruling African National Congress (ANC) seeing reduced support, created the conditions during which the country retained its investment-grade rating from Moody's. Macroeconomic stability, however, remains a risk with an increasing fiscal deficit, rising public debt, inefficient state-owned enterprises and slipping global competitiveness.

Internal contestation within the ANC, between factions aligned to President Ramaphosa and those aligned to former President Jacob Zuma, also weigh on business and investor confidence and adversely impact the value of the rand.

## Social factors

The extractive sector must pay attention to its social licence to operate, given the nature of its activities. Miners face heightened stakeholder expectations on a wide range of fronts. Communities are protesting for economic opportunities and improved local service delivery, while government pushes for transformation and employment creation. Labour unions mobilise for higher wages.

Formal sector unemployment rates remain extremely high across South Africa. Mining companies are often the main providers of employment in rural areas, which creates high community expectations. In recent years, the protests and strikes by those dissatisfied with the slow transformation and a lack of service delivery have rapidly grown in number in South Africa. These have sometimes led to violent clashes with the authorities and disrupted production due to employees being unable to get to work.

Artisanal mining provides a living for many impoverished people in resource-rich developing countries. This sector is typically unregulated, with formal miners having to compete with illegal miners for their own resources. Government tends to deal erratically with illegal miners, and some companies that have taken strong action to protect their operations have been accused of human rights abuses.

To navigate these complex dynamics and avoid or minimise conflicts with host communities, miners must maximise positive impacts, minimise negative impacts and ensure continuous engagement with host community stakeholders. A strong social licence to operate is vital for long-term sustainable value creation for all stakeholders.

## Legislative factors

Mining is among the most regulated industries in South Africa. Changes in labour legislation, employment equity legislation, as well as the reform of the environmental regulatory system, create a dynamic context for mining legislation's evolution. Minerals and mining policy, which is necessarily broad in its scope, needs to be coordinated with other policies that fall within the remit of other forums.

We have seen a move towards greater industry consultation and certainty in the local regulatory environment. The revised Mining Charter III was released in June 2018 and approved in September 2018, with full effect from March 2019. Although an improvement on the previous charter, certain elements of the revised charter remain concerning. The carbon tax implementation is on track, but there is a lack of clarity on the draft National Climate Change Bill and its practical implementation.

## HOW WE IMPACT OUR OPERATING ENVIRONMENT

### Economy

Mining and its related supply industries are critical to South Africa's socio-economic development. The sector accounts for roughly one-third of the market capitalisation of the JSE and traditionally attracts foreign investment to the country. Pan African Resources makes a significant contribution to economic activity in the regions where it operates through job creation, local supplier development, socio-economic contributions and foreign exchange earnings.

After employees, the National Treasury is the second-largest beneficiary of the value created by the mining sector; at 24% in 2018.

Although direct company taxes vary with profitability, the state gains more consistency from royalties and employee taxes. More than half of the government's tax revenue goes to social protection services ranging from social grants, free and subsidised housing to the provision of clean water, electricity and education. These benefit from mining industry taxes.

Pan African Resources makes a sizeable contribution to South Africa's economy each year. In this financial year, the group paid USD14.1 million (2018: USD17.4 million) in South African government taxes (excluding VAT).

## Society

The industry has a strong record of transformation, exceeding the requirements of the 2010 Mining Charter by a large margin. This included procurement and staff demographics at all levels of the business.

Community investments, such as building houses, schools and clinics, upgrading local infrastructure, and providing child and adult education learnerships, accounted for 2%, or R3.5 billion of the mining industry's expenditure in 2018.

Pan African Resources is a primary employer in the Barberton and Evander regions of South Africa. The financial and social investment flows we sustain are crucial to the well-being of communities near our operations. During the review period, the group invested USD1.9 million (2018: USD1.1 million) in CSI, LED projects and bursaries.

## Employees

Skilled employees are essential to the sustainability of the gold mining industry. Training and development in the industry focuses on developing the scarce skills needed at mines and improving the employability of local residents.

South Africa's chronically high unemployment rate is a national crisis, making every job valuable. The group's difficult and unavoidable restructuring in 2017/18 created a sustainable mining environment for our 2,148 current employees, with a solid foundation for launching new projects and creating additional jobs.

During this period, the group's employees received USD50.3 million (2018: USD44.3 million) in salaries, wages and benefits.

## Environment

Our activities associated with the exploration, extraction and processing of Mineral Resources result in the unavoidable disturbance of land, the consumption of resources, generation of waste and atmospheric and water pollutants. Pan African Resources invests in innovation and skills training to build an even greater understanding of the conservation of our natural environment.

Our gold tailings reclamation projects not only extract the additional economic value from these tailings but also provide an opportunity to process the tailings with up-to-date technology. This delivers a less toxic, more stable footprint, while making large areas of land available for productive use.

# BOARD OF DIRECTORS

## NON-EXECUTIVE DIRECTORS

			
<b>KEITH SPENCER</b> (69) Chairman	<b>HESTER HICKEY</b> (65) Non-executive and lead independent director <sup>6</sup>	<b>THABO MOSOLOLI</b> (49) Non-executive	<b>ROWAN SMITH</b> (55) Non-executive
<i>BSc Eng (Mining)</i>	<i>CA(SA), BCompt (Hons)</i>	<i>BCom (Hons), CA(SA)</i>	<i>BSc (Hons), BCom (Hons)</i>
<b>Date of appointment</b> 8 October 2007	<b>Date of appointment</b> 12 April 2012	<b>Date of appointment</b> 9 December 2013	<b>Date of appointment</b> 8 September 2014 <sup>1</sup>
	<b>Significant directorships</b> <ul style="list-style-type: none"> <li>Northam Platinum Limited</li> <li>Cashbuild Limited</li> <li>Barloworld Limited</li> <li>African Dawn Capital Limited (resigned on 31 August 2019)</li> </ul>	<b>Significant directorship</b> <ul style="list-style-type: none"> <li>Chief operating officer of Sun International (for the South African operations)</li> </ul>	<b>Significant directorships</b> <ul style="list-style-type: none"> <li>Adviser to Athena Capital</li> <li>Director of Hlanganani Capital</li> </ul>
<b>Skills and experience</b> Keith is a qualified mining engineer with 48 years' practical mining experience. Since 1986, Keith has held senior positions in some of the largest gold mines in the world including the positions of: <ul style="list-style-type: none"> <li>Managing director of Driefontein Consolidated</li> <li>Chairman and managing director of Deelkraal Gold Mine</li> <li>Director on the boards of gold mines belonging to Gold Fields, South Africa</li> <li>Operations director of Metorex</li> </ul>	<b>Skills and experience</b> Hester worked at AngloGold Ashanti, initially as group internal audit manager and later as executive officer: head of risk. Prior to this, she worked at Ernst & Young and Liberty Life and was acting head of internal audit at Transnet. In her early career she lectured at the University of Witwatersrand, was a partner at Ironside Greenwood and was the national technical and training manager at BDO Spencer Steward. Hester has also served as chairperson of SAICA	<b>Skills and experience</b> Thabo brings a wealth of experience in financial management, corporate governance and audit, having qualified as a chartered accountant with KPMG in 1994. Since then, he has served on various boards as a member and chairman of audit committees in the resources and other industries in South Africa. He continues to operate MFT Investment Holdings, a family-owned investment company strategically placed to capitalise on BBBEE investment opportunities	<b>Skills and experience</b> Rowan has nearly three decades of experience in the resources and investment banking industries. He was a founding shareholder and managing director of Shanduka Resources. Before Shanduka, he was a director of Investec Bank's mining finance team in Johannesburg. He also worked for Swiss-based Société Générale de Surveillance in Geneva. Rowan started his career as a valuation geologist at Harmony Mine
Independent	Independent	Independent	Independent
<b>Experience</b> <ul style="list-style-type: none"> <li>Technical and operational</li> <li>Risk management</li> <li>Environmental and sustainability</li> <li>Business and strategy</li> <li>Leadership</li> </ul>	<b>Experience</b> <ul style="list-style-type: none"> <li>Finance and accounting</li> <li>Risk management</li> <li>Governance and regulation</li> <li>Business and strategy</li> <li>Leadership</li> <li>Taxation</li> </ul>	<b>Experience</b> <ul style="list-style-type: none"> <li>Finance and accounting</li> <li>Governance and regulation</li> <li>Business and strategy</li> <li>Leadership</li> </ul>	<b>Experience</b> <ul style="list-style-type: none"> <li>Technical and operational</li> <li>Environmental and sustainability</li> <li>Business and strategy</li> <li>Leadership</li> </ul>
<b>Committee membership</b>    Chairman of the SHEQC committee	<b>Committee membership</b>   Chairperson of the audit and risk committee	<b>Committee membership</b>    Chairman of the social and ethics committee	<b>Committee membership</b>  Chairman of the remuneration committee <sup>3</sup>
<b>Board and committee meeting attendance</b>  7/7  5/5  2/2  4/4	 7/7  5/5  4/4	 7/7  5/5  2/2  1/1	 3/7  2/2

<sup>1</sup> Resigned from the board with effect from 3 April 2019.

<sup>3</sup> Resigned from the remuneration committee with effect from 3 April 2019.

<sup>5</sup> Appointed to the audit committee with effect from 17 July 2019.

<sup>2</sup> Resigned from the audit committee with effect from 10 September 2019.

<sup>4</sup> Appointed as chairperson of the remuneration committee with effect from 17 July 2019.

<sup>6</sup> Appointed as lead independent director with effect from 4 April 2019.





Audit committee



Remuneration committee



SHEQC committee



Social and ethics committee



Board meetings

## EXECUTIVE DIRECTORS



**YVONNE THEMBA (54)**  
Non-executive

BA, MBA

**Date of appointment**  
17 July 2019

**Significant directorships**

- ▶ Adopt-A-School Foundation non-profit organisations
- ▶ Canadoce Investments Close Corporation
- ▶ Bo Themba Projects Proprietary Limited
- ▶ Clique Marketing Proprietary Limited
- ▶ Pfortner Solutions Proprietary Limited
- ▶ Mathomo Packhouse Proprietary Limited
- ▶ Talamati Asset Managers Proprietary Limited
- ▶ Talamati Capital Managers Proprietary Limited
- ▶ Julia Investments Proprietary Limited
- ▶ Varsbegin Proprietary Limited

**Skills and experience**

Yvonne Themba is currently the executive director of BoThemba projects. She was previously responsible for human capital at Phembani Group and Shanduka Group. She headed the group corporate communications department at African Life Assurance Limited and the corporate social investment and corporate communications department at Sanlam. Prior to that she was deputy director of the Life Officers' Association

Independent

**Experience**

- ▶ Technical and operational
- ▶ Risk management
- ▶ Governance and regulation
- ▶ Environmental and sustainability
- ▶ Business and strategy
- ▶ Leadership

**Committee membership**Chairperson of the remuneration committee<sup>4</sup>

**CHARLES NEEDHAM (65)**  
Non-executive

Articles of Clerkship-Accounting, Dip in Mining Taxation

**Date of appointment**  
17 July 2019

**Significant directorships**

- ▶ Alphamin Resources Corporation
- ▶ Divitiae Holdings Limited
- ▶ Imagined Earth Proprietary Limited
- ▶ Kinsenda Copper Company SARL
- ▶ METPROP Proprietary Limited
- ▶ MetQuip Proprietary Limited
- ▶ Orpheus Property Holdings Proprietary Limited
- ▶ Ruashi Holdings Proprietary Limited

**Skills and experience**

Charles is currently the chairman of Kinsenda Mining Company and Alphamin Resource Corporation (listed on the Toronto Stock Exchange), and consults to Metorex, a subsidiary of the Jinchuan Group. Previous experience includes 31 years at Metorex, with a spread of mining operations in Namibia, South Africa, Zambia and the Democratic Republic of the Congo. Charles progressively held the positions of group accountant, financial director and ultimately chief executive officer, while at Metorex

Independent

**Experience**

- ▶ Finance and accounting
- ▶ Technical and operational
- ▶ Governance and regulation
- ▶ Business and strategy
- ▶ Leadership

**Committee membership**

**COBUS LOOTS (41)**  
Chief executive officer

CA(SA), CFA® Charterholder

**Date of appointment**  
26 August 2009

**Skills and experience**

Cobus has many years of experience in the African mining sector. He qualified as a chartered accountant with Deloitte & Touche in South Africa. Prior to joining Pan African Resources, he held the title of managing director of Shanduka Resources. Shanduka Resources was a mining investment business and part of the Shanduka Group, which was headed by Cyril Ramaphosa prior to his move to the South African government. He has been a director of Pan African Resources since 2009. Cobus served as financial director of Pan African Resources from 2013 until his appointment as chief executive officer on 1 March 2015

Not independent

**Experience**

- ▶ Technical and operational
- ▶ Finance and accounting
- ▶ Business and strategy
- ▶ Leadership
- ▶ Technology
- ▶ Taxation

**Committee membership**

**GIDEON (DEON) LOUW (57)**  
Financial director

CA(SA), CFA® Charterholder, H-Dip (Tax Law), AMCT (UK)

**Date of appointment**  
1 March 2015

**Skills and experience**

Deon has extensive finance and business experience, which includes investment banking, advisory and business administration in the finance and mining sectors. He was a founding member of Investec Bank's emerging market finance team and was involved in the financing of mining transactions in sub-Saharan Africa for more than a decade. He fulfilled the roles of chief financial officer of Shanduka Coal, financial director of Sentula Mining Limited, director of Resource Finance Advisers and head of resource structured finance at Investec Bank

Not independent

**Experience**

- ▶ Finance and accounting
- ▶ Risk management
- ▶ Business and strategy
- ▶ Leadership
- ▶ Technology
- ▶ Taxation

**Committee membership**

7/7 5/5 2/2 4/4

7/7 5/5 1/2 1/1

# GROUP MINERAL RESOURCES AND MINERAL RESERVES

## MINERAL TENURE

The group is committed to complying with the Mineral and Petroleum Resources Development Act 28 of 2002 (MPRDA). In this regard, Barberton Mines' and Evander Mines' mining rights are valid until April 2021 and April 2038, respectively. On 23 August 2018, Barberton Mines submitted renewal applications to the South African Department of Mineral Resources to extend the operation's mining rights for a further 30 years, up to August 2048.

The DMR has responded to these renewal applications by stating that the renewals were lodged too early. The company has, however, taken legal advice to the effect that the DMR should process the renewal applications in accordance with the South Africa Mineral and Petroleum Resources Development Act 28 of 2002. Consequently, the company lodged an appeal against the decision of the DMR to delay the processing of the renewal applications. This internal administrative process is not expected to impact on the company's security of tenure with regard to its mining rights.

It is noted that the Evander South Mineral Resource of 21.7Mt at 7.66g/t for 5.3Moz (11.6Mt at 8.88g/t for 3.3Moz are Indicated and 10.1Mt at 6.25g/t for 2.0Moz are Inferred Mineral Resources) occurs on the Evander South prospecting right MP30/5/1/2/2/248 PR. This prospecting right is being consolidated into the Evander Mines mining right MP30/5/1/2/2/126 MR through a Section 102, application which was lodged in 8 December 2017.

Pan African Resources' attributable gold Mineral Resources and Mineral Reserves as at 30 June 2019 are tabled below, with detail presented in the group Mineral Resources and group Mineral Reserves sections of this report, respectively. Production statistics for the preceding years are presented in this document (refer to [pages 8 and 9](#)).

	Mineral Resources			Mineral Reserves	
	As at 30 June 2019	As at 30 June 2018		As at 30 June 2019	As at 30 June 2018
Total	36.0Moz Au	33.3Moz Au	Total	10.9Moz Au	11.2Moz Au
Inferred	12.3Moz Au	10.2Moz Au			
Indicated	20.5Moz Au	20.1Moz Au	Probable	9.5Moz Au	10.23Moz Au
Measured	3.1Moz Au	3.0Moz Au	Proved	1.4Moz Au	0.98Moz Au

All Mineral Resources and Mineral Reserves reported are within the group's existing mining rights and prospecting rights.

## MINERAL RESOURCE CLASSIFICATION

### Barberton Mines

Measured Resource blocks are generally 20m on strike and 10m in the dip direction of actual mining. Where blocks are defined adjacent to a development end only, the grade and true width of the reef in the block are estimated by calculating the arithmetic mean or 'stretch average' of the samples along the development end. If the sample spacing is at the standard stope sampling grid of 3m, the block value is derived by calculating the inverse weighted estimated value of all available samples. If the sample interval is variable, the block is assigned the inverse weighted estimate of the strip grades. During ordinary kriging, a Measured Resource block is defined as a block estimated within the modelled variogram range with a slope of regression of not less than 70%, effectively reporting a Measured Resource within 50m of sufficient representative sampling.

Indicated Resource blocks are defined where only diamond drill hole samples and information are available. Both the grades and orebody widths are either estimated by means of an inverse weighted estimate or ordinary kriging. The Indicated Resource extends up to the modelled variogram ranges of a sufficiently sampled area. Grades and widths are mostly interpolated into the Indicated Resource blocks as to extrapolation that occurs for Inferred Resource blocks.

The Inferred Resource blocks are characterised by an average grade and width obtained from arithmetic means, Sichel's-t estimates and wide-range ordinary kriging. Inferred Resource blocks are extrapolated to double the modelled variogram range or grade continuity for each orebody.

### Evander Mines

Grade estimates are kriged into 30m x 30m blocks for the Measured Resources from point data within the modelled variogram ranges. Indicated Mineral Resources are estimated into 60m x 60m parent cells employing a regularised, declustered grid of samples on the same basis. Estimation is conducted within the modelled variogram ranges per geozone. Inferred Mineral Resources are estimated into a 120m x 120m parent cell within the identified geozones, based on the modelled variogram range from a regularised and declustered data set on the same grid size. The Measured and Indicated Resource models are then tested on kriging efficiency and slope of regression and merged together with the inferred model to produce a combined kriged block model.

## MINERAL RESERVE CLASSIFICATION

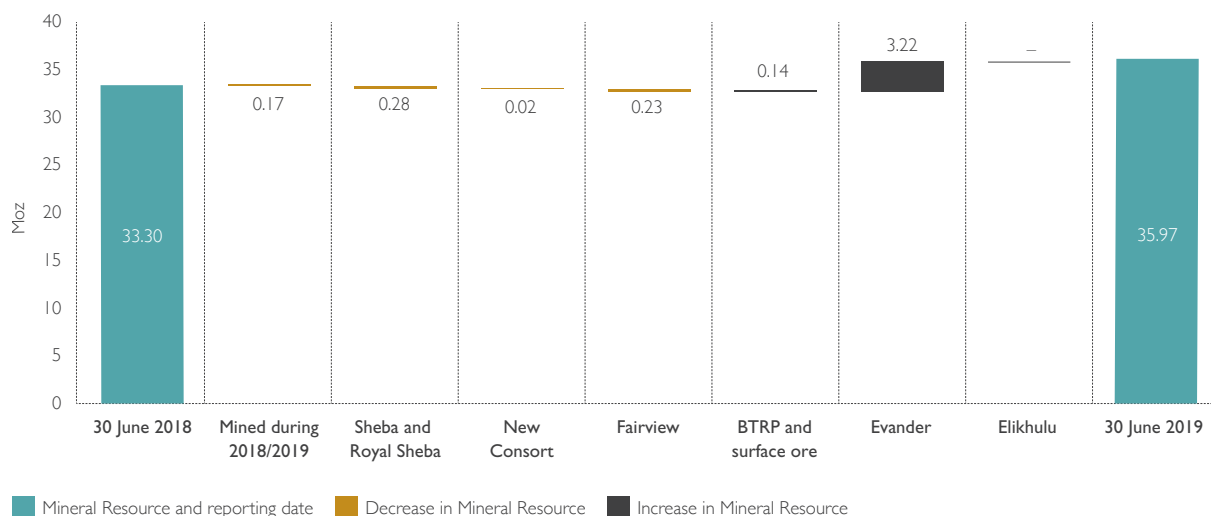
Indicated Mineral Resources are converted to Probable Mineral Reserves due to the lower confidence, mainly in grade continuity, relative to that of Measured Mineral Resources. In most instances Measured Mineral Resources are converted to Proved Mineral Reserves. Certain Measured Mineral Resource blocks are not immediately accessible for mining and require further development or equipping. In these situations, a Measured Mineral Resource block has been converted to a Probable Mineral Reserve.

## GROUP MINERAL RESOURCE TABULATION

The total Mineral Resources for the group increased from 33.3Moz (331.2Mt at 3.13g/t) in June 2018 to 36.0Moz (335.8Mt at 3.13g/t) in June 2019 – a gross annual increase of 2.7Moz (4.6Mt at 18.04g/t), or 8.0%.

Category	Mineral Resources							
	As at 30 June 2019				As at 30 June 2018			
	Tonnes million	Contained gold		Moz	Tonnes million	Contained gold		Moz
		Grade g/t	Tonnes gold			Grade g/t	Tonnes gold	
Measured	53.1	1.84	97.5	3.14	55.5	1.65	91.8	2.95
Indicated	218.1	2.93	639.2	20.54	219	2.86	625.5	20.10
Inferred	64.7	5.90	381.8	12.29	56.6	5.62	318.2	10.24
<b>Total</b>	<b>335.8</b>	<b>3.33</b>	<b>1,118.5</b>	<b>35.97</b>	<b>331.2</b>	<b>3.13</b>	<b>1,035.5</b>	<b>33.30</b>

## Resource reconciliation – gold ounce



Mineral Resources increased mainly due to cut-off grade changes at Evander Mines. The changes in the cut-off grade are impacted by the higher gold price used in the cut-off grade estimations relative to the previous declarations (June 2019: R700,000/kg Au – June 2018: R600,000/kg Au). Additional Inferred Mineral Resources were identified at the BTRP operation in the form of the Camelot and Sheba TSFs.



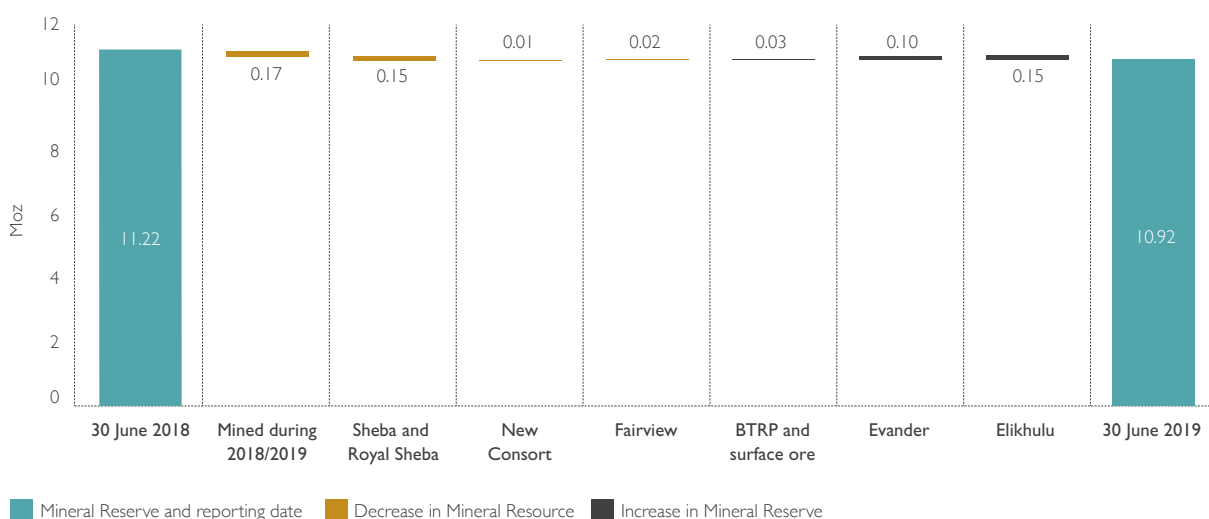
## GROUP MINERAL RESOURCES AND MINERAL RESERVES continued

### GROUP MINERAL RESERVE TABULATION

Pan African Resources' Mineral Reserves decreased from 11.2Moz (239.1Mt at 1.46g/t) in June 2018 to 10.9Moz (216.6Mt at 1.57g/t) in June 2019 – a gross annual decrease of 0.28Moz (22.5Mt at 0.38g/t), or 2.5%.

Category	Mineral Reserves							
	As at 30 June 2019				As at 30 June 2018			
	Tonnes million	Contained gold		Moz	Tonnes million	Contained gold		Moz
		Grade g/t	Tonnes gold			Grade g/t	Tonnes gold	
Proved	36.4	1.22	44.3	1.42	48.4	0.63	30.5	0.98
Probable	180.2	1.64	295.5	9.50	190.7	1.67	317.9	10.23
<b>Total</b>	<b>216.6</b>	<b>1.57</b>	<b>339.8</b>	<b>10.92</b>	<b>239.1</b>	<b>1.46</b>	<b>348.4</b>	<b>11.22</b>

### Reserve reconciliation – gold ounce



Mineral Reserves remained relatively constant year-on-year, with a minimal decrease of 2.5%. This includes 163.7Koz (excluding 8.7Koz of processed surface sources) recovered through mining. Increases in the Mineral Reserves are observed for the New Consort, Fairview, BTRP and Evander operations, with decreases at Sheba, Royal Sheba and Elikhulu. Decreases are due to depletion and modelling changes.

## GROUP STRATEGY – MINERAL RESOURCES AND MINERAL RESERVES

Pan African Resources has an exceptional asset base and attractive growth opportunities, both in established projects and brownfield resource definition prospects. Strategy in this regard is based on global best practice in MRM: to dynamically explore and develop projects that will become next-generation long-term business units.

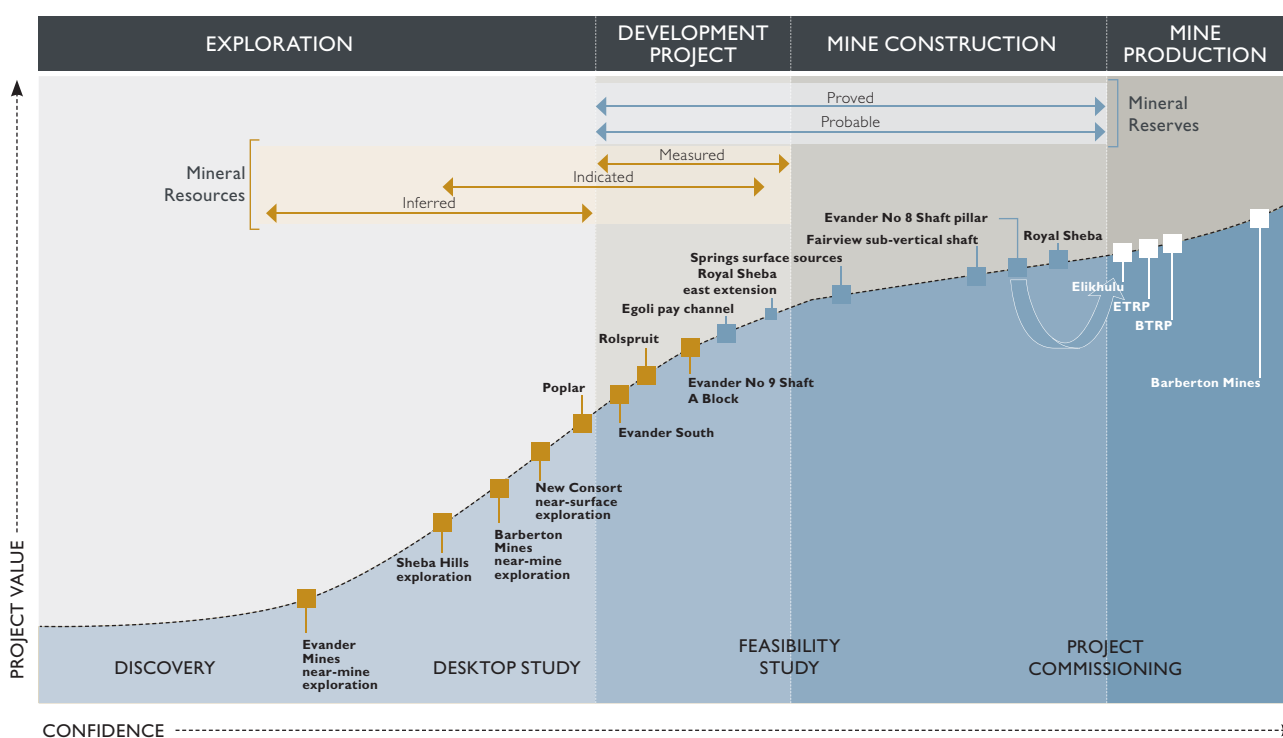
This strategy includes:

- ▶ improving the conversion of Mineral Resources to Mineral Reserves by accessing, developing and exploiting surface and underground assets
- ▶ unlocking the value of major organic projects
- ▶ identifying new expansion opportunities to sustain growth.

## VALUE CREATION

In order to obtain investment approval and subsequent project implementation, a project evolves from initial sample testing to commissioning a series of study stages, commencing with exploratory work and terminating with feasibility studies. If a project is evaluated as feasible, and meets the return requirements, it is then implemented (subject to funding). Pan African Resources distinguishes itself from its peers by having a clear focus on growth and mining resources that are profitable at lower gold prices, in order to deliver long-term economic benefit.

The graph below demonstrates the group's mineral assets and how value is created through projects and operations such as the BTRP, ETRP, Elikhulu, Royal Sheba, Egoli and Evander Mines' 8 Shaft pillar.



## ORGANIC GROWTH

The operations' robust life-of-mine plans support the group's business. Current resource definition drilling and initiatives to access and develop orebodies were aggressively pursued at the Barberton operations during the year ended April 2019. The strategy of converting Mineral Resources to Mineral Reserves was progressed by moving organic projects further up the mining value chain closer towards feasibility or production stages. These projects include Elikhulu, Egoli, Royal Sheba and Evander Mines' 8 Shaft pillar. The following tables reflect the progress of near-mine growth projects that contributed ounces to Mineral Resources for the year:

## GROUP MINERAL RESOURCES AND MINERAL RESERVES continued

### EXPLORING THE OREBODY: RESOURCE DEFINITION DRILLING

Operation	Total metres	Number of boreholes	Total expenditure R million
Barberton Mines underground	12,825	159	11.3
Barberton Mines surface	7,145	72	20.3
Evander Mines	—	—	—

### ACCESSING THE OREBODY: ON-REEF DEVELOPMENT

Operation	Total on-reef development metres	Average grade g/t
Barberton Mines	1,714	2.80
Evander Mines	60	28.86

### DEVELOPING THE OREBODY: CAPITAL ORE RESERVE PROJECTS – BARBERTON MINES

Project	2019 metres	2018 metres	2017 metres	2016 metres	Potential resource target oz
Sheba – pillar development	513.6	488.1	450	540	10,101
Sheba – Edwin Bray to Thomas and Joe's Luck area	121.9	7.6	8	27	14,326
Fairview – 11 Level Royal Reef	—	—	—	Equipping	15,655
Fairview – Shaft one reserve opening	—	—	71	131	34,701
Fairview – 3 Shaft deepening	309.3	177.7	171	64	115,423
Fairview – (64 – 68) Level	917.0	531.9	451	581	1,166,275
New Consort – (33 – 45) PC	87.3	74.8	265	387	26,005
New Consort – MMR pillar development	—	—	8	—	21,953
New Consort – 3 Shaft	—	—	—	17	8,357
Royal Sheba	251.4	373.1	143	189	648,587
Sheba Western Cross	49.6	—	4	133	26,752



## VALUE CREATION THROUGH EXECUTION

### Elikhulu



Elikhulu was commissioned during the first quarter of the 2019 financial year. During December 2018, the ETRP circuit was incorporated into Elikhulu to ensure more efficient recoveries of gold from the tailings being processed for the next 13 years and also to reduce unit costs of production going forward. The three existing TSFs will be reclaimed in the following order: Kinross (three years), Leslie/Bracken (five years) and Winkelhaak (five years).

Elikhulu is expected to yield approximately 60,000oz of gold per annum for its initial eight years of production while treating the Kinross and Leslie TSFs. Thereafter, while processing the Winkelhaak TSF, production is expected to be approximately 45,000oz a year for the plant's remaining five years. These production figures exclude an Inferred Resource of 150,000oz of gold delineated in the soil material beneath the existing tailings dumps.

### Mineral Resources

Category	Mineral Resources							
	As at 30 June 2019				As at 30 June 2018			
	Tonnes million	Contained gold		Moz	Tonnes million	Contained gold		Moz
		Grade g/t	Tonnes gold			Grade g/t	Tonnes gold	
Measured	37.58	0.31	11.7	0.38	46.24	0.32	14.8	0.48
Indicated	153.41	0.28	42.5	1.36	150.91	0.28	42.3	1.35
Inferred	12.57	0.34	4.2	0.15	12.57	0.34	4.2	0.15
<b>Total</b>	<b>203.56</b>	<b>0.29</b>	<b>58.4</b>	<b>1.89</b>	<b>209.72</b>	<b>0.29</b>	<b>61.3</b>	<b>1.98</b>

Mineral Resources are reported in accordance with the SAMREC Code. Mineral Resources would be the same if reported according to the guidelines of the Canadian Institute of Mining's (CIM) National Instrument 43-101. Cut-off values are calculated at 0.1g/t applying a gold price of R700,000/kg (USD1,534/oz and ZAR14.19:USD1). Mineral Resources are reported inclusive of Mineral Reserves. All Mineral Resources reported exclude geological structures. Mineral Resources are reported as in-situ tonnes. Any discrepancies in totals are due to rounding.

Additional effects of mining and recovery losses have been considered in the cut-off grade calculations.

## GROUP MINERAL RESOURCES AND MINERAL RESERVES continued

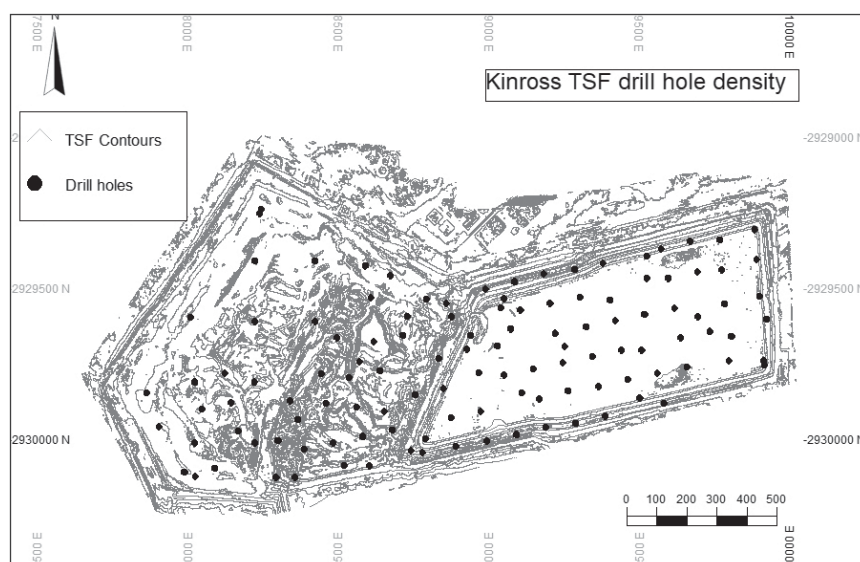
### Mineral Reserves

Category	Mineral Reserves							
	As at 30 June 2019				As at 30 June 2018			
	Tonnes million	Contained gold		Moz	Tonnes million	Contained gold		Moz
		Grade g/t	Tonnes gold			Grade g/t	Tonnes gold	
Proved	23.62	0.31	7.4	0.23	46.0	0.32	14.7	0.48
Probable	146.99	0.26	38.8	1.25	144.6	0.28	40.1	1.3
<b>Total</b>	<b>170.61</b>	<b>0.27</b>	<b>46.2</b>	<b>1.48</b>	<b>190.6</b>	<b>0.29</b>	<b>54.8</b>	<b>1.78</b>

Mineral Reserves are reported in accordance with the SAMREC Code. Mineral Reserves would be the same if reported according to the guidelines of the CIM's National Instrument 43-101. Cut-off value is calculated at 0.1g/t applying a gold price of R600,000/kg (USD 1,315/oz and ZAR 14.19:USD 1). All Mineral Reserves reported exclude geological structures. Mineral Reserves are reported as in-situ tonnes. Any discrepancies in totals are due to rounding.

Additional effects of mining and recovery losses have been considered in the cut-off grade calculations.

The total Mineral Reserve contains 1.48Moz, of which an estimated 692,895oz will be recovered over a 13-year life of the plant at an average gold recovery of 46.88%.



The grade tonnage of the Kinross dam was de-risked through a resource definition drilling campaign (1,832m) conducted during 2018. This drilling also resulted in the upgrade of Probable Reserves to Proved Reserves. All data collected from the resource definition drilling programme was employed in the updated Mineral Resources and Mineral Reserves for Kinross dam.

### EVANDER MINES' 8 SHAFT PILLAR

An independent feasibility study into the merits of mining Evander Mines' 8 Shaft pillar and high-grade areas in proximity to the pillar was completed and the Pan African Resources board of directors approved the project, with first gold produced during August 2019. Evander Mines' 8 Shaft pillar will replace the current remnant underground mining and vamping production and is expected to contribute, on average, 30,000oz per annum over the next three financial years, with approximately 20,000oz forecast for the 2020 financial year.

Evander Mines' 8 Shaft pillar contains the following Mineral Reserves:

Category	Mineral Reserves			
	As at 30 June 2019			
	Tonnes million	Contained gold		Moz
		Grade g/t	Tonnes gold	
Proved	0.38	8.54	3.2	0.10
Probable	—	—	—	—
<b>Total</b>	<b>0.38</b>	<b>8.54</b>	<b>3.2</b>	<b>0.10</b>

Mineral Reserves are reported in accordance with the SAMREC Code. Mineral Reserves would be the same if reported according to the guidelines of the CIM's National Instrument 43-101. Cut-off value is calculated at 951 cmg/t (or 7.93g/t at a 1.2m stope width) applying a gold price of R600,000/kg (USD1,315/oz and ZAR14.19:USD1). All Mineral Reserves reported exclude geological structures. Mineral Reserves are reported as in-situ tonnes. Any discrepancies in totals are due to rounding.

Additional effects of mining and recovery losses have been considered in the cut-off grade calculations.

## ROYAL SHEBA

Extensive feasibility work was completed on Barberton Mines' Royal Sheba project during the year. Due to the group's disciplined capital allocation criteria and the capital cost estimates to develop this mine, Pan African Resources will not currently pursue the Royal Sheba project on a stand-alone basis. The existing Barberton Mines processing plant infrastructure can, however, be upgraded to process ore from this orebody. The benefits of this approach are the ability to expedite the environmental licensing process, shorten the timeline to production, enhance returns from mining this orebody and negate the requirement for external capital funding. We look forward to updating the market on this project in the months ahead.

During the 2019 financial year, an additional 39 holes were drilled into the near-surface expression to confirm the orebody's extent and volume. The drilling resulted in an update of the 3D geological model and Mineral Resource estimate as presented above.

The emphasis is now on assessing the merits of using an underground sub-level open-stopping mining method, by developing haulages from the current surface adits into the orebody. General authorisation in terms of Section 39 of the National Water Act 36 of 1998 was obtained during May 2019, which allows the group to upgrade the Royal Sheba adit and bridge.

## Mineral Resources

Category	Mineral Resources							
	As at 30 June 2019				As at 30 June 2018			
	Tonnes million	Contained gold		Moz	Tonnes million	Contained gold		Moz
		Grade g/t	Tonnes gold			Grade g/t	Tonnes gold	
Measured	2.40	3.46	8.3	0.27	4.11	3.29	13.5	0.43
Indicated	2.33	3.93	9.1	0.29	3.14	3.25	10.2	0.33
Inferred	0.86	3.19	2.7	0.09	1.31	3.22	4.2	0.14
<b>Total</b>	<b>5.58</b>	<b>3.61</b>	<b>20.2</b>	<b>0.65</b>	<b>8.56</b>	<b>3.27</b>	<b>28.0</b>	<b>0.90</b>

Mineral Resources are reported in accordance with the SAMREC Code. Mineral Resources would be the same if reported according to the guidelines of the CIM's National Instrument 43-101. Cut-off values are calculated at 1.7g/t applying a gold price of R700,000/kg (USD1,534/oz and ZAR14.19:USD1). Mineral Resources are reported inclusive of Mineral Reserves. All Mineral Resources reported exclude geological structures. Mineral Resources are reported as in-situ tonnes. Any discrepancies in totals are due to rounding. Mineral Resources reported for the year ending 30 June 2018 include near-surface Mineral Resources that were reported at a cut-off grade of 0.5g/t. In the current Mineral Resource, these areas are reported at a cut-off grade of 1.7g/t.

Additional effects of mining and recovery losses have been considered in the cut-off grade calculations.



## GROUP MINERAL RESOURCES AND MINERAL RESERVES continued

▼ Elikhulu plant – inspecting CIL tanks

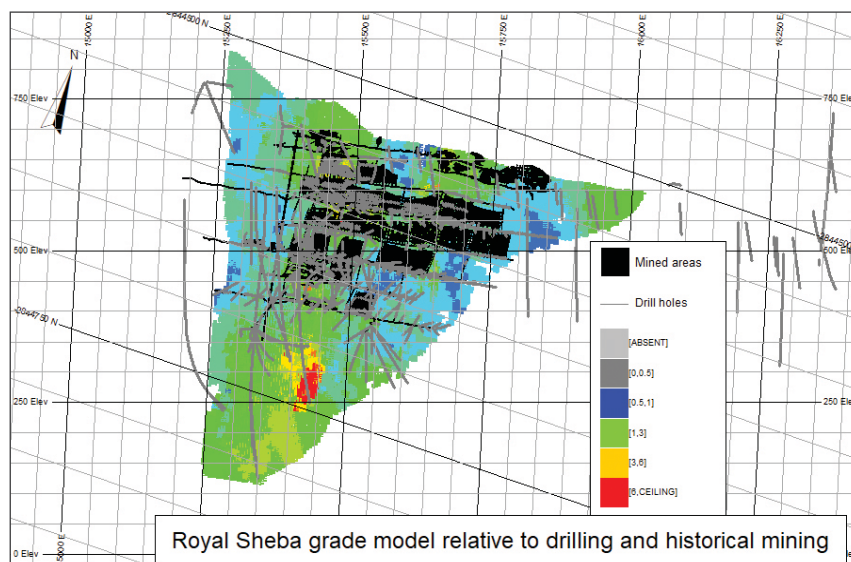


### Mineral Reserves

Category	Mineral Reserves							
	As at 30 June 2019				As at 30 June 2018			
	Tonnes million	Contained gold		Moz	Tonnes million	Contained gold		Moz
		Grade g/t	Tonnes gold			Grade g/t	Tonnes gold	
Proved	2.29	3.46	7.9	0.26	—	—	—	—
Probable	2.33	3.93	9.1	0.29	5.14	3.38	17.37	0.56
<b>Total</b>	<b>4.62</b>	<b>3.70</b>	<b>17.1</b>	<b>0.55</b>	<b>5.14</b>	<b>3.38</b>	<b>17.37</b>	<b>0.56</b>

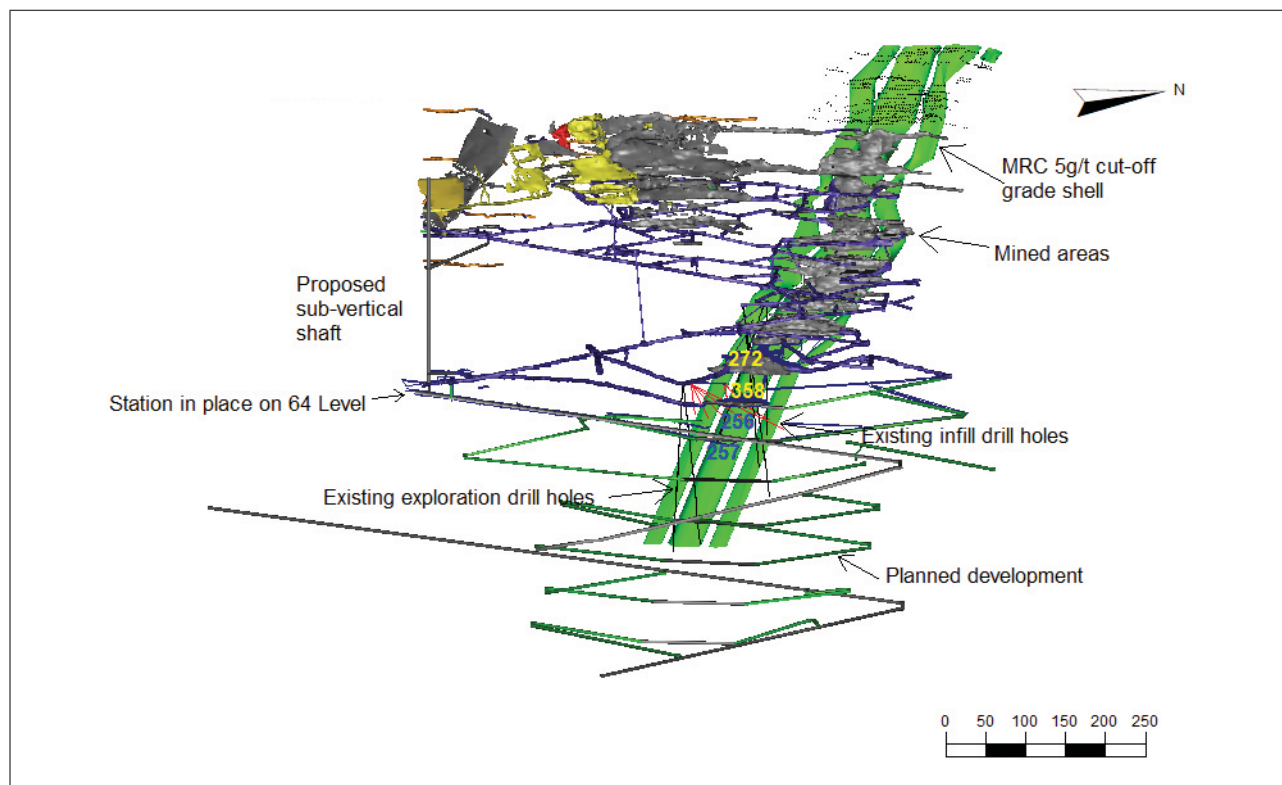
Mineral Reserves are reported in accordance with the SAMREC Code. Mineral Reserves would be the same if reported according to the guidelines of the CIM's National Instrument 43-101. Cut-off value is calculated at 1.7g/t applying a gold price of R600,000/kg (USD1,315/oz and ZAR14.19:USD1). All Mineral Reserves reported exclude geological structures. Mineral Reserves are reported as in-situ tonnes. Any discrepancies in totals are due to rounding. Mineral Reserves reported for the year ending 30 June 2018 include near-surface Mineral Reserves that were reported at a cut-off grade of 0.7g/t. In the current Mineral Reserves, these areas are reported at a cut-off grade of 1.7g/t.

Additional effects of mining and recovery losses have been considered in the cut-off grade calculations.



## VALUE CREATION THROUGH OPTIMISATION

### Barberton Mines' sub-vertical shaft project at Fairview Mine



The Fairview mining operation is currently restricted by the hoisting capacity of its 3 Decline, which is used to access workings below 42 Level. This decline is currently used to transport employees and material, and for rock hoisting. The 11-block, or Main Reef Complex (MRC), orebody has an average grade of 31.3g/t and current life-of-mine of 20 years. With no intervention, future mining at depth will result in an increased travelling distance, reduced employee face time and will cause a lack of capacity with which to ensure both ore replacement and exploration development.

Pan African Resources, with the assistance of DRA Global, completed a feasibility study on the construction of a raise-bored, sub-vertical shaft from Fairview's 42 Level to 64 Level, with the potential of continuing the vertical shaft to 68 Level in the future.

This sub-vertical shaft will transport employees and material to the working areas, which will allow the 3 Decline to be used exclusively for rock hoisting, thus increasing overall capacity and production from the 11-block mining area.

Pan African Resources has also commenced an infill drilling programme on the 11-block orebody of 10 diamond drill holes. This is to enhance the confidence of the Probable Mineral Reserve to that of a Proved Mineral Reserve ahead of the mining face, by up to 60m ahead of current mining areas. This is equivalent to more than five years life-of-mine on the 11-block. The results of the drill holes are considered in the reported Mineral Resource and Mineral Reserve estimates.

During the current financial year, R5.89 million was spent in progressing access to the sub-vertical collar position. Developing top and bottom access for the sub-vertical shaft is progressing according to plan, with our focus in 2020 on the following:

- ▶ Completing all preparatory development for the sub-vertical shaft on both 42 Level and 64 Level at Fairview Mine
- ▶ Establishing sufficient hoisting flexibility to cater for the additional tonnages when reaming of the shaft commences in the 2021 financial year.

## GROUP MINERAL RESOURCES AND MINERAL RESERVES continued

### Mineral Resources

Category	Mineral Resources							
	As at 30 June 2019				As at 30 June 2018			
	Tonnes million	Contained gold		Moz	Tonnes million	Contained gold		Moz
		Grade g/t	Tonnes gold			Grade g/t	Tonnes gold	
Measured	1.62	10.04	16.2	0.52	1.62	10.12	16.4	0.53
Indicated	1.02	13.05	13.4	0.43	1.04	13.51	14.1	0.45
Inferred	1.75	16.12	28.2	0.91	1.75	19.66	34.4	1.10
<b>Total</b>	<b>4.39</b>	<b>13.16</b>	<b>57.8</b>	<b>1.86</b>	<b>4.41</b>	<b>14.70</b>	<b>64.8</b>	<b>2.08</b>

Mineral Resources are reported in accordance with the SAMREC Code. Mineral Resources would be the same if reported according to the guidelines of the CIM's National Instrument 43-101. Cut-off values are calculated at 2.08g/t applying a gold price of R700,000/kg (USD1,534/oz and ZAR14.19:USD1). Mineral Resources are reported inclusive of Mineral Reserves. All Mineral Resources reported exclude geological structures. Mineral Resources are reported as in-situ tonnes. Any discrepancies in totals are due to rounding.

Additional effects of mining and recovery losses have been considered in the cut-off grade calculations.

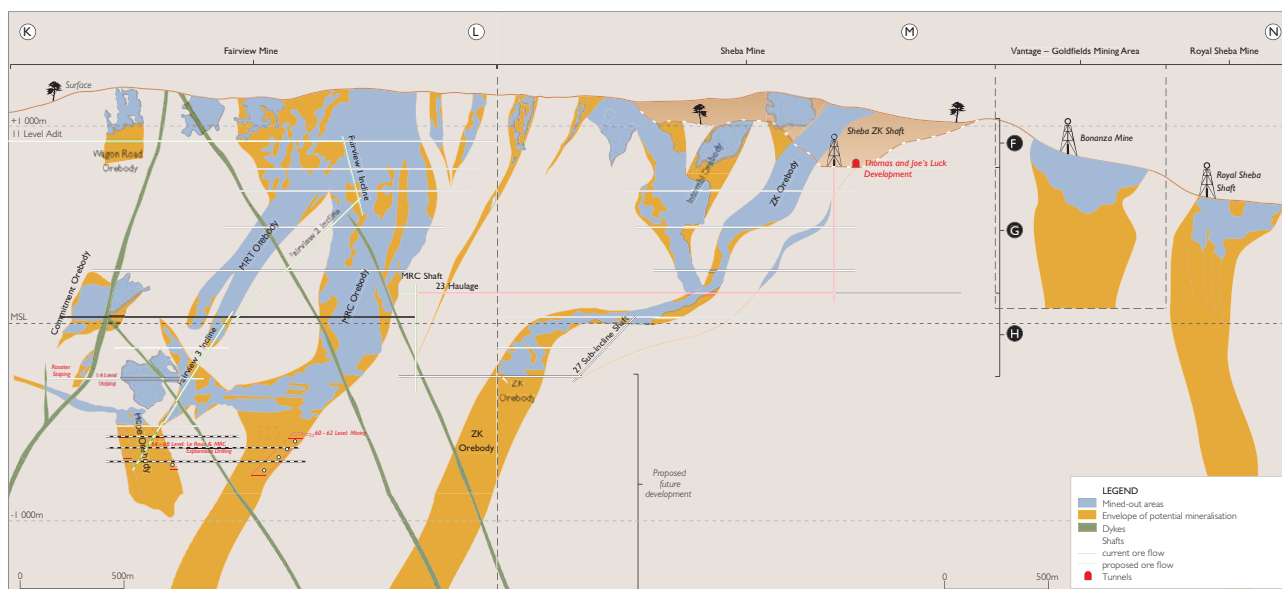
### Mineral Reserves

Category	Mineral Reserves							
	As at 30 June 2019				As at 30 June 2018			
	Tonnes million	Contained gold		Moz	Tonnes million	Contained gold		Moz
		Grade g/t	Tonnes gold			Grade g/t	Tonnes gold	
Proved	0.74	8.83	6.6	0.21	0.93	9.07	8.43	0.27
Probable	1.20	13.95	16.8	0.54	1.06	14.25	15.16	0.49
<b>Total</b>	<b>1.95</b>	<b>11.99</b>	<b>23.4</b>	<b>0.75</b>	<b>1.99</b>	<b>11.84</b>	<b>23.58</b>	<b>0.76</b>

Mineral Reserves are reported in accordance with the SAMREC Code. Mineral Reserves would be the same if reported according to the guidelines of the CIM's National Instrument 43-101. Cut-off value is calculated at 7.73g/t applying a gold price of R600,000/kg (USD1,315/oz and ZAR14.19:USD1). All Mineral Reserves reported exclude geological structures. Mineral Reserves are reported as in-situ tonnes. Any discrepancies in totals are due to rounding.

Additional effects of mining and recovery losses have been considered in the cut-off grade calculations.

## Barberton Mines' Project Dibanisa



Project Dibanisa aims to use the current Sheba Mine infrastructure, both on surface and underground, to effectively extract the Royal Sheba orebody from 23 Level (Sheba Mine Zwartkoppie (ZK) Shaft). This enables the concurrent mining of the Royal Sheba orebody from near-surface workings as well as some 600m beneath surface, targeting the Measured and Indicated Mineral Resources.

The project involves connecting the Sheba and Fairview workings on 23 Level by establishing a series of ore-passes from the Sheba Mine to the Fairview Mine. The combined production of Fairview and Sheba will then be hoisted from the Fairview infrastructure (mainly 2 Decline and 1 Decline). The ore will then be processed at the Fairview plant where a gravity circuit (Knelson Concentrator) is currently being installed. This will enable the Fairview plant to effectively process the free gold reefs of Sheba Mine and decrease the overall cost by reducing the transportation of concentrate from the Sheba plant to the Fairview BIOX<sup>®</sup> plant.

Following these modifications and enhancements to the underground and surface infrastructure, underground ore from Royal Sheba (23 Level Sheba Mine ZK Shaft) will be extracted through the Sheba Mine ZK Shaft and processed at the Sheba plant at a throughput of approximately 12,000 tonnes per month.

Near-surface workings at Royal Sheba will be used to fill the plant capacity at New Consort. The total project is estimated to be completed by June 2022.

Project Dibanisa mitigates the need for the high capital requirements of commissioning a new plant and related infrastructure for the Royal Sheba deposit. Further, this initiative reduces overall overhead costs for the operations by consolidating infrastructure.



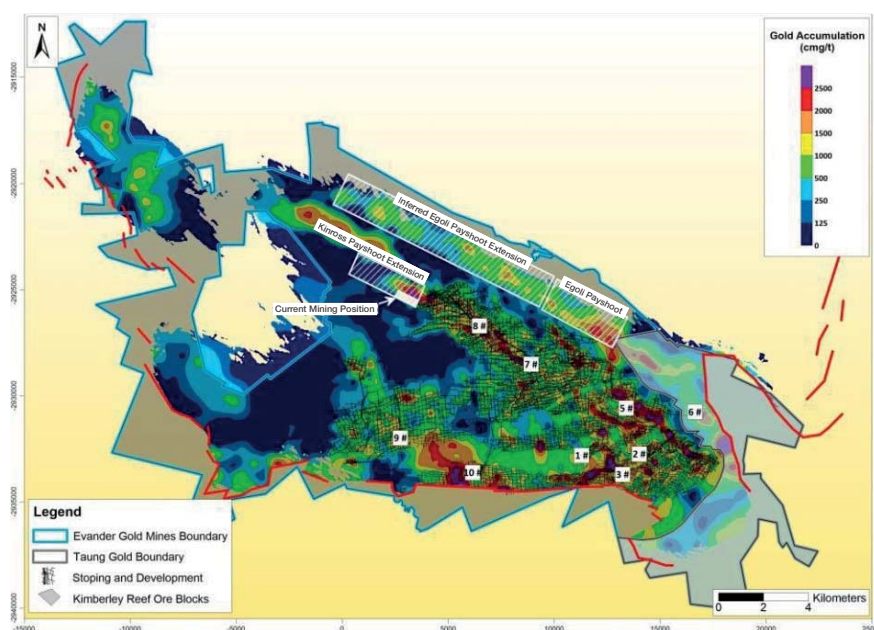
## GROUP MINERAL RESOURCES AND MINERAL RESERVES continued

### VALUE CREATION THROUGH PROJECT DEVELOPMENT

#### Egoli

Egoli's promising mining feasibility study was completed and optimisation studies are being finalised. Development options for this project will be finalised during the 2020 financial year. The group is currently reviewing the merits of expediting the Egoli project and is assessing funding options in this regard.

The Egoli pay channel is approximately 4.5km in tramming distance from 7 Shaft, which was used by Evander Mines for hoisting run-of-mine material to the Kinross metallurgical plant. This compares favourably with the 8 Shaft mining area, which is approximately 12km in tramming distance from 7 Shaft.



The Egoli pay channel Mineral Resource is adjacent to the 7 Shaft infrastructure and extends from the boundary of Taung Gold International Limited's 6 Shaft project and mining rights in a west-north-westerly direction. Egoli's Mineral Resources and Mineral Reserves are summarised in the following tables:

#### Mineral Resources

Category	Mineral Resources							
	As at 30 June 2019				As at 30 June 2018			
	Tonnes million	Contained gold		Moz	Tonnes million	Contained gold		Moz
		Grade g/t	Tonnes gold			Grade g/t	Tonnes gold	
Measured	0.44	8.6	3.8	0.12	0.41	8.76	3.6	0.11
Indicated	2.94	9.85	28.9	0.93	2.93	9.86	28.9	0.93
Inferred	6.26	9.68	60.6	1.95	6.23	9.70	60.4	1.94
<b>Total</b>	<b>9.64</b>	<b>9.69</b>	<b>93.3</b>	<b>3.00</b>	<b>9.57</b>	<b>9.71</b>	<b>92.9</b>	<b>2.99</b>

Mineral Resources are reported in accordance with the SAMREC Code. Mineral Resources would be the same if reported according to the guidelines of the CIM's National Instrument 43-101. Cut-off values are calculated at 689cmg/t (or 5.74g/t at a 1.2m stoping width) applying a gold price of R700,000/kg (USD1,534/oz and ZAR14.19:USD1). Mineral Resources are reported inclusive of Mineral Reserves. All Mineral Resources reported exclude geological structures. Mineral Resources are reported as in-situ tonnes. Any discrepancies in totals are due to rounding.

## Mineral Reserves

Category	Mineral Reserves							
	As at 30 June 2019				As at 30 June 2018			
	Tonnes million	Contained gold		Moz	Tonnes million	Contained gold		Moz
		Grade g/t	Tonnes gold			Grade g/t	Tonnes gold	
Proved	0.62	4.21	2.6	0.08	0.62	4.21	2.6	0.08
Probable	3.51	7.06	24.8	0.80	3.51	7.06	24.8	0.80
<b>Total</b>	<b>4.13</b>	<b>6.64</b>	<b>27.4</b>	<b>0.88</b>	<b>4.13</b>	<b>6.64</b>	<b>27.4</b>	<b>0.88</b>

Mineral Reserves are reported in accordance with the SAMREC Code. Mineral Reserves would be the same if reported according to the guidelines of the CIM's National Instrument 43-101. Cut-off value is calculated at 805cmg/t (or 6.71 g/t at a 1.2m stoping width) applying a gold price of R600,000/kg (USD1,315/oz and ZAR14.19:USD1). All Mineral Reserves reported exclude geological structures. Mineral Reserves are reported as in-situ tonnes. Any discrepancies in totals are due to rounding.

Additional effects of mining and recovery losses have been considered in the cut-off grade calculations.

## RISKS TO THE MINERAL RESOURCES AND MINERAL RESERVES


Mineral Resources and Mineral Reserves are estimates of the portion of the deposit that can be mined economically and legally. The estimate of the amount of gold is a function of set criteria for geological, technical and economic factors. Estimating the grade and/or quantity of the Mineral Resource is conducted by geologically analysing the volume, continuity and shape of the deposit. Data employed for these analyses includes geological mapping, core drilling, logging and sampling. Due to the nature of the deposits, it is required that complex geological judgements and scientific calculations be used to interpret the data and construct models.

Economical and technical factors such as inflationary cost increases and volatile commodity prices impact the cut-off grade employed to report the economically extractable Mineral Resources and Mineral Reserves. In addition, global markets and geological data from the operations can result in changes to the estimates of the Mineral Resources and Mineral Reserves reported. The group's financial position and results could be impacted by changes to the Mineral Resources and Mineral Reserves.

▼ Elikhulu – tailings remining



## GROUP MINERAL RESOURCES AND MINERAL RESERVES continued


Risks detailed in the 2019 integrated annual report (refer to  pages 29 to 35) should also be considered.

● Low ● Medium ● High

Type of risk	Risk	Mitigation action	Level of risk
Financial	Volatile commodity price and foreign currency exchange rates	<ul style="list-style-type: none"> <li>▶ A conservative rand gold price was used to calculate the modifying factors in comparison to the current prevailing rand gold prices</li> </ul>	●
	Cost inflation	<ul style="list-style-type: none"> <li>▶ Successfully concluded a three-year wage deal at Barberton Mines in 2018</li> <li>▶ Cessation of the large-scale underground operations at Evander Mines' 8 Shaft resulted in a reduction in the group's all-in sustaining cost per kilogramme</li> <li>▶ Low-cost and low-risk tailings operations in the form of the BTRP, ETRP and Elikhulu further assist the group in reducing the all-in sustaining cost per kilogramme</li> <li>▶ Tailings retreatment accounted for 46.5% of the group's gold production for the year ended June 2019</li> </ul>	Short to medium term ●
Legal	Mining right legal tenure	<ul style="list-style-type: none"> <li>▶ Barberton Mines submitted its mining right renewal application on 23 August 2018 for a further 30 years. The renewal application is pending approval based on the appeal lodged towards the decision of the DMR not to process the renewal application at this time. This internal administrative process does not at all impact the company's security of tenure with regard to its mining rights</li> <li>▶ Evander Mines' mining right expires on 28 April 2038</li> <li>▶ A Section 102 application has been in process from 8 December 2017 to incorporate MP30/5/1/2/2/248 PR and MP30/5/1/2/2/4272 PR into Evander Mines' mining right MP30/5/1/2/2/126 MR</li> </ul>	●
Operational	Modifying factors	<ul style="list-style-type: none"> <li>▶ Modifying factors as defined in the Mineral Reserve conversion are based on actual modifying factors achieved over the preceding three years</li> <li>▶ The group's mining operations have consistently exploited the same orebodies with the same infrastructure over the past three years</li> </ul>	●
	Limited mining flexibility	<ul style="list-style-type: none"> <li>▶ Development rates have increased by 72% in the MRC high-grade I I-block</li> <li>▶ A third high-grade panel in the MRC I I-block was accessed within August 2019</li> <li>▶ The Fairview sub-vertical shaft project will improve ore handling efficiencies and significantly increase face time in the high-grade I I-block</li> <li>▶ The sub-vertical shaft project is estimated to improve production by approximately 7,000oz to 10,000oz per annum</li> <li>▶ Development at New Consort's dow-dip extension of the MMR from 14 Level to 15 Level as well as 38 Level to 40 Level is underway in the 2020 financial year</li> <li>▶ High variability in gold grades may be experienced in hydrothermal lode gold deposits</li> </ul>	●
	Nature reserve	<ul style="list-style-type: none"> <li>▶ Portions of Barberton Mines' mining rights overlap the boundaries of a proclaimed nature reserve, impacting surface infrastructure, surface mining and environmental rehabilitation</li> <li>▶ Continuous communication and collaboration with governmental departments to ensure sustainable mining operations</li> </ul>	●

There are currently no material legal proceedings or material conditions that will impact the Mineral Resources and Mineral Reserves reported for 2019 or Pan African Resources' ability to continue mining activities as per life-of-mine plans.





The mineralisation at Barberton Mines is classified as Achaean epigenetic hydrothermal lode gold deposits within a granite greenstone terrain. The distribution and localisation of these orebodies in the Barberton Greenstone Belt can be largely attributed to the combined influence of thermal metamorphism and structural deformation. The Barberton Greenstone Belt has produced approximately 11 Moz of gold since gold was discovered in this goldfield in the early 1880s. Barberton Mines has produced more than 75% of the total production from the Barberton Greenstone Belt.

< Barberton Mines – gold pour

BARBERTON MINES



# BARBERTON MINES

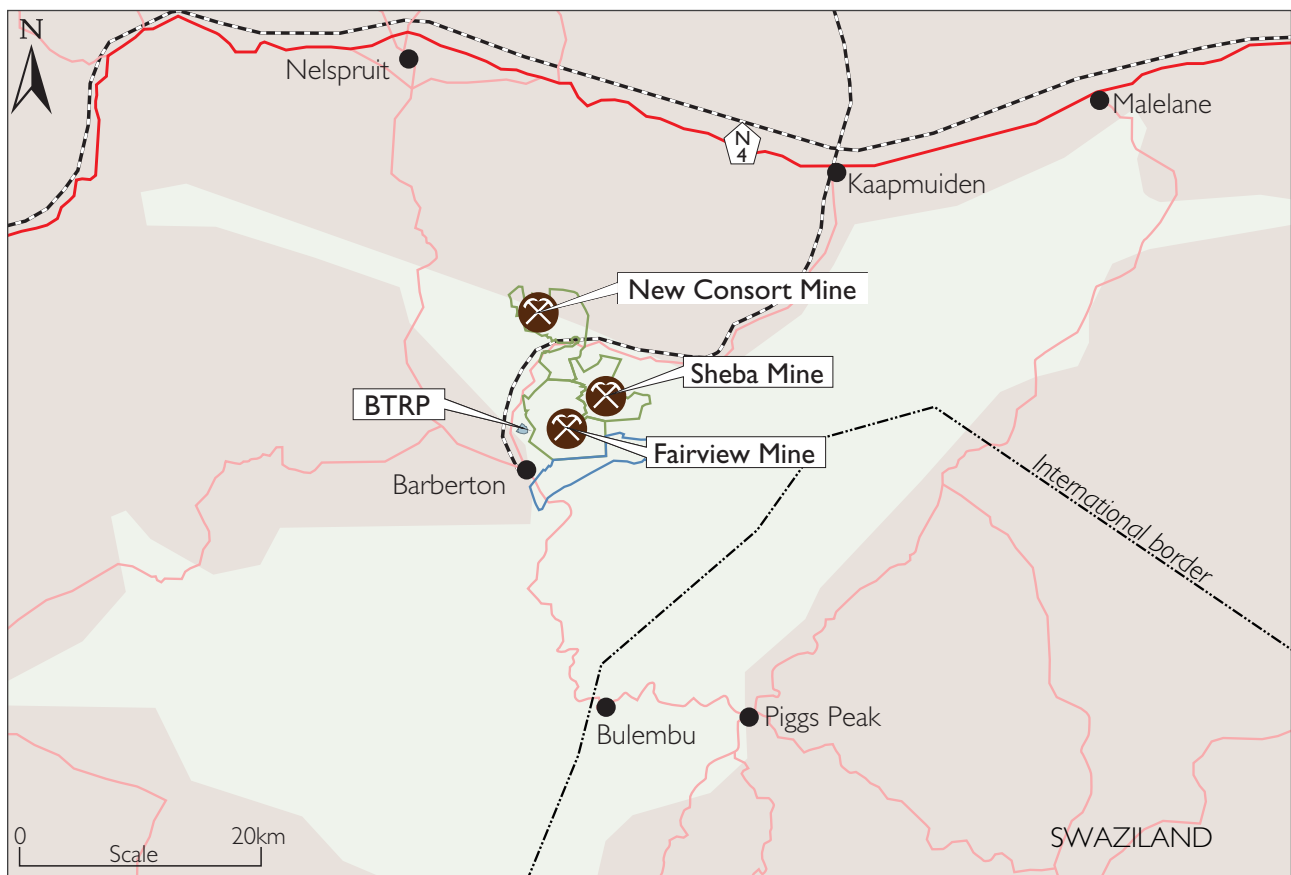
## BACKGROUND

The mines that today make up Barberton Mines started operations more than 100 years ago. Originally, the New Consort area consisted of several small workings.

Over time, these were consolidated into what became known as New Consort Mine. In 1933, the company's name changed to Eastern Transvaal Consolidated Mines (ETC), and in 1948 ETC became a member of the Anglovaal group. The life of the Sheba Mine began with the discovery of Bray's Golden Quarry, the first 13,000t of ore yielding 50,000oz of gold. Sheba Mine and its adjacent workings changed hands quite frequently before being acquired by ETC in 1937. Mining at the Fairview Mine started in 1886 as a number of small operations from surface. These continued intermittently until 1955 when they were consolidated under Federale Mynbou. ETC acquired Fairview Mine in 1998. Gold was originally discovered in the Barberton area in 1886 and comprises the sediments and metavolcanics within the Barberton Greenstone Belt. Barberton Mines has therefore been mined for over a century with current production practices now embedded.

## LOCATION

Barberton Mines is situated in the magisterial district of Barberton, Mpumalanga, South Africa, some 370km east of Johannesburg and 47km south-east of Nelspruit. Barberton Mines comprises Fairview Mine, Sheba Mine, New Consort Mine and the Barberton Tailings Retreatment Plant (BTRP).



Fairview produces approximately 50% of Barberton Mines' underground gold production with Sheba and New Consort Mines producing the remaining 30% and 20% respectively. Operating three underground mines continues to provide flexibility and versatility in terms of resource allocation.

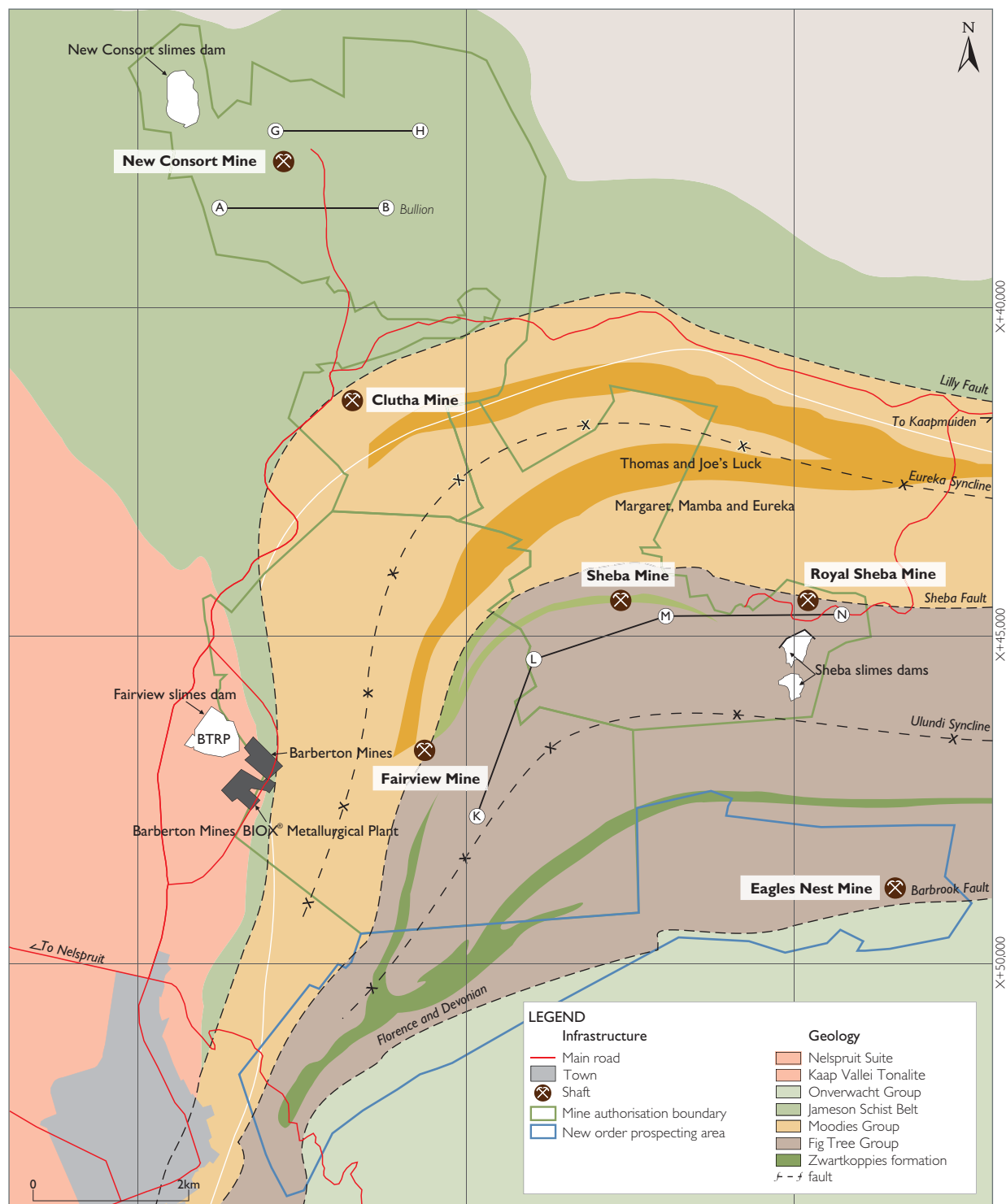
The mining mix of high-grade and lower-grade orebodies from the mines are planned to maintain the targeted monthly grade/tonnage profile and gold production. This mining mix ensures the optimal management of cash flows at Barberton Mines from an early stage

in the mining process. The operation has a proven track record of consistently delivering a solid performance, driven to a large extent by an embedded culture of safety and cost control.

The mining methods used at Barberton Mines' underground operations are semi-mechanised up-dip cut and fill and up-dip room and stick. An estimated 16% to 18% of gold is recovered by sweeping and vamping contractors focusing on worked-out areas and mining high-grade remnants. Gold is extracted using the BIOX® gold extraction process, an environmentally friendly process which uses bacteria to release gold from the sulphide ore.

## REGIONAL GEOLOGICAL SETTING

The mineralisation at Barberton Mines is classified as Achaean epigenetic hydrothermal lode gold deposits within a granite greenstone terrain. The distribution and localisation of these orebodies in the Barberton Greenstone Belt (BGB) can be largely attributed to the combined influence of thermal metamorphism and structural deformation. The BGB has produced approximately 11 Moz of gold since the first discovery in the early 1880s. Barberton Mines has produced more than 75% of the total production from the BGB.



^ Geological setting (sections are illustrated on the map along the mines to depict the mineralised geological structures)

## BARBERTON MINES continued

### BACKGROUND continued

#### GENESIS OF THE ORE IN BARBERTON

Metamorphic devolatilisation of the mafic and ultra-mafic Onverwacht lava at the transition from greenschist to amphibolite facies triggers the process by which fluid is released. These low-salinity fluids, which transport gold as a reduced sulphur complex containing  $\text{H}_2\text{O}$ ,  $\text{CO}_2$  and  $\text{H}_2\text{S}$  are released from the mineral's crystal structures and can transport gold in solution to favourable depositional sites. It is calculated that a lava volume of 10 cubic kilometres is sufficient to have produced all the known gold mineralisation in the BGB. The Onverwacht Group consists of approximately 4,800 cubic kilometres of potential parent material lava. The stability fields of most of the common sulphides in the Barberton Mines ore (pyrite, arsenopyrite and pyrrhotite) indicate that the gold complex in the transport fluid is  $\text{Au}(\text{HS})_2$ .

To facilitate metal deposition from the hydrothermal fluid, the pressure, temperature or chemical conditions need to change. Most greenstone gold deposits form as a result of the mineralised fluid coming into contact with an iron-bearing host rock. Conversely, the Barberton Mines host lithologies are not high in iron content. The ore deposition therefore occurred due to a drop in fluid pressure. Pressure shadows, which form during dilating, faulting and folding, create low-pressure zones, effectively drawing the fluids into these cavities and results in releasing pressure. When pressure is released,  $\text{H}_2\text{S}$  (the ligand that makes gold soluble) is driven off, resulting in gold precipitation.

The Barberton ores are thus mineralised shears with gold occluded in sulphide minerals. The sulphides often occur as massive assemblages in the shear structure. Lower-grade ore, in the wall rock, forms as a result of the alteration process during fluid flow and is associated with disseminated sulphide minerals. A late stage of gold mineralisation occurred in brittle fractures with the formation of quartz veins. These quartz veins often contain free gold in visible clusters.

#### GEOLOGICAL/RESOURCE ESTIMATION METHODOLOGY

The Mineral Resource is classified according to guidelines compliant with the South African Code for Reporting of Exploration Results, Mineral Resources and Mineral Reserves 2016 edition (the SAMREC Code).

##### Geological modelling

The grade and the structure in the ore shoots are highly erratic in nature, and most of the data for evaluating resource blocks is derived from development adjacent to the mining blocks and from the position of the present mining areas along with diamond drill hole information. The continuity of grade values within the ore shoots is derived primarily from short-range statistical projections, based on historical mining measurements of the orebody, the study of its tectonic structure and continuity modelling such as variography and trend analyses.

The tectonic structure and orebody geometry has been modelled using the Lynx orebody modelling system and Datamine Studio RM<sup>®</sup>. These systems allow the 3D structure of the mineralised volume to be constructed, modified and viewed graphically. Additionally, these 3D models can be adjusted as current data becomes available. Furthermore, these systems are employed as a tool for visualising grade continuity and are an aid for mine planning.

#### Resource estimation

During grade control, both diamond-cored drill holes and underground sampling, a minimum sampling width of 230cm is used in the case of mechanical mining, and 100cm for conventional scraper-type stoping. Where the reef width is less than this value, hanging wall and footwall samples are included. Exploration diamond drill holes and sampling are conducted over a sample width of 50cm within the mineralised or lithological contacts. Drilling is also conducted on the tailings material that is retreated at BTRP and, in this case, the samples, either from auger drilling, dual drilling or sonic drilling, are sampled in 150cm intervals.

All the samples are transported from site to the nearby SGS Barberton assay laboratory (SGS Barberton). SGS Barberton is a South African National Accreditation System (SANAS) accredited assay laboratory (T0565) and is certified to conduct the relevant gold analyses. The samples are accompanied by a representative from Barberton Mines (either a geologist or a sampler) and a sample dispatch note. Sample preparation and assaying is conducted by SGS Barberton. Preparation of the samples includes the drying of the sample at 110°C followed by crushing to 85% passing 2.36mm. Between 0.5kg and 0.75kg of crushed material is sub-sampled and pulverised using Rocklabs LM2 and RM2000 pulverisers to 85% passing 75µm. A 25g (grade control) or 50g (exploration) aliquot is mixed with a pre-mix flux for fire assay purposes. Low-grade orebodies are analysed using atomic absorption while high-grade orebodies employ a parted gravimetric finish.

An in-house quality assurance and quality control (QA/QC) system is in effect at Barberton Mines where each sample for grade control purposes is assayed in duplicate to ensure repeatability. Also, certified reference material is employed to indicate the accuracy of the assaying procedure. For exploration, up to 10% of the samples are re-assayed for precision tests and are accompanied by certified reference material at a 10% frequency. A two times standard deviation is employed as a failing criteria in the QA/QC system and triggers a re-assaying procedure. All exploration samples retrieving grades in excess of 10g/t are immediately re-assayed to validate the grades.

Mineral Resource Estimation (MRE) at the Fairview, Sheba and New Consort mines uses an inverse distance weighted grade and orebody width estimate within a limited search ellipse defined for each orebody specifically. At Royal Sheba (located within the Sheba mining right), ordinary kriging MRE is conducted for the various resource classification criteria. The search ellipse employed during the kriging process is in line with the orebody dimension and modelled variogram ranges. In all cases, historical data is employed during the MRE due to the rich history of mining and exploration in the area.

Extreme high-grade samples are evaluated per orebody and capped to an acceptable maximum grade for each orebody and operation specifically. These high-grades are identified by sample statistics, histograms and capping curves. The capped high-grade samples are employed for the MRE of each orebody.

### Mineral Resource classification

Measured Resource blocks are generally 20m on strike and 10m in the dip direction of actual mining. Where blocks are defined adjacent to a development end only, the grade and true width of the reef in the block are estimated by calculating the arithmetic mean or 'stretch average' of the samples along the development end. If the sample spacing is at the standard stope sampling grid of 3m, the block value is derived by calculating the inverse weighted estimated value of all available samples. If the sample interval is variable, the block is assigned the inverse weighted estimate of the sampled grades. During ordinary kriging MRE, a Measured Resource block is defined as a block estimated within the modelled variogram range with a slope of regression not less than 70%, effectively reporting a Measured Resource within 50m of sufficient representative sampling.

Indicated Resource blocks are defined where only diamond drill hole samples and information are available. Both the grades and orebody widths are either estimated by means of an inverse weighted estimate or ordinary kriging. The Indicated Resource extends up to the modelled variogram ranges of a sufficiently sampled area with a slope of regression not less than 50%. Grades and widths are mostly interpolated into the Indicated Resource blocks as to extrapolation that occurs for Inferred Resource blocks. The Inferred Resource blocks are characterised by a regional grade and width obtained from arithmetic means, Sichel's-t estimates and ordinary kriging. Inferred Resource blocks are extrapolated to double the modelled variogram range or grade continuity for each orebody.

### Mineral Reserve conversion

Mineral inventory of Barberton Mines as at 30 June 2019	
Resources	Reserves
Inferred 12.86Mt @ 3.56g/t for 1.47Moz	
Indicated 8.79Mt @ 3.88g/t for 1.10Moz	Probable 6.32Mt @ 4.88g/t for 1.00Moz
Measured 12.75Mt @ 3.61g/t for 1.48Moz	Proved 11.80Mt @ 2.63g/t for 1.00Moz

Indicated Mineral Resources are converted to Probable Mineral Reserves due to the lower confidence mainly in grade continuity relative to that of Measured Mineral Resources. In most instances Measured Mineral Resources are converted to Proved Mineral Reserves. Certain Measured Mineral Resource blocks are not immediately accessible for mining and require development or equipping. In these situations, a Measured Mineral Resource block has been converted to Probable Mineral Reserves.

### MINING RIGHTS

The mineral rights pertaining to Barberton Mines were issued by the Department of Mineral Resources (DMR) in terms of Item 7 of Schedule II of the MPRDA.

Mineral rights to Barberton Mines comprise three separate mining rights for the three different mining operations. All three operations' old order rights were converted to the sole and exclusive right to mine on 28 April 2011. The description of the mining area of all these mines is the Mpumalanga magisterial district of Barberton and the commodity is gold. All three mining rights are scheduled to expire

on 27 April 2021. Due to this, on 23 August 2018, Barberton Mines submitted to the DMR renewal applications, for all three mining rights, to extend the operations' mining rights by a further 30 years, up to August 2048.

The DMR has responded to these renewal application by stating that these renewals were lodged too early. The company has taken legal advice to the effect that the DMR should process the renewal applications in accordance with the MPRPA. Consequently the company lodged an appeal against the decision of the DMR to delay the processing of the renewal applications. This internal administrative process is not expected to impact on the company's security of tenure with regards to its mining rights.

No impediments are foreseen that could prevent the renewal of the mining rights. All Mineral Resources and Mineral Reserves reported on in this document are located within the existing mining rights of Barberton Mines.



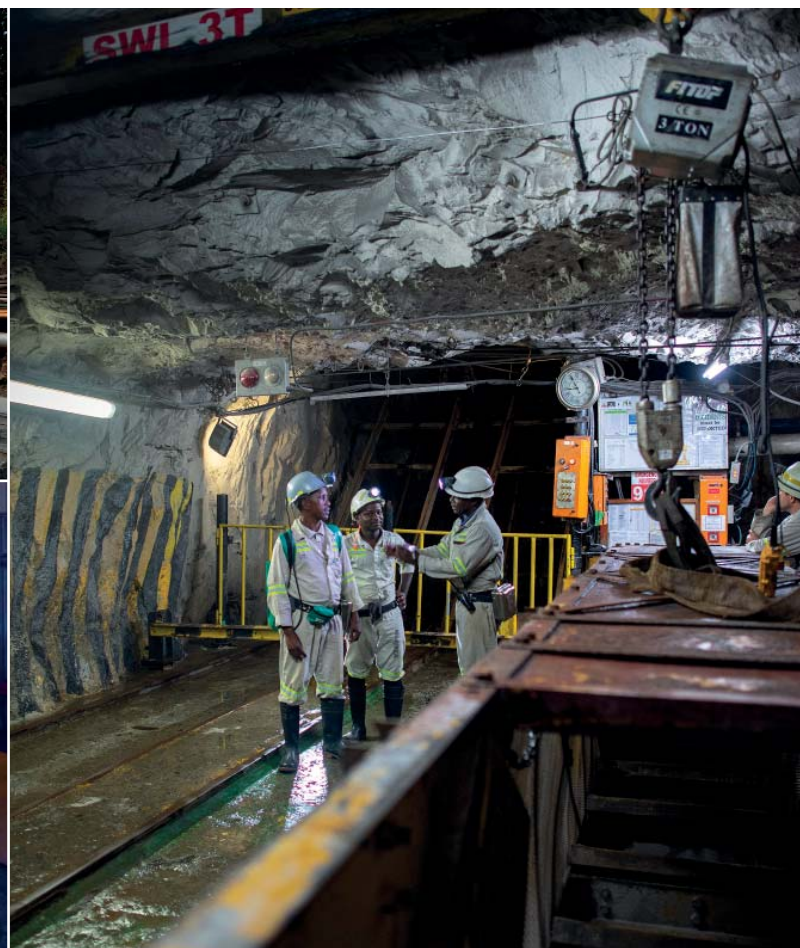
## BARBERTON MINES continued

### BACKGROUND continued

▼ Barberton Mines – hoppers carrying ore at Fairview 11 Level adit



▼ Barberton Mines – Fairview 3 Incline station



▲ Barberton Mines – Fairview smelting operation

Licence name	Project	Type of licence	Licence number	Area (ha)	Licence holder	Expiry date	Status
Barberton Mines Proprietary Limited	AMIRA	Prospecting	MP30/5/1/1/2/1040 PR	1,900	Barberton Mines Proprietary Limited	11 November 2011	Awaiting renewal under Section 18(5) of the MPRDA
Barberton Mines Proprietary Limited	Sheba Mine (including Royal Sheba)	Mining	MP30/5/1/2/2/189 MR	1705.0645	Barberton Mines Proprietary Limited	27 April 2021	Effective renewal application lodged to extend to 2048
Barberton Mines Proprietary Limited	New Consort Mine	Mining	MP30/5/1/2/2/190 MR	2520.8191	Barberton Mines Proprietary Limited	27 April 2021	Effective renewal application lodged to extend to 2048
Barberton Mines Proprietary Limited	Fairview Mine	Mining	MP30/5/1/2/2/191 MR	3033.8643	Barberton Mines Proprietary Limited	27 April 2021	Effective renewal application lodged to extend to 2048

Barberton Mines has established an environmental management programme. Each operation has an approved environmental impact assessment, environmental management programme and water use licence. Barberton Mines' discounted rehabilitation provision of USD3.0 million (undiscounted USD5.1 million), is funded by means of a Cenvro Solutions insurance investment product underwritten by Centriq Insurance Company Limited with a current value of USD3.9 million. These funds are invested in a portfolio comprising a combination of money market, capital market and equity instruments. The aim is to provide the group with the necessary liquidity for rehabilitation and to preserve the value of the rehabilitation capital. The audit and risk committee reviews the performance of this portfolio on a regular basis.

## FAIRVIEW MINE

### SURFACE RIGHTS

The majority of the surface rights that form part of the Fairview mining area are owned by local government (the Department of Public Works) and are under the management of the Mpumalanga Tourism and Parks Agency (MTPA). Fairview Mine has had an active lease agreement with the Department of Public Works since 2012. This lease agreement enables Fairview Mine to continue using the surface areas for its approved mine works programme.

Fairview Mine owns surface rights on the farms Fairview 542JU and Portion 1 Bramber South 348JU which adjoins the Fairview mining right area. Certain mine infrastructure, offices and the operational Fairview tailings dam are located on this property. The Fairview Mine properties consist of approximately 3,000 hectares of which approximately 4% of the surface is currently disturbed by mining and mining-related activities.

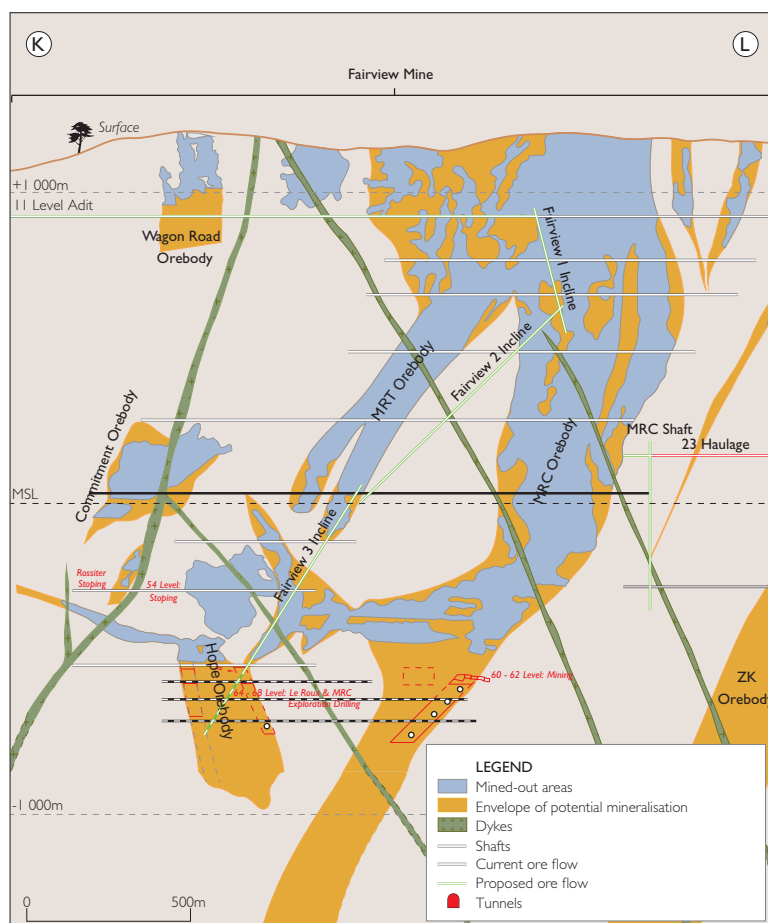
### GEOLOGY

The Fairview Mine area straddles the contact between the Moodies Group to the north (Eureka Syncline) and the Fig Tree Group's greywacke and shale to the south (Ulundi Syncline). The contact is marked by the presence of the regionally identifiable Sheba Fault. The two synclines are re-folded due to the immense force present during deformation, resulting in back-to-back isoclinal folds that dip steeply to the south. Tight isoclinal, thrust fault-related anticlines of Onverwacht Group schist (Zwartkoppie Formation) occur within the greywacke of the Fig Tree Group.

The Fairview Mine orebody is an epigenetic hydrothermal lode gold deposit. Three distinct types of mineralisation occur in the mine:

- ▶ Refractory sulphidic ore, which constitutes the bulk of the mined ore, is hosted in the greywacke and shale sequence of the Fig Tree Group. The mineralisation is found in close association with an anastomosing shear system that often parallels the stratigraphy and lithological contacts. Auriferous pyrite and arsenopyrite mineralisation are confined to ribbon-like shoots within the shear system and as disseminations in the wall rock. The shears are often defined by quartz-carbonate veining, and the host rock can be sericitised and carbonatised on either side of the shear.
- ▶ A coarse clastic unit of the Fig Tree Group hosts a series of hanging wall bodies. This coarse clastic unit consists of thick-bedded to massive

▼ Geology at Fairview Mine



greywacke, grading into arenite with interbedded granule stone layers. Two quartz-porphry dykes and two dolerite dykes intrude the host rock sediments. Although the mineralised fractures persist for up to 500m, payable gold values are confined to several discrete ribbon-like payshoots. Blue-black quartz veins, quartz-carbonate veins and stock-works are recognised in the hanging wall area. The contacts and texture of the veins suggest a dilation fracture fill origin rather than replacement origin. Refractory gold-quartz-carbonate-sulphide ore occurs as disseminated to massive pyrite and arsenopyrite mineralisation. The age relationship between the gold mineralisation and the quartz-porphry dykes suggests that the Hope Reef is marginally older and the Le Roux Reef is marginally younger than the quartz-porphry dykes. The quartz-porphry dyke that intrudes into the Hope Reef mineralisation has been dated at 3,050 million years.

- ▶ Quartz veins, containing free milling gold, occur in the Moodies Group in the footwall of the Sheba Fault. The blue-gray quartz veins fill near-vertical cross-cutting fractures in the siliceous, brittle quartzite units. Gold mineralisation generally occurs within the vein, but may penetrate the adjacent host rock. Only minor pyrite and arsenopyrite are associated with this ore type.

The deepest intersection on a Fairview orebody is at a depth of 1,660m below the adit elevation, approximately 200m below the current mining platforms. The orebody is open at depth.

## BARBERTON MINES continued

### FAIRVIEW MINE continued

#### MINERAL RESOURCES

Category	Mineral Resources							
	As at 30 June 2019				As at 30 June 2018			
	Tonnes million	Contained gold		Moz	Tonnes million	Contained gold		Moz
		Grade g/t	Tonnes gold			Grade g/t	Tonnes gold	
Measured	1.62	10.04	16.22	0.52	1.62	10.12	16.38	0.53
Indicated	1.02	13.05	13.36	0.43	1.04	13.51	14.08	0.45
Measured and Indicated	2.64	11.20	29.58	0.95	2.66	11.45	30.47	0.98
Inferred	1.75	16.12	28.22	0.91	1.75	19.66	34.36	1.10
<b>Total</b>	<b>4.39</b>	<b>13.16</b>	<b>57.80</b>	<b>1.86</b>	<b>4.41</b>	<b>14.70</b>	<b>64.83</b>	<b>2.08</b>

Notes: Mineral Resources are reported in accordance with the SAMREC Code. Mineral Resources would be the same if reported according to the guidelines of the CIM's National Instrument 43-101. Cut-off values are calculated at 2.08g/t for Fairview Mine and 1.29g/t for I I Level, applying a gold price of R700,000/kg (USD 1,534/oz and ZAR 14.19:USD 1). Mineral Resources are reported inclusive of Mineral Reserves. All Mineral Resources reported exclude geological structures. Mineral Resources are reported as in-situ tonnes (2.73t/m<sup>3</sup>). Any discrepancies in totals are due to rounding. Effects of mining and recovery losses have been considered in the cut-off grade calculations.

#### MINERAL RESERVES MODIFYING FACTOR

As at 30 June 2019	Gold price R/kg	Cut-off value g/t Au	Cut-off value cmg/t	Stoping width cm	Dilution %	MCF %	PRF %
Fairview Mine	600,000	2.08	208	100	5	99.90	92.20

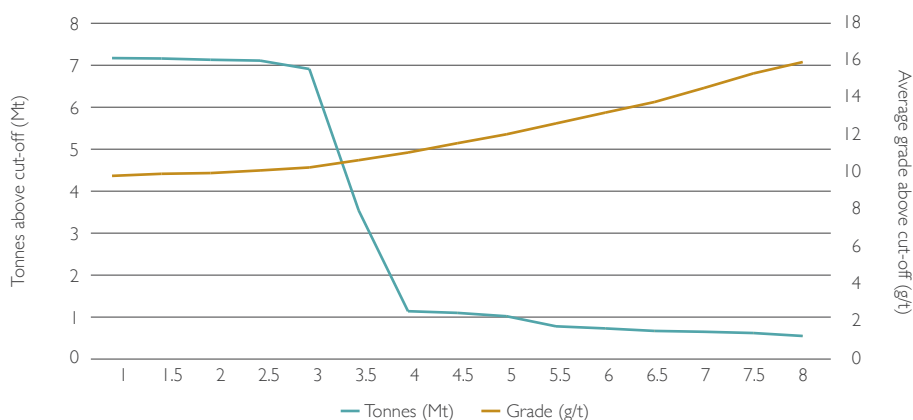
#### MINERAL RESERVES

Category	Mineral Reserves							
	As at 30 June 2019				As at 30 June 2018			
	Tonnes million	Contained gold		Moz	Tonnes million	Contained gold		Moz
		Grade g/t	Tonnes gold			Grade g/t	Tonnes gold	
Proved	0.74	8.83	6.57	0.21	0.93	9.07	8.43	0.27
Probable	1.20	13.95	16.79	0.54	1.06	14.25	15.16	0.49
<b>Total</b>	<b>1.95</b>	<b>11.99</b>	<b>23.36</b>	<b>0.75</b>	<b>1.99</b>	<b>11.84</b>	<b>23.58</b>	<b>0.76</b>

Notes: Mineral Reserves are reported in accordance with the SAMREC Code. Mineral Reserves would be the same if reported according to the guidelines of the CIM's National Instrument 43-101. Cut-off values are calculated at 7.73g/t for Fairview Mine and 5.92g/t for I I Level, applying a gold price of R600,000/kg (USD 1,315/oz and ZAR 14.19:USD 1). All Mineral Reserves reported exclude geological structures. Mineral Reserves are reported as in-situ tonnes (2.73t/m<sup>3</sup>). Any discrepancies in totals are due to rounding. Effects of mining and recovery losses have been considered in the cut-off grade calculations. The mineral tenure for Fairview Mine is up to 27 April 2021. On 23 August 2018, Barberton Mines submitted to the Department of Mineral Resources a renewal application, for the Fairview mining right, to extend the mining right by a further 30 years, up to August 2048. No impediments are foreseen that could prevent the renewal of the mining right.

#### Fairview Mine

Grade/tonnage curve



## SHEBA MINE

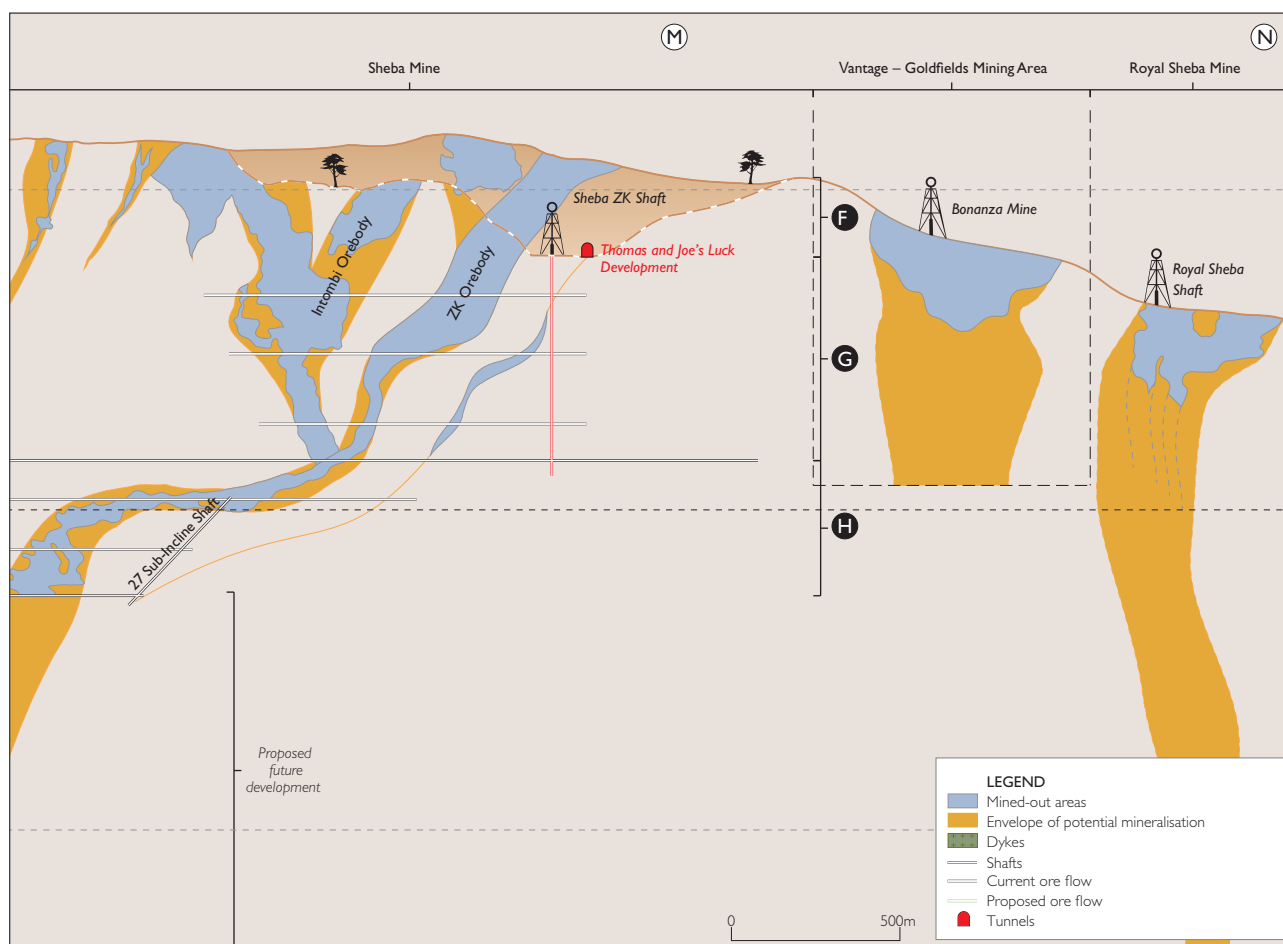
### SURFACE RIGHTS

The majority of the area used for the development of Sheba Mine's surface infrastructure is located on state land under the control of the Department of Public Works and is under the management of the MTPA. The adjacent land is primarily wilderness and grazing areas.

Sheba Mine properties consist of approximately 2,500 hectares, of which approximately 14% of the surface is currently disturbed by mining and mining-related activities. Sheba Mine has had an active lease agreement with the Department of Public Works since 2012. This lease agreement enables Sheba Mines to continue using the surface areas for its approved mine works programme.

### GEOLOGY

The Sheba section straddles the contact between the Moodies Group to the north (Eureka Syncline) and the Fig Tree Group's greywacke and shale to the south (Ulundi Syncline) similar to the stratigraphic occurrence of the Fairview Mine. The contact is marked by the presence of the regionally identifiable Sheba Fault. The two synclines are re-folded due to the immense force present during deformation, resulting in back-to-back isoclinal, thrust fault-related anticlines of Onverwacht Group schist (Zwartkoppie Formation) occur within the Fig Tree Group's greywacke.



▲ Geology at Sheba Mine

The Sheba orebody is an epigenetic hydrothermal lode gold deposit. Three distinct types of mineralisation occur in the mine:

- ▶ Refractory sulphidic ore (MRC Main Roof Complex), which constitutes the bulk of the mined ore, is hosted in the greywacke and shale sequence of the Fig Tree Group. The mineralisation is found in close association with a shear system in the immediate hanging wall of greenschist anticlines of the Zwartkoppie Formation. Auriferous pyrite and arsenopyrite mineralisation occurs as massive replacement veins within the shear system and as disseminations in the wall rock
- ▶ The Zwartkoppie section is characterised by the occurrence of visible gold and disseminated pyrite in the greenschist as the prominent mineralisation, in association with shear and fracture hosted smoky and white quartz veins
- ▶ The mineralisation of the Royal Sheba orebody is encapsulated in a shear envelope of the Sheba Fault, ranging in width from 5m to 25m. The gold mineralisation occurs predominantly in sulphide minerals and native gold.

The deepest orebody intersection on Sheba is 1,200m below shaft collar elevation. The orebody is open at depth.



## BARBERTON MINES continued

### SHEBA MINE continued

## MINERAL RESOURCES

The Mineral Resource reported includes that of the Royal Sheba deposit.

Category	Mineral Resources							
	As at 30 June 2019				As at 30 June 2018			
	Tonnes million	Contained gold		Moz	Tonnes million	Contained gold		Moz
		Grade g/t	Tonnes gold			Grade g/t	Tonnes gold	
Measured	3.03	4.59	13.91	0.45	4.75	4.08	19.39	0.62
Indicated	2.62	4.20	11.00	0.35	3.46	3.54	12.25	0.39
Measured and Indicated	5.64	4.41	24.90	0.80	8.21	3.85	31.64	1.02
Inferred	1.38	1.93	6.80	0.22	1.60	5.83	9.30	0.30
<b>Total</b>	<b>7.02</b>	<b>4.51</b>	<b>31.70</b>	<b>1.02</b>	<b>9.81</b>	<b>4.17</b>	<b>40.94</b>	<b>1.32</b>

Notes: Mineral Resources are reported in accordance with the SAMREC Code. Mineral Resources would be the same if reported according to the guidelines of the CIM's National Instrument 43-101. Cut-off values are calculated at 1.94g/t for Sheba Mine, 2.04g/t for the MRC and ZK sections and 1.7g/t for Royal Sheba underground, applying a gold price of R700,000/kg (USD 1,534/oz and ZAR 14.19/USD 1). Mineral Resources are reported inclusive of Mineral Reserves. All Mineral Resources reported exclude geological structures. Mineral Resources are reported as in-situ tonnes (2.73t/m<sup>3</sup>). Any discrepancies in totals are due to rounding. Effects of mining and recovery losses have been considered in the cut-off grade calculations.

## MINERAL RESERVES MODIFYING FACTOR

As at 30 June 2019	Gold price R/kg	Cut-off value g/t Au	Cut-off value cmg/t	Stoping width cm	Dilution %	MCF %	PRF %
Sheba Mine	600,000	5.42	542	100	5	100	94.10

## MINERAL RESERVES

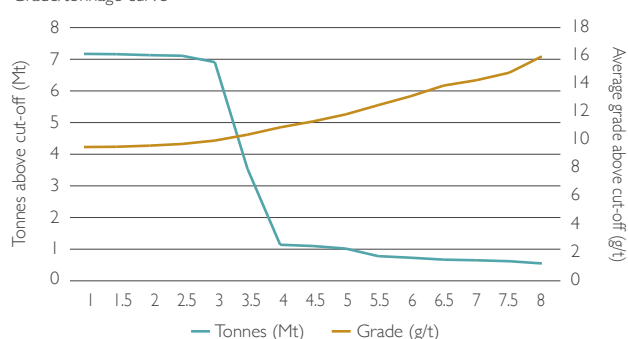
The Mineral Reserves reported includes the Royal Sheba deposit.

Category	Mineral Reserves							
	As at 30 June 2019				As at 30 June 2018			
	Tonnes million	Contained gold		Moz	Tonnes million	Contained gold		Moz
		Grade g/t	Tonnes gold			Grade g/t	Tonnes gold	
Proved	3.08	3.45	10.63	0.34	0.59	6.73	3.97	0.31
Probable	2.64	3.60	9.51	0.31	5.47	3.49	19.09	0.61
<b>Total</b>	<b>5.72</b>	<b>3.52</b>	<b>20.14</b>	<b>0.65</b>	<b>6.05</b>	<b>3.81</b>	<b>23.061</b>	<b>0.74</b>

Notes: Mineral Reserves are reported in accordance with the SAMREC Code. Mineral Reserves would be the same if reported according to the guidelines of the CIM's National Instrument 43-101. Cut-off values are calculated at 5.42g/t for Sheba Mine, 5.64g/t for the MRC and ZK sections and 1.7g/t for Royal Sheba, applying a gold price of R600,000/kg (USD 1,315/oz and ZAR 14.19/USD 1). All Mineral Reserves reported exclude geological structures. Mineral Reserves are reported as in-situ tonnes (2.73t/m<sup>3</sup>). Any discrepancies in totals are due to rounding. Effects of mining and recovery losses have been considered in the cut-off grade calculations. The mineral tenure for Sheba Mine is up to 27 April 2021. On 23 August 2018, Barberton Mines submitted to the Department of Mineral Resources a renewal application, for the Sheba mining right, to extend the mining right by a further 30 years, up to August 2048. No impediments are foreseen that could prevent the renewal of the mining right.

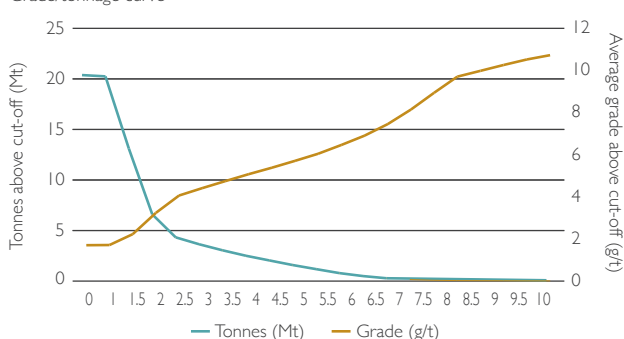
### Sheba Mine

Grade/tonnage curve



### Royal Sheba project

Grade/tonnage curve



## NEW CONSORT MINE

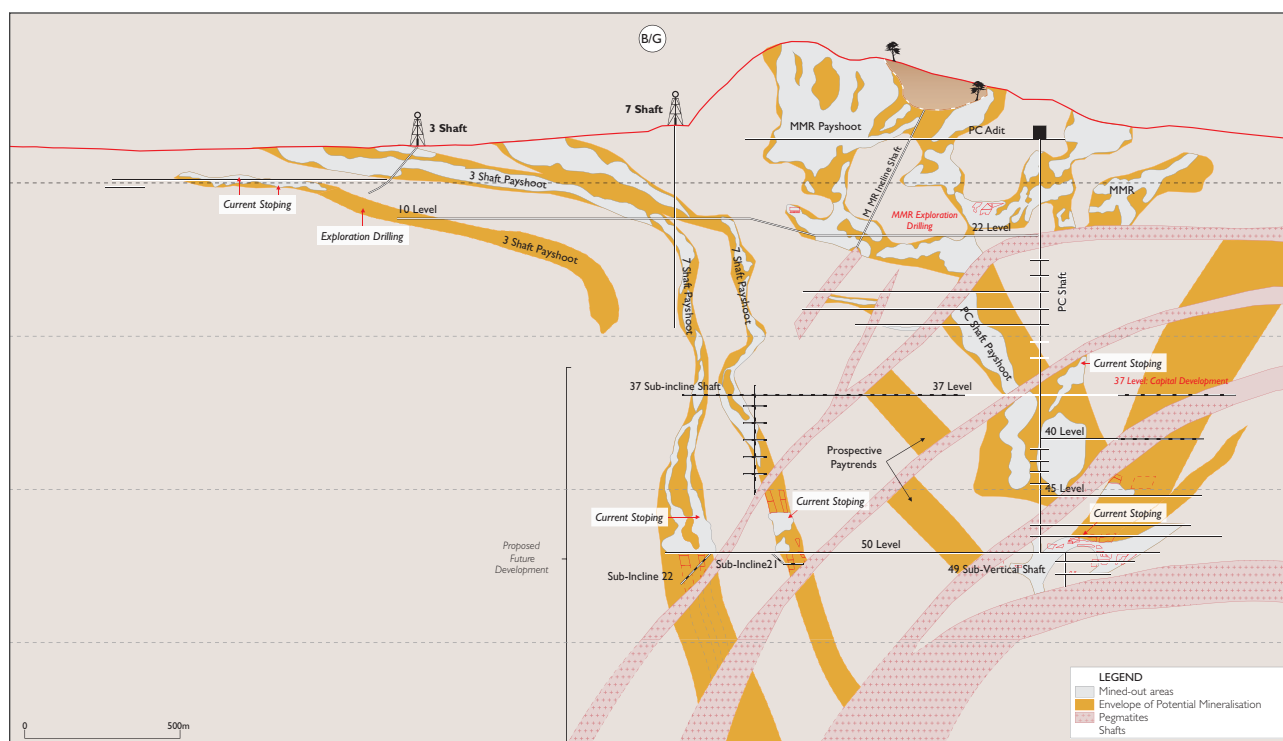
### SURFACE RIGHTS

Most of the area employed for the development of the New Consort Mine surface infrastructure is state-owned land under the control of the Department of Public Works and is under the management of the MTPA. The surrounding land is primarily wilderness and grazing areas. A private nature reserve is located to the west of the mining right area.

Barberton Mines owns Portion 1 of the farm Segalla 306 JU on which the Segalla Tailings Facility is located. A substantial part of the facility, however, falls outside Portion 1 on state land, which is declared a conservation area and is controlled by the MTPA. The New Consort Mine properties consist of approximately 2,500 hectares of which approximately 14% of the surface is currently disturbed by mining and mining-related activities. New Consort Mine has had an active lease agreement with the Department of Public Works since 2012 for the land on which the surface infrastructure and the Segalla Tailings Facility is located on. This lease agreement enables New Consort Mines to continue using the surface areas for its approved mine works programme.

### GEOLOGY

The New Consort area can be divided into two distinctive synclinal structures, termed the Three Shaft Syncline and the Top Section Syncline. The Shires structure, which is a prominent north-south striking shear zone separating these two synclines, is intruded by a pegmatite.



▲ Geology at New Consort Mine

The New Consort orebody is an epigenetic hydrothermal lode gold deposit. Gold mineralisation at the New Consort section is associated with the contact between the underlying schist of the Onverwacht Group and the overlying metapelite of the Fig Tree Group. This contact is marked by the presence of the Consort 'bar', a highly siliceous banded chert. The Consort bar is thought to be a silicified mylonite occupying the contact. A series of north-dipping tabular pegmatites, termed the Muiden Reef pegmatites, displace the south-dipping Consort contact and the mineralised shoots. Some scheelite mineralisation has been recorded associated with the pegmatites.

A lenticular body of fine-grained siliceous amphibolite, termed the 'footwall lens', occurs on the northern limb of the Top Section Syncline and is host to the mineralisation in the Prince Consort (PC) and Main Muiden Reef (MMR) shoots. Mineralisation consists of arsenopyrite and visible gold associated with fractures in the footwall lens. The Consort bar is host to mineralisation in the 7 Shaft, 3 Shaft and Ivaura areas.

The deepest intersection of the New Consort orebody is 1,450m below adit elevation. The orebody is open at depth.

## BARBERTON MINES continued

### NEW CONSORT MINE continued

#### MINERAL RESOURCES

Category	Mineral Resources							
	As at 30 June 2019				As at 30 June 2018			
	Tonnes million	Contained gold		Moz	Tonnes million	Contained gold		Moz
		Grade g/t	Tonnes gold			Grade g/t	Tonnes gold	
Measured	0.34	9.05	3.07	0.10	0.31	7.52	2.31	0.07
Indicated	0.18	8.06	1.48	0.05	0.16	7.51	1.17	0.04
Measured and Indicated	0.52	8.71	4.55	0.15	0.46	7.52	3.48	0.11
Inferred	0.23	6.60	1.51	0.05	0.27	12.66	3.38	0.11
<b>Total</b>	<b>0.75</b>	<b>8.06</b>	<b>6.06</b>	<b>0.20</b>	<b>0.73</b>	<b>9.40</b>	<b>6.86</b>	<b>0.22</b>

Notes: Mineral Resources are reported in accordance with the SAMREC Code. Mineral Resources would be the same if reported according to the guidelines of the CIM's National Instrument 43-101. Cut-off values are calculated at 2.63g/t for New Consort Mine, 2.52g/t for the 3 Shaft, 2.75g/t for the PC Shaft and 2.48g/t for MMR, applying a gold price of R700,000/kg (USD1,534/oz and ZAR14.19/USD1). Mineral Resources are reported inclusive of Mineral Reserves. All Mineral Resources reported exclude geological structures. Mineral Resources are reported as in-situ tonnes (2.73t/m<sup>3</sup>). Any discrepancies in totals are due to rounding. Effects of mining and recovery losses have been considered in the cut-off grade calculations.

#### MINERAL RESERVES MODIFYING FACTOR

As at 30 June 2019	Gold price R/kg	Cut-off value g/t Au	Cut-off value cmg/t	Stoping width cm	Dilution %	MCF %	PRF %
New Consort Mine	600,000	7.10	710	100	5	92.20	92.20

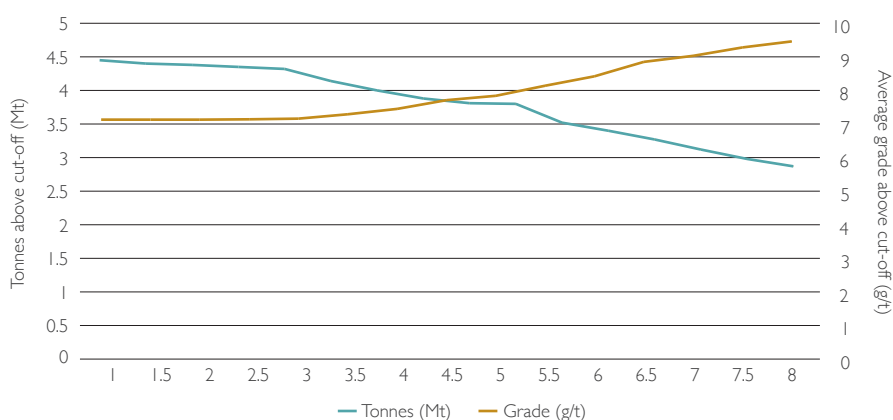
#### MINERAL RESERVES

Category	Mineral Reserves							
	As at 30 June 2019				As at 30 June 2018			
	Tonnes million	Contained gold		Moz	Tonnes million	Contained gold		Moz
		Grade g/t	Tonnes gold			Grade g/t	Tonnes gold	
Proved	0.20	5.12	1.01	0.03	0.20	4.04	0.82	0.03
Probable	0.11	5.14	0.58	0.02	0.11	4.49	0.50	0.02
<b>Total</b>	<b>0.31</b>	<b>5.13</b>	<b>1.59</b>	<b>0.05</b>	<b>0.31</b>	<b>4.20</b>	<b>1.32</b>	<b>0.04</b>

Notes: Mineral Reserves are reported in accordance with the SAMREC Code. Mineral Reserves would be the same if reported according to the guidelines of the CIM's National Instrument 43-101. Cut-off values are calculated at 7.10g/t for New Consort Mine, 6.11g/t for the 3 Shaft, 8.18g/t for the PC Shaft and 5.82g/t for MMR, applying a gold price of R600,000/kg (USD1,315/oz and ZAR14.19/USD1). All Mineral Reserves reported exclude geological structures. Mineral Reserves are reported as in-situ tonnes (2.73t/m<sup>3</sup>). Any discrepancies in totals are due to rounding. Effects of mining and recovery losses have been considered in the cut-off grade calculations. The mineral tenure for New Consort Mine is up to 27 April 2021. On 23 August 2018, Barberton Mines submitted to the Department of Mineral Resources a renewal application, for the Consort mining right, to extend the mining right by a further 30 years, up to August 2048. No impediments are foreseen that could prevent the renewal of the mining right.

#### New Consort Mine

Grade/tonnage curve



## BARBERTON TAILINGS RETREATMENT PLANT

### SURFACE RIGHTS

The Barberton Tailings Retreatment Plant (BTRP) is located within the Fairview Mine's mining right.

### GEOLOGY

The BTRP section retreats previously processed gold ore in the form of slime material. The slimes emanate from historical mining activities on the same orebodies that are currently being mined underground from the existing Barberton Mines underground operations. The feed sources to the BTRP include the Bramber dam, currently contributing up to 10,000 tonnes per month of the BTRP's 100,000 tonne capacity. A further 70,000 tonnes per month are sourced from the nearby Harper South and Harper North tailings dams that will supply the BTRP with feed material at the current rate for the next three years. The total life of BTRP is modelled at nine years. The additional life is obtained by the re-mining of the Segalla dam located at New Consort Mine. The remainder of the capacity is filled with residue material from the BIOX<sup>®</sup> Plant at Fairview Mine at a rate of 13,000 tonnes per month and the Vantage dam at 7,000 tonnes per month.





## BARBERTON MINES continued

### BARBERTON TAILINGS RETREATMENT PLANT continued

#### MINERAL RESOURCES

Category	Mineral Resources							
	As at 30 June 2019				As at 30 June 2018			
	Tonnes million	Contained gold		Moz	Tonnes million	Contained gold		Moz
		Grade g/t	Tonnes gold			Grade g/t	Tonnes gold	
Measured	7.77	1.65	12.86	0.41	—	—	—	—
Indicated	4.75	1.45	6.91	0.22	12.64	1.36	17.20	0.55
Measured and Indicated	12.52	1.58	19.77	0.64	12.64	1.36	17.20	0.55
Inferred	9.32	0.89	8.26	0.27	10.71	0.74	7.94	0.26
<b>Total</b>	<b>21.84</b>	<b>1.28</b>	<b>28.03</b>	<b>0.90</b>	<b>23.34</b>	<b>1.08</b>	<b>25.14</b>	<b>0.81</b>

Notes: Mineral Resources are reported in accordance with the SAMREC Code. Mineral Resources would be the same if reported according to the guidelines of the CIM's National Instrument 43-101. Cut-off values are calculated at 0.2g/t for BTRP, applying a gold price of R700,000/kg (USD 1,534/oz and ZAR 14.19:USD 1). Mineral Resources are reported inclusive of Mineral Reserves. All Mineral Resources reported exclude geological structures. Mineral Resources are reported as in-situ tonnes (1.4t/m<sup>3</sup>). Any discrepancies in totals are due to rounding. Effects of mining and recovery losses have been considered in the cut-off grade calculations.

#### MINERAL RESERVES MODIFYING FACTOR

	Gold price R/kg	Cut-off value g/t Au	Cut-off value cmg/t	Stoping width cm	Dilution %	PRF %
As at 30 June 2019						
BTRP	600,000	—	—	—	—	26.8

#### MINERAL RESERVES

Category	Mineral Reserves							
	As at 30 June 2019				As at 30 June 2018			
	Tonnes million	Contained gold		Moz	Tonnes million	Contained gold		Moz
		Grade g/t	Tonnes gold			Grade g/t	Tonnes gold	
Proved	7.77	1.65	12.86	0.41	—	—	—	—
Probable	2.36	1.67	3.94	0.13	12.64	1.36	17.20	0.55
<b>Total</b>	<b>10.13</b>	<b>1.66</b>	<b>16.80</b>	<b>0.54</b>	<b>12.64</b>	<b>1.36</b>	<b>17.20</b>	<b>0.55</b>

Notes: Mineral Reserves are reported in accordance with the SAMREC Code. Mineral Reserves would be the same if reported according to the guidelines of the CIM's National Instrument 43-101. Cut-off values are calculated at 0.3g/t for BTRP, applying a gold price of R600,000/kg (USD 1,315/oz and ZAR 14.19:USD 1). All Mineral Reserves reported exclude geological structures. Mineral Reserves are reported as in-situ tonnes (1.4t/m<sup>3</sup>). Any discrepancies in totals are due to rounding. Effects of mining and recovery losses have been considered in the cut-off grade calculations.

## BARBERTON MINES' MINERAL RESOURCE AND MINERAL RESERVE RECONCILIATION

As at 30 June 2019, Barberton Mines reported a Mineral Reserve of 1,990,208oz (18Mt at 3.42g/t) and a Mineral Resource of 4,049,415oz (34Mt at 3.66g/t) contained gold. The Measured and Indicated Mineral Resources are inclusive of those Mineral Resources modified to produce the Mineral Reserves. Mineral Reserves are reported as mill-delivered tonnes at the contained grade having duly considered all modifying factors. Mineral Resources and Mineral Reserves reported are contained within the mining right boundaries of Barberton Mines. All mined-out areas have been depleted from the reported Mineral Resources and Mineral Reserves.

### MINERAL RESOURCES COMPARISON

Category	Mineral Resources							
	As at 30 June 2019				As at 30 June 2018			
	Tonnes million	Contained gold		Moz	Tonnes million	Contained gold		Moz
		Grade g/t	Tonnes gold			Grade g/t	Tonnes gold	
Measured	12.75	3.61	46.06	1.48	6.68	5.70	38.08	1.22
Indicated	8.79	3.88	34.07	1.10	17.51	2.63	46.03	1.48
Measured and Indicated	21.55	3.72	80.13	2.58	24.19	3.48	84.11	2.70
Inferred	12.86	3.56	45.83	1.47	14.50	3.86	56.02	1.80
<b>Total</b>	<b>34.40</b>	<b>3.66</b>	<b>125.95</b>	<b>4.05</b>	<b>38.69</b>	<b>3.62</b>	<b>140.13</b>	<b>4.51</b>

### RECONCILIATION OF MINERAL RESOURCES

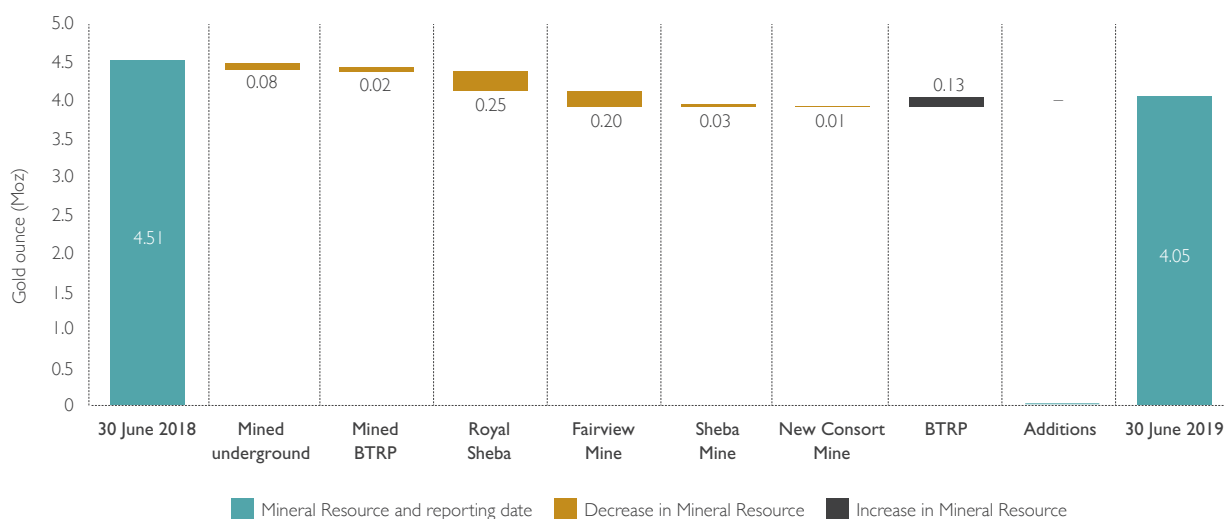
Barberton Mines' Mineral Resources posted the following changes for 2019.

Barberton Mines' Mineral Resources decreased by 456Koz contained gold.

The decrease can be attributable to the re-evaluation of:

- ▮ Royal Sheba at Sheba Mine
- ▮ Re-evaluating Fairview Mine's remnant pillars
- ▮ Remnant areas at remnant pillars at New Consort Mine
- ▮ Changes in cut-off grades.

### Resource reconciliation



## BARBERTON MINES continued

### BARBERTON MINES' MINERAL RESOURCE AND MINERAL RESERVE RECONCILIATION continued

#### MINERAL RESERVES COMPARISON

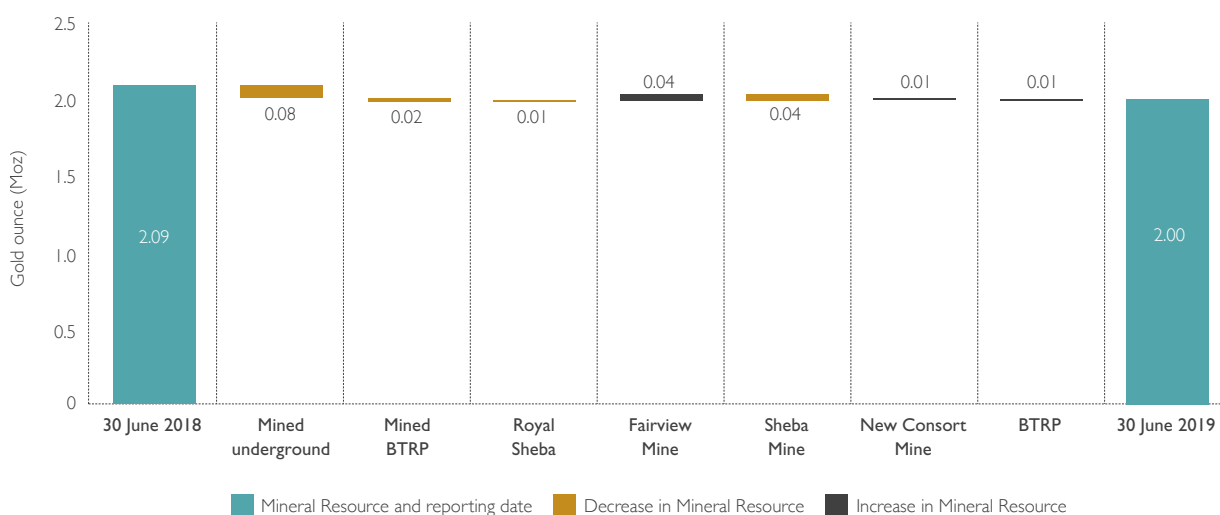
Category	Mineral Reserves							
	As at 30 June 2019				As at 30 June 2018			
	Tonnes million	Contained gold		Moz	Tonnes million	Contained gold		Moz
		Grade g/t	Tonnes gold			Grade g/t	Tonnes gold	
Proved	11.80	2.63	31.08	1.00	1.72	7.68	13.21	0.42
Probable	6.32	4.88	30.83	1.00	19.28	2.69	51.86	1.67
<b>Total</b>	<b>18.11</b>	<b>3.42</b>	<b>61.90</b>	<b>2.00</b>	<b>21.00</b>	<b>3.10</b>	<b>65.01</b>	<b>2.09</b>

#### RECONCILIATION OF MINERAL RESERVES

Barberton Mines' Mineral Reserves decreased by 2.89Mt at 1.10g/t for 102Koz contained gold.


The decrease, post depletion, can be attributed to the conversion of the Royal Sheba and Sheba orebodies' Mineral Resource to a Mineral Reserve. Decreasing sections in the Mineral Reserves are mainly attributed to cut-off grade changes. The BTRP Mineral Reserve increase is based on the re-evaluation of the Segalla and Camelot tailings dams that were drilled and modelled during the year.

#### Reserve reconciliation



#### COMPETENT PERSON

The competent person for Barberton Mines, Mr Hendrik Pretorius, the Group Project Geologist, signs off the Mineral Resources for Barberton Mines. He is a member of the South African Council for Scientific Professions (SACNASP) (400051/11 – Management Enterprise Building, Mark Shuttleworth Street, Innovation Hub, Pretoria, South Africa), as well as a member in good standing of the Geological Society of South Africa (GSSA – CSIR Mining Precinct, Corner Rustenburg and Carlow Roads, Melville, South Africa). Hendrik has 16 years of experience in economic geology and mineral resource management. Hendrik holds a BSc (Hons) degree in Geology from the University of Johannesburg as well as a Graduate Diploma in Engineering from the University of the Witwatersrand. He is based at The Firs Office Building, 2nd Floor, Office 204, Cnr Cradock and Biermann Avenues, Rosebank, Johannesburg, South Africa. Hendrik has confirmed, in writing, that the information disclosed is compliant with Section 12 of the JSE Listings Requirements and Table 1 of the SAMREC Code, and that it may be published in the form and context in which it is intended.



Exploration in the area started in 1903 with the advent of diamond drilling and progressed intermittently through various major exploration phases up to the incorporation of the first mine (Winkelhaak Mine) in 1955 within the Evander basin region of the world-renowned Witwatersrand Supergroup. Since then, three other mines were brought into production – namely Leslie Mine, Bracken Mine and Kinross Mine.

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◀ Evander Mines – 8 Shaft sheave wheel and headgear

EVANDER MINES



# EVANDER MINES

## BACKGROUND

Exploration started in 1903 with the advent of diamond drilling and progressed intermittently through various major exploration phases up to the incorporation of the first mine (Winkelhaak Mine) in 1955.

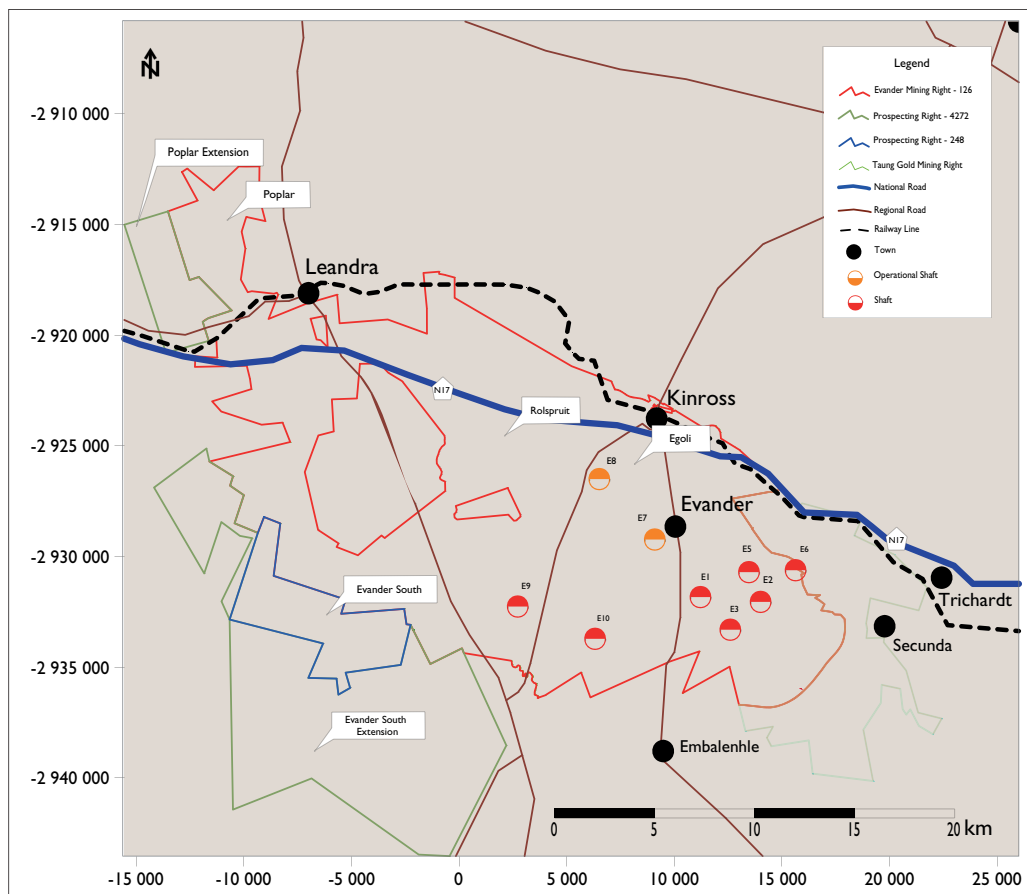
Since then, three other mines were brought into production – namely Leslie Mine, Bracken Mine and Kinross Mine. Evander Mines (Leslie, Bracken and Kinross Mines) exploits the Kimberley Reef in the Evander basin, part of the greater Witwatersrand basin. Mining methods employed are underground conventional scraper mining and rail-bound equipment with some trackless mechanised development (large-scale underground operations ceased on 31 May 2018). With 8 Shaft at a depth of 2.5km, it took the workforce approximately an hour to reach the mining area via a lift and locomotive and two chairlifts. The rock is transported along 11 conveyors from the rock face to the bottom of 7 Shaft from where it is hoisted to the surface.

Hydraulic mining of the Kinross tailings dam at a rate of 1.2 million tonnes per month is employed to pump material to the combined Elikhulu and Evander Tailings Retreatment Plant (ETRP) operation, now termed Elikhulu. The Elikhulu Tailings Retreatment Plant (Elikhulu) was commissioned during the financial year with the inaugural gold pour on 16 August 2018. Elikhulu process re-mined tailings from the three tailings storage facilities (TSFs) (Kinross, Leslie/Bracken and Winkelhaak) at a rate of 1.2 million tonnes per month for a total of 13 years. The gold is then extracted in a CIL hybrid plant.

Evander Mines' mineral assets comprise a set of Mineral Resources that are from early pre-feasibility studies to a bankable feasibility study including the operating tailings retreatment section, Elikhulu. The current revenue streams for Evander Mines were generated from the Evander 8 Shaft and re-mining of tailings. The principal economical horizon mined at Evander Mines' underground sections is the Kimberley Reef which was deposited in the Witwatersrand sedimentary basin approximately 2,300 million years ago.

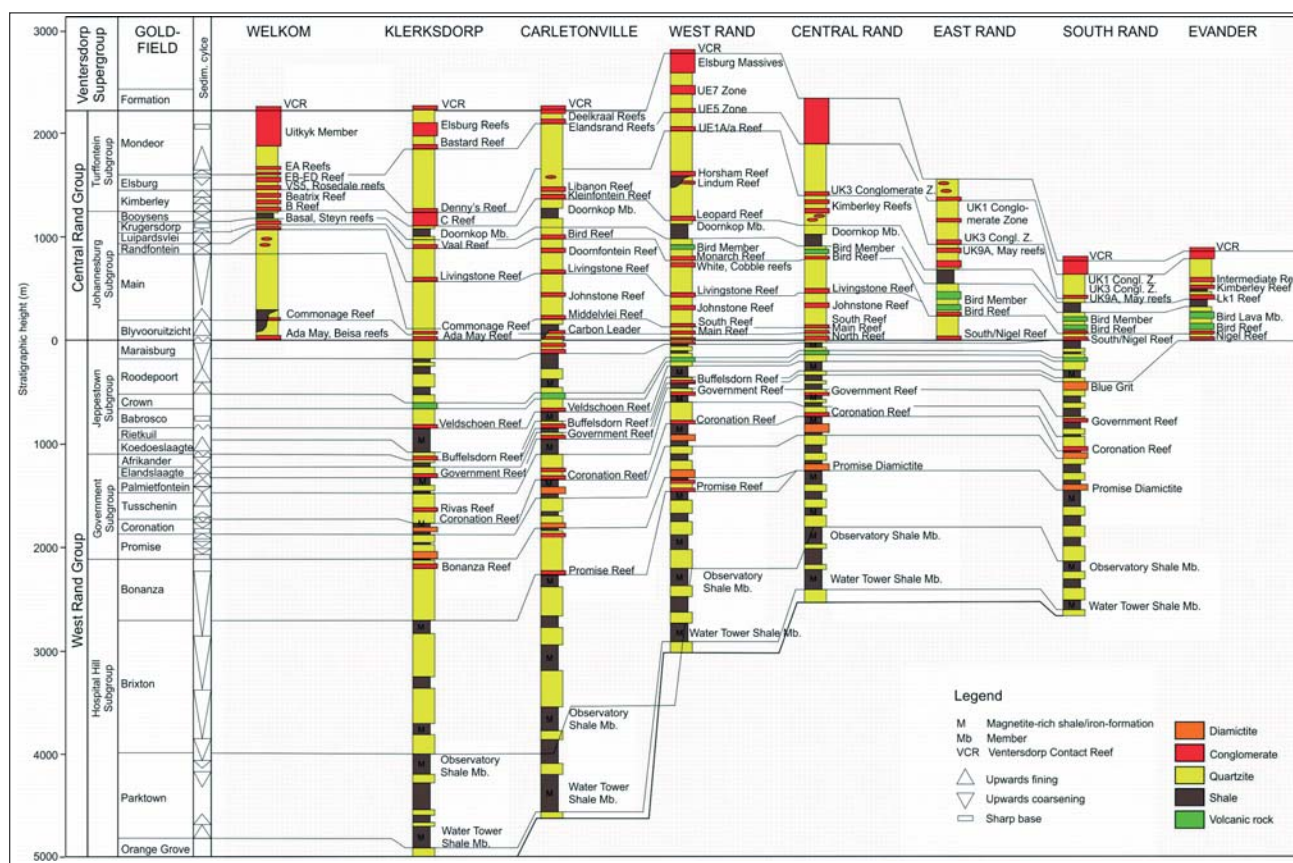
## LOCATION

Evander Mines is located in Mpumalanga approximately 120km east-south-east from Johannesburg near the town of Secunda.



## REGIONAL GEOLOGICAL SETTING

Evander Mines exploits the Kimberley Reef in the Evander basin, the eastern-most extremity of the Witwatersrand Supergroup. The Kimberley Reef is mined throughout the major gold mining districts within the Witwatersrand Supergroup including the East Rand, Central Rand, West Rand, Far West Rand and Free State goldfields. Deposition models for gold within the conglomeratic horizons follow a paleo-placer type sedimentological deposition along with winnowing, erosion and concentration of gold-bearing footwall lithologies. Various studies have highlighted the importance of hydrothermal activity for deposition, remobilisation and enrichment within certain packages of the Witwatersrand Supergroup.



▲ After: The Archaeological Geology of the Kaapvaal Craton, Southern Africa pp 255-275 (Frimmel, H. E., 2019)

## MINING RIGHTS

The mineral rights pertaining to Evander Mines were issued by the Department of Mineral Resources (DMR) in terms of Item 7 of Schedule II of the MPRDA and were registered on 15 October 2010. All Mineral Resources and Mineral Reserves reported in this document are located within the existing mining right and prospecting rights of Evander Mines. The Evander South prospecting right (MP30/5/1/2/2/248 PR) constitutes a Mineral Resource of 21.7Mt at 7.66g/t for 5.3Moz (11.6Mt at 8.88g/t for 3.3Moz are Indicated and 10.1Mt at 6.25g/t for 2.0Moz are Inferred Mineral Resources) which is being included into the mining right. This prospecting right is being consolidated into the Evander Mines mining right MP30/5/1/2/2/126 MR through a Section 102 application which was lodged in December 2017.

Mining licence	Type of licence	Licence number	Area (ha)	Expiry date	Status
Evander South	Prospecting	MP30/5/1/2/2/248 PR	2,551	29 June 2019	Section 102 pending (lodged 8 December 2017)
Evander West	Prospecting	MP30/5/1/2/2/4272 PR	11,189	19 October 2016	Renewal application lodged, Section 102 pending (lodged 12 August 2017)
Evander Gold Mining	Mining	MP30/5/1/2/2/126 MR	36,898	28 April 2038	Effective

Evander Mines has an established approved environmental impact assessment, environmental management programme and water use licence which incorporates the Elikhulu operations.

## EVANDER MINES continued

### BACKGROUND continued

Evander Mines' discounted rehabilitation provision of USD12.8 million (undiscounted USD18.5 million) is fully funded by means of a Cenviro Solutions insurance investment product underwritten by Centriq Insurance Company Limited with a current value of USD21.2 million. These funds are invested in a portfolio comprising a combination of money market, capital market and equity instruments. The aim is to provide the group with the necessary liquidity for rehabilitation and to preserve the value of the rehabilitation capital. A rehabilitation strategy and implementation plan was compiled and updated in 2017 to rehabilitate dormant and non-productive areas. The audit and risk committee reviews the performance of this portfolio on a regular basis.

### SURFACE RIGHTS

Evander Mines' mining right extends over 36,893 hectares. Evander Mines owns a surface area of 6,676 hectares of which 2,230 hectares are disturbed by mining and mining-related activities. The surface activities are limited to the three main shaft complexes; Kinross, Winkelhaak and Leslie/Bracken. There is also one TSF associated with each of the three complexes. No surface exploration activities are currently being undertaken on the prospecting right areas.

Historically, mining involved underground operations from nine shafts at the Kinross, Winkelhaak and the Bracken/Leslie sections. Water abstraction is via both 7 and 8 Shafts in the Kinross section. Evander Mines also currently undertakes reworking of surface tailings facilities via the Elikhulu Tailings Retreatment Plant.

### MINERAL RESOURCES ESTIMATION

The Mineral Resource is classified according to guidelines compliant with the SAMREC Code.

#### Geological modelling

The grade and the structure in the Kimberley Reef is highly erratic in nature, and most of the data for evaluating resource blocks is derived from development adjacent to the mining blocks and from the position of the present mining areas along with diamond drill hole information. The continuity of grade values within the ore shoots is derived primarily from short-range statistical projections, based on historic mining actual measurements of the orebody and continuity modelling such as variography and trend analyses.

The tectonic structure and orebody geometry has been modelled using Datamine Studio RM®. This system allows the 3D structure of the mineralised volume to be constructed, modified and viewed graphically. Additionally, the 3D models can be adjusted as current data becomes available. This system is further employed as a tool for visualising grade continuity and is an aid for mine planning.

Monthly drone surveys are conducted over the tailings dams being re-mined, forming the basis of the geological and resource models for the Elikhulu operation.

#### Resource estimation

During grade control, both diamond-cored drill holes and underground stope and development sampling, a minimum sampling width of 20cm is adhered to. Exploration diamond drill holes and sampling is conducted over a sample width of 50cm within the mineralised zone or lithological contacts. Drilling is also conducted on the tailings material that is retreated at the Elikhulu operation, and in this case, the samples, either from auger drilling, dual drilling or sonic drilling are sampled in 150cm intervals.

All the samples are transported from site to SGS Barberton. SGS Barberton is a SANAS-accredited assay laboratory (T0565) and is certified to conduct the relevant gold analyses. The samples collected by SGS Barberton at Evander Mines in the presence of a mine representative (sampler) are accompanied by a sample dispatch note. Transportation of the samples is done in sealed containers by SGS Barberton employees to the assay laboratory. Sample preparation and assaying is conducted by SGS Barberton. Preparation of the samples includes the drying of the sample at 110°C followed by crushing to 85% passing 2.36mm. Between 0.5kg and 0.75kg of crushed material is sub-sampled and pulverised using Rocklabs LM2 or RM2000 pulverisor to 85% passing 75µm. A 25g (grade control) or 50g (exploration) aliquot is mixed with a pre-mix flux for fire assay purposes. Low-grade orebodies are analysed using atomic absorption while high-grade orebodies employ a parted gravimetric finish.

An in-house quality assurance and quality control (QA/QC) system is in effect at Evander Mines where each sample for grade control purposes is assayed in duplicate to ensure repeatability. Also, certified reference material is employed to indicate the accuracy of the assaying procedure. For exploration, up to 10% of the samples are re-assayed for precision tests and are accompanied by certified reference material at a 10% frequency. A two times standard deviation is employed as a failing criteria in the QA/QC system and triggers a re-assaying procedure. All exploration samples retrieving grades in excess of 10g/t are immediately re-assayed to validate the grades.

Extreme high-grade samples are evaluated per geozone and capped to an acceptable maximum grade. These high-grades are identified by sample statistics, histograms and capping curves. The capped high-grade samples are employed for the MRE of each geozone.

The MRE method employed for generating local-grade estimates on Evander Mines is ordinary kriging. The orientations and ranges of each geozone's semi-variogram are used to determine the kriging search parameters, and the estimation parameters are optimised.

#### Mineral Resource classification

Hard rock Kimberley Reef estimates are kriged into 30m x 30m blocks for the Measured Resources from point data within the modelled variogram ranges. Indicated Mineral Resources are estimated into 60m x 60m parent cells employing a regularised declustered grid of samples on the same basis. Estimation is conducted within the modelled variogram ranges per geozone. Inferred Mineral Resources are estimated into a 120m x 120m parent cell within the identified geozones based on the modelled variogram



v Elikhulu plant



range from a regularised and declustered data set on the same grid size. The Measured and Indicated Resource models are then tested on cmg/t kriging efficiency and slope of regression and merged together with the Inferred model to produce a combined kriged block model.

The tailings Mineral Resource is estimated by a capped 3m composite drill hole data set. The MRE is conducted through ordinary kriging employing anisotropic variography into a parent cell of

50m x 50m x 3m (X,Y,Z) dimensions. The MRE parameters such as the minimum and maximum number of samples, maximum samples per drill hole and scaling factors, are assessed through a quantitative kriging neighbourhood analysis. A Measured tailings Mineral Resource is classified if a block is estimated within the variogram range with a slope of regression of 80% or more. An Indicated tailings Mineral Resource extends up to double the variogram range due to the nature of the deposit. All other estimates are classified as Inferred tailings Mineral Resources.

### Mineral Reserve conversion

Mineral inventory of Evander Mines as at 30 June 2019

Resources	Reserves
Inferred 51.82Mt @ 6.48g/t for 10.82Moz	
Indicated 209.28Mt @ 2.89g/t for 19.45Moz	Probable 173.86Mt @ 1.52g/t for 8.51Moz
Measured 40.34Mt @ 1.28g/t for 1.66Moz	Proved 24.62Mt @ 0.54g/t for 0.43Moz

Indicated Mineral Resources are converted to Probable Mineral Reserves due to the lower confidence mainly in grade continuity relative to that of Measured Mineral Resources. In most instances, Measured Mineral Resources are converted to Proved Mineral Reserves. Certain Measured Mineral Resource blocks are not immediately accessible for mining and require development or equipping. In these situations, a Measured Mineral Resource block has been converted to Probable Mineral Reserves.



## EVANDER MINES continued

### EVANDER 8 SHAFT

#### GEOLOGY

The Kimberley Reef is an oligomictic, pebbly conglomerate and comprises a composite sequence of channel sediments that define longitudinal gravel bars and sand bars with pebbly veneers. The reef in the area strikes in an east-west direction and dips to the north at about 10 degrees. The area is also divided by two major normal faults, striking in an east-north-east to west-south-west direction. The reef thickness varies from a waste on contact up to a 50cm well-developed oligomictic conglomerate. Average reef thickness is 35cm within the 8 Shaft vicinity. High gold values in the Kimberley Reef are mostly located at the base of the unit, and are associated with the presence of carbon and some visible gold on the footwall contact.

#### LOCATION

The Evander 8 Shaft is situated about 5km north-west of the town of Evander. It covers an area of 44 square kilometres and is located between Rolspruit to the north-west and 7 Shaft to the south-east. Mining occurs in the 2 Decline area on the western side at a depth of 2,300m to 2,500m below surface, as well as the development of the 8 Shaft pillar at a depth of 1,600m below surface.

#### MINERAL RESOURCES

Category	Mineral Resources							
	As at 30 June 2019				As at 30 June 2018			
	Tonnes million	Contained gold		Moz	Tonnes million	Contained gold		Moz
		Grade g/t	Tonnes gold			Grade g/t	Tonnes gold	
Measured	2.32	15.49	35.92	1.16	2.22	15.90	35.32	1.14
Indicated	2.10	14.12	29.59	0.95	2.04	14.26	29.10	0.94
Measured and Indicated	4.42	14.84	65.52	2.11	4.26	15.12	64.42	2.07
Inferred	12.88	10.40	134.04	4.31	6.76	11.54	78.06	2.51
<b>Total</b>	<b>17.30</b>	<b>11.53</b>	<b>199.56</b>	<b>6.42</b>	<b>11.02</b>	<b>12.92</b>	<b>142.47</b>	<b>4.58</b>

Notes: Mineral Resources are reported in accordance with the SAMREC Code. Mineral Resources would be the same if reported according to the guidelines of the CIM's National Instrument 43-101. Cut-off values are calculated at 95.1 cmg/t, applying a gold price of R700,000/kg (USD1,534/oz and ZAR14.19:USD1). Mineral Resources are reported inclusive of Mineral Reserves. All Mineral Resources reported exclude geological structures. Mineral Resources are reported as in-situ tonnes (2.71 t/m<sup>3</sup>). Any discrepancies in totals are due to rounding. Effects of mining and recovery losses have been considered in the cut-off grade calculations.

▼ Evander Mines – Elikhulu and Kinross plants and 7 Shaft infrastructure



## MINERAL RESERVES MODIFYING FACTOR

As at 30 June 2019	Gold price R/kg	Cut-off value g/t Au	Cut-off value cmg/t	Stoping width cm	Dilution %	MCF %	PRF %
Evander 8 Shaft	600,000	7.80	936	120	14.6	85	95.3

## MINERAL RESERVES

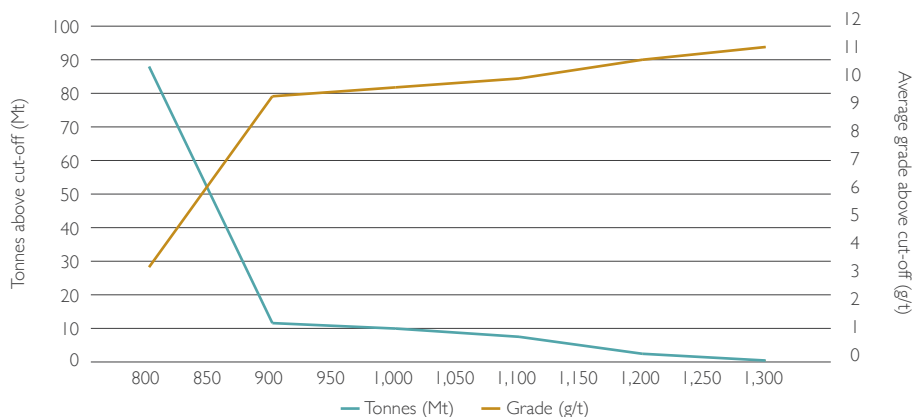
Category	Mineral Reserves							
	As at 30 June 2019				As at 30 June 2018			
	Tonnes million	Contained gold		Moz	Tonnes million	Contained gold		Moz
		Grade g/t	Tonnes gold			Grade g/t	Tonnes gold	
Proved	0.38	8.54	3.23	0.10	—	—	—	—
Probable	—	—	—	—	—	—	—	—
<b>Total</b>	<b>0.38</b>	<b>8.54</b>	<b>3.23</b>	<b>0.10</b>	—	—	—	—

Notes: Mineral Reserves are reported in accordance with the SAMREC Code. Mineral Reserves would be the same if reported according to the guidelines of the CIM's National Instrument 43-101. Cut-off values are calculated at 936cmg/t, applying a gold price of R600,000/kg (USD1,315/oz and R14,ZAR14.19:USD1). All Mineral Reserves reported exclude geological structures. Mineral Reserves are reported as in-situ tonnes (2.71 t/m<sup>3</sup>). Any discrepancies in totals are due to rounding. Effects of mining and recovery losses have been considered in the cut-off grade calculations. This Mineral Reserve is only reported within the 8 Shaft pillar area.

The Mineral Reserve reported is attributed to the 8 Shaft pillar. For more detail refer to the 8 Shaft Pillar project on [page 28 to 29](#).

## Evander 8 Shaft

Grade/tonnage curve





## EVANDER MINES continued

### EVANDER 7 SHAFT – EGOLI

▼ Evander Mines – 7 Shaft headgear



The Evander 7 Shaft is located south-east of 8 Shaft (approximately 3km apart) and currently hoists 8 Shaft's run-of-mine ore to the Kinross metallurgical plant. Due to the increased gold price over the past few years, an opportunity arose to investigate the viability to reclaim ore via vamping operations at 7 Shaft. Other organic growth projects include the Egoli project at the 3 Decline within the 7 Shaft area, which is being actively pursued. A revised mining feasibility study has been completed. This feasibility study focuses on the Egoli project as a standalone operation and uses the Kinross metallurgical plant.

#### MINERAL RESOURCES

Category	Mineral Resources							
	As at 30 June 2019				As at 30 June 2018			
	Tonnes million	Contained gold		Moz	Tonnes million	Contained gold		Moz
		Grade g/t	Tonnes gold			Grade g/t	Tonnes gold	
Measured	0.44	8.60	3.80	0.12	0.41	8.76	3.59	0.12
Indicated	2.94	9.85	28.93	0.93	2.93	9.86	28.91	0.93
Measured and Indicated	3.38	9.69	32.75	1.05	3.34	9.72	32.50	1.05
Inferred	6.26	9.68	60.58	1.95	6.23	9.70	60.39	1.94
<b>Total</b>	<b>9.64</b>	<b>9.69</b>	<b>93.33</b>	<b>3.00</b>	<b>9.57</b>	<b>9.71</b>	<b>92.89</b>	<b>2.99</b>

Notes: Mineral Resources are reported in accordance with the SAMREC Code. Mineral Resources would be the same if reported according to the guidelines of the CIM's National Instrument 43-101. Cut-off values are calculated at 689cmg/t, applying a gold price of R700,000/kg (USD1,534/oz and ZAR14.19:USD1). Mineral Resources are reported inclusive of Mineral Reserves. All Mineral Resources reported exclude geological structures. Mineral Resources are reported as in-situ tonnes (2.71t/m<sup>3</sup>). Any discrepancies in totals are due to rounding. Effects of mining and recovery losses have been considered in the cut-off grade calculations.

## MINERAL RESERVES MODIFYING FACTOR

As at 30 June 2019	Gold price R/kg	Cut-off value g/t Au	Cut-off value cmg/t	Stoping width cm	Dilution %	MCF %	PRF %
Evander 7 Shaft	600,000	6.71	805	120	11	90	95

## MINERAL RESERVES

Category	Mineral Reserves							
	As at 30 June 2019				As at 30 June 2018			
	Tonnes million	Contained gold		Moz	Tonnes million	Contained gold		Moz
		Grade g/t	Tonnes gold			Grade g/t	Tonnes gold	
Proved	0.62	4.21	2.61	0.08	0.62	4.21	2.61	0.08
Probable	3.51	7.06	24.82	0.80	3.51	7.06	24.82	0.80
<b>Total</b>	<b>4.13</b>	<b>6.64</b>	<b>27.43</b>	<b>0.88</b>	<b>4.13</b>	<b>6.64</b>	<b>27.43</b>	<b>0.88</b>

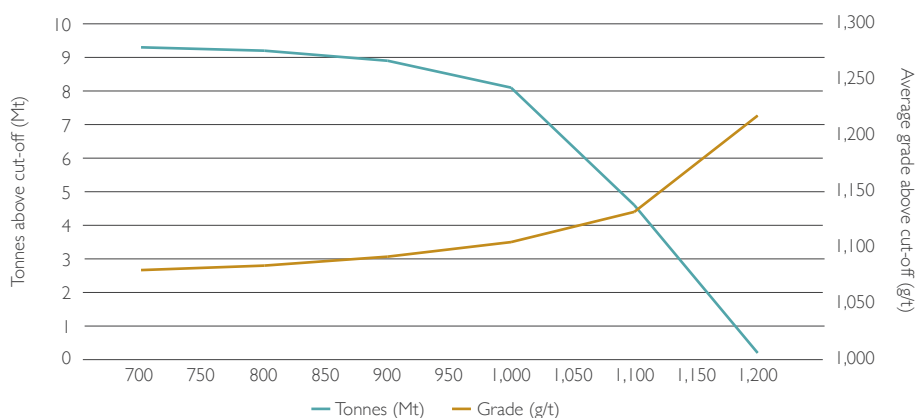
Notes: Mineral Reserves are reported in accordance with the SAMREC Code. Mineral Reserves would be the same if reported according to the guidelines of the CIM's National Instrument 43-101. Cut-off values are calculated at 805cmg/t, applying a gold price of R600,000/kg (USD1,315/oz and ZAR14.19:USD1). All Mineral Reserves reported exclude geological structures. Mineral Reserves are reported as in-situ tonnes (2.71 t/m<sup>3</sup>). Any discrepancies in totals are due to rounding. Effects of mining and recovery losses have been considered in the cut-off grade calculations.

The Egoli project is approximately 3km in tramming distance from 7 Shaft. This compares favourably with the 8 Shaft mining area which is approximately 13km in tramming distance from 7 Shaft. The Egoli orebody is a defined high-grade, large orebody of world-class proportions. As a brownfield project it has all the required permitting and licencing in place through Evander Mines' mining rights, water use licence and approved environmental management plan. Also, all the necessary surface and engineering infrastructure such as offices, electricity supply, metallurgical plant and tailings storage facilities are in place.

The Egoli project can increase Evander Mines' underground gold production materially at a relatively low capital cost using Evander Mines' established shaft and metallurgical facilities.

#### Evander 7 Shaft

Grade/tonnage curve





## EVANDER MINES continued

### ELIKHULU

The Elikhulu Tailings Retreatment Plant and infrastructure at Evander Mines, owned and operated by Pan African Resources, retreats gold plant tailings at a rate of 1.2 million tonnes per month (including the combined throughput of ETRP). This operation will ensure more efficient recoveries of gold for the next 13 years through the reprocessing of the tailings. Three existing TSFs will be reclaimed in the following order: Kinross, Leslie/Bracken and Winkelhaak. Post their processing, these TSFs will be consolidated into a single enlarged Kinross facility thus reducing Evander Mines' environmental footprint and associated environmental impact.

Elikhulu is expected to yield approximately 60,000oz of gold per annum for the initial eight years of production (while treating the Kinross and Leslie/Bracken TSFs). Thereafter, while processing the Winkelhaak TSF, production is expected to be approximately 45,000oz a year for the plant's remaining five years. These production figures exclude an Inferred Resource of 150,000oz of gold delineated in the soil material beneath the existing tailings dumps.

### MINERAL RESOURCES

Category	Mineral Resources							
	As at 30 June 2019				As at 30 June 2018			
	Tonnes million	Contained gold		Moz	Tonnes million	Contained gold		Moz
		Grade g/t	Tonnes gold			Grade g/t	Tonnes gold	
Measured	37.58	0.31	11.7	0.38	46.24	0.32	14.8	0.48
Indicated	153.41	0.28	42.5	1.36	150.91	0.28	42.3	1.35
Measured and Indicated	190.99	0.28	54.22	1.74	197.15	0.29	57.09	1.83
Inferred	12.57	0.34	4.2	0.15	12.57	0.34	4.2	0.15
<b>Total</b>	<b>203.56</b>	<b>0.29</b>	<b>58.4</b>	<b>1.89</b>	<b>209.72</b>	<b>0.29</b>	<b>61.3</b>	<b>1.98</b>

Notes: Mineral Resources are reported in accordance with the SAMREC Code. Mineral Resources would be the same if reported according to the guidelines of the CIM's National Instrument 43-101. Cut-off values are calculated at 0.1g/t, applying a gold price of R700,000/kg (USD 1,534/oz and ZAR 14.19:USD 1). Mineral Resources are reported inclusive of Mineral Reserves. All Mineral Resources reported exclude geological structures. Mineral Resources are reported as in-situ tonnes (1.35t/m<sup>3</sup>). Any discrepancies in totals are due to rounding. Effects of mining and recovery losses have been considered in the cut-off grade calculations.

### MINERAL RESERVES MODIFYING FACTOR

As at 30 June 2019	Gold price R/kg	Cut-off value g/t Au	Cut-off value cmg/t	Stoping width cm	Dilution %	PRF%
Elikhulu	600,000	—	—	—	—	47.74

### MINERAL RESERVES

Category	Mineral Reserves							
	As at 30 June 2019				As at 30 June 2018			
	Tonnes million	Contained gold		Moz	Tonnes million	Contained gold		Moz
		Grade g/t	Tonnes gold			Grade g/t	Tonnes gold	
Proved	23.62	0.31	7.4	0.23	46.0	0.32	14.7	0.48
Probable	146.99	0.26	38.8	1.25	144.6	0.28	40.1	1.3
<b>Total</b>	<b>170.61</b>	<b>0.27</b>	<b>46.2</b>	<b>1.48</b>	<b>190.6</b>	<b>0.29</b>	<b>54.8</b>	<b>1.78</b>

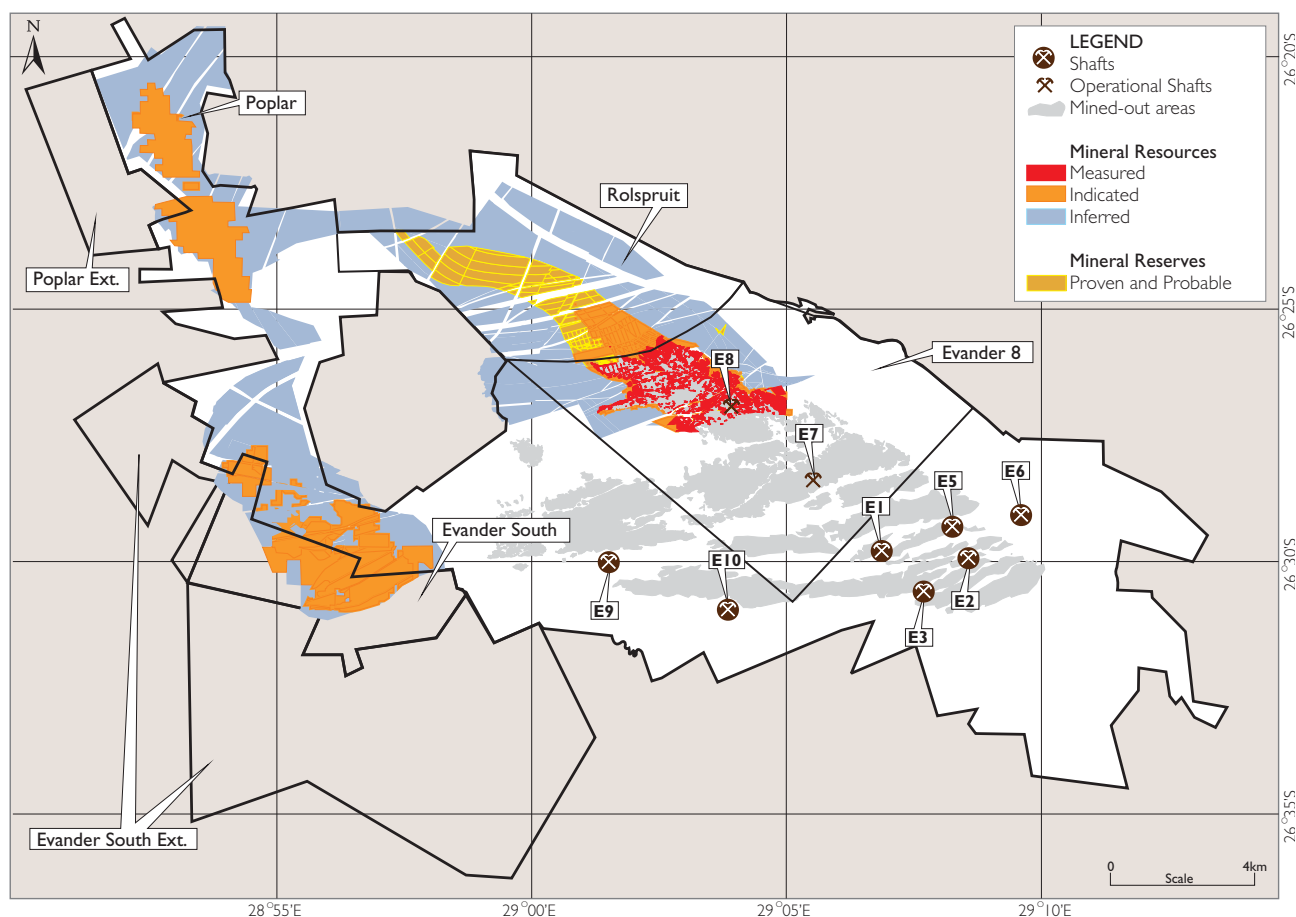
Notes: Mineral Reserves are reported in accordance with the SAMREC Code. Mineral Reserves would be the same if reported according to the guidelines of the CIM's National Instrument 43-101. Cut-off values are calculated at 0.1g/t, applying a gold price of R600,000/kg (USD 1,315/oz and ZAR 14.19:USD 1). All Mineral Reserves reported exclude geological structures. Mineral Reserves are reported as in-situ tonnes (1.35t/m<sup>3</sup>). Any discrepancies in totals are due to rounding. Effects of mining and recovery losses have been considered in the cut-off grade calculations.

The total Mineral Reserve contains 1.48Moz, of which an estimated 692,895oz will be recovered over a 13-year life of the operation at an average gold recovery of 46.88%.

The grade tonnage of the Kinross dam was de-risked through a resource definition drilling campaign (1,832m) conducted during 2018. This drilling also resulted in the upgrade of Probable Reserves to Proved Reserves. All the data collected from the resource definition drilling programme was employed in the updated Mineral Resources and Mineral Reserves for Kinross dam.

## EVANDER PROJECTS

Evander Mines' assets also consist of exploration projects that are at varying stages of exploration and development. The individual projects and level of study are summarised and illustrated on the map below.



The group remains focused on creating shareholder value through unlocking the value of its organic surface and brownfield exploration projects.

▼ Elikhulu plant – inspecting CIL tanks



## EVANDER MINES continued

### ROLSPRUIT

#### GEOLOGY

The Kimberley Reef strikes in an east-west direction and dips at 28 degrees to the north. The Foot Wall Sill Break is an intrusive sill that is associated with a reverse fault, which displaces the reef horizon by 90m. The Kimberley Reef at Rolspruit is a well-developed oligomictic conglomerate up to one metre thick, averaging about 37cm. In this area, the Kimberley Reef is very similar to that of 8 Shaft. High gold grade values in the Kimberley Reef are mostly located at the base of the unit and are associated with the presence of carbon and some visible gold on the footwall contact.

#### BACKGROUND

The Rolspruit project is an exploration project and the orebody is a down-dip extension of the Kinross Payshoot currently being exploited at Evander 8 Shaft. The project is located immediately west-north-west of Evander 8 Shaft. Exploration on the Rolspruit project commenced in 1955, and by 1988 a total of 53 boreholes had been completed by various companies with accompanying reef deflections.

#### MINERAL RESOURCES

The Mineral Resource estimation was performed by ExploreMine Consultants Proprietary Limited in April 2011 with no recent updates as no new information on the project is available. A review of the resulting pre-feasibility study was conducted in 2012, and reviewed by SRK Consulting (South Africa) in 2017, with all operational and capital expenditure being escalated. An extensive channel sampling database for the adjoining Evander 8 Shaft area and the surface drilling data for Rolspruit formed the data set for the resource estimation.

Macro-ordinary kriging was applied to Indicated Resources while a Sichel's-t estimation technique was used to estimate the Inferred Mineral Resources. The Indicated Mineral Resource estimation was defined on the Evander 8 Shaft channel sampling data set and subsequent geozones. The block size employed during this estimation was 60m x 60m.

#### MINERAL RESOURCES

Category	Mineral Resources							
	As at 30 June 2019				As at 30 June 2018			
	Tonnes million	Contained gold		Moz	Tonnes million	Contained gold		Moz
		Grade g/t	Tonnes gold			Grade g/t	Tonnes gold	
Measured	—	—	—	—	—	—	—	—
Indicated	23.74	11.79	279.90	9.00	22.94	12.05	276.28	8.88
Measured and Indicated	23.74	11.79	279.90	9.00	22.94	12.05	276.28	8.88
Inferred	2.09	9.25	19.36	0.62	2.09	9.25	19.36	0.62
<b>Total</b>	<b>25.83</b>	<b>11.58</b>	<b>299.26</b>	<b>9.62</b>	<b>25.03</b>	<b>11.81</b>	<b>295.64</b>	<b>9.50</b>

Notes: Mineral Resources are reported in accordance with the SAMREC Code. Mineral Resources would be the same if reported according to the guidelines of the CIM's National Instrument 43-101. Cut-off values are calculated at 447mg/t, applying a gold price of R700,000/kg (USD1,534/oz and ZAR14.19:USD1). Mineral Resources are reported inclusive of Mineral Reserves. All Mineral Resources reported exclude geological structures. Mineral Resources are reported as in-situ tonnes (2.71 t/m<sup>3</sup>). Any discrepancies in totals are due to rounding. Effects of mining and recovery losses have been considered in the cut-off grade calculations.

## MINERAL RESERVES MODIFYING FACTOR

As at 30 June 2019	Gold price R/kg	Cut-off value g/t Au	Cut-off value cmg/t	Stoping width cm	Dilution %	MCF %	PRF %
Rolspruit	600,000	4.81	529	110	16.5	85	96.4

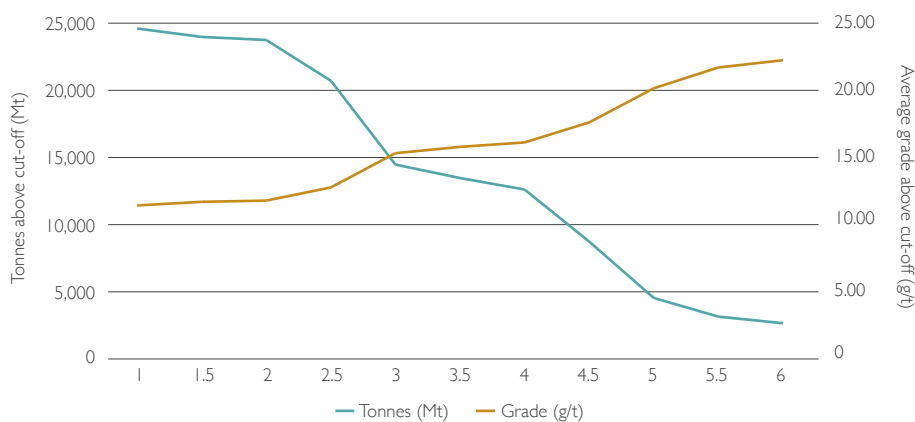
## MINERAL RESERVES

Category	Mineral Reserves							
	As at 30 June 2019				As at 30 June 2018			
	Tonnes million	Contained gold		Moz	Tonnes million	Contained gold		Moz
		Grade g/t	Tonnes gold			Grade g/t	Tonnes gold	
Proved	—	—	—	—	—	—	—	—
Probable	23.36	8.60	201.01	6.46	23.36	8.60	201.01	6.46
<b>Total</b>	<b>23.36</b>	<b>8.60</b>	<b>201.01</b>	<b>6.46</b>	<b>23.36</b>	<b>8.60</b>	<b>201.01</b>	<b>6.46</b>

Notes: Mineral Reserves are reported in accordance with the SAMREC Code. Mineral Reserves would be the same if reported according to the guidelines of the CIM's National Instrument 43-101. Cut-off values are calculated at 529cmg/t, applying a gold price of R600,000/kg (USD1,315/oz and ZAR14.19:USD1). All Mineral Reserves reported exclude geological structures. Mineral Reserves are reported as in-situ tonnes (2.71 t/m<sup>3</sup>). Any discrepancies in totals are due to rounding. Effects of mining and recovery losses have been considered in the cut-off grade calculations.

## Rolspruit

Grade/tonnage curve





## EVANDER MINES continued

### POPLAR

#### GEOLOGY

The Kimberley Reef occurs at a depth of between 500m in the west and 1,200m in the east below surface. The reef strikes north-south and dips nine to 24 degrees to the east. The Kimberley Reef comprises a sequence of fluvial, channel sediments that were deposited in a braided stream environment. Deposition of the reef was influenced by the footwall lithologies. The Kimberley Reef horizon has a channel width of approximately 30cm, generally a thin reef hosting high gold grades. The reef has north-east to south-west trending channels or payshoots which is evident in other parts of the Evander basin.

A series of seven major, sub-parallel and fairly evenly spaced faults traverse the property. These are all orientated in a roughly north-north-east to south-south-west direction. Throws on these faults vary between 50m and 400m.

#### BACKGROUND

The Poplar project is situated in the north-western limb of the Evander basin, west of the town of Leandra. Exploration on the Poplar project commenced in the mid-1950s and has been the subject of several studies. A total of 104 mother holes were drilled in the project area realising an additional 146 intersections through deflection drill holes. No additional information has been obtained recently.

#### MINERAL RESOURCES

Category	Mineral Resources							
	As at 30 June 2019				As at 30 June 2018			
	Tonnes million	Contained gold		Moz	Tonnes million	Contained gold		Moz
		Grade g/t	Tonnes gold			Grade g/t	Tonnes gold	
Measured	—	—	—	—	—	—	—	—
Indicated	15.50	7.82	121.22	3.90	12.65	8.39	106.17	3.41
Measured and Indicated	15.50	7.82	121.22	3.90	12.65	8.39	106.17	3.41
Inferred	7.91	6.91	54.70	1.76	5.29	7.66	40.51	1.30
<b>Total</b>	<b>23.41</b>	<b>7.51</b>	<b>175.92</b>	<b>5.66</b>	<b>17.93</b>	<b>8.18</b>	<b>146.68</b>	<b>4.72</b>

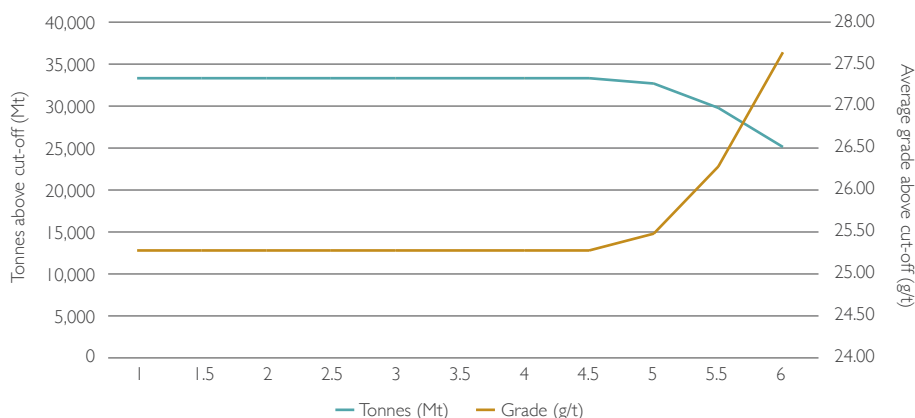
Notes: Mineral Resources are reported in accordance with the SAMREC Code. Mineral Resources would be the same if reported according to the guidelines of the CIM's National Instrument 43-101. Cut-off values are calculated at 555cmg/t, applying a gold price of R700,000/kg (USD1,534/oz and ZAR14.19:USD1). Mineral Resources are reported inclusive of Mineral Reserves. All Mineral Resources reported exclude geological structures. Mineral Resources are reported as in-situ tonnes (2.7 t/m<sup>3</sup>). Any discrepancies in totals are due to rounding. Effects of mining and recovery losses have been considered in the cut-off grade calculations.

#### MINERAL RESERVES

No Mineral Reserves are reported for this project.

#### Poplar

Grade/tonnage curve



## EVANDER SOUTH

### GEOLOGY

The Kimberley Reef occurs at a depth of between 300m in the west and 1,200m in the east below surface. The reef strikes north-south and dips between six and 19 degrees. The Kimberley Reef comprises a sequence of fluvial channel sediments that were deposited in a braided stream environment. Deposition of the reef was influenced by the footwall lithologies. The high-grade Kimberley Reef is associated with carbon and is a narrow, small pebble, clast-supported and well-packed oligomictic conglomerate. Carbon was present in several of the borehole Kimberley Reef intercepts drilled in the project area.

### BACKGROUND

The Evander South project is in the south-western limb of the Evander basin. It is located directly west of Evander 9 Shaft and is south of the Poplar project. A total of 116 mother holes were drilled in the project area and 475 deflections. No additional information has been obtained recently.

### MINERAL RESOURCES

Category	Mineral Resources							
	As at 30 June 2019				As at 30 June 2018			
	Tonnes million	Contained gold		Moz	Tonnes million	Contained gold		Moz
		Grade g/t	Tonnes gold			Grade g/t	Tonnes gold	
Measured	—	—	—	—	—	—	—	—
Indicated	11.59	8.88	102.98	3.31	10.00	9.68	96.75	3.11
Measured and Indicated	11.59	8.88	102.98	3.31	10.00	9.68	96.75	3.11
Inferred	10.10	6.25	63.09	2.03	9.18	6.49	59.61	1.92
<b>Total</b>	<b>21.69</b>	<b>7.66</b>	<b>166.07</b>	<b>5.34</b>	<b>19.18</b>	<b>8.15</b>	<b>156.36</b>	<b>5.03</b>

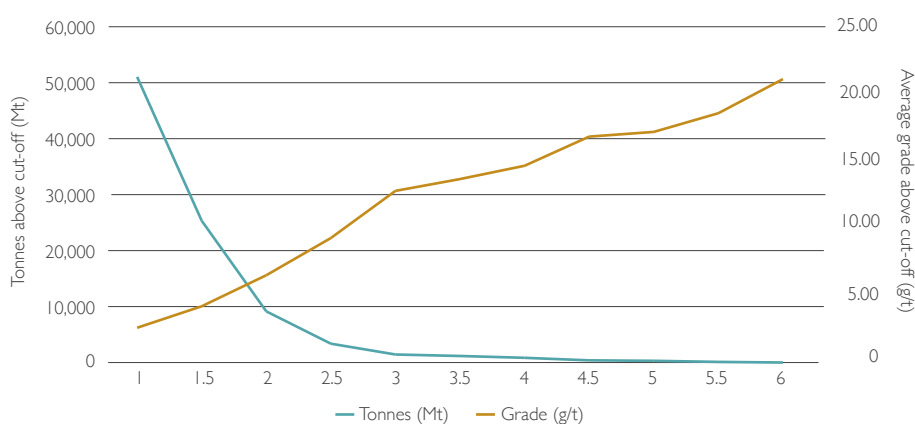
Notes: Mineral Resources are reported in accordance with the SAMREC Code. Mineral Resources would be the same if reported according to the guidelines of the CIM's National Instrument 43-101. Cut-off values are calculated at 375cmg/t, applying a gold price of R700,000/kg (USD1,534/oz and ZAR14.19:USD1). Mineral Resources are reported inclusive of Mineral Reserves. All Mineral Resources reported exclude geological structures. Mineral Resources are reported as in-situ tonnes (2.71 t/m<sup>3</sup>). Any discrepancies in totals are due to rounding. Effects of mining and recovery losses have been considered in the cut-off grade calculations.

### MINERAL RESERVES

No Mineral Reserves are reported for this project.

#### Evander South

Grade/tonnage curve



## EVANDER MINES continued

### EVANDER MINES' MINERAL RESOURCE AND MINERAL RESERVE RECONCILIATION

As at 30 June 2019, Evander Mines reported a Mineral Reserve of 8,926,067oz (198.48Mt at 1.40g/t) and Mineral Resources of 31,919,339oz (301.44Mt at 3.29g/t) of contained gold. The Measured and Indicated Mineral Resources are inclusive of those Mineral Resources modified to produce the Mineral Reserves. Mineral Reserves are reported as mill-delivered tonnes at the head-grade having duly considered all modifying factors. Mineral Resources and Mineral Reserves reported are contained within the mining right and prospecting right boundaries of Evander Mines. The Evander South Mineral Resource of 21.7Mt at 7.66g/t for 5.3Moz (11.6Mt at 8.88g/t for 3.3Moz are Indicated and 10.1Mt at 6.25g/t for 2.0Moz are Inferred Mineral Resources) occurs on the Evander South prospecting right MP30/5/1/2/2/248 PR. This prospecting right is being consolidated into the Evander Mines mining right MP30/5/1/2/2/126 MR through a Section 102 application which was lodged on 8 December 2017. All mined-out areas have been depleted from the reported Mineral Resources and Mineral Reserves.

#### MINERAL RESOURCES COMPARISON

Category	Mineral Resources							
	As at 30 June 2019				As at 30 June 2018			
	Tonnes million	Contained gold		Moz	Tonnes million	Contained gold		Moz
		Grade g/t	Tonnes gold			Grade g/t	Tonnes gold	
Measured	40.34	1.28	51.48	1.66	48.87	1.10	53.71	1.73
Indicated	209.28	2.89	605.11	19.45	201.47	2.88	579.49	18.62
Measured and Indicated	249.62	2.63	656.59	21.10	250.34	2.53	633.20	20.35
Inferred	51.82	6.48	335.98	10.82	42.12	6.22	262.14	8.44
<b>Total</b>	<b>301.44</b>	<b>3.29</b>	<b>992.57</b>	<b>31.92</b>	<b>292.47</b>	<b>3.06</b>	<b>895.34</b>	<b>28.79</b>

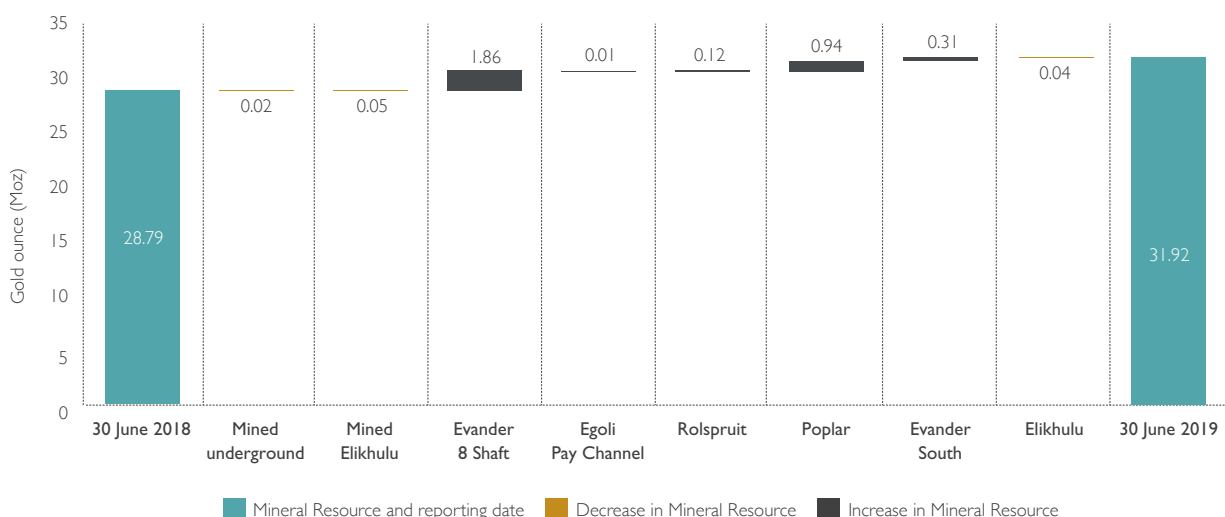
#### RECONCILIATION OF MINERAL RESOURCES

Evander Mines' Mineral Resources posted the following changes for 2019.

Total Evander Mines' Mineral Resources increased by 3.12Moz (8.97Mt at 10.83g/t) contained gold.

The increase can be attributable to the escalation in the gold price from R600,000/kg of gold in 2018 to R700,000/kg of gold in 2019, and the subsequent decrease of cut-off grades. This had a marked change in the Evander 8 Shaft Inferred Mineral Resource statement.

#### Resource reconciliation



## MINERAL RESERVES COMPARISON

Category	Mineral Reserves							
	As at 30 June 2019				As at 30 June 2018			
	Tonnes million	Contained gold		Moz	Tonnes million	Contained gold		Moz
		Grade g/t	Tonnes gold			Grade g/t	Tonnes gold	
Proved	24.62	0.54	13.21	0.43	46.66	0.37	17.34	0.56
Probable	173.86	1.52	264.68	8.51	171.45	1.55	265.92	8.56
<b>Total</b>	<b>198.48</b>	<b>1.40</b>	<b>277.89</b>	<b>8.93</b>	<b>218.11</b>	<b>1.30</b>	<b>283.27</b>	<b>9.12</b>

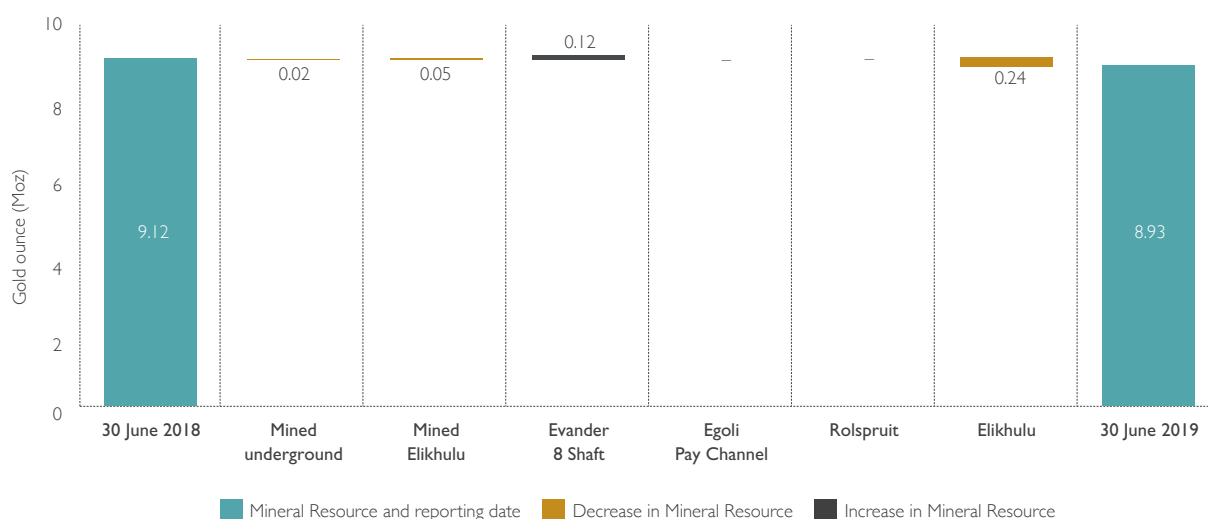
## RECONCILIATION OF MINERAL RESERVES

Total Evander Mines' Mineral Reserves decreased by 195,981oz (19.63Mt at 0.27g/t) contained gold.

This decrease can be attributed to:

- The depletion of ~70Koz of gold recovered through both the underground and tailings operations
- The depletion of mining activity on the Kinross dam (unrecovered gold) through the Elikhulu operation.

### Reserve reconciliation



## COMPETENT PERSON

The competent person for Evander Mines, Mr Hendrik Pretorius, the Group Project Geologist, signs off the Mineral Resources for Evander Mines. He is a member of the South African Council for Scientific Professions (SACNASP) (400051/11 – Management Enterprise Building, Mark Shuttleworth Street, Innovation Hub, Pretoria, South Africa), as well as a member in good standing of the Geological Society of South Africa (GSSA – CSIR Mining Precinct, Corner Rustenburg and Carlow Roads, Melville, South Africa). Hendrik has 16 years of experience in economic geology and mineral resource management. Hendrik holds a BSc (Hons) degree in Geology from the University of Johannesburg as well as a Graduate Diploma in Engineering from the University of the Witwatersrand. He is based at The Firs Office Building, 2nd Floor, Office 204, Cnr Cradock and Biermann Avenues, Rosebank, Johannesburg, South Africa. Hendrik has confirmed in writing, that the information disclosed is compliant with Section 12 of the JSE Listings Requirements and Table 1 of the SAMREC Code, and that it may be published in the form and context in which it is intended.



# GLOSSARY

AIM	Alternative Investment Market, the London Stock Exchange's international market for smaller growing companies
Barberton Mines	Barberton Mines Proprietary Limited
BGB	Barberton Greenstone Belt
BIOX®	The Biological Oxidation (BIOX®) gold extraction process was developed at Barberton Mines. It is an environmentally friendly process of releasing gold from the sulphide that surrounds it by using bacteria
the board	The board of directors of Pan African Resources, as set out on pages 20 and 21
Bramber	TSF located at Fairview which the BTRP treated historically
Brownfield project	Project based on prior work or rebuilt from a previous one
BTRP	Barberton Tailings Retreatment Plant, a gold recovery tailings plant owned by Barberton Mines, which commenced production in FY2014
CIL	Carbon-in-leach
CIM	Canadian Institute of Mining
CSI	Corporate social investment
DMR	Department of Mineral Resources
Elikhulu	Elikhulu Tailings Retreatment Plant project in Mpumalanga province
Eskom	State-owned South African electricity utility
ETC	Eastern Transvaal Consolidated Mines
ETRP	Evander Tailings Retreatment Plant commissioned in October 2015
Evander Mines	Evander Gold Mines Limited and Evander Gold Mining Proprietary Limited
g/t	Grams/tonne
GSSA	Geological Society of South Africa
JSE	JSE Limited incorporating the Johannesburg Securities Exchange, the main bourse in South Africa
km	Kilometres
Koz	Thousand ounces
KPIs	Key performance indicators – a set of quantifiable measures that a company or industry uses to gauge or compare performance in terms of meeting their strategic and operational goals
LSE	London Stock Exchange
MCF	Mine call factor
Mining Charter	Charter to facilitate the sustainable transformation and development of the South African mining industry
MMR	Main Muiden Reef
Moz	Million ounces
MPRDA	Mineral and Petroleum Resources Development Act, 28 of 2002
MRC	Main Reef Complex
MRE	Mineral Resource Estimation
MRM	Mineral Resource Management
Mt	Million tonnes

Pan African Resources PLC	Holding company – Pan African Resources
PAR Gold Proprietary Limited	Pan African Resources' black empowerment partner, which has a 19.53% stake in the group
PC	Prince Consort
QA/QC	Quality assurance and quality control
RCF	Revolving credit facility
SA	South Africa
SACNASP	South African Council for Natural Scientific Professions
SAMREC Code	South African Code for Reporting of Exploration Results Mineral Resources and Mineral Reserves, 2016 Edition
SANAS	South African National Accreditation System
SHEQC	Safety, health, environment, quality and community
SLP	Social and labour plan
t	Tonnes
TSF	Tailings storage facility
the current year or the year under review	The year ended 30 June 2019
the group or the company or Pan African Resources	Pan African Resources PLC, listed on the LSE's AIM and on the JSE in the 'Gold Mining' sector
UK	United Kingdom

# COMPANY INFORMATION

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Elikhulu plant – CIL tanks >







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