

# Creating a better future

Mineral Resource and Mineral Reserve Statement as at 30 June **2021** 

> Supplement to the Annual Integrated Report 30 June 2021

# Welcome to our **Mineral Resource and Mineral Reserve Statement**

This report contains the 2021 Mineral Resource and Mineral Reserve statement of Impala Platinum Holdings Limited as at 30 June 2021.

The report provides updated estimates and reconciliations of Mineral Resources and Mineral Reserves. It conforms to the South African Code for the Reporting of Exploration Results, Mineral Resources and Mineral Reserves (SAMREC Code (2016)). The report also conforms to section 12.13 of the JSE Listings Requirements and has been signed off by the appointed competent persons.

As at 30 June 2021, Implats is pleased to report a stable inventory of Mineral Resources and Mineral Reserves.



#### **Our purpose**

Creating a better future



#### **Our vision**

To be the most valued and responsible metals producer, creating a better future for our stakeholders



#### **Our values**

#### Respect

We believe in ourselves We work together as a team We take ownership of our responsibilities We are accountable for our actions



#### Care

We care for the environment We work safely and smartly We make a positive contribution to society

Deliver We play our A-game everyday We go the extra mile We learn, adapt and grow We create a better future



#### Integrated report

- Reporting about how Implats' strategy, governance, performance and outlook short, medium and long term
- Available at **www.implats.co.za** on release



#### **ESG Report**

- Detail on material economic, social and environmental performance
- GRI G4 core compliance
- Internal reporting guidelines in line with the UN Global Compacts



#### **Annual Financial Statements**

These annual financial statements were prepared according to International Financial Reporting Standards (IFRS) of the International Accounting Standards Board (IASB), the SAICA Financial Reporting Guides as issued by the Accounting Reporting Pronouncements as issued by the Financial Reporting Standards Council, the requirements of the South African Companies Act, Act 71 of 2008, the Listings

#### How to navigate this report

For easy navigation and crossreferencing, we have included the following icons within this report:



Information available on our website



Information available elsewhere in this report

Copyright and trademarks are owned by the Institute of Directors in South Africa NPC, and all of its rights are reserved.

# Contents

We welcome your feedback to ensure we cover all aspects

Go to **www.implats.co.za** or email **investor@implats.co.za** to provide us with your feedback.

#### Introduction and overview

- 2 Headline summary
- 4 Attributable Mineral Resources and Mineral Reserves
- **11** Reconciliation of estimates
- 13 Governance and compliance
- 17 Reporting principles and framework
- **19** Mineral rights and legal tenure
- 22 Summary of our sustainability performance

**Appendices** 

details

118

123

116 Glossary of terms

Mineral Resource and

**119** Third-party assurance

**125** Contact details and administration

**Mineral Reserve definitions** 

Competent Person and RPO

- 25 Mineral Resource management risk
- 27 Managing our Mineral Resources
- 28 Planning our Mineral Reserves

#### Scene setting

- 30 Regional geological settings
- 36 Exploration synopsis
- 37 Historic Group production trends
- 40 Group life-of-mine outlook
- 41 Valuation and sensitivities

# Our operations – Mineral Resource and Mineral Reserve estimates

- 42 Impala Rustenburg
- 54 Marula
- 64 Two Rivers
- 73 Zimplats
- 83 Mimosa
- 91 Impala Canada

# Our projects – Mineral Resource estimates and Chromium ore

- **103** Afplats Project
- 108 Waterberg Project
- 115 Chromium ore



Strategic pillars

Responsible stewardship

create a better future

Operational excellence

We generate superior value for

consistent operational delivery

all stakeholders through modern,

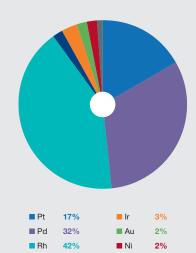
safe, responsible, competitive and

We aspire to become an industry leader in ESG, producing metals that

sustain livelihoods beyond mining and

# Metal Revenue Contribution

as at 30 June 2021 (%)



Ru

2%

Cu

#### Online www.implats.co.za

- Direct access to all our reports
- Our website has detailed investor, sustainability and business information

@impalaplatinum.com

www.linkedin.com/company/impala-platinum



# The report

## FORWARD-LOOKING STATEMENTS

This report contains certain forward-looking statements and forecasts, which involve risk and uncertainty because they relate to events and relies on, or may be influenced by future events. Several factors beyond our control could cause actual results or developments to differ materially from those expressed or implied by these forwardlooking statements. Impala Platinum Holdings Limited (Implats) is one of the world's foremost producers of platinum group metals (PGMs). Implats is currently structured around six main operations with a total of 22 underground shafts. Our operations are located within the Bushveld Complex in South Africa, the Great Dyke in Zimbabwe and the Lac des Iles Intrusive Complex in Ontario, Canada.

Implats has its listing on the JSE Limited (JSE) in South Africa. Our headquarters are based in Johannesburg. The six primary operations are Impala Rustenburg, Marula and Two Rivers in South Africa, Mimosa and Zimplats in Zimbabwe, and Lac des Iles in Canada. The Mimosa and Two Rivers Platinum operations are joint venture operations with Sibanye Stillwater and African Rainbow Minerals (ARM), respectively, with Mimosa being managed by an on-site mine team and overseen by a joint venture board, and Two Rivers by ARM. The structure of our operating framework allows for each of our operations to establish and maintain close relationships with their stakeholders, while operating within a Groupwide framework to managing the economic, social and environmental aspects of sustainability.

The report relates to the Mineral Resource and Mineral Reserve Statement, compiled for Implats and its subsidiaries and provides the status of estimates as at 30 June 2021. An abridged version is included in the Implats integrated annual report for 2021, published annually and available at (www.implats.co.za). The report seeks to provide transparent and compliant details relating to the Mineral Resources and Mineral Reserves considered material to stakeholders.

In an effort to optimise the report, certain sections may have been reduced. However, continuity is assured and the reader may access the 2020 report on the Group web page (www.implats.co.za).

# Headline summary

# MINERAL RESOURCE AND MINERAL RESERVE STATEMENT

The Mineral Resource and Mineral Reserve Statement as at 30 June 2021 reflects the benefit of an improved pricing outlook for the significant PGMs and the contribution of organic growth at the Group in the period under review. Mineral Reserve estimates have benefited from further expansion of life-of-mine I (LoM I) profiles at Impala with the improved outlook. At Two Rivers, the Merensky Reef section was established, and at Mimosa, contiguous claims were acquired from Anglo American Platinum.

The Group Mineral Resource estimate increased marginally by 0.2Moz 6E on an attributable basis to 277.3Moz 6E while the Group Mineral Reserve estimate increased by 5.6Moz 6E on an attributable basis to 53.4Moz 6E.

Greenfields exploration activities remain dormant at the South African and Zimbabwean operations, with some activity being undertaken by Impala Canada in the Ontario province. Shaft sinking activities at Impala's 17 and Afplats' Leeuwkop shafts remain suspended.

#### **GROUP OPERATIONS**

Implats is structured around six mining operations and Impala Refining Services (IRS), a toll-refining business. Group operations are located on the Bushveld Complex in South Africa, the Great Dyke in Zimbabwe – the two most significant platinum orebodies in the world – and the Canadian Shield, a prominent igneous complex domain for PGMs. In South Africa our operations at Impala Rustenburg are located in the Rustenburg area of the North West province, while both the Marula and Two Rivers operations, together with the Waterberg Joint Venture project, are located in the Limpopo province.



SCENE SETTING •

#### Headline summary (continued)

## **GROUP STRUCTURE**



#### **HEADLINE NUMBERS**

The headline summary for the Group is shown below. Combined estimates as at 30 June 2021 show a stable inventory with a marginal increase in the Mineral Resource estimates and a substantial increase in the Mineral Reserve estimates. Details regarding the estimates are reported in the following section and in the various chapters per operation and project.

Attributable estimates*		2021	2020	2019	2018	2017
Mineral Resources	Moz Pt	132.3	132.4	131.6	133.8	191.6
	Moz Pd	90.2	89.9	81.5	83.0	127.5
	Moz 3E	234.4	233.9	228.0	228.0	337.5
	Moz 4E	249.7	249.1	239.5	243.9	360.4
	Moz 6E	277.3	277.1	268.3	273.2	402.7
	Mt	1 885.9	1 818.8	1 710.1	1 740.7	2 787.0
Mineral Reserves	Moz Pt	24.6	21.8	21.2	21.2	22.4
	Moz Pd	18.8	17.3	14.7	14.4	14.1
	Moz 3E	46.0	41.2	38.0	37.5	38.2
	Moz 4E	48.7	43.6	40.3	40.0	41.0
	Moz 6E	53.4	47.8	44.3	44.2	45.9
	Mt	512.4	419.7	370.7	365.5	358.1

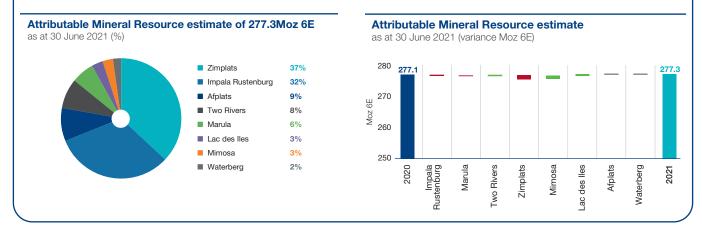
\* Mineral Resources estimates are inclusive of Mineral Reserves.

# Attributable Mineral Resources and Mineral Reserves

#### Summary Mineral Resources

For more detail see page 5.

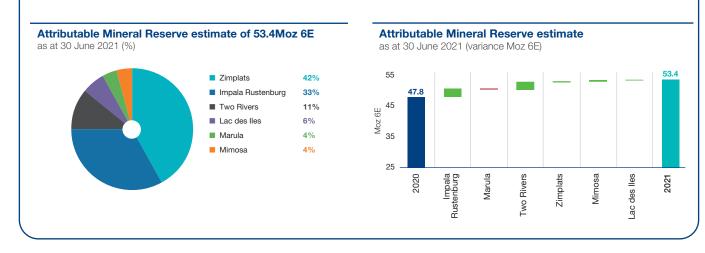
Overall, the Group Mineral Resource estimate increased marginally by 0.2Moz 6E on an attributable basis to 277.3Moz 6E. Zimplats accounts for 37% of the Group's Mineral Resource base, while Impala Rustenburg accounts for 32%, the balance of 31% is comprised of Marula, Mimosa, Two Rivers, Lac des Iles, Waterberg and Afplats.



#### Summary Mineral Reserves

For more detail see page 6.

Overall, the Group Mineral Reserve estimate increased by 5.6Moz 6E on an attributable basis to 53.4Moz 6E. Zimplats accounts for 42% of the attributable 6E Mineral Reserve estimate base, while Impala Rustenburg accounts for 33%.



SCENE SETTING •

## Attributable Mineral Resources and Mineral Reserves (continued)

Implats adopted the inclusive style of reporting for Mineral Resources where Mineral Reserves are included in the estimates. All Mineral Resource estimates are reported inclusive of Mineral Reserves unless otherwise stated. A summary table with the estimated Mineral Resources exclusive of Mineral Reserves is provided on page 9.

#### ATTRIBUTABLE MINERAL RESOURCE ESTIMATES INCLUSIVE OF MINERAL RESERVES AS AT 30 JUNE 2021 Based on Implats' equity interest

		Att	ributable Mir of Mi	neral Reso neral Rese		clusive					Attribu	utable o	unces			
Operations and projects	Implats' share- holding %	Orebody	Category	Tonnes Mt	3E grade g/t	4E grade g/t	6E grade g/t	Pt	Pd	Rh	Ru	Moz Ir	Au	3E	4E	6E
Impala Rustenburg	96	Merensky	Measured Indicated	108.8 63.0	5.92 6.12	6.25 6.46	6.96 7.20	13.90 8.31	6.04 3.61	1.17 0.70	1.91 1.14	0.57 0.34	0.78 0.46	20.7 12.4	21.9 13.1	24.4 14.6
South Africa		UG2	Inferred Measured Indicated Inferred	10.9 141.9 67.7 11.9	6.62 5.02 4.99 4.91	7.00 5.58 5.55 5.46	7.79 6.61 6.58 6.47	1.56 14.64 6.96 1.21	0.68 7.95 3.78 0.65	0.13 2.56 1.22 0.21	0.22 3.54 1.68 0.29	0.06 1.16 0.55 0.10	0.09 0.28 0.13 0.02	2.3 22.9 10.9 1.9	2.5 25.4 12.1 2.1	2.7 30.1 14.3 2.5
		Total		404.3	5.47	5.93	6.82	46.58	22.71	5.99	8.79	2.79	1.77	71.1	77.1	88.6
Marula	73	Merensky	Measured	25.1	4.14	4.26	4.56	1.99	1.09	0.10	0.20	0.03	0.26	3.3	3.4	3.7
South Africa		UG2	Indicated Inferred Measured Indicated	5.6 3.8 33.3 16.4	4.08 3.71 5.80 5.67	4.20 3.82 6.38 6.24	4.50 4.10 7.40 7.28	0.44 0.27 2.89 1.42	0.24 0.15 3.23 1.51	0.02 0.01 0.61 0.30	0.04 0.03 0.90 0.44	0.01 0.00 0.20 0.10	0.06 0.04 0.09 0.05	0.7 0.5 6.2 3.0	0.8 0.5 6.8 3.3	0.8 0.5 7.9 3.8
			Inferred	4.7	5.74	6.32	7.37	0.41	0.45	0.09	0.13	0.03	0.01	0.9	1.0	1.1
		Total		88.8	5.11	5.51	6.25	7.42	6.67	1.13	1.75	0.38	0.51	14.6	15.7	17.9
Two Rivers	46	Merensky	Indicated Inferred	34.8 28.2	3.03 3.84	3.13 3.98	3.42 4.32	2.09 2.07	1.07 1.19	0.12 0.12	0.27 0.26	0.05 0.05	0.23 0.23	3.4 3.5	3.5 3.6	3.8 3.9
South Africa		UG2	Measured Indicated Inferred	7.5 38.8 38.4	4.21 4.26 3.94	4.69 4.74 4.37	4.32 5.72 5.73 5.23	0.64 3.22 2.84	0.36 2.04 1.97	0.12 0.12 0.60 0.53	0.20 0.20 0.99 0.84	0.05 0.24 0.21	0.23 0.01 0.06 0.06	5.3 4.9	5.0 1.1 5.9 5.4	5.9 1.4 7.1 6.5
		Total		147.8	3.80	4.12	4.78	10.87	6.62	1.49	2.56	0.59	0.59	18.1	19.6	22.7
Zimplats	87	MSZ	Measured	219.9	3.30	3.45	3.64	12.08	9.50	1.00	0.90	0.47	1.78	23.4	24.4	25.7
Zimbabwe		Total	Indicated Inferred	466.2 178.4	3.34 3.26	3.49 3.40	3.68 3.58 <b>3.65</b>	26.49 10.13 <b>48.70</b>	19.64 7.00 <b>36.14</b>	2.13 0.77	1.96 0.69	0.98 0.34 <b>1.79</b>	4.00 1.59 <b>7.36</b>	50.1 18.7 <b>92.2</b>	52.2 19.5 <b>96.1</b>	55.2 20.5 <b>101.4</b>
Mimosa	50	Total MSZ	Maggurad	864.4	<b>3.32</b> 3.36	<b>3.46</b> 3.51	3.73	1.77		3.90	<b>3.55</b> 0.15	0.07	0.30	3.5	3.6	3.8
Zimbabwe	50	WOZ	Measured Indicated Inferred	32.0 17.8 17.2	3.32 3.24	3.47 3.39	3.68 3.57	0.97	1.39 0.76 0.71	0.16 0.08 0.08	0.13 0.08 0.07	0.07 0.04 0.03	0.30 0.17 0.16	1.9 1.8	2.0 1.9	2.1 2.0
		Total		66.9	3.32	3.47	3.67	3.67	2.86	0.32	0.29	0.15	0.62	7.1	7.5	7.9
Lac des lles	100	LDI	Measured	10.3	2.85	2.85	2.85	0.07	0.81	-	-	-	0.06	0.9	0.9	0.9
Canada		Intrusive Complex	Indicated Inferred	72.1 10.5	2.43 2.48	2.43 2.48	2.43 2.48	0.47 0.07	4.80 0.73	_	_	_	0.35 0.04	5.6 0.8	5.6 0.8	5.6 0.8
		Total	interreta	92.9	2.48	2.48	2.48	0.62	6.34	_	_	_	0.45	7.4	7.4	7.4
Afplats	74	UG2	Measured	72.8	4.60	5.19	6.46	7.40	3.31	1.39	2.41	0.56	0.06	10.8	12.1	15.1
South Africa			Indicated	8.0	4.52	5.11	6.36	0.80	0.36	0.15	0.26	0.06	0.01	1.2	1.3 6.7	1.6
South Africa		Total	Inferred	41.3 <b>122.2</b>	4.45 <b>4.54</b>	5.06 <b>5.14</b>	6.25 6.38	4.07 <b>12.27</b>	1.82 5.48	0.77 <b>2.31</b>	1.32 3.99	0.31 0.93	0.03 0.09	5.9 <b>17.8</b>	<b>20.2</b>	8.3 <b>25.1</b>
Waterberg	15	T-Zone	Measured	0.7	4.16	4.20	4.20	0.03	0.05	0.00	5.99	0.95	0.09	0.1	0.1	0.1
	10	1 20110	Indicated	2.6	4.58	4.61	4.61	0.11	0.19	0.00	_	_	0.02	0.4	0.4	0.4
South Africa		F-Zone	Inferred Measured	3.3	3.83 3.31	3.86 3.36	3.86 3.36	0.12 0.25	0.20 0.57	0.00 0.01	-	-	0.08 0.04	0.4 0.9	0.4 0.9	0.4 0.9
		1-ZUIR	Indicated	8.1 25.0	3.19	3.24	3.24	0.25	1.68	0.01	_	_	0.04	2.6	0.9 2.6	2.6
			Inferred	6.7	2.94	2.98	2.98	0.19	0.41	0.01	-	_	0.03	0.6	0.6	0.6
		Total		46.4	3.31	3.36	3.36	1.46	3.11	0.07	-	-	0.37	4.9	5.0	5.0
Implats	Total	underground		1 833.7	3.96	4.22	4.68	131.6	89.9	15.2	20.9	6.6	11.8	233.3	248.5	276.0
Impala Rustenburg	96	TSF1 and 2	Indicated	52.2	0.67	0.70	0.78	0.70	0.28	0.05	0.12	0.03	0.14	1.1	1.2	1.3
South Africa		Total surface		52.2	0.67	0.70	0.78	0.70	0.28	0.05	0.12	0.03	0.14	1.1	1.2	1.3
Implats		Grand total		1 885.9	3.87	4.12	4.57	132.3	90.2	15.3	21.0	6.7	11.9	234.4	249.7	277.3

Implats reports a summary of total attributable ounces as sourced from all categories of Mineral Resources of the Implats Group of companies and its other strategic interests on a percentage equity-interest basis. The tabulation above reflects estimates for 3E, 4E and 6E, based on the percentage equity interest. For clarity, both attributable Mineral Resources, inclusive of Mineral Reserves, and attributable Mineral Resources, exclusive of Mineral Reserves, are shown separately in different sections of this report. Note that these are not additive to each other.

#### **NOTES**

- Mineral Resources are quoted inclusive of Mineral Reserves
- Mineral Resource estimates allow for estimated geological losses but not for anticipated pillar losses during eventual mining
- In addition to the 2 000m depth cut-off that was applied at Impala and the Afplats Project in 2014 as previously reported and a 1 250m depth cut-off at the Waterberg Project for the reporting of Mineral Resources, various Mineral Resource blocks are considered on a case-by-case basis. This has resulted in areas where the reasonable prospects for eventual economic extraction (RPEEE) are in doubt. These areas are excluded from the summation of total Mineral Resources per area and the attributable Mineral Resources
- The UG2 Mineral Resource estimates for Impala Rustenburg and Marula are based on a minimum mining width rather than the main UG2 chromitite layer width only. Two Rivers and Afplats report the UG2 Mineral Resource as the main UG2 chromitite layer width, which is wider than a minimum mining width
- Implats has elected not to publish Merensky Reef Mineral Resource estimates for Afplats as the RPEEE is presently in doubt
- In October 2017, Implats announced a strategic investment in the Waterberg Joint Venture project. In terms of the agreement, Implats holds a 15% attributable interest as at 30 June 2021, and these estimates are included in this year's reporting of Mineral Resources
- In December 2019, Implats announced the acquisition of North America Palladium Limited and these estimates are currently reported under Impala Canada Limited with a 100% attributable interest as at 30 June 2021
- The rounding of numbers may result in minor computational discrepancies. Mineral Resource estimates are inherently imprecise. The results tabulated in this report must be read as estimates and not as calculations. Inferred Mineral Resources, in particular, are qualified as approximations.

#### Summary of attributable Mineral Resource estimate

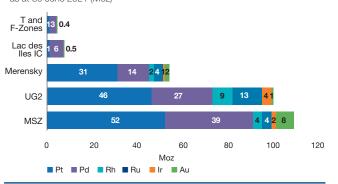
		Attributable Moz 6E							
Operations and projects	2017	2018	2019	2020	2021				
Impala									
Rustenburg	101.3	94.2	93.5	90.2	89.9				
RBR JV	2.8	-	-	-	-				
Marula	18.5	18.3	18.2	18.0	17.9				
Afplats	25.1	25.1	25.1	25.1	25.1				
Imbasa and Inkosi	17.7	_	-	-	-				
Two Rivers*	22.6	24.2	22.3	22.4	22.7				
Waterberg*	-	_	_	5.0	5.0				
Zimplats	207.3	104.2	102.3	102.8	101.4				
Mimosa*	7.4	7.2	6.9	6.8	7.9				
Lac des lles	-	-	-	6.8	7.4				
Total	402.7	273.2	268.3	277.1	277.3				

\* Non-managed.

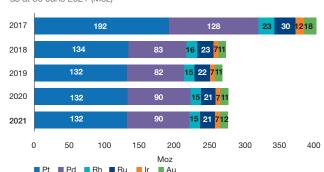
The accompanying graphs illustrate the following:

- The five-year statistics for the estimated attributable platinum, palladium, rhodium, ruthenium, gold and iridium Mineral Resources indicating no material change during 2020 with a minor decrease in the platinum estimate as at 30 June 2021
- The comparison based on 6E ounces shows that the Impala Rustenburg and Zimplats Mineral Resources comprise the bulk of the Group's Mineral Resources (69% of the total Implats inventory)
- The 6E ounces per reef grouping show that the MSZ hosts 40% of the attributable Implats Mineral Resources.

#### Attributable Mineral Resource estimate per reef inclusive of Mineral Reserves as at 30 June 2021 (Moz)



#### Attributable Mineral Resource estimate inclusive of Mineral Reserves (6E per annum) as at 30 June 2021 (Moz)



SCENE SETTING •

APPENDICES •

Attributable Mineral Resources and Mineral Reserves (continued)

# ATTRIBUTABLE MINERAL RESERVE ESTIMATES AS AT 30 JUNE 2021

**Based on Implats' equity interest** 

		A	ttributable N	/lineral Re	serve es	timate					Attrib	utable o	unces			
Operations	Implats' share- holding %	Orebody	Category	Tonnes Mt	3E grade g/t	4E grade g/t	6E grade g/t	Pt	Pd	Rh	Ru	Moz Ir	Au	3E	4E	6E
Impala Rustenburg	96	Merensky	Proved Probable	11.6 41.5	3.41 3.55	3.60 3.75	4.01 4.17	0.85 3.17	0.37 1.38	0.07 0.27	0.12 0.44	0.03 0.13	0.05 0.18	1.3 4.7	1.3 5.0	1.5 5.6
South Africa		UG2	Proved Probable	13.9 54.0	3.31 3.23	3.68 3.59	4.36 4.26	0.94 3.59	0.51 1.95	0.17 0.63	0.23 0.87	0.07 0.29	0.02 0.07	1.5 5.6	1.6 6.2	1.9 7.4
		Total		121.0	3.37	3.66	4.22	8.57	4.21	1.13	1.65	0.53	0.31	13.1	14.2	16.4
Marula	73	UG2	Proved Probable	3.0 10.2	3.97 3.66	4.36 4.03	5.03 4.65	0.17 0.55	0.20 0.64	0.04 0.12	0.05 0.17	0.01 0.04	0.01 0.02	0.4 1.2	0.4 1.3	0.5 1.5
South Africa		Total		13.2	3.73	4.10	4.74	0.72	0.84	0.16	0.22	0.05	0.02	1.6	1.7	2.0
Two Rivers	46	Merensky	Proved Probable	- 22.8	_ 2.56	_ 2.65	_ 2.89	- 1.16				_ 0.15	- 0.13	- 1.9	- 1.9	- 2.1
South Africa		UG2	Proved Probable	4.2 28.5	2.53 2.56	2.82 2.86	3.46 3.47	0.22 1.45	0.13 0.87	0.04 0.27	0.07 0.45	0.02 0.11	0.00 0.03	0.3 2.3	0.4 2.6	0.5 3.2
		Total		55.5	2.56	2.77	3.23	2.83	1.58	0.38	0.55	0.27	0.16	4.6	4.9	5.8
Zimplats	87	MSZ	Proved	101.3	3.06	3.19	3.37	5.16	4.06	0.42	0.39	0.20	0.75	10.0	10.4	11.0
			Probable	108.0	3.05	3.18	3.35	5.45	4.32	0.45	0.41	0.21	0.80	10.6	11.0	11.6
Zimbabwe		Total		209.3	3.05	3.18	3.36	10.61	8.38	0.88	0.79	0.41	1.56	20.5	21.4	22.6
Mimosa	50	MSZ	Proved	8.8	3.43	3.58	3.85	0.50	0.39	0.04	0.04	0.03	0.08	1.0	1.0	1.1
Zimbabwe		Total	Probable	7.7 <b>16.5</b>	3.30 3.37	3.44 3.51	3.69 3.78	0.42 0.92	0.33 0.72	0.03 <b>0.08</b>	0.04 <b>0.08</b>	0.03 <b>0.06</b>	0.07 0.16	0.8 <b>1.8</b>	0.9 <b>1.9</b>	0.9 <b>2.0</b>
Lac des lles	100	LDI	Proved	1.9	2.55	2.55	2.55	0.92	0.12	0.00	0.00	0.00	0.01	0.2	0.2	0.2
		Intrusive Complex	Probable	42.6	2.28	2.28	2.28	0.25	2.67	_	_	_	0.20	3.1	3.1	3.1
Canada		Total		44.6	2.29	2.29	2.29	0.26	2.81	_	_	_	0.21	3.3	3.3	3.3
Implats	Total (	underground		460.1	3.03	3.21	3.52	23.9	18.5	2.62	3.3	1.3	2.42	44.9	47.5	52.1
Impala	96	TSF1 and 2	Proved	-	_	_	_	-	_	_	_	_	_	_	_	-
Rustenburg			Probable	52.2	0.67	0.70	0.78	0.70	0.28	0.05	0.12	0.03	0.14	1.1	1.2	1.3
South Africa		Total surface		52.2	0.67	0.70	0.78	0.70	0.28	0.05	0.12	0.03	0.14	1.1	1.2	1.3
Implats		Grand total		512.4	2.79	2.95	3.24	24.6	18.8	2.67	3.4	1.4	2.56	46.0	48.7	53.4

#### **Summary of attributable Mineral Reserve estimates**

	Attributable Moz 6E							
Operations	2017	2018	2019	2020	2021			
Impala								
Rustenburg	23.3	14.6	12.8	15.1	17.7			
Marula	2.7	2.6	2.3	2.2	2.0			
Two Rivers	1.8	3.7	3.4	3.3	5.8			
Zimplats	15.9	21.3	23.9	22.4	22.6			
Mimosa	2.3	2.1	1.9	1.6	2.0			
Lac des lles	-	-	-	3.2	3.3			
Total	45.9	44.2	44.3	47.8	53.4			

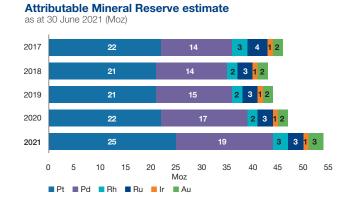
## **NOTES**

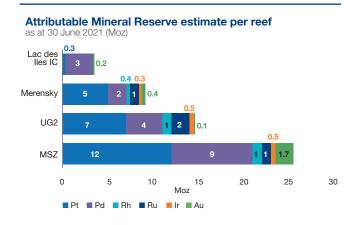
 The modifying factors used to convert a Mineral Resource to a Mineral Reserve are derived from historical performance while taking future anticipated conditions into account

- Mineral Reserves quoted reflect the grade delivered to the mill
- The rounding of numbers may result in minor computational discrepancies. The results tabulated in this report must be read as estimates and not as calculations
- The economic assessment resulted in effective tail-cutting of the production profiles at all the southern African operations.

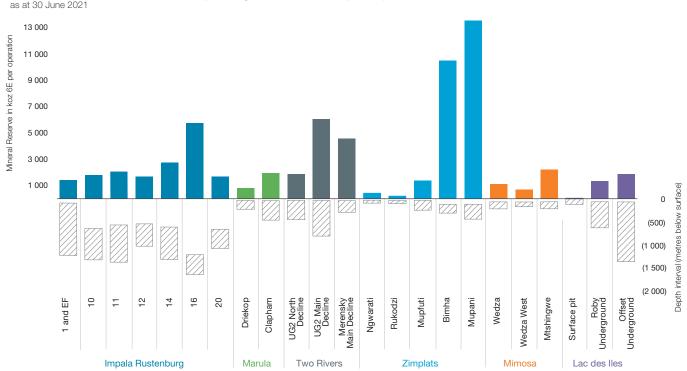
The attendant graphs compare the last few reporting periods and indicate an overall increase in attributable Mineral Reserves in line with depletion and the changes mentioned above:

- The five-year statistics for the estimated attributable 6E Mineral Reserves indicate an increase as at 30 June 2021 compared with the previous reporting period
- Comparison based on 6E ounces shows that the Zimplats Mineral Reserves make up 42% of the Mineral Reserves
- The estimates per reef show that the MSZ hosts some 46% of the attributable 6E Implats Mineral Reserves at the Zimplats and Mimosa mines
- The updated allocation of Implats' 6E Mineral Reserves per operation is shown on the next page. The advantage at Zimplats regarding the operating depth and size is clearly illustrated.











#### ATTRIBUTABLE MINERAL RESOURCE SUMMARY, EXCLUSIVE OF MINERAL RESERVES

Various international reporting codes permit both inclusive and exclusive methods of reporting Mineral Resources. Implats has adopted inclusive reporting for consistency and alignment with its strategic partners. A collation of the Mineral Resource estimates exclusive of Mineral Reserves is presented below and allows for additional transparency. Note that this format is not adhered to by Implats' strategic partners, and the corresponding estimates have been derived from details provided to Implats.

This summation is aligned with previous Annual Mineral Resource and Mineral Reserve statements by Implats and is fully permitted under the guidelines of the SAMREC (2016) Code.

#### Summary of Mineral Resource estimates, exclusive of Mineral Reserves as at 30 June 2021

			Т	otal est	imate		Attributable estimate						te			
Operations and projects	Implats' share- holding %	Orebody Category	Tonnage Mt	3E grade g/t	4E grade g/t	6E grade g/t	Tonnage Mt	Pt	Pd	Rh	Ru	Moz Ir	Au	3E	4E	6E
Impala Rustenburg	96	Merensky Measured Indicated	58.9 66.0	5.92 6.12	6.25 6.46	6.96 7.20	56.6 63.3	7.22 8.36	3.14 3.63	0.61 0.70	0.99 1.15	0.30 0.34	0.40 0.47	10.8 12.5	11.4 13.2	12.7 14.6
South Africa		Inferred UG2 Measured Indicated Inferred	11.5 82.9 70.6 12.4	6.62 4.91 4.99 4.91	7.00 5.46 5.55 5.46	7.79 6.47 6.58 6.47	11.1 79.6 67.7 11.9	1.58 8.04 6.96 1.21	0.69 4.36 3.78 0.65	0.13 1.41 1.22 0.21	0.22 1.94 1.68 0.29	0.06 0.64 0.55 0.10	0.09 0.16 0.13 0.02	2.4 12.6 10.9 1.9	2.5 14.0 12.1 2.1	2.8 16.5 14.3 2.5
		Total	302.3	<b>5.45</b>	<b>5.91</b>	<b>6.80</b>	<b>290.2</b>		<b>16.25</b>	4.28	6.28	1.99	1.27	50.9	55.2	<b>63.4</b>
Marula	73	Merensky Measured	34.3	4.14	4.26	4.56	25.1	1.99	1.09	0.10	0.20	0.03	0.26	3.3	3.4	3.7
South Africa		Indicated Inferred UG2 Measured Indicated	7.6 5.2 30.1 22.3	4.08 3.71 5.83 5.67	4.20 3.82 6.41 6.24	4.50 4.10 7.46 7.28	5.6 3.8 22.0 16.4	0.44 0.27 1.94 1.42	0.24 0.15 2.12 1.51	0.02 0.01 0.41 0.30	0.04 0.03 0.61 0.44	0.01 0.00 0.14 0.10	0.06 0.04 0.06 0.05	0.7 0.5 4.1 3.0	0.8 0.5 4.5 3.3	0.8 0.5 5.3 3.8
		Inferred	6.4	5.74	6.32	7.37	4.7	0.41	0.45	0.09	0.13	0.03	0.01	0.9	1.0	1.1
T	10	Total	105.9	5.01	5.39	6.10	77.6	6.47	5.56	0.93	1.45	0.31	0.48	12.5	13.4	15.2
Two Rivers South Africa	46	Merensky Indicated Inferred UG2 Measured Indicated	29.9 61.4 4.6 21.3	2.63 3.84 4.32 4.51	2.72 3.98 4.84 4.99	2.97 4.32 5.88 5.99	13.7 28.2 2.1 9.8	0.71 2.07 0.20 0.84	0.36 1.19 0.10 0.56	0.04 0.12 0.04 0.15	0.09 0.26 0.06 0.25	0.02 0.05 0.01 0.06	0.08 0.23 0.00 0.02	1.2 3.5 0.3 1.4	1.2 3.6 0.3 1.6	1.3 3.9 0.4 1.9
		Inferred	83.5	3.94	4.35	5.23	38.4	2.84	1.97	0.13	0.23	0.00	0.02	4.9	5.4	6.5
		Total	200.7	3.78	4.08	4.71	92.3	6.67	4.18	0.89	1.51	0.35	0.39	11.2	12.1	14.0
Zimplats Zimbabwe	87	MSZ Measured Indicated Inferred	69.9 310.3 205.0	3.53 3.45 3.26	3.68 3.60 3.40	3.89 3.80 3.58	60.8 269.9 178.4		2.76 11.37 7.00	0.30 1.26 0.77	0.28 1.17 0.69	0.14 0.58 0.34	0.54 2.47 1.59	6.9 30.0 18.7	7.2 31.2 19.5	7.6 33.0 20.5
		Total	585.2	3.40	3.54	3.73	509.1	29.85	21.14	2.32	2.15	1.06	4.61	55.6	57.9	61.1
Mimosa Zimbabwe	50	MSZ Measured Indicated Inferred	32.0 16.9 34.4	3.27 3.39 3.24	3.41 3.54 3.39	3.61 3.76 3.57	16.0 8.4 17.2	0.86 0.47 0.93	0.67 0.36 0.71	0.07 0.04 0.08	0.07 0.04 0.07	0.03 0.02 0.03	0.15 0.08 0.16	1.7 0.9 1.8	1.8 1.0 1.9	1.9 1.0 2.0
		Total	83.3	3.28	3.43	3.62	41.6	2.26	1.74	0.19	0.18	0.08	0.39	4.4	4.6	4.9
Lac des lles Canada	100	LDI Measured Intrusive Indicated Complex Inferred	6.3 32.6 7.5	2.68 2.23 2.56	2.68 2.23 2.56	2.68 2.23 2.56	6.3 32.6 7.5	0.05 0.21 0.05	0.47 1.98 0.54	-	-	_ _ _	0.03 0.14 0.03	0.5 2.3 0.6	0.5 2.3 0.6	0.5 2.3 0.6
		Total	46.4	2.35	2.35	2.35	46.4	0.31	2.99	-	-	-	0.21	3.5	3.5	3.5
Afplats	74	UG2 Measured	98.4	4.60 4.52	5.19 5.11	6.46 6.36	72.8	7.40 0.80	3.31 0.36	1.39	2.41	0.56	0.06	10.8 1.2	12.1 1.3	15.1
South Africa		Indicated Inferred Total	10.8 55.9 <b>165.1</b>	4.52 4.45 <b>4.54</b>	5.06 5.14	6.25 6.38	8.0 41.3 <b>122.2</b>	4.07	1.82 <b>5.48</b>	0.15 0.77 <b>2.31</b>	0.26 1.32 <b>3.99</b>	0.06 0.31 <b>0.93</b>	0.01 0.03 <b>0.09</b>	5.9 <b>17.8</b>	6.7 <b>20.2</b>	1.6 8.3 <b>25.1</b>
Waterberg	15	T-Zone Measured	4.4	4.16	4.20	4.20	0.7	0.03	0.05	0.00	-	-	0.02	0.1	0.1	0.1
South Africa		F-Zone Measured Inferred Indicated Inferred	17.0 21.8 54.1 166.9 44.8	4.58 3.83 3.31 3.19 2.94	4.61 3.86 3.36 3.24 2.98	4.61 3.86 3.36 3.24 2.98	2.6 3.3 8.1 25.0 6.7	0.11 0.12 0.25	0.19 0.20 0.57 1.68 0.41	0.00 0.00 0.01 0.04 0.01	_ _ _ _		0.07 0.08 0.04 0.12 0.03	0.4 0.4 0.9 2.6 0.6	0.4 0.4 0.9 2.6 0.6	0.4 0.4 0.9 2.6 0.6
		Total	309.1	3.31	3.36	3.36		1.46	3.11	0.07	-	-	0.37	4.9	5.0	5.0
All Mineral Res of Mineral Res		lusive Measured Indicated Inferred	772.1	4.44 3.82 3.68	4.78 4.02 3.91	5.45 4.35 4.33	350.1 523.1 352.6	31.5 37.2 23.9	18.6 26.0 15.8	4.3 3.9 2.7	6.6 5.1 3.9	1.8 1.7 1.1	1.7 3.7 2.4	51.9 67.0 42.0	56.2 70.9 44.8	64.7 77.8 49.7
Implats		Grand total	1 797.9		4.19	4.63	1 225.8		60.4	11.0	15.6	4.7		160.9		

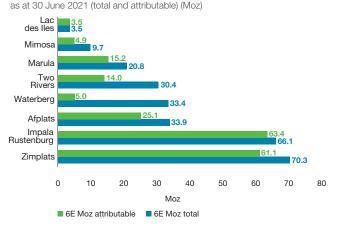
#### **NOTES**

- The figures in the accompanying table reflect those Mineral Resources that have not been converted to Mineral Reserves, i.e. these are the Mineral Resources exclusive of Mineral Reserves
- The tabulation should be read in conjunction with the Mineral Reserve statement in the preceding sections
- A direct comparison of tonnes and grade is not possible between inclusive and exclusive reporting, owing to the mixing of Mineral Resource figures with production estimates
- Mineral Resource estimates allow for estimated geological losses but not for anticipated pillar losses during eventual mining
- Note that similar to previous reports, certain areas have been excluded from the Mineral Resource estimates due to the RPEEE
- Implats has chosen not to publish Merensky Reef Mineral Resource estimates for Afplats as the eventual economic extraction is presently in doubt
- The rounding of numbers may result in minor computational discrepancies. Mineral Resource estimates are inherently imprecise. The results tabulated in this report must be read as estimates and not as calculations. Inferred Mineral Resources, in particular, are qualified as approximations
- The year-on-year decrease can be attributed to the conversion of Mineral Resources at Impala and Two Rivers to Mineral Reserves.

# Summary of attributable Mineral Resource estimates exclusive of Mineral Reserves

		Attributable Moz 6E							
Operations and projects	2017	2018	2019	2020	2021				
Impala									
Rustenburg	68.4	73.4	75.9	67.0	63.4				
RBR JV	2.8	_	-	-	-				
Marula	15.1	15.1	15.1	15.1	15.2				
Afplats	25.1	25.1	25.1	25.1	25.1				
Imbasa/Inkosi	17.7	_	-	-	-				
Two Rivers	19.8	18.4	16.1	15.9	14.0				
Waterberg	_	_	_	5.0	5.0				
Zimplats	184.4	68.8	62.4	64.3	61.1				
Mimosa	4.2	4.1	4.1	4.2	4.9				
Lac des lles	-	_	_	3.0	3.5				
Total	337.5	204.9	198.7	199.6	192.2				

# Exclusive Mineral Resource estimate Moz 6E





INTRODUCTION • AND OVERVIEW SCENE SETTING •

THE DETAILS - • MINERAL RESOURCES AND MINERAL RESERVES

The consolidated high-level reconciliations of the attributable Mineral Resources and Mineral Reserves for both managed and non-managed operations are shown below. These high-level variances are relatively small. In addition to depletions, particulars of these variances are illustrated in more detail in the sections by operation. The rounding of numbers may result in computational discrepancies, specifically in these high-level comparisons.

## **MINERAL RESOURCE RECONCILIATION**

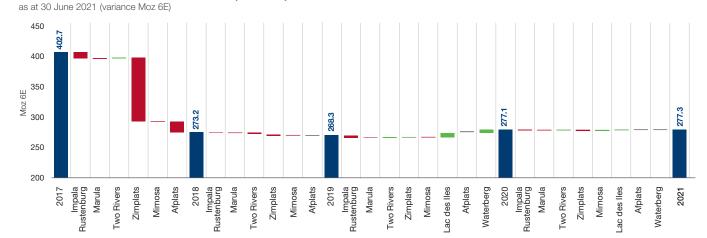
- The Impala Rustenburg estimate in the graph below includes the contiguous Impala/RBR JV estimate from 2014 to 2017 and relates to the prospecting JV over deeper-seated down-dip prospecting rights at Impala Rustenburg; the project was terminated by mutual agreement in 2018
- Depletion was adjusted by the global concentrator and mine-call factors
- The potential impact of pillar factors was taken into account

Attributable Mineral Resource estimate (inclusive)

- Imbasa and Inkosi Mineral Resources are excluded from 2018 further to the decision to dispose of Implats' interest
- More minor variances are primarily due to depletion and updates to the estimation models.

The significant variances in the estimated attributable Group Mineral Resources during the past five years are:

- 2017 to 2018: At Impala Rustenburg, as the RBR JV prospecting rights were not renewed, the disposal of the Imbasa and Inkosi areas and the release of the Zimplats gazetted land impacted the Mineral Resources negatively, while the increase in the Two Rivers Mineral Resources had a minor positive effect on the overall Group Mineral Resources
- 2018 to 2019: The significant decrease in Mineral Resources applied to Two Rivers with the exclusion of a portion of the Buffelshoek Merensky Reef Mineral Resources due to an update in the Mineral Resource classification based on consideration for RPEEE
- 2019 to 2020: Effective year-on-year increase due to the inclusion of the Lac des lles and Waterberg project Mineral Resource estimates
- 2020 to 2021: Minor increase year-on-year, mainly due to an increase at Two Rivers, Mimosa and Lac des Iles.



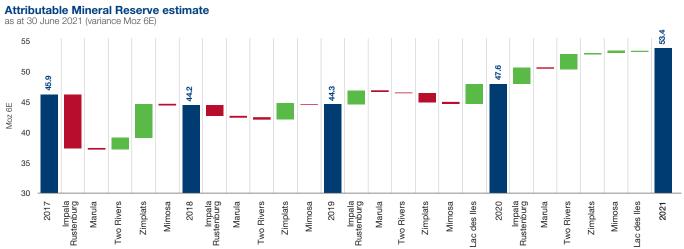
# **MINERAL RESERVE RECONCILIATION**

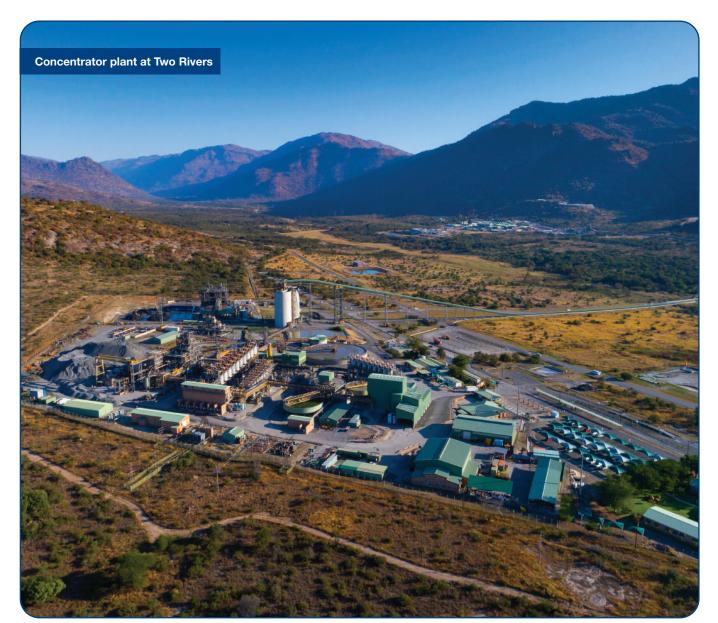
- At Impala Rustenburg, the Mineral Reserves estimate increased due to the progression of certain LoM IA areas to LoM I based on RPEEE and economic considerations and the conversion of the TSF1 and TSF2 Mineral Resources
- The Mineral Reserve estimates increased at Two Rivers following the decision to initiate mining from the Merensky Reef section
- At Mimosa, the Mineral Reserves were expanded by the increased footprint at Wedza
- The Mineral Reserve estimate increased at Zimplats due to the inclusion of additional MSZ Upper Ores
- The Lac des Iles Mineral Reserve estimate increased due to the inclusion of additional areas.

The significant variances in the estimated Group Mineral Reserves during the past five years are:

- 2017 to 2018: At Impala Rustenburg, the strategic review and economic valuation of the individual shafts and tail-cutting impacted negatively, while the addition of some MSZ Upper Ores at Bimha Mine and Mupani Mine at Zimplats and the Kalkfontein RE portion at Two Rivers effectively increased the Mineral Reserve estimate
- 2018 to 2019: Mining depletions were offset by the addition of Mineral Reserves at Mupani Mine (Portal 6) after the conversion of a portion of Portal 8 Mineral Resources to Mineral Reserves; this follows from a footprint reallocation of Portal 8 ground to Mupani and Portal 10 either side of the Manzamunyama fault, respectively
- 2019 to 2020: Effective increase in Mineral Reserve estimates due to the inclusion of Lac des Iles Mineral Reserves and the extensions to the LoM I at Impala Rustenburg
- 2020 to 2021: Increase due to the growth of LoM I at Impala Rustenburg, the addition of Merensky Reef Mineral Reserves at Two Rivers, the acquisition of Wedza West (the Anglo American Platinum claims at Mimosa).

# Reconciliation of estimates (continued)





# Governance and compliance

The reporting of Mineral Resources and Mineral Reserves for Implats' South African, Zimbabwean and Canadian operations is undertaken in accordance with the principles and guidelines of the SAMREC Code (2016), including Appendices and Table 1, and section 12.13 of the JSE Listings Requirements.

All operations' Mineral Resources and Mineral Reserves report to the SAMREC Code (2016), with the exception of Zimplats which uses the JORC Code (2012) as required by ASX but this code either is identical to SAMREC (2016) or not materially different. Implats reviews the Zimplats' processes, procedures and estimates to ensure that Mineral Resource and Mineral Reserve estimates fully comply with the SAMREC Code (2016). Mimosa as a Mauritiusbased company has no regulatory reporting code so adopted the SAMREC Code (2016). Impala Canada switched to the SAMREC Code (2016) after delisting but previously had reported to the Canadian National Instrument 43-101 (NI43-101) and the Waterberg JV complies with both the N143-101 and the SAMREC Code (2016).

SAMREC was established in 1998 and modelled its code on the Australasian Code for the Reporting of Exploration Results, Mineral Resources and Mineral Reserves (JORC Code). The first version of the SAMREC Code was issued in March 2000 and adopted by the JSE in its Listings Requirements later in the same year.

The SAMREC Code has been under review since 2004 and was updated in the 2007 edition and amended in July 2009. The SAMREC Code was again updated in 2016, and this superseded the previous editions of the code; this was launched on 19 May 2016 at the JSE. Section 12 of the JSE Listings Requirements has been updated, and the revised SAMREC and SAMVAL Codes came into effect on 1 January 2017.

The latest edition of the SAMREC Code (2016 Edition) includes an updated Table 1 template, which provides an extended list of the main criteria that must be considered and reported when reporting on Exploration Results, Mineral Resources and Mineral Reserves. In the context of complying with the principles of the code, comments relating to the items in the relevant sections of Table 1 must be provided on an 'if not, why not' basis within the Competent Persons' report. The guidelines for the compilation of Table 1 is for (i) the first-time declaration of Exploration Results, a Mineral Resource or a Mineral Reserve, and (ii) in instances where these items have materially changed from when they were last publicly reported for significant projects – reporting on an 'if not, why not' basis ensures that it is clear to an investor or other stakeholders whether items have been considered and deemed of low consequence or are not yet addressed or resolved.

Concurrent with the evolution of the SAMREC Code, the Committee for Mineral Reserves International Reporting Standards (CRIRSCO) has, since 1994, been working to create a set of standard definitions for the reporting of Mineral Resources and Mineral Reserves. The 2016 edition of the SAMREC Code definitions are either identical to or not materially different from those existing standard definitions published in the updated CRIRSCO Reporting Template 2019.

Various Competent Persons (CPs), as defined by the SAMREC Code (2016) and JORC (2012) Code, have contributed to the estimation and summary of the Mineral Resource and Mineral Reserve figures quoted in this report. These statements reflect the estimates as compiled by teams of professional practitioners from the various operations and shafts.

Gerhard Potgieter, Chief Operating Officer, PrEng, ECSA Registration No 20030236, a full-time employee of Implats with 36 years' relevant mining experience, takes full responsibility for the Mineral Reserve estimates for the Group.

Theodore Pegram, Executive – Mineral Resources, PrSciNat, SACNASP Registration No 400032/03, a full-time employee of Implats with 32 years' relevant experience, assumes responsibility for the Mineral Resource estimates for the Implats Group. He also assumes responsibility for collating the combined Mineral Resource and Mineral Reserve Statement for the Group.

Nico Strydom, BCompt (Hons), CA(SA), ACMA, Group Manager – Project Finance, a full-time employee of Implats, takes full responsibility for the Mineral Resources and Mineral Reserves' valuation.

Implats has written confirmation from the Lead Competent Persons that the information disclosed in terms of this document are compliant with the SAMREC Code (2016) together with Appendices and Table 1 and, where applicable, the relevant JSE section 12 Listings Requirements (section 12.13).

They confirmed that it may be published in the form, format and context in which it was intended.

The address for ECSA is: Engineering Council of South Africa (ECSA) Private Bag X691, Bruma, 2026, Gauteng, South Africa.

The address for SACNASP is: South African Council for Natural Scientific Professions (SACNASP) Private Bag X540, Silverton, 0127 Gauteng, South Africa.

The address for SAICA is: The South African Institute of Chartered Accountants (SAICA) Private Bag X32, Northlands, 2116 Gauteng, South Africa

## Governance and compliance (continued)

The contact details of the Lead Competent Persons are as follows:



**Gerhard Potgieter** ECSA 20030236, MSAIMM **Lead Competent Person – Mineral Reserves Chief Operating Officer** Impala Platinum Holdings Limited 2 Fricker Road Illovo, 2196 Private Bag X18 Northlands, 2116



2 September 2021



Theodore Pegram SACNASP 400032/03, FGSSA, FSAIMM Lead Competent Person – Mineral Resources Executive – Mineral Resources Impala Platinum Holdings Limited 2 Fricker Road Illovo, 2196 Private Bag X18 Northlands, 2116



2 September 2021



Nico Strydom SAICA 03141381, CIMA Lead Competent Valuator Group Manager – Project Finance Impala Platinum Holdings Limited 2 Fricker Road Illovo, 2196 Private Bag X18 Northlands, 2116

.....

2 September 2021

#### Relationship between exploration results, Mineral Resources and Mineral Reserves showing Implats' attributable Mineral Resources and Mineral Reserves as at 30 June 2021 (Moz 6E)

				Exploration results
Total 53.4Moz 6	Mineral Reserves		Total 277.3Moz 6E	Mineral Resources
			49.9Moz 6E	Inferred
36.8Moz 61	Probable		113.4Moz 6E	Indicated
16.6Moz 61	Proved	•	114.1Moz 6E	Measured

Consideration of mining, metallurgical, processing, infrastructural, economic, marketing, legal, environmental, social and governmental factors (the modifying factors)

Implats is committed to independent third-party reviews providing assurance for the Mineral Resource and Mineral Reserve estimates. These reviews assist with the principle of continuous improvement on the internal processes in previous reporting cycles. The managed operations were subjected to external audit for this cycle – individual audit certificates of each of the respective audit companies are included in the appendices of this report.

APPENDICES •

#### Governance and compliance (continued)

## **COMPETENT PERSON (CP) STRUCTURE 2021**

Lead CP Mineral Resources: Theodore Pegram, Executive – Mineral Resources (PrSciNat – SACNASP 400032/03), FGSSA, FSAIMM Lead CP Mineral Reserves: Gerhard Potgieter – Chief Operating Officer (PrEng – ECSA 20030236), MSAIMM Lead CV Mineral Resources and Mineral Reserves: Nico Strydom, Group Manager – Project Finance (SAICA 03141381)

Operations and projects	Competent Person's (CP) name	Qualifications	Appointment	Registration
Implats	Theodore Pegram Gerhard Potgieter Nico Strydom Johannes du Plessis Louise Fouché	BSc (Hons) (Geology), GDE (Mining) BSc Eng (Mining) BCompt (Hons), CA(SA), ACMA MSc (Geology) MSc (Geology), Post-Grad Dipl (MRM)	Lead CP Mineral Resources Lead CP Mineral Reserves Lead CV Valuation CP Mineral Resources and Audits CP Geostatistics and databases	SACNASP, FGSSA, FSAIMM ECSA, MSAIMM SAICA, CIMA SACNASP, FGSSA SACNASP, FGSSA, MSAIMM
Impala Rustenburg	David Sharpe Emmanuel Acheampong Philip Fouché	BSc (Hons) (Geology), BComm MSc Eng (Mining), MBA MSc (MRM), BCompt	CP Mineral Resources CP Mineral Reserves CP Exploration	SACNASP, MGSSA ESCA, MSAIMM SACNASP, MGSSA
Marula	Sifiso Mthethwa	BSc (Hons) (Geology)	CP Mineral Resources and CP Mineral Reserves	SACNASP, MGSSA
Two Rivers	Juan Coetzee Tobie Horak	BSc (Hons) (Geology) NHD (Mine Surveying), GDE (Mining Engineering)	CP Mineral Resources CP Mineral Reserves	SACNASP, MGSSA, MSAIMM, IMSSA
Zimplats	Steven Duma Wadzanayi Mutsakanyi	BSc (Hons) (Geology) BSc (Hons) (Mining Engineering)	CP Mineral Resources CP Mineral Reserves	SACNASP, MAusIMM MSAIMM, MAusIMM
Mimosa	Dumisayi Mapundu Paul Man'ombe	BSc (Geology) BSc Eng (Hons) Mining, MBA (UZ), MMCC (Zim)	CP Mineral Resources CP Mineral Reserves	SACNASP MSAIMM
Lac des lles	Stuart Gibbins Kris Hutton Lionnel Djon	MSc (Geology) B Applied Science and Engineering (Mineral Engineering) PhD (Geology)	CP Mineral Resources CP Mineral Reserves CP Exploration	PGO PEO PGO
Afplats	Louise Fouché	MSc (Geology), Post-Grad Dipl (MRM)	CP Mineral Resources	SACNASP, FGSSA, MSAIMM
Waterberg project	Charles Muller*	BSc (Hons) Geology	CP Mineral Resources	SACNASP, MGSSA, MGASA

Independent consultant.





#### 2021 INDEPENDENT AUDITS OF THE MINERAL RESOURCE AND MINERAL RESERVE ESTIMATES

Implats has exhausted all reasonable means of oversight towards ensuring the integrity of the 2021 Mineral Resources and Mineral Reserves Statement.

Several consultancy firms (auditors) were engaged in undertaking the external audits of the Mineral Resource and Mineral Reserve estimates and supporting Life of Mine Plans (LoM I), which underpin the 2021 declaration. The 2021 audits were limited to the managed operations within the portfolio. On a geological domain basis, Caracle Creek International Min-Res (CCIC Min-Res) and Frazer-McGill Mining and Minerals Advisory were assigned the audit of Impala Rustenburg, and Marula Mines located in the Bushveld Complex in South Africa, with The MSA Group assigned the audit of Zimplats' Ngezi Mine situated on the Great Dyke in Zimbabwe. At the same time, The Mineral Corporation undertook the audit of Lac des Iles Mine in Ontario, Canada.

This year, the joint venture operations, Mimosa and Two Rivers Platinum, were subjected to an Internal Compliance Review.

As additional assurance and complete transparency, all audit reports were shared with Deloitte as Financial Auditor for the Implats Group. Likewise, Implats Group Internal Audit Department was provided with the full set of the audit reports.

These audits endorse the Mineral Resource and Mineral Reserve estimates as at 30 June 2021 as contained in this report, confirming No Fatal Flaws, and based on compliance to the SAMREC Code (2016), deriving No impediments for inclusion towards public domain year-end reporting.

The individual Operations' audit findings have been shared with the respective mines' Chief Executives. They will be progressed with each mine's technical staff via the Implats Resources and Reserves Committee (IRRC) during FY2022. Individual Audit Certificates under the letterhead of each of the respective auditors are included in the Appendices of this report.

Alle

GS Potgieter (ECSA 20030236)

THC Pegram (SACNASP 400032/03)

Impala Platinum Holdings Limited Reg. No. 1957/001979/06 2 Fricker Road, Illovo, 2196 • Private Bag X18, Northlands, 2116, South Africa Tel: +27 11 731 9000 • Fax: +27 11 731 9254 • www.implats.co.za

Directors: NDB Orleyn (Chairman) • NJ Muller (Chief Executive Officer) • M Kerber (Chief Financial Officer) PW Davey\* • D Earp • R Havenstein • BT Koshane • AS Macfarlane\* • FS Mufamadi • B Ngonyama MEK Nkeli • LN Samuel • PE Speckmann • ZB Swanepoel

> Secretary: TT Llale (\*British)

INTRODUCTION • AND OVERVIEW

# Reporting principles and framework

The following key assumptions and parameters, unless otherwise stated, were used in the compilation of the 2021 estimates:

 A Group-wide committee, the Implats Resource and Reserve Committee (IRRC), was constituted in 2009 to promote standardisation, compliant and transparent reporting, continuous improvement and internal peer reviews. As a result, Implats developed a Group-wide protocol for estimating, classifying, and reporting Mineral Resources and Mineral Reserves in 2010 to enhance standardisation and facilitate consistency in auditing. This protocol is updated annually to improve and specifically guide the classification of Mineral Resources and ensuring compliance with the SAMREC Code (2016).

# Structural hierarchy of principles, requirements, standards, assumptions and estimates

U

The JSE LISTINGS REQUIREMENTS Section 12

THE SAMREC CODE (2016) AND TABLE 1

Generic code for the whole mining industry

IMPLATS CODE OF PRACTICE ALIGNED WITH SAMREC AND JSE Specific for Implats Group

**PROJECT FEASIBILITY STUDY OR DETAILED ANNUAL REPORT** Detailed assumptions, application, data and estimate for particular business unit

- A vital aspect of the Group-wide protocol determines the standards for the classification of Mineral Resources. The classification standard is a matrix process and measures both geological and grade continuity between points of observation. Quality, distribution and quantity of available data and the confidence thereof forms the basis of the Mineral Resource classification
- Mineral Resource and Mineral Reserve evaluation is based on a systematic process of collecting and validating geological data as depicted in the Group-wide protocol. Updating of geological and geostatistical models with data from exploration and underground drilling, mapping and sampling forms the basis of the Mineral Resource and Mineral Reserve Statements
- Geostatistical estimation is performed using different geostatistical software packages within the Implats Group.
   Various interpolation methods and geostatistical parameters are used depending on the orebody and sampling density. Ordinary kriging and inverse distance weighting are the primary interpolation methods used within the Implats Group
- Implats introduced a depth cut-off in 2010 whereby mineralisation below a certain depth is excluded from the Mineral Resource estimate. A depth cut-off of 2 000m below the surface was introduced in 2014. A depth cut-off of 1 250m was applied to the Waterberg project Mineral Resource estimates. In addition to the latest depth cut-off, various Mineral Resource blocks are considered on a case-by-case basis and this has resulted in areas where the RPEEE is in doubt

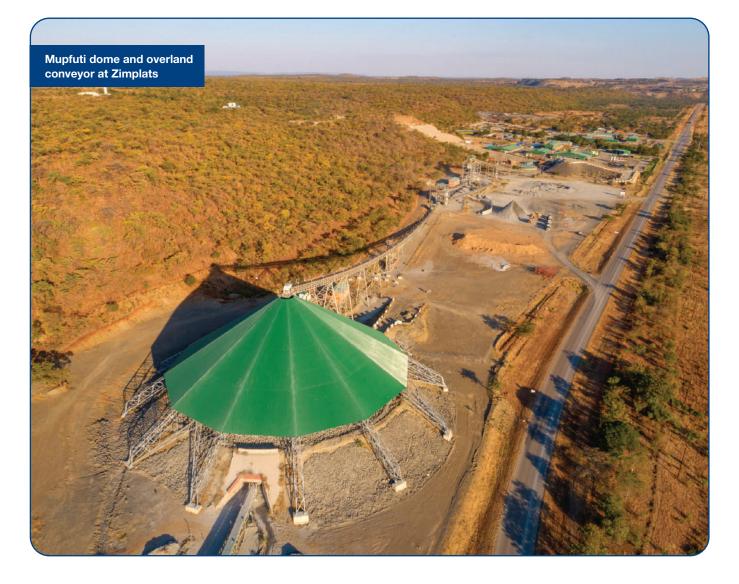
- Mineral Resource tonnages and grades are estimated in situ. The Mineral Resources for the Merensky Reef are estimated at a minimum mining width and may include mineralisation below the selected cut-off grade. Mineral Resource estimates for the UG2 Reef reflect the minimum mineable width and may include dilution
- Mineral Resource estimates for the Main Sulphide Zone are based on optimal mining widths. Such mining widths are reviewed from time to time given varying economic and operational considerations
- Mineral Resource estimates at Lac des Iles and the Waterberg project consider the suitable mining method, and an economical grade cut-off is applied
- Mineral Resource estimates are reported inclusive of Mineral Reserves unless otherwise stated. A summary table with the estimated Mineral Resources exclusive of Mineral Reserves is provided on page 9
- Mineral Resource estimates allow for estimated geological losses but not for anticipated pillar losses during eventual mining, except where these pillars will never be extracted, such as legal, boundary and shaft pillars
- Mineral Reserve estimates include allowances for mining dilution and are reported as tonnage and grade delivered to the mill
- Mineral Reserve estimates take cognisance of all mine stability pillars, and the content associated with pillars is excluded
- Rounding-off of figures in the accompanying summary estimates may result in minor computational discrepancies. Where this occurs, it is not deemed significant
- Mineral Resource Statements, in principle, remain imprecise estimates and cannot be referred to as calculations. All Inferred Mineral Resources should be read as 'approximations'
- Exploration samples are mainly assayed for all PGEs and Au, using the nickel sulphide fire assay collection method and determining the elements with an inductively coupled plasma mass spectrometer (ICPMS). Base metal content is determined by an atomic absorption (AA) spectrometer using partial digestion in order to state metal in sulphide that is amenable to recovery by flotation processes. Base metal assays at Lac des lles and the Waterberg project are based on four acid digestions which result in the near-total dissolution
- Underground samples are mainly assayed for platinum, palladium, rhodium and gold using the lead collection method by the in-house laboratories at the respective mines. Partial digestion at the in-house laboratories is used at southern African operations to determine the base metal content of samples using atomic absorption. At Lac des lles, four-acid near-total digestion is used
- Southern African operations report Mineral Resource and Mineral Reserve PGE estimates for four metals (4E) and six metals (6E). Reporting on a 4E basis reflects the summation of platinum, palladium, rhodium and gold in the case of 6E; this reflects the total of platinum, palladium, rhodium, gold, ruthenium and iridium. In the case of the South African Waterberg project, only 4Es are reported given the available compliant data and the inherent negligible ruthenium and iridium concentration levels

## Reporting principles and framework (continued)

- The Impala Canada Lac des Iles Mineral Resource and Mineral Reserve PGE estimates are reported on a 3E basis; this reflects the summation of platinum, palladium and gold. The other PGE metals such as rhodium, iridium and ruthenium occur in inherent negligible and low concentrations and are not considered material
- All references to tonnage are to the metric unit
- All references to ounces (oz) are troy, with the factor used being 31.10348 metric grams per ounce
- The Mineral Resources and Mineral Reserves reported for the individual operations and projects are reflected as the total estimate (100%). The corresponding estimates relating to attributable Mineral Resources and Mineral Reserves are only given as combined summary tabulations
- Mineral Reserves are that portion of the Mineral Resource that technical and economic studies have demonstrated that can justify extraction at the time of disclosure. Historically, Implats has only converted Mineral Resources to Mineral Reserves on completion of a full feasibility study with board approval of the project capital and LoM I for an operating mine (as per SAMREC Code (2016))

- Accordingly, no Mineral Reserve estimates are included in this report for the Waterberg project in the absence of board approval and funding
- The work processes and flow are fully integrated with the planning cycle, and a structured approach has been adopted with activities aligned in a continuous sequence.

No Inferred Mineral Resources, other than insignificant incidental dilution at LDI, included at zero grade, have been converted into Mineral Reserves at any of the Implats operations reported. No Inferred Mineral Resources were considered in feasibility studies. According to the SAMREC Code (2016), Inferred Mineral Resources may be included in mine design, mine planning and economic studies only if a mine plan exists. SAMREC requires that a comparison of the results with and without the Inferred Mineral Resources must be shown, and the rationale behind including it must be explained.



# Mineral rights and legal tenure

As at 30 June 2021, Implats has legal entitlement to the minerals being reported upon without any known impediments. There are no legal proceedings or other material matters that may impact the ability of Implats to continue with exploration and mining activities.

#### **SOUTH AFRICA**

The Mineral and Petroleum Resources Development Act, No 28 of 2002 (MPRDA), governing mineral extraction in South Africa, came into effect on 1 May 2004. The MPRDA, with its associated broad-based socio-economic empowerment charter for the mining industry and its attendant scorecard, as revised and amended from time to time, has played a significant role in the transformation of the South African mining industry. Implats continues to embrace the principles of transformation as a moral and strategic imperative to reinforce its position as a leading southern African mining company. The Implats SA operating companies (Impala Rustenburg Mine, Afplats and Marula) submitted their annual Mining Charter reports to the Department of Mineral Resources and Energy (DMRE) for the 2020 calendar year. This is required as per the Broad-Based Socio-Economic Empowerment Charter for the Mining and Minerals Industry, 2018 (Mining Charter, 2018) that was gazetted on 27 September 2018 (as amended).

Notwithstanding achieving a self-assessment score of above the required level of compliance as part of the Mining Charter reports, Impala Rustenburg Mine, Marula and Afplats' total scores are deemed to be non-compliant due to the delays in implementation of the ring-fenced mine community Local Economic Development Social and Labour Plan projects, as well as outstanding regulatory approvals of submitted amendments to the Social and Labour Plans. The Housing and Living Conditions Plans for Impala Rustenburg Mine and Marula were submitted on 9 December 2020, as required by the Housing and Living Conditions Standard for the Mineral Industry, 2019, that relates to the reporting in terms of the Mining Charter 2018, as published on 11 December 2019. The Implats Group will continue to strategically align its business, where economically viable, to comply or exceed all elements of the Mining Charter, 2018. The DMRE conducts regular compliance audits in respect of the Implats Group's mining and prospecting rights. During FY2021, inspections were conducted on 22 September 2020 in respect of the Impala Rustenburg Mine's Social and Labour Plan (SLP) for the period 2014 to 2018 and in respect of Marula's SLP for the period 2018 to 2022. On 25 February 2021, an inspection was conducted in respect of the Mining Works Programme for Marula's Converted Mining Rights. Furthermore, on 29 April 2021, an inspection was conducted in respect of the Mining Work Programme of Impala Rustenburg Mine relating to the renewal

application of Converted Mining Right 132 MR that was submitted on 18 September 2018, which application is still pending approval. The DMRE is still processing the Section 102 application to include the Wolvekraal and Kareepoort prospecting right areas into the adjacent Afplats Leeuwkop project submitted in June 2013. The Implats Group is attending to the required closure obligations relating to former prospecting rights now cancelled, abandoned or expired. Impala is engaging with the DMRE on the written notice of the grant of the Assegai prospecting right in the Mpumalanga province obtained on 27 November 2019.

In 2011, Impala Rustenburg Mine reached an agreement with the Royal Bafokeng Resources (Pty) Ltd (RBR) and Rustenburg Platinum Mines Limited (RPM) unincorporated joint venture to access certain of its mining areas at Bafokeng Rasimone Platinum Mine (BRPM) from 6, 8 and 20 Shafts. This is essentially a royalty agreement that provides mining flexibility to these shafts. During FY2018, the parties have concluded two notarial mining right leases, subject to the Section 11 approval of the DMRE, which applications were submitted in early FY2019. These notarial mining right leases will replace the current interim contractorship agreements between the parties once approved. During FY2020, the dates to obtain the above-mentioned Section 11 approvals as conditions precedent in the two notarial mining right leases, were extended. The RPM's interest in the agreements was ceded in line with the transfer of the 33% interest of RPM in the BRPM mining right to RBR. A further extension of the dates to obtain the Section 11 approvals was concluded with RBR in FY2021. Impala Rustenburg Mine and RBR continue to engage with the DMRE in the matter.

South Africa	Implats' interest (%)	Mining right (ha)	Prospecting right (ha)
Impala	00	00 770	
Rustenburg	96	29 773	
Afplats	74	4 602	1 065*
Marula	73.26	5 494	
Two Rivers**	46	11 349	
Waterberg**	15	20 532	79 188

\* Pending approvals.

\*\* Non-managed.

On 7 June 2021, Impala Rustenburg Mine received a Section 93 order and Section 29 directive in terms of the MPRDA in respect of the SLP for the period 2009 to 2013 and submitted its responses on 7 July 2021 to the DMRE.

Impala Rustenburg Mine and Afplats continued during FY2021 to engage with the DMRE to address and close out certain findings. This relates to the Impala Rustenburg Section 93 order (in respect of its SLP for the period 2014 to 2018) and the Afplats Section 93 order (in respect of its SLP for the period 2008 to 2013), as well as the Afplats Section 29 directive (in respect of its SLP for the period 2013 to 2018) as received in FY2020.

## Mineral rights and legal tenure (continued)

In 2017, Implats acquired a 15% interest in the Waterberg project, situated in the Blouberg Municipal/Administrative District in the Limpopo province on the northern limb of the Bushveld Complex. Implats also acquired a right of first refusal for concentrate offtake. The mining right application as submitted in FY2019 has been granted and executed on 13 April 2021 for a 30-year period. (DMRE reference number LP30/5/1/1/2/10161MR, covering 20 532ha, for the following minerals: PGMs, chrome, cobalt, copper, gold, iron, lead, molybdenum, nickel, rare earths, silver, vanadium and zinc). Three appeals have been lodged against the Waterberg rights (see page 110). Implats elected in FY2020 not

to exercise its option to increase its stake in the Waterberg project, but opted to retain its 15% ownership.

Details about to the Two Rivers mineral rights can be found in the ARM 2021 Mineral Resource and Mineral Reserve Statement **(www.arm.co.za).** A summary is presented on page 65 in the Two Rivers chapter of this document.

Fully permitted mining rights are not specified by the SAMREC Code (2016) as a prerequisite for converting Mineral Resources to Mineral Reserves. However, Implats is cognisant that a reasonable expectation must exist that such mining rights will be obtained.

#### ZIMBABWE

Following the May 2018 release by Zimplats to the Government of Zimbabwe of land measuring 23 903ha within Zimplats' mining lease area, Zimplats now holds two mining leases covering two pieces of land measuring in aggregate 24 632ha valid for life-ofmine. These mining leases replaced the special mining lease which Zimplats previously held. During FY2021, the amendment applications to the mining leases relating to the addition of certain minerals were approved.

At Mimosa, adjoining claims were acquired from Anglo American Platinum.

Zimbabwe	Implats' interest (%)	Mining leases (ha)	Mining claims (ha)	Special grant (ha)
Zimplats	87	24 632		
Mimosa**	50	6 594	845	30

\*\* Non-managed.

#### **CANADA**

Mining rights in Canada fall into two broad categories, namely 'claims' or exploration licences and mining leases. A claim or exploration licence grants its holder the exclusive right for a limited period to carry out exploration work within a designated area. Exploration work may include overburden removal, exploratory drilling and test-ore extraction and milling. A mining lease allows its holder to carry out extractive and processing activities on a commercial scale.

The Mining Act in the Province of Ontario is the provincial legislation that governs and regulates prospecting, mineral exploration, mine development and rehabilitation. The purpose of the Act is to encourage prospecting, online mining claim registration and exploration for the development of Mineral Resources, in a manner consistent with the recognition and affirmation of existing Aboriginal and treaty rights in section 35 of the Constitution Act, 1982. This includes the duty to consult and to minimise the impact of these activities on public health and safety and the environment. In 2009, Bill 173 – An Act to Amend the Mining Act, was passed into law. The modernisation process promoted mineral exploration and development to recognise Aboriginal and treaty rights, introduced processes that are more respectful of private landowners, and minimised the impact of mineral exploration and development. While some changes came into effect upon Royal Assent, most of the changes were brought into effect over time.

Implats holds 100% interest over all mining and property rights of Impala Canada Limited in Canada. Impala Canada Limited owns and operates the Lac des Iles Mine comprising Mining Leases and Mining Claims encompassing 78 234ha.

The Impala Canada Limited leases have a renewal date in 2027, at which time the company has the exclusive right to apply for renewal. The mining leases are currently subject to a 5% net smelter return (NSR) royalty.

Impala Canada Limited holds other mineral rights in Ontario. The company holds a 50% interest in the past-producing Shebandowan Mine Property (8 046ha) located approximately 75km northwest of Thunder Bay, Ontario. The mine ceased production in 1998 and is currently under care and maintenance. Additionally, the company holds 100% interest in approximately 859 active mining claims. This consists of the amalgamation of 967 small mining claim cells to larger mining claim cells, covering the same extent and area, totalling 62 998ha in the Thunder Bay District; 51% interest in 174 mining claims (3 677ha) of the Sunday Lake Joint Venture Exploration Project. Finally, the company holds 51% in options to purchase both surface and mining rights for four private land parcels (totalling 140ha) in the Sunday Lake Joint Venture Exploration Project.

Impala Canada is currently considering the execution of Stage 2 of its Option Agreement on Sunday Lake, which will see it increasing its equity holding by a further 13.99%, with the equivalent reduction in equity stake for Implats.

Canada	Implats' interest (%)	Mining leases (ha)	Mining claims (ha)
Lac des lles	100	3 513	
Shebandowan Mine Lease	50	8 046	
Thunder Bay District	100		62 998
Sunday Lake Joint Venture	51		3 677

# Mineral rights and legal tenure (continued)

#### Summary of Impala Canada mining leases

Claim number	Parcel	Area (ha)	Lease number	Due date	Annual Taxes (C\$)	Comments
CLM251	2982L TB	235	107910	31 Aug 2027	705	Surface and mining rights
CLM252	2983L TB	341	107911	31 Aug 2027	1 024	Surface and mining rights
CLM253	2985L TB	395	107909	31 Aug 2027	1 187	Surface and mining rights
CLM254	2984L TB	497	107908	31 Aug 2027	1 492	Mining rights only
CLM430	2531L TB	384	108139	30 Sep 2027	1 045	Surface and mining rights
CLM431	2532L TB	1 695	108138	30 Sep 2027	5 086	Surface and mining rights
Total	6	3 513			10 539	

#### Summary of Impala Canada mineral rights

Operations and projects	Туре	Ownership	Units	Hectares
Impala Canada Limited (Lac des Iles)	Mining leases	100%	6	3 513
Impala Canada Limited (Thunder Bay District)	Mining claims	100%	890	62 998
Shebandowan	Mining leases	50%	109	8 046
Sunday Lake Joint Venture	Mining claims	51%	174	3 677
Total			1 179	78 234

As at 30 June 2021, Impala Canada has legal entitlement to the minerals being reported upon without any known impediments. There are no legal proceedings or other material matters that may impact the ability of Impala Canada to continue with exploration and mining activities.



# Summary of our sustainability performance

#### **ESG MANAGEMENT**

淌

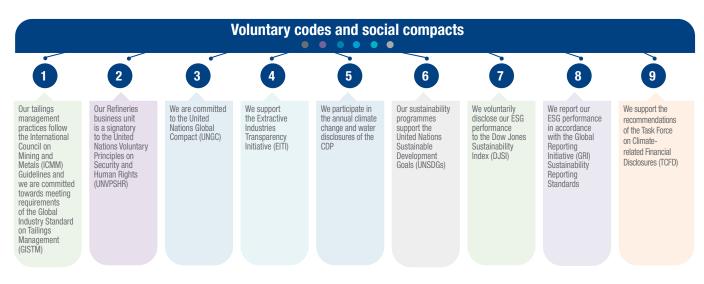
Effective ESG risk management remains a key strategic pillar of the Implats Group. We have a comprehensive ESG framework guiding our sustainability programmes, from exploration, through projects and operations. We aspire to lead in environmental, social and governance (ESG) performance, producing metals that sustain livelihoods beyond mining and that create a cleaner and better future. This section should be read in conjunction with the Implats 2021 ESG report for more elaborate detail, (www.implats.co.za).

Our ESG framework covers environmental areas such as energy and climate change; water management; air quality; biodiversity; waste management; rehabilitation and closure and environmental systems.

Our ESG programmes aim to:

- Sustain livelihoods through and beyond mining
- Provide meaningful employment and improved occupational health, safety and wellbeing for our staff, towards zero harm
- Reduce our environmental footprint
- Minimise negative and maximise positive environmental impacts
- Ensure responsible business practices within an entrenched governance framework.

The ESG considerations are not only critical modifying factors for the estimation and reporting of Mineral Resources and Mineral Reserves, but these are also important for stakeholders and investors alike.



#### **ESG REPORTING**

The ESG reporting by Implats has been compiled under the GRI Sustainability Reporting Standards, the FTSE/JSE SRI requirements, and internally developed guidelines on reporting. We report our sustainability non-financial data in accordance with the GRI reporting standards, available at (www.implats.co.za). Implats is a signatory to the United Nations Global Compact (UNGC). The ESG report serves as our advanced level UNGC Communication on Progress (CoP), outlining our support for its broader development objectives and our work on implementing the principles. Our integrated reporting process has also been guided by the principles and requirements contained in the International Financial Reporting Standards (IFRS), the IIRC's International <IR> Framework, the King Code on Corporate Governance 2016 (King IV), the JSE Listings

#### **CLIMATE-RELATED RISKS**

Requirements and the Companies Act, 71 of 2008.

Use of climate scenarios includes understanding risks related to the following:

- temperature and precipitation changes and their potential impact on the security of water supply for our operations and host communities
- the impact of climate-related laws, regulations and policies
- the potential impact of a transition to a low-carbon economy through the drive for vehicle electrification and cost-competitive renewable energy technologies.

Actions taken by the Group to mitigate these risks are detailed in the annual integrated report and the ESG Report. The Implats Group has publicly committed to achieving carbon neutrality by 2050. Implats has committed to align its climate reporting with the recommendations of the Task Force on Climate-related Financial Disclosures.

#### **ENERGY MANAGEMENT AND DECARBONISATION**

Security of electricity supply and rising energy prices continue to be a material risk for our South African and Zimbabwean operations, due to the aging national power generation and transmission infrastructure. The Group is developing an energy security and decarbonisation strategy to reduce its reliance on state-owned power generation utilities and introduce low-carbon and renewable energy sources. Our Zimbabwe and Canada operations are supplied electricity primarily from hydropower schemes, with Canada at 100% renewable electricity and Zimplats at nearly 50%. We continue to invest in energy savings and carbon emissions reduction initiatives. We are committed to playing our part in the global effort to reduce greenhouse gas (GHG) emissions towards carbon neutrality by 2050.

#### WATER MANAGEMENT

Water is our most significant environmental concern as the majority of our operations are in water-scarce countries, South Africa and Zimbabwe. The principal risks we face are increased water stress leading to potential operational disruptions, uncontrolled dirty water discharges into the environment, rising costs associated with water supply and management, local community discontent and reputational risks. Our strategy focuses on water consumption management, with operation-specific water conservation strategies, in line with our strategic commitment to reduce potable water usage levels and increase recycled/reused water usage. We actively participate in basin level catchment forums and discussions to promote longer-term water security. SCENE SETTING •

APPENDICES •

## **ENVIRONMENTAL CERTIFICATION**

All our operations, except Lac des Iles (LDI), have environmental management systems certified against the ISO 14001:2015 standard. LDI has conducted a gap analysis against ISO 14001:2015 certification and is in the process of addressing the identified gaps. Implats has an established incident and non-conformity procedure to manage, report, review and remediate environmental impacts from incidents or substandard acts and conditions. During the year, no fines or non-monetary sanctions for non-compliance with environmental regulations, licences or permits were imposed by authorities at any of our operations.

# ESG MODIFYING FACTORS FOR MINERAL RESOURCES AND MINERAL RESERVES

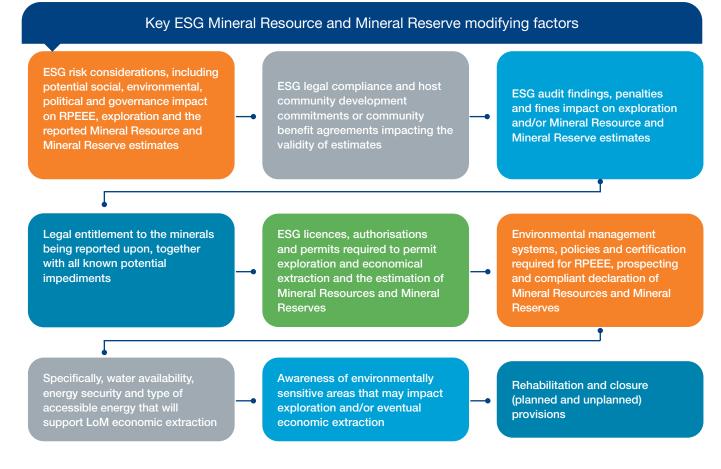
The South African guideline for the reporting of environmental, social and governance parameters within the solid minerals and oil and gas industries (the SAMESG guideline 2017), lists extensive guidelines for disclosing ESG parameters when reporting Exploration Results, Mineral Resources and Mineral Reserves. These have not been incorporated in the JSE Listings Requirements and the SAMREC Code (2016), and all disclosures are presently voluntary. The details will be different for Competent Persons' reports and Annual Mineral Resource and Mineral Reserve statements. The SAMESG guideline is being redrafted whilst the industry seeks clarity on responsible and compliant disclosure requirements of ESG aspects when reporting on Exploration Results, Mineral Resources and Mineral Reserves. ESG modifying factors considered by Implats in the estimation of Mineral Resources and Mineral Reserves are illustrated in the diagram below. In addition, sustained commitment to ESG stewardship has certain cost and financial implications that are incorporated in the RPEEE and valuation assessments of the Implats Mineral Resource and Mineral Reserve estimates.

## **ESG AUDITS AND ASSURANCE**

Independent assurance over selected ESGs' key performance indicators has been provided by Nexia SAB&T (a 90% blackowned and 48% black women-owned South African assurance firm). The scope of the assurance, the selected performance information and the independent statement of assurance are provided in the 2021 Implats ESG report (www.implats.co.za).

## **CLOSURE MANAGEMENT AND FUNDING**

We conduct concurrent rehabilitation taking into account considerations for all stakeholders, especially host communities. Rehabilitation provision is reported in the 2021 Implats annual financial statements and further commentary is provided in the 2021 Implats ESG report. These reports will be published at (www.implats.co.za) in September 2021.



# Summary of our sustainability performance (continued)

The current rehabilitation cost estimates and financial provisions are compiled as follows:

	Current cos	st estimates*	Financial provisions**	
Operations	2021 Rm	2020 Rm	2021 Rm	2020 Rm
Impala Rustenburg	1553	1 342	960	758
Impala Springs	564	275	533	228
Marula	397	334	181	148
Afplats	23	20	23	20
Zimplats	552	668	290	352
Impala Canada	278	297	285	312
	3 367	2 936	2 272	1 818

The current expected cost to restore the environmental disturbances as estimated by third-party experts for regulatory compliance purposes is R3 367 million for the Group. The amounts in the table above for accounting purposes exclude VAT, preliminary and general costs and contingencies. The Zimplats estimates include preliminary and general costs and contingencies. Future value of the current cost estimates discounted to current balance sheet date as provided in the annual financial statements of the Group.

\*\*

Financial guarantees are submitted to the DMRE to satisfy the requirements of the National Environmental Management Act concerning environmental rehabilitation. The third-party expert that conducts these assessments is E-Tek Consulting.

In compliance with the DMRE mine closure requirements, the South African liabilities are secured through insurance policies and bank guarantees. The trust fund has been dissolved. Only bank and

insurance guarantees are currently used as financial provisions. Similar arrangements are in place for the other regions.

Further details relating to the materiality of environmental aspects, management processes, historical performance, and commitments are reported in the 2021 ESG report.



# Mineral Resource management risk

The Group's reported Mineral Resources and Mineral Reserves represent its estimate of quantities of PGMs that have the potential to be economically mined and refined under anticipated geological, environmental, social, governance and economic conditions. There are numerous uncertainties and risks inherent in estimating quantities of Mineral Resources and Mineral Reserves and projecting potential future rates of metal production, coupled with many factors beyond the Group's control. The accuracy of any Mineral Resources and Mineral Reserves estimate is a function of several factors, including the quality of the methodologies employed, the quality and quantity of available data, geological interpretation and judgement.

This is also dependent on economic conditions that are in line with estimates. Further, estimates of different geologists and mining engineers may vary. After the date of an estimate, the Group's mining and production results may lead to a revision of estimates. This can be due to fluctuations in the market price of ores and metals, reduced recovery rates, or increased production costs due to inflation or other factors, rendering Mineral Resources and Mineral Reserves containing lower grades of mineralisation uneconomic. Mineral Resource estimates are based on limited sampling and, consequently, are uncertain as the samples may not represent the entire orebody and Mineral Resource. As the understanding of the orebody improves, the estimates may also change. In addition, the Mineral Reserves which the Group ultimately exploits may not conform to geological, metallurgical or other expectations, and the volume and grade of ore recovered may differ from the estimated levels. It is important to note that Mineral Resource data is not indicative of future production.

Substantial capital expenditure is required to identify and delineate Mineral Resources and Mineral Reserves through geological mapping and drilling. Significant costs are incurred to identify geological features that may prevent or restrict the ore extraction, determine the metallurgical processes to extract the metals from the ore, and construct mining and processing facilities in the case of new properties.

The Mineral Resource Management (MRM) Department subscribes to a formal risk management process that systematically treats all Mineral Resources and Mineral Reserves. All of the risks that could affect the Mineral Resources and Mineral Reserves are within acceptable tolerance levels. Implats recognises that Mineral Resource and Mineral Reserve estimations are based on projections, which may vary as new information becomes available or specifically if assumptions, modifying factors and market conditions change materially. This approach is consistent with our Group definitions of risk that have been revised in line with the updates published in terms of the International Risk Management Standard, ISO 31000:2018, which defines risk as 'the effect of uncertainty on objectives'. The assumptions, modifying factors, and market conditions, therefore, represent areas of potential risk. In addition, the security of Mineral Right tenure or corporate activity could have a material impact on the future mineral asset inventory.

The Group has developed a generic matrix to measure the relative severity of risks related to Mineral Resources. This risk rating tool is seen to be applicable to highlight, manage and mitigate perceived risks. The rating is also useful to rank different Mineral Resource blocks or projects.

During the year under review, we enhanced our risk assessment process to ensure alignment with the requirements of ISO 31000:2018. Arising from this process, we identify a set of objective-based risk assessments that cover the key aspects of the Implats business. Each identified risk, as well as its associated controls, has a clearly defined line management owner. This process aggregates into the identification of the prioritised Group strategic risks.

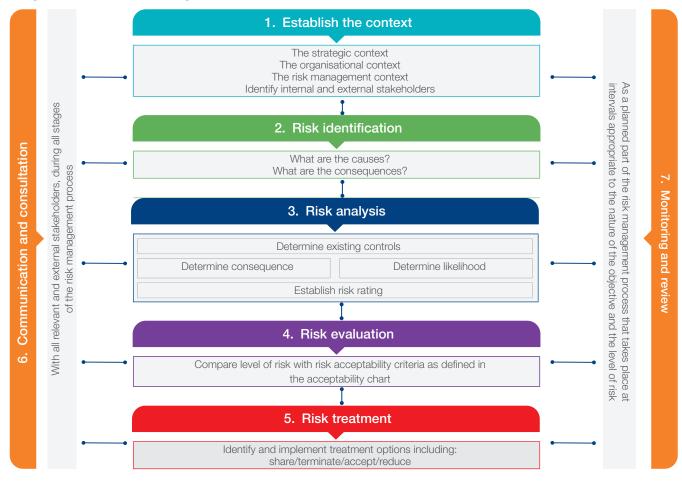
## **GROUP RISKS**

The group risks that may potentially impact on RPEEE include the following:

- The ability to maintain optimal and harmonious labour relations environment
- Rising cost and unreliable supply of electricity resulting in business interruption
- Deterioration in safety performance due to failure of critical infrastructure or non-achievement of safety requirements
- Impact of the Covid-19 pandemic on Implats' operations
- The new forex retention policy, combined with the requirement to pay taxes in US\$, will put pressure on foreign currency, lead to excess ZWL holdings and associated currency devaluation
- Inability to secure/maintain a social licence to operate and maintain stakeholder relations
- Impala Canada (IC): Challenges with the grade quality due to underground delivery
- Ensuring regulatory compliance through the value stream as informed through key legislation
- Ability to ramp up 16 Shaft and, in particular, 20 Shaft in accordance with the business plan at Impala Rustenburg
- Challenged capacity and efficiencies of management layers at South African operations
- Failure to establish water security, avoid contamination and manage water costs
- Marula business disruption due to community unrest
- Cyber risk attacks by third parties via the internet with malicious intent.

# Each individual operation's specific risks are listed later in this report.

## Mineral Resource management risk (continued)



The Group risk management process is described in detail in the 2021 Implats integrated and ESG reports. The key steps in risk management are illustrated in the diagram below:



# Managing our Mineral Resources

Implats embraces an integrated Mineral Resource management (MRM) function. To this end, systems, procedures and practices are aligned and are continuously being improved to achieve this objective. MRM includes exploration, geology, geostatistical modelling and evaluation, mine surveying, sampling, mine planning, ore accounting and reconciliation, and the MRM information systems. The MRM function is the custodian of the mineral assets and strives explicitly to optimise these assets through a constant search for optimal extraction plans that yield returns in line with the corporate and business objectives.

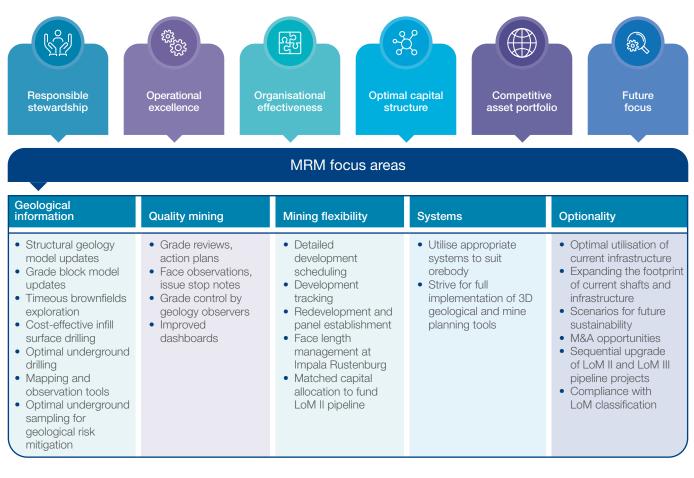
The main objective of the MRM function is to support the strategic intent and add value to the organisation through:

- Safe production, which is the first principle underpinning all Mineral Reserve estimates
- The appropriate investigation, interpretation and understanding of the orebodies
- Integrated short-, medium- and long-term plans
- Technically appropriate and proven management information systems
- Accurate and reconcilable Mineral Resource and Mineral Reserve estimates
- Seeking optimal solutions to ensure sustainable and profitable operations.

Continuous improvement has been embedded in the MRM function. Specific focus is given to new learnings, standardisation and protocols, and collaboration with the industry.

Present focus areas include:

- Timeous exploration drilling to support sustainable operations and LoM planning
- Improved Mineral Reserve flexibility, measured as mineable face length in conventional mining sections
- Improvement in the quality of mining
- Revisiting optionality of long-term planning
- Scenario planning for LoM II and III Mineral Resources to ensure a sustainable business model
- Transitioning from a 2D to appropriate 3D platform as part of the optimisation of our spatial mine planning, based on 3D spatial geological models at Impala Rustenburg and Marula
- Workstreams to ensure optionality to sustain operations.

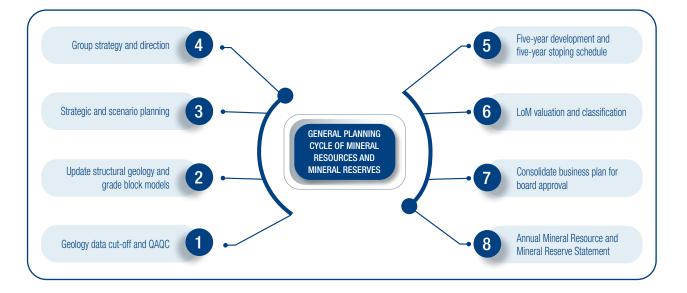


# STRATEGIC THRUSTS

# Planning our Mineral Reserves

The integrated Implats planning cycle, spanning across the whole financial year, has the primary objective of integrating the different planning levels providing continuity of plans and cycles, and populating the cycle with appropriate review processes linked to associated business reporting periods. Emphasis is placed on risk mitigation, optimisation of plans and compliance with standards and consolidation as a platform for tracking delivery against plans. The planning process is iterative, with top-down goals flowing through to operational planning and vice versa, with the ability to adjust the plan as conditions change. The embedded planning cycle gives due consideration to the planning sequence, the duration of the business planning period and the entrenching of long-term strategic planning, spanning the entire calendar year. The generalised planning cycle is shown below. Rework or new activities are accommodated out of the normal cycle. It commences with Scenario and LoM planning in August until October, followed by a detailed business planning (BP) phase in February until May, with a five-year focus.

The planning process is completely integrated with costing, outlook on commodity prices and financial valuation.



Implats has defined four levels of life-of-mine (LoM) planning, classified as levels III, II, IA and I. The four levels are linked to increased confidence levels from III to I, and the conversion of Mineral Resources to Mineral Reserves. LoM level III includes 'Blue Sky' and scoping studies, focusing mainly on Inferred Resources and exploration results. It may also include contiguous areas and opportunities outside existing lease boundaries and ownership. LoM III is excluded from the Mineral Reserve estimate. LoM level II includes planned and unapproved projects, which have a reasonable chance of future board approval. LoM level IA can be defined as those Mineral Reserves that fail the valuation test of LoM level I. These uneconomic volumes are removed from LoM I, ie Mineral Reserves, but are retained as Mineral Resources. Most of the Mineral Reserves removed through the tail-cutting process fall in the LoM level IA category. Likewise, operations that are deemed uneconomic under the current LoM considerations also fall in this category. No capital approval is required for these operations. These areas in LoM II and IA will be excluded from the Mineral Reserve estimate. LoM level I includes operational shafts and approved capital projects where a portion of Mineral Resources is converted to Mineral Reserves, and sufficient confidence exists for the declaration of Mineral Reserves in a public report. To this effect, no Inferred Mineral Resources are included in LoM I, other than incidental dilution, which is included at zero grade.

#### LoM levels and definitions





SCENE SETTING •

THE DETAILS - • MINERAL RESOURCES AND MINERAL RESERVES





# Regional geological settings

Implats exploits platiniferous horizons within the Bushveld Complex (BC) in South Africa and the Great Dyke in Zimbabwe, and the palladium-dominant orebody located in the Lac des Iles Intrusive Complex in Canada.

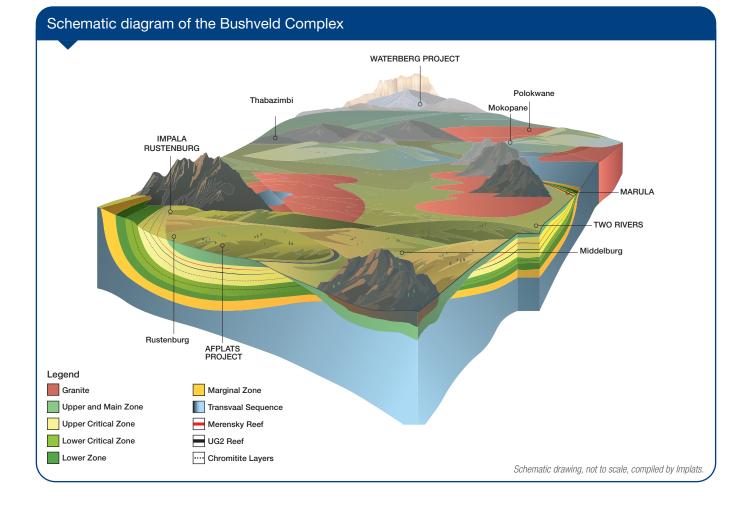
The Bushveld Complex and Great Dyke layered intrusions are unique in terms of size and geological continuity. Mining mostly takes place as underground operations, with specific mining methods adapted to suit the local geology and morphology of the mineralised orebodies.

#### THE BUSHVELD COMPLEX

The Bushveld Complex is an extremely large (65 000km<sup>2</sup>), two billion-year-old layered igneous intrusion occurring in the northern part of South Africa. Rock types range in composition from ultramafic to felsic. The complex is unique in size and the range and economic significance of its contained mineral wealth. In addition to the PGMs and associated base metals, vast quantities of chromium, vanadium, tin, fluorine and dimension stone are also produced.

The accompanying map (page 32) and schematic diagram below show the extent of the Bushveld Complex. The layered sequence, the Rustenburg Layered Suite, comprises five significant subdivisions. These are from the bottom upwards, the Marginal, Lower, Critical, Main and Upper Zones as indicated in the generalised stratigraphic column on page 31.

Three horizons within the Critical Zone, namely the Merensky Reef, the Upper Group 2 (UG2) Reef and the Platreef, host extensive economically exploitable quantities of PGMs. Two of these horizons are the focus of the current Implats' operations. The PGMs – platinum, palladium, rhodium, ruthenium and iridium – and the associated gold, copper, nickel, cobalt, chromium and other minor metals and compounds are mined concurrently but recovered by different processes.

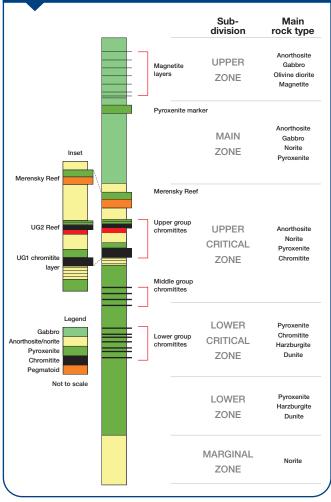


APPENDICES •

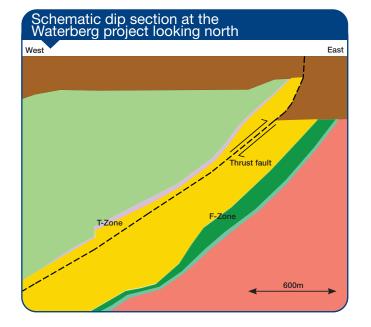
Chromitite layers present below the UG2 Reef contain little to no PGM mineralisation and are mined by other operators for their chromium content. Some PGEs are recovered as a by-product from these chromite layers. The economic potential of the Waterberg PGM deposit at the northern extremity of the Northern Limb is the focus for optimisation studies as part of the upfront work before commencing with potential mining. There are two PGE Cu-Ni-Au mineralised intervals in the Waterberg deposit, a lower F-Zone and an upper T-Zone. Both these contain dominant palladium mineralisation.

Implats' operations on the Bushveld Complex comprise Impala Rustenburg Mine north of Rustenburg, Marula Mine northwest of Burgersfort, and the Two Rivers Mine, a joint venture between Implats and ARM situated southwest of Steelpoort. The Afplats Leeuwkop Project is located in the western limb of the Bushveld Complex, west of Brits. Implats acquired a 15% interest in the

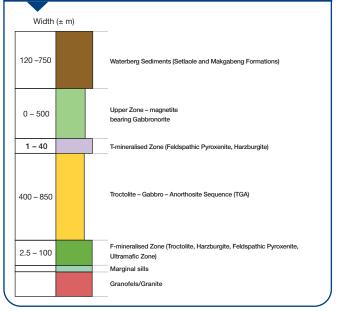




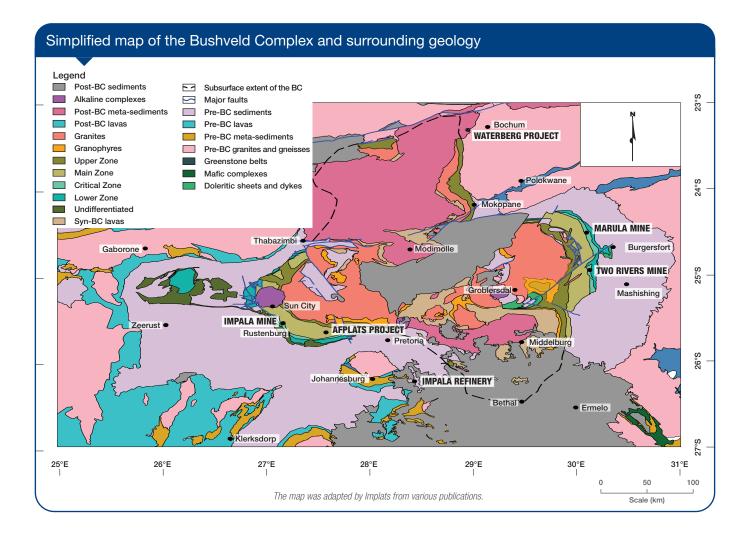
Waterberg Joint Venture project during 2017. Geological descriptions of the various reef types and facies are provided under the relevant operational sections. The grade distribution varies materially from area to area. The UG2 Reef morphology and associated vertical grade distribution differ significantly between regions, specifically in terms of the width of the main PGM bearing chromitite layer and in the number of layers. In general, the grade increases if the chromitite layer width becomes thinner.







# Regional geological settings (continued)





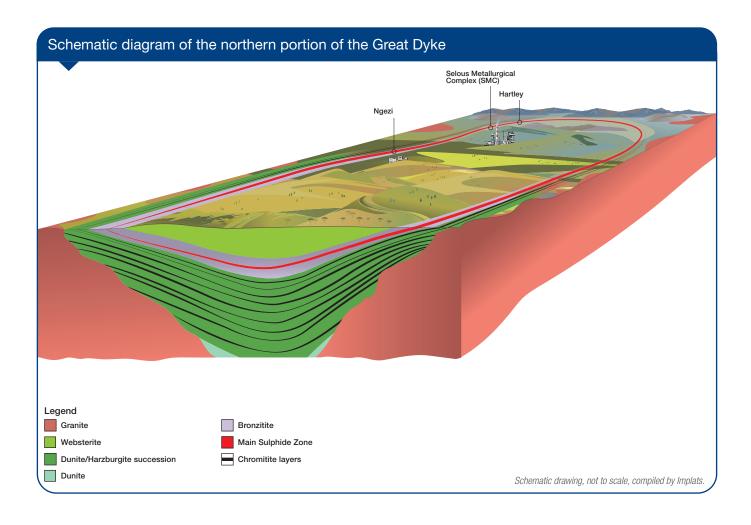
THE DETAILS - • MINERAL RESOURCES AND MINERAL RESERVES

## Regional geological settings (continued)

#### THE GREAT DYKE

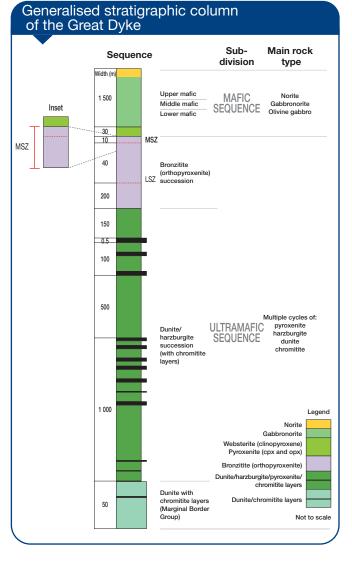
The Great Dyke is a 2.5 billion-year-old layered mafic-ultramafic body that intruded into Zimbabwe's Archaean granites and greenstone belts. It is highly elongated, slightly sinuous, 550km long, north-northeast trending with a maximum width of 12km. It bisects Zimbabwe in a north-north easterly trend. It is divided vertically into a lower ultramafic sequence, comprising cyclic repetitions of pyroxenite, harzburgite, dunite and chromitite, and an upper mafic sequence consisting mainly of norite, gabbronorite and olivine gabbro. It is U-shaped in section with layers dipping and flattening towards the axis of the intrusion. Much of the mafic sequence has been removed by erosion, and at the present plane of erosion the Dyke is exposed as a series of narrow, contiguous layered complexes or chambers. These are, from north to south, Musengezi, Hartley (comprising the Darwendale and Sebakwe sub-chambers) and a southern chamber (comprising the Selukwe and Wedza sub-chambers).

The Main Sulphide Zone (MSZ), host to economically exploitable PGMs and associated base metal mineralisation, is located 10m to 50m below the ultramafic/mafic contact in the P1 pyroxenite. The PGMs, along with gold, copper and nickel, occur in the MSZ. Descriptions of the MSZ and the value distributions are provided in the relevant operations sections. The grade profiles vary between areas and the platinum and palladium peaks are somewhat offset. Typically, the MSZ consists of a 2m to 10m-thick zone containing 2% to 8% iron-nickel-copper sulphides disseminated in pyroxenite. This nickel copper-rich layer base is straddled by a 1m to 5m-thick zone of elevated precious metals (Pt, Pd, Rh and Au). The base metal zone contains up to 5% sulphides, while the sulphide content of the PGM Zone is less than 0.5%. This change in sulphide content is related to the metal distribution consistently and is used as a mining marker. It can usually be located visually in the drillhole core, and with careful observation, it can also be visually identified underground. Therefore careful monitoring supported by channel sampling and XRF scanning is required to guide mining.



## Regional geological settings (continued)

Chromitite layers present below the MSZ contain little to no PGM mineralisation and are mined by other operators for their chromium content only. Implats' operations on the Great Dyke comprise Zimplats' Ngezi Mine southwest of Harare and the Mimosa Mine, a joint venture between Implats and Sibanye-Stillwater situated east of Bulawayo.



#### 29°S | 31°S | 30°S | 32°S Zambezi Mobile Belt Musengezi e Subchambe 17°S Darwendale Subchamber Harare Mining Lease 36 (Hartley Mine) Vorth Cham 18°S Chegutu • Kado Mining Lease 37 (Ngezi Mine) Sebakwe Subchamber Kwekwe 9°S Chivhu Mvuma Gweru Selukwe Subchamber Shurug 20°S Masvingo Bulawavo 4110 bchamber Zvishavane Wedza Mining Lease 24 (Mimosa Mine) Gwanda 🛛 21°S Southern Sate Ilites po Beli Mobil 100 0 Scale (km) Legend Basalt \_ Mining lease Sandstone Paragneiss/Meta-sediments Norite/Gabbro $\square$ Major faults Great Dyke

# Simplified map of the Great Dyke

Pyroxenite

AND OVERVIEW

Regional geological settings (continued)

#### THE LAC DES ILES INTRUSIVE COMPLEX

The Lac des lles property is underlain by mafic to ultramafic rocks of the Archean Lac des Iles Intrusive Complex (LDI-IC). The LDI-IC is the best documented of a suite of mafic to ultramafic intrusive bodies occurring within 30km of the Lac des Iles Mine. The intrusions are hosted by the Central Wabigoon Subprovince of the Wabigoon Terrane in the northwestern Superior Province of the Canadian Shield. Impala Canada holds title to active mineral claims covering most of the known Lac des lles suite intrusions.

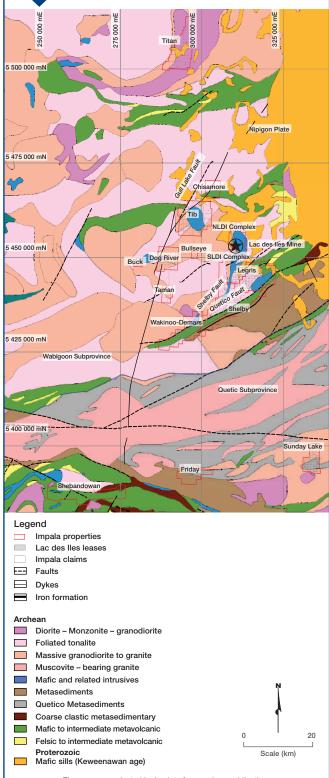
The easternmost bodies of the Lac des lles suite of intrusions are the LDI-IC and the Legris Lake Complex. The LDI-IC and the Legris Lake Complex appear to have been emplaced along with northeasttrending splay structures (eg, Shelby Lake fault) emanating from the Quetico Fault Zone. The Quetico Fault Zone is a collisional structural boundary between the Quetico Subprovince and the Wabigoon Terrane. The Lac des Iles suite intrusions were emplaced into the 3.01 to 2.89 billion-year-old granite-greenstone basement rocks designated as the Marmion Terrane, representing an older slice of magmatic arc-related crustal rocks.

Most of the known Lac des lles suite intrusions host economically notable (eg, greater than 1g/t combined palladium + platinum) PGE ± copper-nickel sulphide mineralisation in the form of surface showings and/or shallow drilling intersections. The LDI-IC remains the only member of the suite in which PGE Mineral Resources have been delineated.

The Lac des lles Mine property hosts the North Lac des lles Complex that mainly comprises ultramafic rocks, and the South Lac des lles Complex that is dominated by mafic rocks. Historical surface prospecting, mapping and limited trenching and diamond drilling have identified several areas in the North Lac des lles Complex hosting PGE occurrences exceeding 1g/t of combined Pd+Pt+Au. They are commonly hosted by orthopyroxene-bearing cyclic units and have Pd: Pt ratios of approximately 3:1, in contrast to the characteristic  $\geq$ 10:1 Pd: Pt ratios observed in the mineralised zones of the South Lac des lles Complex.

The South Lac des lles Complex, which hosts the Lac des lles Mine, was emplaced into predominantly intermediate composition orthogneiss basement rocks. The emplacement age of the main block intrusion has been established as 2.689 to 2.693 billion years. Four major intrusive sequences (series) are now recognised in the complex. The oldest series is referred to as the gabbronorite series. This was succeeded by a significant period of noritic magmatism that produced both the norite series and breccia series. The altered norite is strongly foliated with aligned chlorite grains in highly strained areas, defining a pervasive schistosity. The youngest magmatism to occur in the South Lac des Iles Complex produced the diorite series comprising more evolved hornblendebearing mafic to intermediate intrusive rocks with a wide range in textures and grain sizes.

Simplified regional geology of the Lac des lles area showing location of Lac des lles suite intrusions (dark blue), Lac des lles mine and mill (star) and Lac des lles mineral properties (red claim outlines)



# Exploration synopsis

Implats' exploration focus is limited to current operations. The Group exploration strategy remains unchanged insofar as the main focus being brownfields activities supporting ongoing mining at existing operations. In general, surface drill hole spacing during feasibility studies are 500m or greater apart. Infill drilling is required on an ongoing basis to better define geological structures, specific local complexities, ground conditions and grade variations to inform mine planning and direct medium-term layouts. The target remains to gather information timeously towards allowing, directing and supporting the five-year Mineral Reserve development plans and minimise the impact of geological risk on operations. Accordingly, Marula and Impala Rustenburg are catering to tighten their surface drill hole spacing to a targeted 400m collar spacing. Several brownfields feasibility opportunities require additional supporting geological information. As such, brownfields exploration plans are annually revisited and subjected to scrutiny at various management levels to ensure optimised spend in mitigating operational risks.

Underground geotechnical core-recovering drilling activities are routinely being undertaken at the different operations to assist with detecting potential hazardous geological features.

Annual Group exploration expenditure from the surface and underground operations for the past year amounted to some R278.8 million. This reflects a significant increase of 66.6% compared to the 2020 total of R167.3 million. The higher expenditure can be directly related to the need to acquire detailed geological information to support the Lac des lles life-of-mine (LoM) and that the brownfields projects in southern Africa. It is projected exploration expenditure for FY2023 will increase in levels of expenses to the order of R392.1 million. This equates to an effective doubling in exploration expenditure over two years and signifies Implats' commitment towards bolstering its confidence in both LoM I as well as pipeline LoM II and LoM III projects towards ensuring operational sustainability.

#### FY2021 Exploration expenditure

	Su	rface drillin	ıg	Unde	erground dr	illing	Geotechnical drilling			
Operations and projects	Total number	Length (m)	Amount (R'000)	Total number	Length (m)	Amount (R'000)	Total number	Length (m)	Amount (R'000)	
Impala Rustenburg Marula Two Rivers Zimplats <sup>1</sup> Mimosa <sup>1</sup> Afplats Lac des lles <sup>2</sup>	20 - 57 27 -	24 905 - 1 220 16 243 3 404 - -	45 740 - 1 830 27 214 6 632 - -	735 11 195 63 53 _ 167	43 613 1 082 15 596 6 300 6 682 - 56 068	53 477 1 134 8 580 6 272 2 675 - 118 701	- - 42 17 -	- - 3 750 341 - -	- - 5 972 440 - -	
Total	110	45 772	81 416	1 224	129 341	191 014	59	4 091	6 412	

<sup>1</sup> R14.22 per US Dollar /US\$ as at 30 June 2021.

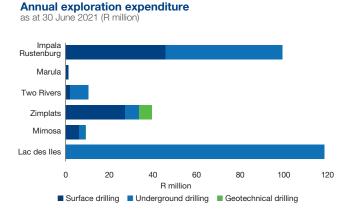
<sup>2</sup> R10.91 per Canadian Dollar/C\$ as at 30 June 2021.

# Details about the ongoing brownfields exploration are described in more detail in the individual operations' sections.

The Waterberg project has seen no active exploration programme during the last year, mainly because of the initial planned drilling having been completed to schedule. A definitive Feasibility Study (DFS) was completed, and further optimisation work is presently underway.

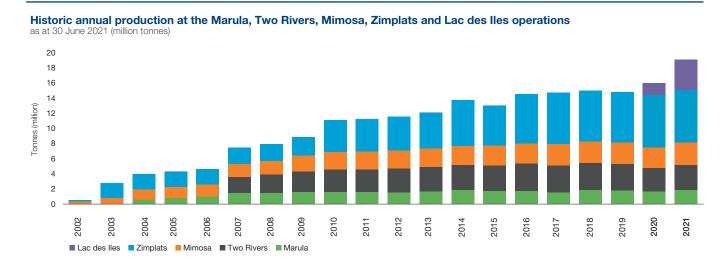
#### **OFFSHORE PROJECTS**

Impala Canada currently manages all offshore exploration activities. Before the acquisition by Implats, North American Palladium (NAP) deployed exploration personnel to upgrade the life-of-mine of the Lac des lles Mine (LDI) and develop potential new sources of mill feed within the greater region. This included successful drilling campaigns on the Sunday Lake PGM-Cu-Ni prospect 60km south of Lac des lles which was part of an earn-in option agreement with Implats. The Exploration team developed new opportunities and targets for future exploration and exploitation, including Titan, Friday, Shelby, Legris, Wakinoo and Tib prospects. Implats continues to monitor PGM exploration worldwide to maintain intelligence concerning Mineral Resource developments and exploration opportunities.

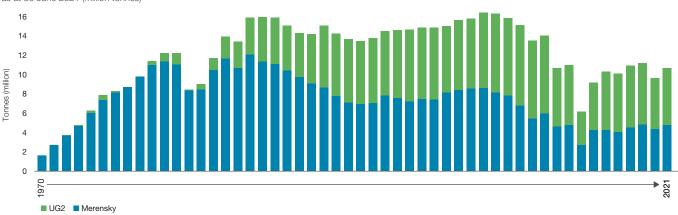


# Historic Group production trends

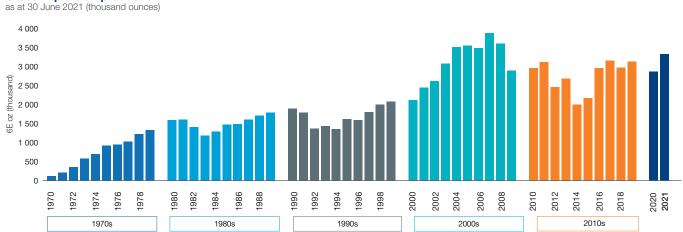
Summary statistics relating to the historical production of the Group is indicated in the accompanying graphs and table. Overall the gross refined ounces for the Group increased from 2 813koz 6E to 3 271koz 6E in the past year compared with the previous financial year.



#### Historic annual production at Impala Rustenburg operation as at 30 June 2021 (million tonnes)



**Gross Implats 6E production** 



# Historic Group production trends (continued)

	units	FY2021	FY2020	FY2019	FY2018	FY2017
Tonnes milled						
Impala Rustenburg	kt	10 686	9 635	11 211	10 947	10 121
Marula	kt	1 802	1 636	1 772	1 838	1 495
Two Rivers	kt	3 283	3 016	3 405	3 455	3 501
Zimplats	kt	6 821	6 751	6 486	6 570	6716
Mimosa	kt	2 861	2 701	2 814	2 802	2 729
Lac des lles	kt	3 901	1 553	-	-	-
Mill head grade						
Impala Rustenburg	g/t 6E	4.05	3.91	3.99	4.09	4.06
Marula	g/t 6E	4.37	4.70	4.40	4.33	4.26
Two Rivers	g/t 6E	3.43	3.45	3.52	3.63	3.90
Zimplats	g/t 6E	3.44	3.48	3.48	3.48	3.49
Mimosa	g/t 6E	3.87	3.85	3.83	3.84	3.83
Lac des lles	g/t 3E	2.59	2.45	-	-	-
Production ex Impala Rustenburg Mine*						
Platinum refined	koz	696.4	638.3	753.8	580.8	654.6
Palladium refined	koz	344.3	343.2	332.0	300.4	308.1
Rhodium refined	koz	96.4	100.0	86.9	88.5	88.7
Nickel refined	t	3 945	4 720	3 439	3 895	3 609
6E refined production	koz	1 334.4	1 270.1	1 390.8	1 126.8	1 246.6
Production ex Marula Mine*						
Platinum in concentrate	koz	88.3	80.5	83.0	85.1	67.9
Palladium in concentrate	koz	90.5	82.6	84.7	87.5	69.3
Rhodium in concentrate	koz	18.2	16.6	17.3	17.8	14.1
Nickel in concentrate	t	297	270	270	252	213
6E in concentrate	koz	231.3	210.5	216.9	223.5	177.6
Production ex Two Rivers Mine*						
Platinum in concentrate	koz	139.2	122.4	147.2	162.5	181.9
Palladium in concentrate	koz	84.5	73.2	86.0	96.6	107.1
Rhodium in concentrate	koz	24.0	21.2	25.6	28.6	31.8
Nickel in concentrate	t	609	481	552	606	602
6E in concentrate	koz	300.2	261.0	313.4	348.4	390.2

\* Numbers reflect 100% of production and not the portion attributable to Implats.

# Historic Group production trends (continued)

	units	FY2021	FY2020	FY2019	FY2018	FY2017
Production ex Zimplats Mine*						
Platinum in matte	koz	266.0	266.9	269.9	270.8	281.1
Palladium in matte	koz	226.5	228.0	223.0	223.2	233.0
Rhodium in matte	koz	23.7	23.4	23.9	23.9	25.4
Nickel in matte	t	4 925	4 991	5 295	4 931	5 111
6E in matte	koz	579.0	580.2	579.6	578.3	601.7
Production ex Mimosa Mine*						
Platinum in concentrate	koz	122.8	116.6	122.1	125.0	121.6
Palladium in concentrate	koz	96.2	91.7	96.7	98.7	96.9
Rhodium in concentrate	koz	10.2	9.8	10.5	10.8	10.5
Nickel in concentrate	t	3 680	3 421	3 567	3 651	3 441
6E in concentrate	koz	261.1	247.8	260.6	265.6	258.9
Production ex Lac des Iles Mine*						
Platinum in concentrate	koz	16.5	6.4	-	_	-
Palladium in concentrate	koz	227.5	84.7	_	_	-
Nickel in concentrate	t	1 247	445	-	_	-
6E in concentrate	koz	260.5	97.4	-	_	-
Gross margin						
Impala Rustenburg	%	49.0	29.5	6.9	(22.2)	(22.6)
Marula	%	63.0	45.7	10.1	(0.4)	(39.0)
Two Rivers	%	62.9	45.5	23.9	23.3	23.8
Zimplats	%	58.0	48.7	29.7	25.5	16.6
Mimosa	%	58.1	34.8	17.4	16.5	0.1
Lac des lles	%	45.7	27.0	-	_	-
Gross Implats refined production**						
6E	koz	3 271	2 813	3 074	2 925	3 100
Platinum	koz	1 517	1 349	1 526	1 468	1 530
Palladium	koz	1 121	892	910	849	932
Rhodium	koz	193	181	206	199	204
Nickel	kt	15.4	15.4	16.0	16.2	17.5

\* Numbers reflect 100% of production and not the portion attributable to Implats.

\*\* Includes IRS production from other sources.

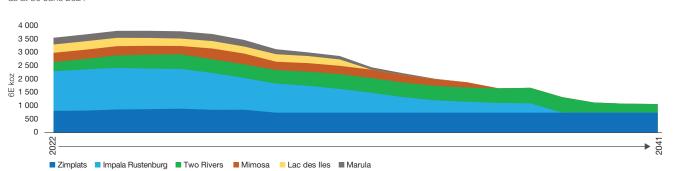
The above statistics not only reflect material improvements in the gross margins at all operations on the back of the metal price hikes, it is also evident that production levels improved year on year. Gross 6E production is at record levels since 2008.

# Group life-of-mine outlook

The high-level LoM (20-year) plan is depicted in the detailed sections per operation in terms of planning levels I, IA, II and III. These graphs reflect 100% of the annual production forecasts and not the portion attributable to Implats. These do not include all the 'Blue Sky' opportunities – some of this potential is specifically excluded at this early stage. Caution should be exercised when considering the LoM plans as these may vary if assumptions, modifying factors, exchange rates or metal prices change materially. These LoM profiles should be read in conjunction with Mineral Resource estimates to determine the long-term potential.

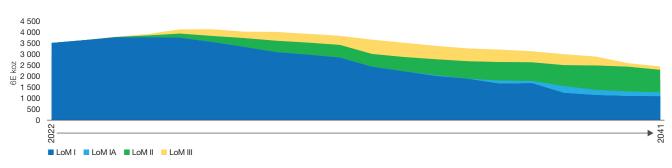
The graph below shows the consolidated high-level LoM I plans collated from the individual profiles per operation. The profiles represent the Mineral Reserve estimates as at 30 June 2021 and only reflects current infrastructure. The LoM I profiles have all been subjected to economic testing and unprofitable production have been excluded and classified as LoM IA. This is referred to as tail-cutting. There are no Inferred Mineral Resources included in the LoM I and Mineral Reserve estimates, other than minor incidental dilution in isolated cases, which is included at zero grade. At the same time, going forward, Implats is committed to an increased strategic thrust to evaluate LoM scenarios and options in the effort to optimise current infrastructure and Mineral Resources. This refers in particular to brownfields opportunities but does not exclude mergers or new acquisitions.

Implats estimated 20-year 6E LoM I ounce profile as at 30 June 2021



The pictorial 20-year profile in this chapter is shown below as a combination of level I with selected level IA, II and III profiles. Only LoM I is based on Mineral Reserves, while LoM II and III have not been converted to Mineral Reserves. Therefore, this combined graph shows a similar low profile from 2036 onwards compared with the profile published as at 30 June 2020. It is clear from a combined Group perspective that a large proportion of the 20-year plan is still at levels II and III and would require an improved financial outlook, further studies, funding and capital approval by

the board. Feasibility studies are continuing at Impala Rustenburg, Two Rivers, Zimplats, Marula, Mimosa and the Waterberg project to evaluate future opportunities. During the past year, the LoM I profiles for Two Rivers and Mimosa were extended on the basis of feasibility studies having been concluded. At Two Rivers, a portion of the Merensky Reef Mineral Resource has now been converted to Mineral Reserves. The Mimosa Mineral Reserves were expanded with the acquisition of the adjoining Anglo American Platinum claims, referred to as Wedza West.



#### Implats estimated 20-year 6E LoM ounce profile as at 30 June 2021

# Valuation and sensitivities

#### **VALUATION AND SENSITIVITIES**

Implats uses a discounted cash flow model that embodies economic, financial and production estimates in the valuation of mineral assets. Forecasts of key inputs are:

- Relative rates of inflation in South Africa, Zimbabwe, Canada and the United States
- Rand exchange rates Rand/C\$ and Rand/US\$
- Metal prices
- Capital expenditure
- Operating expenditure
- Production profile
- Metal recoveries.

The outputs are net present value, the internal rate of return, annual free cash flow, project payback period and funding requirements. The marketing department of Implats regularly updates metal price and exchange rate forecasts. As at 30 June 2021, a real long-term forecast for 6E basket revenue per 6E ounce sold of R24 445 (US\$1 211) was used by the Group. Specific real long-term forecasts in today's money include:

Platinum	US\$/oz	1 087
Palladium	US\$/oz	1 194
Rhodium	US\$/oz	8 624
Ruthenium	US\$/oz	294
Iridium	US\$/oz	3 012
Gold	US\$/oz	1 468
Nickel	US\$/t	16 318
Copper	US\$/t	6 952
Exchange rate	R/US\$	14.51

The spot basket price calculated for Implats at a Group level as at 30 June 2021 was R42 079 (US\$2 957), and the equivalent real long-term market consensus basket price is R24 094 (US\$1 589) per 6E ounce. The long-term market consensus metal price estimates are the mean of 12 broker companies' real term metal price estimates over the next three to five years. Long-term basket price forecasts per operation vary per the metal ratios. Rigorous profitability tests are conducted to test the viability of the Mineral Reserves. References to this are listed in the sections per operation and highlight the spot price scenarios. A summary graph showing the price sensitivity of the total Group Mineral Reserves is depicted on the right.

It is important to note that the basket price is materially impacted by the characteristics of the orebody, specifically the individual 6E metal proportions. These ratios vary significantly from area to area and from orebody to orebody as illustrated in the operational sections of this report. This impact of the Mineral Reserves can clearly be illustrated by the revenue drivers for 2021 where some 42% of the Group revenue was derived from rhodium.

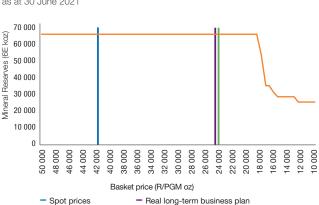
An economic profitability test was conducted at each operation. This process entails the determination of when an operation is no longer profitable and no longer contributes to fixed overheads. Each operation's processing, services and other costs are split between their relevant fixed and variable portions by virtue of a declining production profile. Once an operation is no longer profitable (or contributing to fixed overheads), it is removed from the LoM I profile (and Mineral Reserves). The fixed costs apportioned to the operation are then reallocated to the remaining operations.

A Mineral Resource, by definition, is 'a concentration or occurrence of solid material of economic interest in or on the earth's crust in such form, grade, quality and quantity that there are RPEEE. The interpretation of such 'eventual economics' varies significantly. However, it implies some form of high-level view regarding either 'yard-stick comparisons' or high-level scenario models.

On this basis, Implats has excluded significant mineralisation from 2 000m below surface and selected areas based on geology and potential infrastructure. In total, some 116.6Moz 6E has been excluded from current statements on this basis.

The deeper Rustenburg Mineral Resources beyond current infrastructure investment require a real basket price of between R25 500 to R29 000 per 6E ounce (US\$1 723). This suggests that future investments at Impala Rustenburg might at best be marginal under the current long-term price assumptions. The Zimbabwean Mineral Resources are reasonably robust in terms of RPEEE. Mineral Resources beyond current infrastructure investment will require a real long-term basket price in the order of R24 500 per 6E ounce (US\$1 688).

It should be acknowledged that the commodity market remains fluid. Further details can be seen in the Marketing section of the Implats 2021 integrated annual report at **(www.implats.co.za)**.



Price sensitivity



- Consensus prices

# Impala Rustenburg

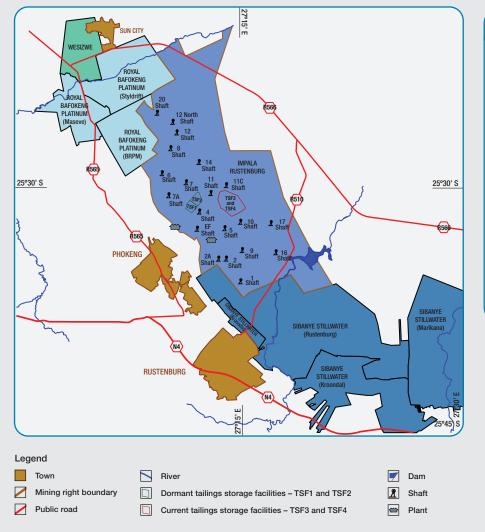


Impala Rustenburg was created on 29 April 1968 as a subsidiary of Union Corporation. Mining production commenced on 22 July 1969.

Mining right 29 773ha

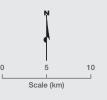
Implats' interest 96% managed

# **REGIONAL LOCALITY MAP SHOWING PGM MINING RIGHTS AND INFRASTRUCTURE AROUND IMPALA RUSTENBURG**



## Location

Impala Rustenburg is located 25km northwest of the town of Rustenburg in the North West province and 140km west of Pretoria, which is situated in the Gauteng province. The Rustenburg region is known as the so-called platinum belt, with vast proportions of worldwide platinum production traditionally produced. Sibanye Stillwater is situated to the immediate south of the Impala Rustenburg operation, and Royal Bafokeng Platinum is located adjacent to the northern boundary of the Impala Rustenburg operation.



42

APPENDICES •

### Impala Rustenburg (continued)

#### **BRIEF HISTORY**

In 1965 Union Corporation purchased a company called Impala Prospecting Company. The first vertical shaft (62m) was developed in 1967 to obtain a bulk Merensky Reef sample. Impala Platinum Limited was created on 26 April 1968 as a subsidiary of Union Corporation. Production commenced on 22 July 1969. Initially, only the Merensky Reef was mined at Impala Rustenburg. The UG2 Reef mining only started in the early 1980's when the technology to smelt ore containing chromitite at a higher temperature was developed. By the early 1990s, 13 vertical shafts were in operation, and Impala Rustenburg produced some one million platinum ounces per annum. Shaft sinking at the new generation shafts (16 and 20) commenced in the mid-2000s. Sinking operations at 17 Shaft started in 2008 but operations have subsequently been placed on care and maintenance.

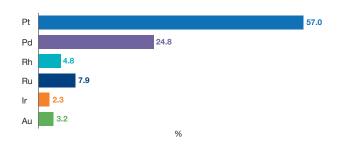
### **GEOLOGICAL SETTING**

The Merensky and UG2 Reefs are separated by a sequence of primarily anorthositic and noritic layered units from 45m in the northern part of the lease area and thickening to 125m in the southern lease area. Both the Merensky and UG2 Reefs are exploited at Impala Rustenburg.

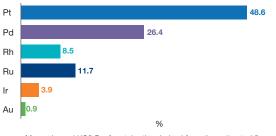
The Merensky Reef is generally composed of an upper feldspathic pyroxenite, overlying a thin basal chromitite stringer, followed by an anorthosite to norite footwall. Locally this is termed a 'pyroxenite reef'. Occasionally a pegmatoidal pyroxenite and a second chromitite stringer may be developed between the feldspathic pyroxenite and the footwall units. Locally this pegmatoidal pyroxenite can exceed 2m in thickness. This is termed a 'pegmatoid reef'.

The UG2 Reef is defined as the main chromitite layer, with most PGM and base metal mineralisation confined to this unit, with a poorly mineralised pegmatoidal pyroxenite footwall. The main chromitite layer's hangingwall is a feldspathic pyroxenite containing up to four thin, poorly mineralised chromitite layers. The vertical grade distribution is depicted in the accompanying graphs, showing peak values at reef contacts associated with chromitite. The average 6E metal ratios show the distinct differences between the Merensky and UG2 Reefs, particularly the higher Pt: Pd ratio related to the Merensky Reef and the relatively high proportion of rhodium in the UG2 Reef, as shown above.

# Impala Rustenburg Merensky Reef 6E metal ratio as at 30 June 2021 (%)



Impala Rustenburg UG2 Reef 6E metal ratio as at 30 June 2021 (%)



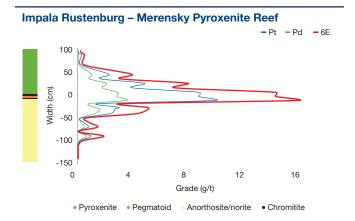
Merensky and UG2 Reef metal ratios derived from the estimated five-year historic mill feed control samples.

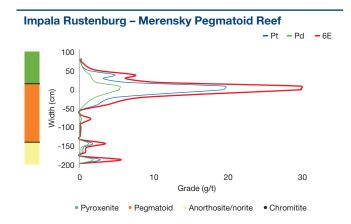
Both mineralised horizons dip gently away from the sub-outcrop in a north-easterly direction at 10° to 12°. The reefs may be disrupted by minor and major faults, lamprophyre, syenite and dolerite dykes, late-stage ultramafic replacement pegmatoid bodies and potholes. The latter features are generally circular and represent "erosion" of or slumping into the footwall units. They vary in size from a few metres to tens of metres across and up to tens of metres in depth. These features are accounted for in the Mineral Resource and Mineral Reserve estimates as geological losses, and they contribute to dilution or absence of the mineralised horizons.

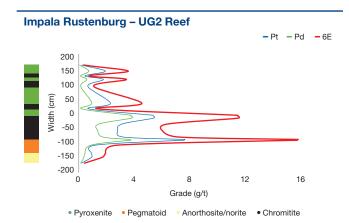
#### **EXPLORATION AND STUDIES**

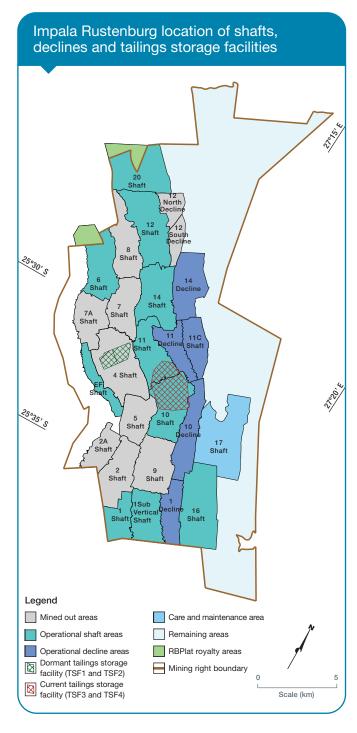
Exploration activities at Impala Rustenburg have typically comprised of geological mapping (surface and underground), geophysical surveys (aeromagnetics, 3D vibroseis) and corerecovering drilling (surface and underground). Surface drilling is mostly infill work to supplement a broader grid of 500m spacing completed during feasibility studies. Such work is mainly targeted to assist with detailed geological structural interpretations. Underground geotechnical core-recovering drilling activities are routinely undertaken at Impala Rustenburg to detect potential hazardous geological features and guide mining operations. Underground drilling is often employed to keep the footwall drives at the ideal elevation and resolve geological structural complexities. Summary statistics about the work conducted in the past year are reported in the exploration overview section of this report.

## Impala Rustenburg (continued)









**IMPLATS – MINERAL RESOURCE AND MINERAL RESERVE STATEMENT 2021** 

THE DETAILS - • MINERAL RESOURCES AND MINERAL RESERVES

#### Impala Rustenburg (continued)

During FY2021, exploration on the Impala Rustenburg mining area focused on providing information for ongoing brownfields feasibility studies; infill drilling from surface at 12, 14, 16 and 20 Shafts, where 20 drill holes were completed. In addition, some 735 underground drill holes were completed across the various shafts, primarily aimed at guiding the spatial placement of development at the ideal elevation while also providing geotechnical information. The results of this work yielded critical geological information required for short- and medium-term planning. In addition, feasibility studies are in progress to assess the potential to exploit the UG2 Reef at 11C and 20 Shafts.

#### **MINERAL RIGHTS AND LEGAL TENURE**

The mining rights at Impala Rustenburg were converted into new-order rights in 2008 and awarded for 30 years. The MPRDA allows for an extension to mining rights. Impala Rustenburg holds contiguous mining rights over 29 773ha across 16 farms or portions of farms. Further summary details are shown on page 19.

Impala Rustenburg has legal entitlement to the minerals being reported upon without any known impediments. There are no legal proceedings or other material matters that may impact the ability of Impala Rustenburg to continue with exploration and mining activities.

# ENVIRONMENTAL MANAGEMENT AND SOCIAL LICENCE TO OPERATE

Summary details about the Group environmental management and policy are listed on page 22. This includes the focus areas such as compliance, water stewardship, air quality, managing waste streams and promoting land management practices. Impala Rustenburg is ISO 14001 certified and aligned with the 2015 standard. Systems are in place to investigate and determine the direct and root causes of high-severity incidents and to address and close out these incidents. All of the tailings currently produced by the concentrator plants are deposited on the No 4 tailing storage facility, one of the largest in South Africa. The projected life of the TSF is at least another 30 years.

Impala Rustenburg's licence to operate is illustrated by the following:

- Mining right: MR130, 131, 132 and 133. A renewal application submitted for MR132; others expire in 2038
- MWP updated in 2020; further update to be submitted by December 2021
- SLP progress reports submitted annually
- EMP: Consolidated and approved in 2013; two EMPs were later approved (2013 and 2107, among others for reprocessing of the dormant TSF1 and TSF2)
- WUL: Approved in 2011, valid for 30 years, application for amendment submitted to DWS in 2018
- Certification: ISO 14001: Impala Rustenburg submitted performance assessments for its environmental management programme audit reports (EMPr) in December 2020 (as required every two years).

#### **GENERAL INFRASTRUCTURE**

Impala Rustenburg is an established mine with infrastructure that includes tarred roads, shaft areas, buildings, offices, railway lines, powerlines, pipelines, concentrators, smelter, chromite recovery plant, sewage and rock and tailings storage facilities. The extent of the servitude area that constitutes the infrastructure, roads, rails and dumps is 46.23km<sup>2</sup>. The network of surface rail infrastructure between the various shaft heads, two concentrators, and a smelter consists of about 92km of rail.

The Impala Rustenburg operations are supplied with electricity by Eskom primarily from its Ararat Main Transmission sub-station (MTS). The total installed capacity at Ararat MTS amounts to 945MVA. At present, there are eight main intake points on Impala Rustenburg, all of which have adequate redundancy. An alternate source of electricity for Impala Rustenburg is the Marang MTS, connected to the Impala 16 Shaft, to provide electricity during emergency conditions. Rand Water supplies water to Rustenburg and Impala Rustenburg from the Vaal River system (Vaal Dam) and the Magalies Water system. The total allocation was 42MI per day, but 2MI per day is now allocated to the new Platinum village. In addition, Impala Rustenburg has a contract to receive 10MI treated effluent (grey water) per day from the Rustenburg municipal water care works for the two processing plants. Impala Rustenburg's three water care works also supply about 3 to 5MI of treated effluent per day to the Mineral Processes operations.

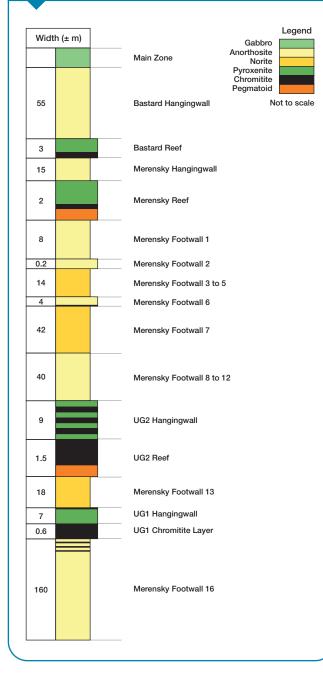
# MINERAL RESOURCE ESTIMATION AND CLASSIFICATION

Mineral Resources are reported inclusive of Mineral Reserves and allow for estimated geological losses but not for anticipated pillar losses during eventual mining. The UG2 Reef Mineral Resources have been estimated using a minimum mining cut of 95cm. The Mineral Resource estimation method is ordinary kriging. The evaluation is conducted using on-reef development sampling and drill holes samples to establish a Mineral Resource estimate for short- and long-term planning. Grade block models are developed using Isatis<sup>™</sup> software. The Mineral Resource classification is based on a Group standard practice that considers the quality of the data, the continuity of the reef, if a seismic survey covers the area or not, the data spacing, and the geostatistical parameters.

The Indicated Mineral Resources in the dormant tailings storage facilities (TSF1 and TSF2) are reported separately. Historically 64 drill holes were drilled at TSF1 and TSF2. In FY2019, an additional 11 drill holes were completed on TSF1 to confirm the Mineral Resource estimation. This was updated using ordinary kriging. Trial mining operations were concluded, and it was decided to reprocess the entire complex.

Mineral Resource estimates are based on mining faces at 31 December 2021. The Mineral Resources estimates have been non-spatially depleted per shaft and reef horizon for six months until 30 June 2021.

#### Generalised geological succession of the upper portion of the Critical Zone at Impala Rustenburg



# REASONABLE PROSPECTS FOR EVENTUAL ECONOMIC EXTRACTION (RPEEE)

Rigorous RPEEE testing is based on the Group standard that, among others, considers (a) security of tenure, (b) exclusion due to ESG considerations, (c) infrastructure, (d) technical constraints (eg VRT), (e) data quality and distribution, (f) confidence in estimation and (g) economic testing for reasonable prospects for eventual economic extraction. All the Mineral Resources reported for Impala Rustenburg are considered for RPEEE (see also valuation and sensitivities on page 51). The RPEEE provides for a depth cut-off, and no Mineral Resources deeper than 2 000m below the surface are reported. In addition, various Mineral Resource blocks are considered on a case-by-case basis. This has resulted in the identification of areas where the eventual economic extraction is in doubt.

#### **MODIFYING FACTORS**

Key modifying factors such as overbreak, underbreak, off-reef mining, on-reef development dimensions, sweepings and other planning factors are applied to the mining area (centare profile) to generate tonnage and grade profiles. The modifying factors used to convert the Mineral Resource to a Mineral Reserve are derived from historical performance while considering future anticipated conditions. Implats' long-term price assumptions in today's money (supporting Mineral Reserve estimates) are shown on page 41.

Mineral Resource Key assumptions	Merensky Reef	UG2 Reef
Geological losses	25 – 35%	37 – 47%
Area	55.7 million ca	64.5 million ca
Channel width	114cm	95cm

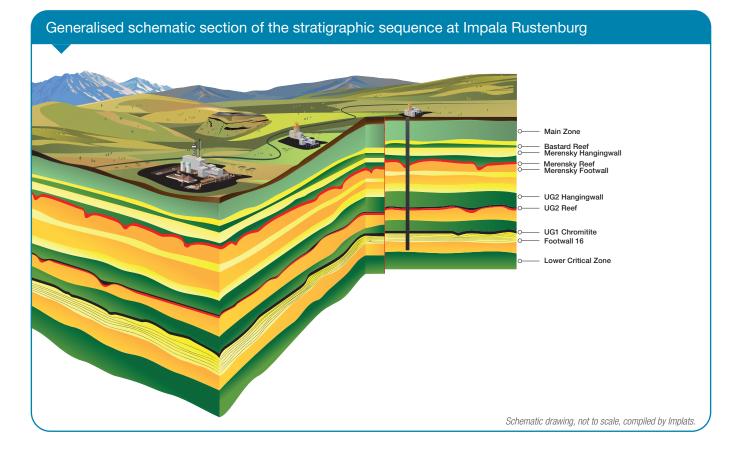
Mineral Reserve Modifying factors	Merensky Reef	UG2 Reef
Dilution	9 – 12%	9 – 12%
Pillars	8 – 10%	8 – 10%
Planning factor	90 - 92%	88 - 90%
Relative density	3.05 – 3.25	3.7 – 3.8
Average stoping width	135cm	114cm
Concentrator recoveries	89 – 91%	79 – 81%

INTRODUCTION • AND OVERVIEW SCENE SETTING •

THE DETAILS - • MINERAL RESOURCES AND MINERAL RESERVES

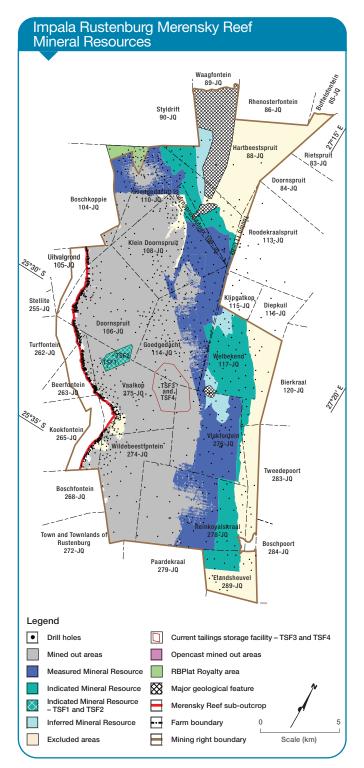
APPENDICES •

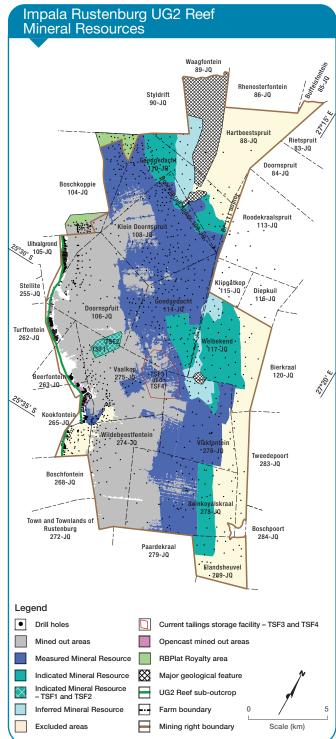
# Impala Rustenburg (continued)





### Impala Rustenburg (continued)





#### Impala Rustenburg Mineral Resource estimate (inclusive reporting)

						As at	: 30 Jun	e 2021							
Orebody		Ν	Nerensky	Reef			UG2 Re	ef			1	FSF1 and T	SF2		
Category		Measured In	ndicated I	nferred	Total	Measured I	ndicated l	nferred	Total	Total	Measured I	ndicated Ir	ferred	Total	Total
Tonnes	Mt	113.4	65.6	11.4	190.4	147.8	70.6	12.4	230.8	421.1	_	54.4	_	54.4	475.6
Width	cm	121	104	96		95	95	95			-	-	_	-	
4E grade	g/t	6.25	6.46	7.00	6.37	5.58	5.55	5.46	5.56	5.93	-	0.70	_	0.70	5.33
6E grade	g/t	6.96	7.20	7.79	7.09	6.61	6.58	6.47	6.59	6.82	_	0.78	-	0.78	6.13
Ni	%	0.14	0.17	0.16	0.15	0.04	0.05	0.04	0.04	0.09	_	-	-	-	0.09
Cu	%	0.08	0.09	0.09	0.08	0.01	0.01	0.01	0.01	0.04	-	-	-	-	0.04
4E oz	Moz	22.8	13.6	2.6	39.0	26.5	12.6	2.2	41.3	80.3	-	1.2	-	1.2	81.5
6E oz	Moz	25.4	15.2	2.9	43.4	31.4	14.9	2.6	48.9	92.3	-	1.4	-	1.4	93.7
Pt oz	Moz	14.5	8.7	1.6	24.8	15.3	7.3	1.3	23.8	48.5	-	0.7	_	0.7	49.3
Pd oz	Moz	6.3	3.8	0.7	10.8	8.3	3.9	0.7	12.9	23.7	-	0.3	-	0.3	23.9

Orebody		1	Verensky	Reef			UG2 Re	ef				TSF1 and T	SF2		
Category		Measured I	ndicated I	nferred	Total	Measured I	ndicated I	nferred	Total	Total	Measured	Indicated In	ferred	Total	Total
Tonnes	Mt	116.2	68.8	11.2	196.2	148.1	70.5	12.4	231.0	427.3	_	50.1	_	50.1	477.4
Width	cm	121	104	99		95	95	95			-	_	_	-	
4E grade	g/t	6.29	6.43	7.33	6.40	5.55	5.51	5.36	5.53	5.93	-	0.71	-	0.71	5.38
6E grade	g/t	7.02	7.18	8.18	7.14	6.61	6.56	6.38	6.58	6.84	-	0.81	_	0.81	6.21
Ni	%	0.16	0.16	0.15	0.16	0.04	0.05	0.04	0.04	0.10	-	-	-	-	0.10
Cu	%	0.09	0.09	0.08	0.09	0.01	0.01	0.01	0.01	0.04	-	-	-	-	0.04
4E oz	Moz	23.5	14.2	2.6	40.4	26.4	12.5	2.1	41.1	81.5	-	1.1	_	1.1	82.6
6E oz	Moz	26.2	15.9	3.0	45.1	31.5	14.9	2.6	48.9	93.9	-	1.3	-	1.3	95.2
Pt oz	Moz	14.9	9.0	1.7	25.6	15.2	7.2	1.2	23.7	49.3	-	0.6	_	0.6	49.9
Pd oz	Moz	6.5	3.9	0.7	11.2	8.3	3.9	0.7	12.8	24.0	-	0.3	_	0.3	24.3

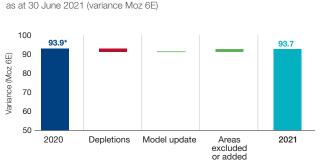
As at 30 June 2020

#### **MINERAL RESOURCE RECONCILIATION**

Year-on-year, the Impala Rustenburg Mineral Resource estimate reduced marginally by 0.2Moz 6E; this was impacted by depletion and updating of the geological and geostatistical estimation models.

The decrease was offset by the inclusion of the TSF1 and TSF2 Mineral Resource estimates in the combined total.

Total Impala Rustenburg 6E Mineral Resources



\* The TSF1 and TSF2 Mineral Resources are excluded from the FY2020 total.

#### **MINING METHODS**

The Merensky and UG2 Reefs are mined concurrently. Stoping at the operations is carried out through conventional double-sided breast mining following Impala's best practice principles. The access haulages are developed in opposite directions from cross-cuts connected to a central shaft position, following the two reef horizons on strike in the footwall of the reefs and are defined as half levels. Footwall drives are developed at approximately 18m to 30m below the reef horizon, with on-reef raise/winze connections between 180m and 250m apart. Panel face lengths vary from 15m to 28m for both Merensky and UG2 Reefs, with panels typically separated by 6m x 3m grid pillars with 2m ventilation holes. Stoping widths are approximately 1.3m and 1.1m for conventional Merensky and UG2 Reefs, respectively, depending on the width of the economic reef horizon. In addition, mechanised (trackless) bord and pillar mining occurs in selected Merensky Reef areas at 14 Decline. The average stoping width of the mechanised panels is about 1.9m.

## Impala Rustenburg (continued)

#### **MINING PLANNING PROCESS**

Mine design and scheduling of operational shafts are undertaken using CADSmine<sup>™</sup> and Studio UG software, while the mine design and scheduling for project shafts are undertaken using Studio UG software only. Geological models/ore blocks are updated and validated using G-Blocks and boundaries in the MRM information system. The mine design for the first two years is monthly per crew. This is extended on an annual basis for the remaining period of the LoM. The planning sequence allows for a cycle that starts with a comprehensive review of the LoM plan followed by the detailed scheduling of a five-year development schedule and a two-year detailed month-by-month stoping schedule.

The Mineral Reserve estimate is the result of the mine planning process applied to Indicated and Measured Mineral Resources only, the application of detailed modifying factors; but importantly, are also subjected to rigorous economic testing at given market conditions.

# MINERAL RESERVE ESTIMATION AND CLASSIFICATION

Mineral Reserve grades are quoted after applying mine to mill modifying factors. The Mineral Reserves mentioned reflect anticipated grades delivered to the mill. The conversion and classification of Mineral Reserves at Impala Rustenburg are informed by:

- Feasible mine plan and project studies, board approval and available funding
- Economic testing at given market conditions (price deck)
- Measured Mineral Resources are converted to Proved and Probable Mineral Reserves if the mine plan passed economic testing and is approved for funding, while Indicated Mineral Resources are only converted to Probable Mineral Reserves, subject to confidence and economic viability.
- Proved Mineral Reserves are those areas where the main development has been completed

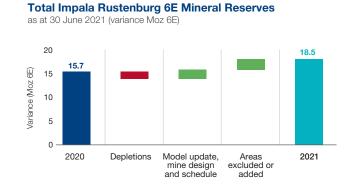
- No Inferred Mineral Resources are converted to the Mineral Reserve category or considered for feasibility studies
- The BP2022 Mine Plan was based on the survey faces of December 2020 with a spatial mine design and schedule forecast of six months until 30 June 2021.

The Mineral Resources and Mineral Reserves involved with the royalty agreement with Royal Bafokeng Platinum (RBPlat) are excluded in this report as the ownership vests with RBPlat. This refers to the commercial transaction with RBPlat to access some of its mining areas at BRPM from 6 and 20 Shafts.

#### **MINERAL RESERVE RECONCILIATION**

The year-on-year reconciliation of the total Impala Rustenburg Mineral Reserve is impacted by depletion. The Mineral Reserve grade and tonnage increase due to the progression of certain LoM IA areas to LoM I based on RPEEE and economic considerations. The addition of the TSF1 and TSF2 Mineral Reserves impacted positively on the reconciliation.

A significant proportion (85%) of all the Mineral Reserves is located in the mature and growth shafts.



#### Impala Rustenburg Mineral Reserve estimate

As at 30 June 2021

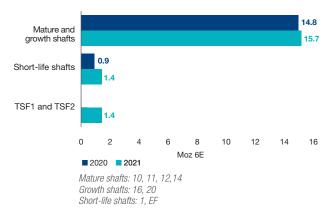
Orebody		Me	rensky Re	əf	ί	JG2 Reef			TSF	1 and TSF	-2	
Category		Proved F	Probable	Total	Proved F	Probable	Total	Total	Proved P	robable	Total	Total
Tonnes	Mt	12.1	43.2	55.3	14.4	56.3	70.7	126.0	_	54.4	54.4	180.4
Width	cm	140	144		114	113	-	-	-	-	-	-
4E grade	g/t	3.60	3.75	3.72	3.68	3.59	3.61	3.66	_	0.70	0.70	2.76
6E grade	g/t	4.01	4.17	4.14	4.36	4.26	4.28	4.22	-	0.78	0.78	3.18
4E oz	Moz	1.4	5.2	6.6	1.7	6.5	8.2	14.8	-	1.2	1.2	16.0
6E oz	Moz	1.6	5.8	7.4	2.0	7.7	9.7	17.1	-	1.4	1.4	18.5
Pt oz	Moz	0.9	3.3	4.2	1.0	3.7	4.7	8.9	-	0.7	0.7	9.7
Pd oz	Moz	0.4	1.4	1.8	0.5	2.0	2.6	4.4	-	0.3	0.3	4.7

THE DETAILS - • MINERAL RESOURCES AND MINERAL RESERVES

### Impala Rustenburg (continued)

As at 30 June 2020												
Orebody		Merensky Reef		UG2 Reef				TSF1 and TSF2				
Category		Proved F	robable	Total	Proved F	Probable	Total	Total	Proved Pr	obable	Total	Total
Tonnes	Mt	8.2	46.2	54.4	13.7	49.5	63.1	117.5	_	-	-	117.5
Width	cm	142	139		115	114	-	-	_	-	-	-
4E grade	g/t	3.47	3.75	3.71	3.59	3.48	3.50	3.60	_	-	-	3.60
6E grade	g/t	3.87	4.19	4.14	4.27	4.14	4.17	4.15	_	-	-	4.15
4E oz	Moz	0.9	5.6	6.5	1.6	5.5	7.1	13.6	_	-	-	13.6
6E oz	Moz	1.0	6.2	7.2	1.9	6.6	8.5	15.7	_	_	-	15.7
Pt oz	Moz	0.6	3.5	4.1	0.9	3.2	4.1	8.2	-	_	-	8.2
Pd oz	Moz	0.3	1.5	1.8	0.5	1.7	2.2	4.0	-	-	-	4.0

# Impala Rustenburg Mineral Reserve distribution as at 30 June 2021 (Moz 6E)



## PROCESSING

Mineral Processes receives ore from the shafts allocated to either the UG2 Plant for the higher chromium grade material or the Central Concentrator for Merensky ore. Between 89% and 91% of the PGMs from the Merensky ore are recovered at mass pulls ranging from 5% to 7% utilising ten primary mills, feeding two, nine-stage, tank cell flotation banks. Approximately 79% to 81% of the PGMs are recovered from the UG2 ore at a mass pull of 2% to 3%. The PGM recovery from UG2 ore is performed utilising a more complex circuit configuration to reduce chromium reporting to the concentrate stream. The MF2 Plant, also situated at the Central Concentrator, operates three primary mills that can accommodate any Merensky ore spillover and, more recently, the old tailings from TSF1 and TSF2. This allows for flexibility in the ore split received from the mining operations without significantly impacting the recovery of valuable material.

Tailings from both concentrators are further processed at the Tailings Scavenging plant to improve overall recovery. In addition, the UG2 Plant tails are also treated at two chromite recovery plants.

The smelter operation treats the concentrate from both the Central Concentrator and UG2 Plant as well as third-party material. The concentrate is first dried to reduce the moisture content and is then treated through one of three electric arc furnaces to produce

a copper, nickel, iron sulphide-rich matte at a mass pull of 8% to 10%. The remaining 90% produces a low-grade furnace slag. The furnace matte is then treated in the converter operation. Granulated converter matte is transported to the refinery operations in Springs by road. Both furnace and converter slag are retreated at its Slag Plant using a flotation process to enhance the recovery of valuable metals. The refineries, including both the base metal and precious metal refineries, are located in Springs, east of Johannesburg.

## LOM, VALUATION AND SENSITIVITY

The strategic outlook remains under review, given the improvement in metal prices. Several studies are being undertaken to optimise the Mineral Resource and infrastructure assets. Such work is targeted to extend the LoM profile. An economic profitability test was conducted at each shaft, mainly to conduct so-called tail-cutting at the end of a shaft's life, where a shaft cannot contribute to its overhead cost. The impact varies from shaft to shaft; on average 10% of the Mineral Reserves have been excluded based on such economic reviews. The effect of tail-cut is more pronounced on the UG2 Reef estimates.

The economic viability of the Impala Rustenburg Mineral Reserves is tested using net present value calculations over the LoM of the Mineral Reserve, determining the lowest real rand basket price, which would still render the Mineral Reserve viable. These calculations generate basket prices based on the local PGM metal ratios and differ from the overall Group basket prices. This is then tested against the internal Impala Rustenburg estimate of the real long-term basket price and the spot price as at 30 June 2021. These tests indicate that the Impala Rustenburg operation requires a real long-term basket price of between R16 500 and R17 500 per 6E ounce to be economically viable. The real spot basket price for the Impala Rustenburg operation as at 30 June 2021 was R41 7604 (US\$2 924), and the Impala Rustenburg internal long-term real basket price per 6E ounce is R22 847 (US\$1 700). Investment in maintaining current production levels well into the future through prudent capex allocation on selected projects from existing infrastructure within the lease area is being considered. The commodity market remains fluid. Key operating statistics are shown on page 38 together with the production summaries.

## Impala Rustenburg (continued)

#### **COMPLIANCE**

Impala Rustenburg has adopted the SAMREC Code (2016) for its reporting. The Competent Person for the Mineral Reserves is Emmanuel Acheampong, a full-time employee of Impala Rustenburg. He holds an MSc (Eng) Mining and an MBA degree and is registered with ECSA and SAIMM as member in good standing, with registration number 400018/91 and has 22 years' relevant experience. The Competent Person for the Impala Rustenburg Mineral Resources is David Sharpe, a full-time employee of Impala Rustenburg. He holds a BSc (Hons) (Geology) and a BComm degree and is registered with SACNASP, with registration number 400018/91 and has 33 years' relevant experience. Implats has written confirmation from the Competent Persons that the information disclosed in terms of these paragraphs are compliant with the SAMREC Code (2016) and, where applicable, the relevant SAMREC Table 1, Appendices and JSE section 12 Listings Requirements and that it may be published in the form, format and context in which it was intended.

Caracle Creek International Consulting MinRes and Fraser McGill Mining and Minerals advisory were engaged for the 2021 third party audit of Impala Rustenburg as part of Implats' governance process for the Mineral Resource and Mineral Reserve estimates,

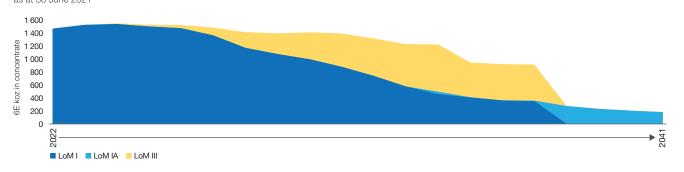
Impala Rustenburg estimated 20-year 6E LoM ounce profile as at 30 June 2021 respectively. No critical issues/fatal flaws were found that could have a material impact on the Mineral Resource and Mineral Reserve estimates. In addition the auditors found the estimates to be SAMREC (2016) compliant and could not find any impediments which would prevent the inclusion of the results as part of Implats' 2021 annual declaration of Mineral Resources and Mineral Reserves.

#### **IMPALA TOP RISKS**

The Group risk management process is described on page 25, where the top Group risks are listed.

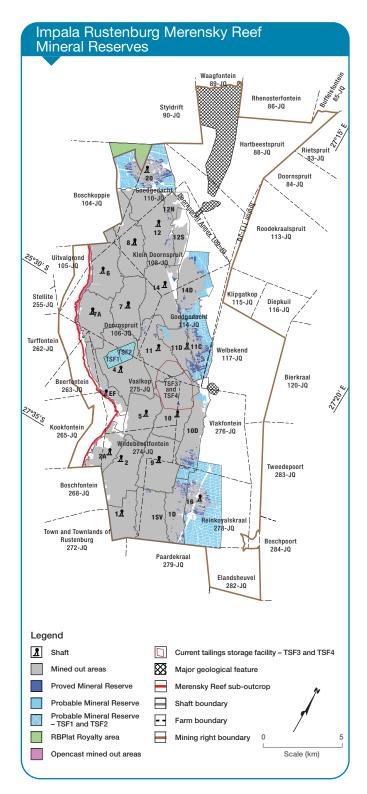
In this context, the top additional operational risks identified at Impala Rustenburg that can potentially impact the RPEEE, in order of priority are:

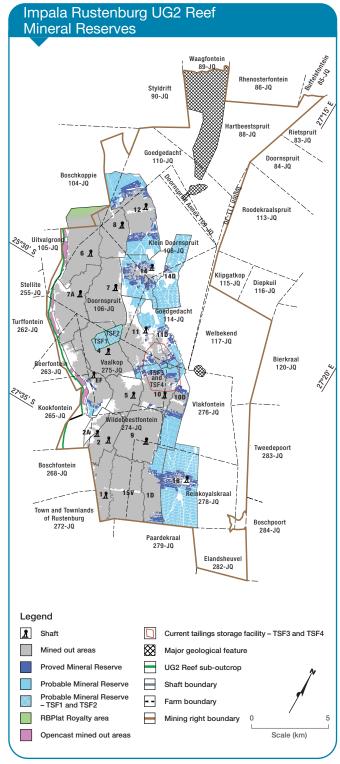
- Impact of community unrest on Impala Platinum
- Labour disruption and violence due to union rivalry
- Increasing unemployment rate causing unrealistic jobs and procurement demands
- Criminal and fraudulent activities within Impala properties
- Loadshedding/curtailment due to electricity supply and Eskom infrastructure failure.





#### Impala Rustenburg (continued)





# Marula

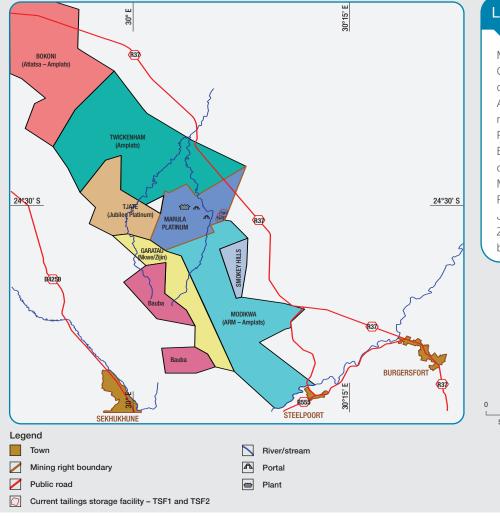


Renowned explorer Hans Merensky first recognised platinum from this area on the nearby farm Maandagshoek in 1924. In June 1998, Implats entered into an arrangement to acquire the Winnaarshoek property from Platexco, a Canadian-based company.

Mining right 5 494ha

Implats' interest 73% managed

# REGIONAL LOCALITY MAP SHOWING PGM MINING RIGHTS AND INFRASTRUCTURE IN THE MARULA SURROUNDINGS



## Location

Marula Mine is located within the Greater Tubatse Local Municipality of the Limpopo province of South Africa, approximately 35km northwest of Burgersfort. Marula Platinum is situated in the Eastern Bushveld Complex, located south of the Anglo Platinum Twickenham Mine and north of the Anglo Platinum-ARM Modikwa Mine. Jubilee Platinum and Garatau (Nkwe/ Zijin) share the western (down-dip) boundaries.



#### Marula (continued)

#### **BRIEF HISTORY**

Exploration activities in the region started in the 1920s, following the discovery of PGMs by Hans Merensky on the nearby Maandagshoek 254KT (now Modikwa Mine). Most of the prospecting activities were prioritised on the Merensky Reef in preference to the UG2 Reef. This early work included trenching, the excavation of adits and sampling of outcrops. In June 1998, Implats entered into an arrangement to acquire the Winnaarshoek property from Platexco, a Canadian-based company. The mineral rights to portions of the adjacent farms of Clapham and Forest Hill and a sub-lease to Driekop were subsequently obtained from Anglo Platinum in exchange for Hendriksplaats (now part of Modikwa Platinum Mine). The establishment and development of the mine commenced in October 2002. Marula is a managed operation within the Implats portfolio.

The Merensky and UG2 Reefs are separated by a sequence of primarily anorthositic and noritic layered units of 400m in combined thickness.

### **GEOLOGICAL SETTING**

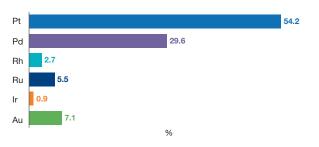
Both the Merensky and UG2 Reefs are present, but only the UG2 is currently exploited. The UG2 Reef is defined as the main chromitite layer, with most of the mineralisation confined to this unit, followed by a poorly mineralised pegmatoidal footwall. The Merensky Reef comprises the upper portion of a pyroxenite layer, with a chromitite stringer close to the hangingwall contact. Mineralisation peaks over the chromitite stringer and decreases into the hangingwall and footwall. The average 6E metal ratios show the distinct differences between the Merensky and UG2 Reefs, particularly the high proportions of palladium and rhodium associated with the UG2 Reef at Marula.

Both mineralised horizons sub-outcrop on the Marula mining rights area and dip in a west-southwest direction at 12° to 14°. The reefs are relatively undisturbed by faults and dykes, with one prominent dolerite dyke traversing the mining area. Potholes represent most of the geological losses encountered underground, while a small dunite pipe also disrupts the reef horizons. These geological features are accounted for in the Mineral Resource and Mineral Reserve estimates as geological losses.

#### **EXPLORATION AND STUDIES**

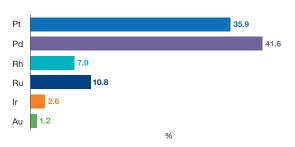
Exploration activities that led to the discovery of PGMs at Marula Mine started in the 1920s following the recognition of PGMs by Hans Merensky in the region. Follow-up exploration in the 1960s and 1980s by Anglo American Platinum Limited (Anglo Platinum) entailed exploration drilling targeting Merensky and the UG2 Reefs.

#### Marula Merensky Reef 6E metal ratio as at 30 June 2021 (%)



Merensky Reef metal ratios derived from the Mineral Resource estimate.

as at 30 June 2021 (%)



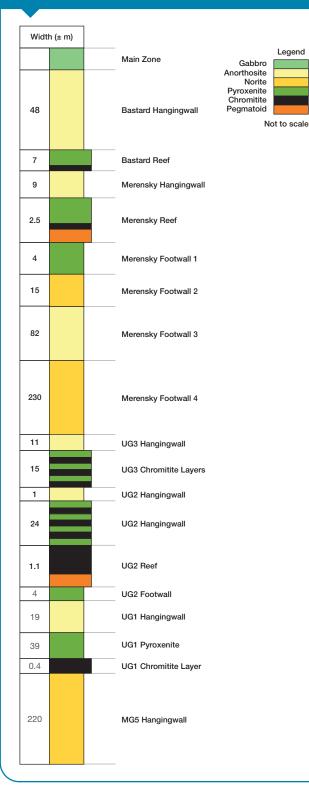
UG2 Reef metal ratios derived from the Mineral Resource estimate.

Several exploration techniques have been employed at Marula by historical explorers and Implats, with the most notable being surface geological mapping, aeromagnetic surveys and surface exploration drilling. Core drilling is the primary drilling technique employed. Ongoing surface drilling is typically infill work to supplement a broader grid completed during feasibility stages. Such work is mainly targeted to assist with detailed structural interpretations. In addition, underground geotechnical corerecovering drilling activities are routinely being undertaken. This forms part of a proactive safety strategy to detect flammable gas, gas pockets, water-bearing features, possible geological anomalies and related phenomena ahead of current mining operations. Summary statistics about the work conducted in the past year are reported in the exploration overview section of this report.

At the two mining shafts at Marula, 34 underground drill holes were drilled, mainly for water cover and geological delineation. Two significant supplementary surface exploration campaigns are earmarked for FY2022 towards bolstering geological confidence for Marula Phase II. Results from the 2021 exploration have been integrated with the structural geology and block models, both for the current operations and the ongoing feasibility study for the mine extension of Marula Phase II.

Marula UG2 Reef 6E metal ratio

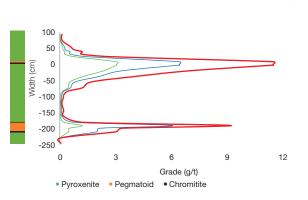
### Marula (continued)



# Generalised geological succession of the upper portion of the Critical Zone at Marula

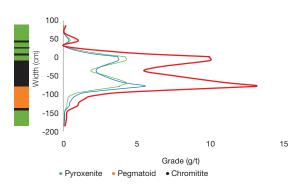
#### Marula – Merensky Reef







- Pt - Pd - 6E

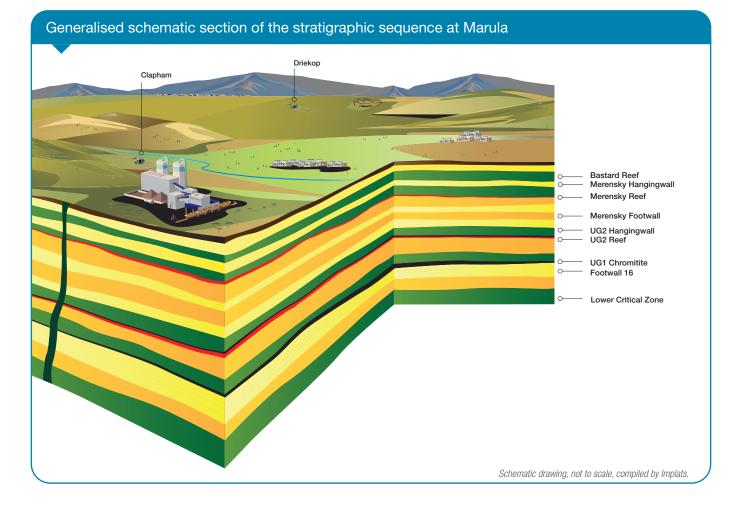


#### **MINERAL RIGHTS AND LEGAL TENURE**

Marula holds two contiguous converted mining rights covering 5494ha across Winnaarshoek and Clapham farms and portions of Driekop and Forest Hill. The new-order mining right was awarded for 30 years in 2008. In terms of the MPRDA, mining rights can be renewed on expiry. Implats manages the operation and has a 73.26% interest in Marula, with each of the three empowerment groupings (Mmakau Mining, the Marula Community Trust and Tubatse Platinum) holding a 9% interest each. The Black Economic Empowerment transaction was refinanced in 2020. It decreased the BEE ownership to 26.74%.

Marula has legal entitlement to the minerals being reported upon without any known impediments. There are no legal proceedings or other material matters that may impact the ability of Marula to continue with exploration and mining activities.

APPENDICES •



# ENVIRONMENTAL MANAGEMENT AND SOCIAL LICENCE TO OPERATE

Summary details about the Group environmental management and policy are listed on page 22. This includes the focus areas such as compliance, water stewardship, air quality, managing waste streams and promoting land management practices. Marula's ISO 14001 certification lapsed in 2017 but was successfully re-certified in 2019. In line with our environmental management system expectations, all areas are required to identify and report on environmental incidents. Systems are in place to investigate and determine the direct and root causes of highseverity incidents and to address and close out these incidents.

Marula's licence to operate is illustrated by the following:

- Mining right: LP 61 MR and LP 63 MR executed in January 2008, valid until January 2038
- MWP updated in 2019
- SLP progress reports submitted annually

- EMP: Approved in 2014, application for amendment
- WUL: Approved in 2011, application for amendment submitted to DWS in 2018
- Certification: ISO 14001.

### **GENERAL INFRASTRUCTURE**

The region is well developed, partly due to other mining activities in the vicinity. The R37 tarred road from Burgersfort to Polokwane passes through the area, while a secondary tarred road links the R37 to the main office and other infrastructure at Marula. The existing mines and villages are supplied with electricity by Eskom. Marula has an adequate and firm electricity supply and distribution network. Two independent 132kV Eskom power lines provide the site with electricity. Water is supplied through the Lebalelo Water Scheme, from which Marula has an allocation of 13.8MI per day, which is more than adequate for planned production levels. Mining infrastructure includes two decline shafts, offices, stores, a concentrator plant, a chromite recovery plant, tailings storage facilities and overland ore conveyance.

# MINERAL RESOURCE ESTIMATION AND CLASSIFICATION

The statement below reflects total estimates for Marula as at 30 June 2021. Mineral Resources quoted are inclusive of Mineral Reserves. The Mineral Resource estimate for the UG2 Reef is shown at a minimum mining width. The estimate has been conducted using the Isatis<sup>™</sup> software. A multi-pass search was used for the estimation, and capping of extreme values was applied for UG2 Reef data. Estimated losses have been accounted for in the Mineral Resource estimation varying from 20% to 25%, using the geological model constructed in CADSmine<sup>™</sup> software as the basis. The Mineral Resource classification is based on a Group standard practice that considers the quality of the data, the continuity of the Reef, if a seismic survey covers the area or not, the data spacing, and the geostatistical parameters.

Mineral Resource estimates are based on mining faces at 31 December 2020 and have been non-spatially depleted per shaft for six months until 30 June 2021.

## **REASONABLE PROSPECTS FOR EVENTUAL ECONOMIC EXTRACTION (RPEEE)**

Rigorous RPEEE testing is based on the Group standard that, among others, considers (a) security of tenure, (b) exclusion due to ESG considerations, (c) infrastructure, (d) technical constraints (eg VRT), (e) data quality and distribution, (f) confidence in estimation and (g) economic testing for reasonable prospects for eventual economic extraction. All the Mineral Resources reported for Marula are considered for RPEEE (see also valuation and sensitivities on page 62).

### **MODIFYING FACTORS**

Key modifying factors, such as overbreak, underbreak, off-reef mining, development dimensions, sweepings and mine call factors, are applied to the mining area (centare profile) to generate tonnage and grade profiles. The modifying factors used to convert a Mineral Resource to a Mineral Reserve are derived from historical performance while

#### Marula Mineral Resource estimate (inclusive reporting)

considering future anticipated conditions. Implats' long-term price assumptions in today's money (supporting Mineral Reserve estimates) are shown on page 41. Key factors are tabulated below.

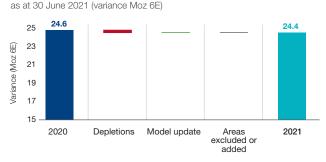
Mineral Resource Key assumptions	Merensky Reef	UG2 Reef
Geological losses	20 – 25%	20 – 25%
Area	16 million ca	19.6 million ca
Channel width	100cm	99cm

Mineral Reserve Modifying factors	Merensky Reef	UG2 Reef
Dilution	_	10 – 12%
Pillars	-	10-12%
Mine call factor	-	95 - 100%
Relative density	_	3.4 – 3.9
Stoping width	_	126cm
Concentrator recoveries	_	86 - 88%

## **MINERAL RESOURCE RECONCILIATION**

The year-on-year reconciliation of the Mineral Resource estimate of Marula shows marginal variance to the previous year; this is primarily due to depletion, some model updates and minor areas excluded.

#### **Total Marula 6E Mineral Resources**

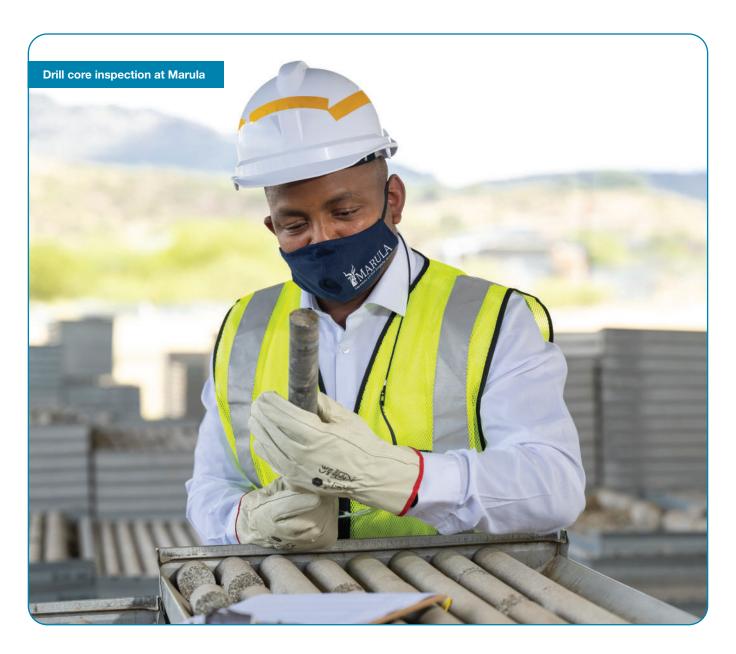


				73	at 50 June 2	.021				
Orebody			Merensł	ky Reef						
Category		Measured	Indicated	Inferred	Total	Measured	Indicated	Inferred	Total	Total
Tonnes	Mt	34.3	7.6	5.2	47.0	45.5	22.3	6.4	74.2	121.3
Width	cm	100	100	100		96	103	104		
4E grade	g/t	4.26	4.20	3.82	4.21	6.38	6.24	6.32	6.33	5.51
6E grade	g/t	4.56	4.50	4.10	4.50	7.40	7.28	7.37	7.36	6.25
Ni	%	0.20	0.19	0.19	0.20	0.05	0.05	0.05	0.05	0.11
Cu	%	0.11	0.11	0.10	0.11	0.02	0.02	0.02	0.02	0.06
4E oz	Moz	4.7	1.0	0.6	6.4	9.3	4.5	1.3	15.1	21.5
6E oz	Moz	5.0	1.1	0.7	6.8	10.8	5.2	1.5	17.6	24.4
Pt oz	Moz	2.7	0.6	0.4	3.7	3.9	1.9	0.6	6.4	10.1
Pd oz	Moz	1.5	0.3	0.2	2.0	4.4	2.1	0.6	7.1	9.1

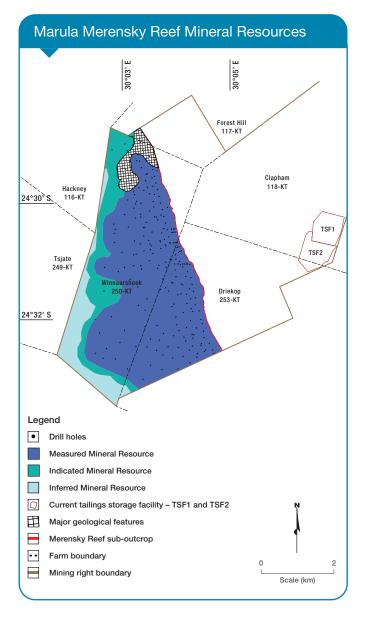
As at 30 June 2021

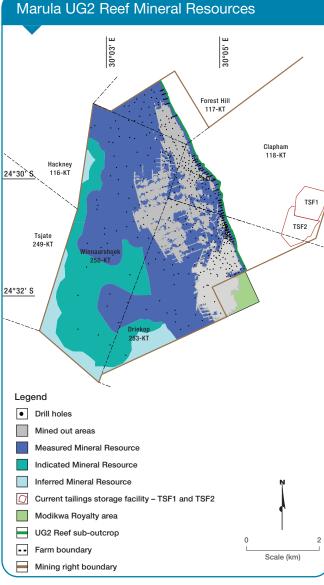
# Marula (continued)

				As	at 30 June 2	020				
Orebody			Merensł	ky Reef			UG2 I	Reef		
Category		Measured	Indicated	Inferred	Total	Measured	Indicated	Inferred	Total	Total
Tonnes	Mt	34.3	7.6	5.2	47.0	47.5	22.4	6.4	76.2	123.3
Width	cm	100	100	100		96	102	103		
4E grade	g/t	4.26	4.20	3.82	4.21	6.28	6.21	6.32	6.26	5.48
6E grade	g/t	4.56	4.50	4.10	4.50	7.28	7.23	7.36	7.27	6.21
Ni	%	0.20	0.19	0.19	0.20	0.04	0.05	0.05	0.05	0.10
Cu	%	0.11	0.11	0.10	0.11	0.02	0.02	0.02	0.02	0.05
4E oz	Moz	4.7	1.0	0.6	6.4	9.6	4.5	1.3	15.3	21.7
6E oz	Moz	5.0	1.1	0.7	6.8	11.1	5.2	1.5	17.8	24.6
Pt oz	Moz	2.7	0.6	0.4	3.7	4.0	1.9	0.6	6.5	10.2
Pd oz	Moz	1.5	0.3	0.2	2.0	4.6	2.1	0.6	7.2	9.2



#### Marula (continued)





#### **MINING METHODS**

Marula Mine has two decline shaft systems exploiting the UG2 Reef. At Driekop Shaft, a hybrid mining method is used, while at Clapham Shaft, both hybrid and conventional mining methods are being used. All main development is undertaken on-reef for the two hybrid sections, and the stoping is carried out through conventional single-sided breast mining from a centre gully. Panel face lengths are approximately 16m to 26m, with panels separated by 6m x 4m grid pillars with 2m ventilation holings. The stoping width averages 125cm. The footwall drives are developed on strike approximately 25m below the reef horizon, with cross-cut breakaways about 220m apart for the conventional operation. This development is undertaken with drill rigs and dump trucks. Stope face drilling takes place with hand-held pneumatic rock drills with airlegs.

#### **MINE PLANNING METHODS**

Mine design and scheduling are carried out using CADSmine<sup>™</sup> and Studio UG software. Geological models and ore blocks are updated and validated using G-Blocks and boundaries in the MRM information system. The Mineral Reserve estimate results from the mine planning process applied against the Measured and Indicated Mineral Resources only, through the application of detailed modifying factors; notably, this process is subjected to rigorous economic viability testing at given market conditions.

Mineral Reserves are converted upon proved economic viability, board approval and secured funding, and not simply on the basis of Measured and Indicated Mineral Resource classification.

THE DETAILS - • MINERAL RESOURCES AND MINERAL RESERVES

#### Marula (continued)

# MINERAL RESERVE ESTIMATION AND CLASSIFICATION

The updated Mineral Reserve estimate as at 30 June 2021 is tabulated below. The Mineral Reserves quoted reflect the grade delivered to the mill rather than the *in situ* channel grade reported regarding the Mineral Resources. The modifying factors used in the UG2 Mineral Reserve estimate are based on the mine plan, which envisages hybrid and conventional breast mining operations. An economic profitability test was conducted at each shaft, mainly to conduct so-called tail-cutting at the end of a shaft's life. The conversion and classification of Mineral Reserves at Marula are informed by:

- Feasible mine plan and project studies, board approval and available funding
- Economic testing at given market conditions (price deck)
- Measured Mineral Resources are classified as Proved and Probable Mineral Reserves if the mine plan passed economic testing and is approved for funding
- Proved Mineral Reserves are those areas where the main development has been completed
- No Inferred Mineral Resources are converted to the Mineral Reserve category, and no Inferred Mineral Resources were used in feasibility studies
- The BP2022 Mine Plan was based on the survey faces of December 2020 with a spatial mine design and schedule forecast of six months until 30 June 2021.

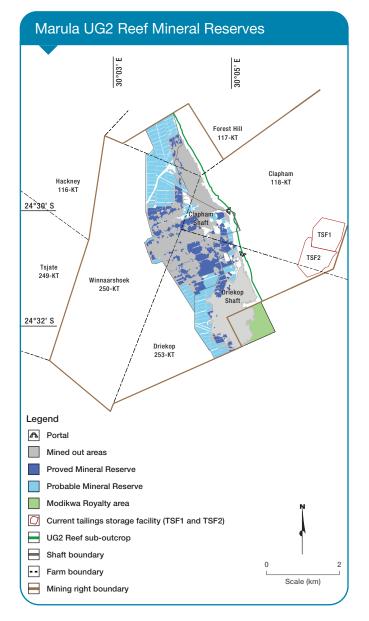
As at 30 June 2021										
Orebody		UG2	Reef							
Category		Proved	Probable	Total						
Tonnes	Mt	4.1	14.0	18.0						
Width	cm	126	125							
4E grade	g/t	4.36	4.03	4.10						
6E grade	g/t	5.03	4.65	4.74						
4E oz	Moz	0.6	1.8	2.4						
6E oz	Moz	0.7	2.1	2.7						
Pt oz	Moz	0.2	0.8	1.0						
Pd oz	Moz	0.3	0.9	1.1						

## Marula Mineral Reserve estimate

As at 30 June 2020									
Orebody		UG2	Reef						
Category		Proved	Probable	Total					
Tonnes	Mt	4.0	15.6	19.6					
Width	cm	125	126						
4E grade	g/t	4.34	4.00	4.07					
6E grade	g/t	4.99	4.62	4.70					
4E oz	Moz	0.6	2.0	2.6					
6E oz	Moz	0.6	2.3	3.0					
Pt oz	Moz	0.2	0.8	1.1					
Pd oz	Moz	0.3	1.0	1.2					



### Marula (continued)

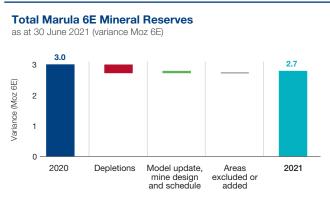


#### PROCESSING

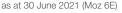
Marula has a concentrator plant where initial processing is conducted. The concentrate is transported by road to Impala's Mineral Processes in Rustenburg in terms of an LoM offtake agreement with Impala Rustenburg. A new TSF facility is nearing completion and will be commissioned for early deposition in August 2021, while project completion is earmarked for January 2022.

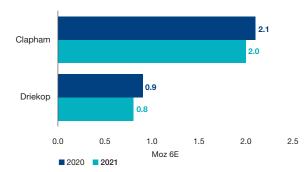
#### **MINERAL RESERVE RECONCILIATION**

There is no material change in the Mineral Reserve estimate when compared with the 30 June 2020 statement. The variances can be attributed to normal mining depletions, local geological impact and updated mine design in selected areas, as well as tail-cutting. A significant proportion (66%) of the Mineral Reserves is located in the Clapham Shaft.



Marula Mineral Reserve distribution





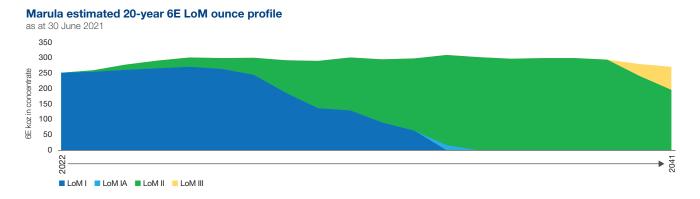
### LOM, VALUATION AND SENSITIVITY

The LoM I encompasses the UG2 Reef at the Clapham Shaft down to 5 level and the Driekop Hybrid areas. There are various options to optimise LoM II; these are subjects of studies that are on-going. Note that the indicative LoM profile is based on a range of assumptions, which could change in future.

The economic viability of the Marula Mineral Reserves is tested using net present value calculations over the LoM of the Mineral Reserve, determining the lowest real rand basket price that would still render the Mineral Reserve viable. These calculations generate basket prices based on the local PGM metal ratios and differ from the overall Group basket prices. This is then tested against the internal Marula estimate of the real long-term basket price and

THE DETAILS - • MINERAL RESOURCES AND MINERAL RESERVES

#### Marula (continued)



the spot price as at 30 June 2021. These tests indicate that the Marula operation requires a real long-term basket price of between R16 000 and R17 000 per 6E ounce to be economically viable. The real spot basket price for the Marula operations as at 30 June 2021 was R50 043 (US\$3 504) per 6E ounce, and the Marula internal long-term real basket price is R24 716 (US\$1 786), reflecting the influence of currently high rhodium prices. The commodity market remains fluid. Key operating statistics are

shown on page 38 together with the production summaries.

#### COMPLIANCE

Marula has adopted the SAMREC Code (2016) for its reporting. The Competent Person for Marula's Mineral Resources and Mineral Reserves is Sifiso Mthethwa, a full-time employee of Marula, who holds a BSc (Hons) (Geology) degree and is registered with SACNASP, with registration number 400163/13 and has 18 years' relevant experience. Implats has written confirmation from the Competent Person that the information disclosed in terms of these paragraphs is compliant with the SAMREC Code (2016) and, where applicable, the relevant SAMREC Table 1, Appendices and JSE section 12 Listings Requirements. The CP concurred that the information may be published in the form, format and context in which it was intended. Implats appointed CCIC and Fraser McGill to undertake the 2021 independent review of the Mineral Resources and Mineral Reserves as at 30 June 2021, respectively. CCIC and Fraser McGill concluded that they could not find any fatal flaws in the estimation of Marula Mine's Mineral Resources and Mineral Reserves based on the data provided. Both companies noted no impediments for publishing the Mineral Resource and Mineral Reserve Statement as SAMREC Code (2016) compliant.

#### **MARULA TOP RISKS**

The Group risk management process is briefly described on page 25, where the top Group risks are listed.

In this context, the top additional risks identified at Marula that can potentially impact RPEEE, are:

- Ability to complete construction of Marula TSF2 within time and cost
- Potential failure of Tailings dam 1
- Optimisation and security of Mineral Resources and Mineral Reserves (current and future)
- Business interruption due to community unrest
- Inability to attract and retain key/critical skills.



# **Two Rivers**

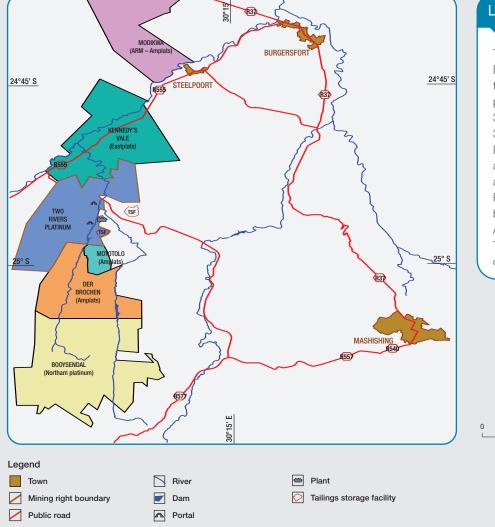


Two Rivers Platinum is located within the Southern sector of the eastern limb of the Bushveld Complex.

Mining right 11 349ha

Implats' interest 46% non-managed

# **REGIONAL LOCALITY MAP SHOWING PGM MINERAL RIGHTS AND INFRASTRUCTURE IN THE TWO RIVERS SURROUNDINGS**



### Location

The mine is located on the farm Dwarsrivier 372KT and extends to the farm Kalkfontein 367KT and portions of the farm Tweefontein 360KT and the farm Buffelshoek 368KT. The mine is situated in the Limpopo province, South Africa, approximately 30km from Steelpoort and 60km from Lydenburg. Two Rivers Platinum Mine is neighboured by Mototolo Platinum Mine (Anglo American Platinum) and Dwarsrivier, Tweefontein and Thorncliffe chromite mines.



#### Two Rivers (continued)

#### **BRIEF HISTORY**

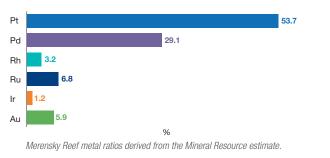
During 2001, Assmang elected to dispose of its platinum interests at the Dwarsrivier Chrome Mine. Two Rivers, the incorporated joint venture between Avmin and Implats, secured the platinum rights in December 2001. Subsequent corporate activity involving Avmin, ARM and Harmony resulted in the transfer of Avmin's share in Two Rivers to a new, empowered platinum entity, ARM Platinum, a division of ARM. The joint venture partners began the development of the Two Rivers project in June 2005. The concentrator plant was commissioned in 2006, and in 2008 the mine successfully made the transition from a project to a mechanised operation. The Two Rivers platinum mine is a non-managed operation in the Implats portfolio.

#### **GEOLOGICAL SETTING**

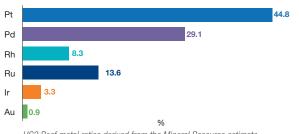
The Merensky and UG2 Reefs are separated by a sequence of primarily anorthositic and noritic layered units of some 140m to 160m in combined thickness. Both the Merensky and UG2 Reefs are present; however, no Merensky Reef is present on Tweefontein, and the UG2 Reef only occurs on a small portion of this farm. The UG2 Reef outcrops in the Klein Dwarsrivier valley over a north-south strike of 7.5km and dips to the west at 7° to 10°. Due to the extreme topography, the Merensky Reef outcrops further up the mountain slope. The Steelpoortpark granite occurs in the southwest part of the project, which is unique to this area. Three distinct reef types have been defined for the UG2 Reef, namely the 'normal' reef with a thick main chromitite layer; a 'split' reef characterised by an internal pyroxenite/norite lens within the main chromitite layer; and a 'multiple split' reef with numerous pyroxenite/norite lenses occurring within the main chromitite layer. The multiple split reef predominates in the southern portion of the mining area. The Merensky Reef is a pyroxenite layer with a chromitite stringer close to the hangingwall contact and at the basal contact. Mineralisation is primarily associated with the upper and lower chromitite stringers.

The area's geological structure is dominated by the regional northnortheast to south-southwest trending Kalkfontein fault, which has an apparent vertical displacement of 1 200m down thrown to the west. A series of subparallel faults occur to the southeast adjacent to the Kalkfontein fault, which affect both the Merensky and UG2 Reefs. These faults exhibit variable apparent vertical displacements of between 20m and 110m.

# **Two Rivers Merensky Reef 6E metal ratio** as at 30 June 2021 (%)



**Two Rivers UG2 Reef 6E metal ratio** as at 30 June 2021 (%)



UG2 Reef metal ratios derived from the Mineral Resource estimate.

#### **EXPLORATION AND STUDIES**

The surface exploration drilling approach addresses the lack of historical drilling on the farm Buffelshoek 368KT and includes a phased surface infill drilling programme to further evaluate the Merensky and UG2 Reefs. During FY2021, six drill holes were drilled on the farm Dwarsrivier for a total of 1 220m at an allinclusive cost of R1.83 million. The drilling assisted in the understanding of the UG2 Split Reef facies and the Merensky Reef feasibility study. In addition, cover and geological delineation drilling were done from underground. In total, 195 drill holes were drilled underground (15 596m) at the cost of R8.58 million. Feasibility studies during 2021 focused on the Merensky Reef; the studies concluded that the operation would be feasible with an initial capital outlay of R5.7bn and steady-state production of 245koz 6E.

#### **MINERAL RIGHTS AND LEGAL TENURE**

The operation is managed by ARM, and Implats has a 46% stake in the joint venture. Two Rivers was granted a new-order mining right in 2013 over 2 140ha on the western portion of the farm Dwarsrivier. The mining rights were awarded for a 25-year period, at which time the MPRDA allows for an extension. In 2015, portions 4, 5 and 6 of the adjoining farm, Kalkfontein, and portions of the farm Tweefontein held by Impala, were incorporated into the Two Rivers mining right. An agreement was also reached for the remaining Implats-owned mineral rights on portions of the farm Kalkfontein and the farm Buffelshoek in exchange for a royalty

#### Two Rivers (continued)

payment. The transfer of the additional Tamboti area on the RE portion of the farm Kalkfontein was concluded in November 2017. A Royalty Mining Agreement was concluded between Two Rivers and Rustenburg Platinum mines (Anglo American Platinum) to mine the UG2 Reef on portion 6 of the farm Dwarsrivier 372KT from the adjacent Mototolo Mine. Two Rivers has legal entitlement to the minerals being reported upon without any known impediments. There are no legal proceedings or other material matters that may impact the ability of Two Rivers to continue with exploration and mining activities.

# ENVIRONMENTAL MANAGEMENT AND SOCIAL LICENCE TO OPERATE

Summary details about the Group environmental management and policy are listed on page 22. This includes the focus areas such as compliance, water stewardship, air quality, managing waste streams and promoting land management practices. Two Rivers is currently ISO 14001 certified. Environmental management activities include monitoring the status of EMPr Reports, WUL applications and Environmental Impact Assessments (EIAs).

Two Rivers' licence to operate is illustrated by the following:

- Mining right: LP 178 MR and LP 63 MR executed in March 2013, valid until March 2038. Two S102 amendments were approved in 2015 and 2107
- MWP updated in 2020
- SLP progress reports submitted annually
- EMP: Consolidated EMP approved in 2015, application for amendment
- WUL: Issued in 2004 and amended in 2017
- Certification: ISO 14001.

More details can be found in the 2021 ARM suite of annual reports (www.arm.co.za).

#### **GENERAL INFRASTRUCTURE**

A tar road provides access to the Two Rivers Mine. Two Rivers has a Water Use Licence (WUL) to obtain its water from the Groot and Klein Dwars Rivers and underground dewatering. The annual WUL (January to December) allocation is 2 926MI. Electricity is obtained from Eskom via one of two 40MVA transformers at the Uchoba sub-station with an allocation of 35MVA for Two Rivers, fed from a 132kV line from the Merensky sub-station. Mining infrastructure includes three decline shafts, offices, stores, a concentrator plant, a chromite recovery plant, tailings storage facilities and overland ore conveyance.

# MINERAL RESOURCE ESTIMATION AND CLASSIFICATION

Mineral Resources are quoted inclusive of Mineral Reserves, and estimated geological losses have been accounted for in the Mineral Resource estimation. Grade estimates were obtained utilising ordinary kriging of UG2 and Merensky Reef drill hole intersections. The UG2 Reef model has been updated, and the classification was based on the consideration of geological and geostatistical parameters and classified as Measured, Indicated and Inferred Mineral Resources. No changes were made to the Merensky Reef Model. The Mineral Resources classification for UG2 and Merensky reefs is based on the geological and grade continuity, drill hole spacing, geostatistical parameters and historical classification.

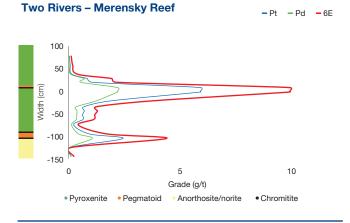
The Mineral Resource estimate reflects the actual depletion as at 31 May 2021 and the spatial depletion to 30 June 2021 as per the planned mining. More information regarding the Mineral Resources and Mineral Reserves can be found in the 2021 ARM annual report (www.arm.co.za).

#### REASONABLE PROSPECTS FOR EVENTUAL ECONOMIC EXTRACTION (RPEEE)

Rigorous RPEEE testing considers (a) security of tenure, (b) exclusion due to ESG considerations, (c) infrastructure, (d) technical constraints (eg VRT), (e) data quality and distribution, (f) confidence in estimation and (g) economic testing for reasonable prospects for eventual economic extraction. All the Mineral Resources reported for Two Rivers are considered for RPEEE (see also valuation and sensitivities on page 71). A substantial area on the farm Buffelshoek was excluded from the Merensky Reef Mineral Resource due to reducing the economic channel width and doubt on its RPEEE. The Merensky and UG2 Mineral Resources to the west of the Kalkfontein fault are currently excluded due to the depth of the reef intersections.

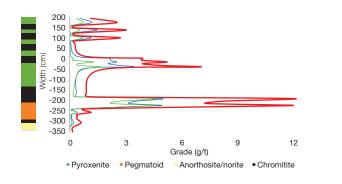
### **MINERAL RESOURCE RECONCILIATION**

The year-on-year comparisons indicate a minor change in the Two Rivers Mineral Resource estimate since the 30 June 2020 statement. The main difference can be attributed to an update of structural information and geological model with drill hole information and mining depletion.



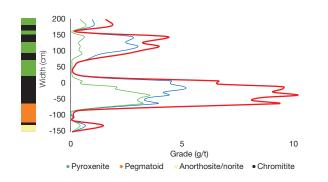
#### Two Rivers - UG2 (split) Reef

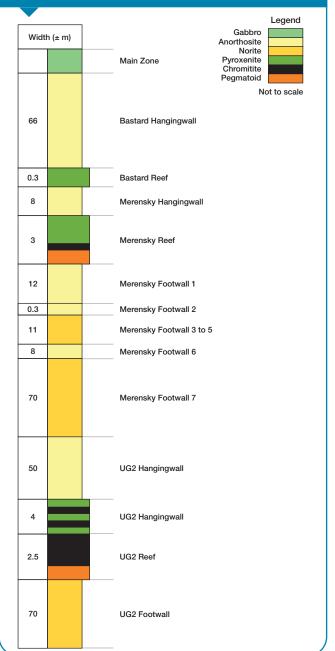
– Pt – Pd – 6E



Two Rivers - UG2 (normal) Reef

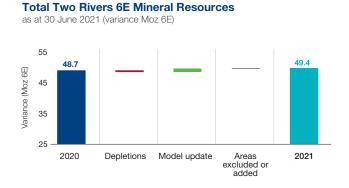
- Pt - Pd - 6E





# Generalised geological succession of the upper portion of the Critical Zone at Two Rivers

APPENDICES •



### **MODIFYING FACTORS**

The modifying factors used to convert Mineral Resources to Mineral Reserves are derived from historical performance while considering future anticipated conditions. Implats' long-term assumptions in today's money (supporting Mineral Reserve

#### **Two Rivers Mineral Resource estimate (inclusive reporting)**

estimates) are shown on page 41. The following other modifying factors were applied to the Mineral Resources:

Mineral Resource Key assumptions	Merensky Reef	UG2 Reef
Geological losses	30%	19%
Area	38.3 million ca	49.3 million ca
Channel width	181cm	133cm

Mineral Reserve Modifying factors	Merensky Reef	UG2 Reef
Dilution	20%	23 – 30%
Pillars	15 – 25%	15 – 25%
Mine call factor	95%	95 – 99%
Relative density	3.2 - 3.3	3.6 - 3.8
Stoping width	305cm	241cm
Concentrator recoveries	82%	81%

			As	at 30 June 2	2021				
Orebody		Μ	erensky Ree	ef		UG2 I	Reef		
Category		Indicated	Inferred	Total	Measured	Indicated	Inferred	Total	Total
Tonnes	Mt	75.7	61.4	137.1	16.3	84.3	83.5	184.1	321.2
Width	cm	210	145		145	143	120		
4E grade	g/t	3.13	3.98	3.51	4.69	4.74	4.37	4.57	4.12
6E grade	g/t	3.42	4.32	3.82	5.72	5.73	5.23	5.50	4.78
Ni	%	0.14	0.16	0.15	0.04	0.04	0.04	0.04	0.09
Cu	%	0.08	0.09	0.08	0.01	0.01	0.01	0.01	0.04
4E oz	Moz	7.6	7.9	15.5	2.5	12.8	11.7	27.0	42.5
6E oz	Moz	8.3	8.5	16.8	3.0	15.5	14.0	32.5	49.4
Pt oz	Moz	4.6	4.5	9.1	1.4	7.0	6.2	14.6	23.6
Pd oz	Moz	2.3	2.6	4.9	0.8	4.4	4.3	9.5	14.4

			As	at 30 June 2	020				
Orebody		Μ	erensky Ree	ef		UG2	Reef		
Category		Indicated	Inferred	Total	Measured	Indicated	Inferred	Total	Total
Tonnes	Mt	75.7	61.4	137.1	14.4	83.8	80.3	178.4	315.5
Width	cm	210	145		148	143	120		
4E grade	g/t	3.13	3.98	3.51	4.66	4.77	4.47	4.62	4.14
6E grade	g/t	3.42	4.32	3.82	5.65	5.73	5.33	5.55	4.80
Ni	%	0.14	0.16	0.15	0.03	0.04	0.04	0.04	0.09
Cu	%	0.08	0.09	0.08	0.01	0.01	0.01	0.01	0.04
4E oz	Moz	7.6	7.9	15.5	2.1	12.8	11.5	26.5	42.0
6E oz	Moz	8.3	8.5	16.8	2.6	15.4	13.8	31.8	48.7
Pt oz	Moz	4.6	4.5	9.1	1.2	7.0	6.0	14.2	23.3
Pd oz	Moz	2.3	2.6	4.9	0.7	4.4	4.3	9.4	14.3

#### Two Rivers (continued)

#### **MINING METHODS**

The UG2 Reef is accessed via two decline shaft systems situated 3km apart, namely the Main Decline and the North Decline. Production of the UG2 Reef is through a fully mechanised bord and pillar stoping method. A mining section consists of 6m, 8m and 10m bords, with pillar sizes increasing with depth below the surface. The pillars are 6m x 6m to 12m x 12m in size. The bords are mined mainly on strike.

Construction of the Merensky Reef section commenced. The mining method will also be based on fully mechanised bord and pillar mining.

#### **MINE PLANNING PROCESS**

A 3D geological model with layer grades and widths per stratigraphic unit is used in the mine planning. The mine scheduling of the two declines is done in Datamine Studio 5D Planner™. The schedule is evaluated against the grade and thickness block model. The three distinct reef types, including normal, split reef and multiple split reef facies, significantly impact the UG2 Reef mine plan. Dilution calculations are based on the specific reef type. Hangingwall and footwall overbreak, percentage off-reef, ore remaining (mining losses), geological losses (potholes, faults, dykes and replacement pegmatoid) and a shaft call factor are applied to the planned areas to generate the tonnage and grade profiles. The Mineral Reserve estimate results from the planning process applied against the Measured and Indicated Mineral Resources only, through the application of detailed modifying factors; notably, this process is subjected to rigorous economic viability testing at given market conditions.

### MINERAL RESERVE ESTIMATION AND CLASSIFICATION

The updated Mineral Reserve estimates reflect total estimates for Two Rivers as at 30 June 2021. Mineral Reserves reflect the width and grade delivered to the mill rather than an *in situ* channel grade quoted in respect of the Mineral Resources. The modifying factors used in the UG2 and maiden Merensky Reef Mineral Reserve estimates are based on the mine plan, which envisages a mechanised bord and pillar layout. No Inferred Mineral Resources have been converted into Mineral Reserves or included in feasibility studies. More details regarding the Mineral Resources and Mineral Reserves can be found in the 2021 ARM annual report (www.arm.co.za).

The conversion and classification of Mineral Reserves at Two Rivers are informed by:

- Economic testing at given market conditions (price deck)
- Most of the Indicated Mineral Resources can be classified as Probable Mineral Reserves
- Most of the Measured Mineral Resources can be classified as Proved Mineral Reserves.

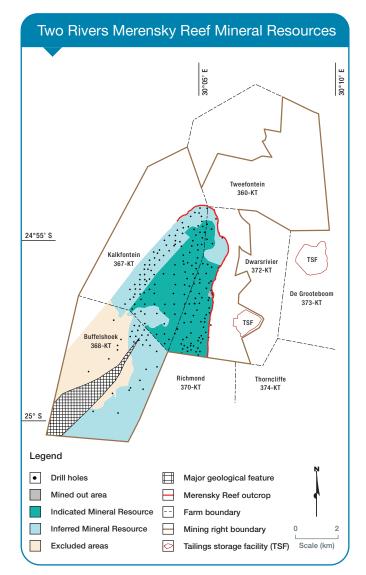
		As	at 30 June 20	021				
Orebody		N	lerensky Reef	:		UG2 Reef		
Category		Proved	Probable	Total	Proved	Probable	Total	Total
Tonnes	Mt	-	49.6	49.6	9.2	61.9	71.1	120.8
Width	cm	-	305		241	241		
4E grade	g/t	-	2.65	2.65	2.82	2.86	2.85	2.77
6E grade	g/t	-	2.89	2.89	3.46	3.47	3.47	3.23
4E oz	Moz	-	4.2	4.2	0.8	5.7	6.5	10.7
6E oz	Moz	-	4.6	4.6	1.0	6.9	7.9	12.5
Pt oz	Moz	-	2.5	2.5	0.5	3.2	3.6	6.2
Pd oz	Moz	-	1.3	1.3	0.3	1.9	2.2	3.4

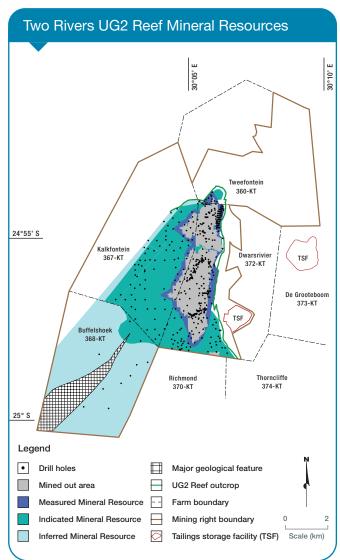
#### **Two Rivers Mineral Reserve estimate**

#### As at 30 June 2020

Orebody		N	lerensky Ree	ef		UG2 Reef		
Category		Proved	Probable	Total	Proved	Probable	Total	Total
Tonnes	Mt	-	-	-	4.6	58.6	63.2	63.2
Width	cm	-	-	-	242	243		
4E grade	g/t	-	-	-	2.79	2.95	2.94	2.94
6E grade	g/t	-	-	-	3.41	3.57	3.55	3.55
4E oz	Moz	-	-	-	0.4	5.6	6.0	6.0
6E oz	Moz	-	-	-	0.5	6.7	7.2	7.2
Pt oz	Moz	-	-	-	0.2	3.1	3.3	3.3
Pd oz	Moz	-	-	-	0.1	1.9	2.0	2.0

## Two Rivers (continued)





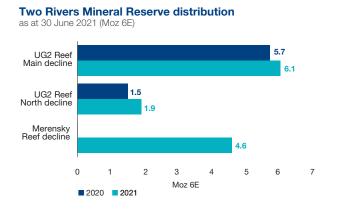


SCENE SETTING •

### Two Rivers (continued)

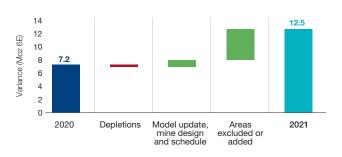
#### **MINERAL RESERVE RECONCILIATION**

The year-on-year comparison indicates the material impact of the inclusion of the Merensky Reef Mineral Reserves. Production depletion and model updates related to the split reef facies associated decrease in mining width and positive change to the geological loss are further factors underpinning changes to the Mineral Reserve estimate as at 30 June 2021. In total, 37% of Two Rivers Mineral Reserves are from the Merensky Reef.



## Total Two Rivers 6E Mineral Reserves

as at 30 June 2021 (variance Moz 6E)



## Two Rivers estimated 20-year 6E LoM ounce profile as at 30 June 2021



## PROCESSING

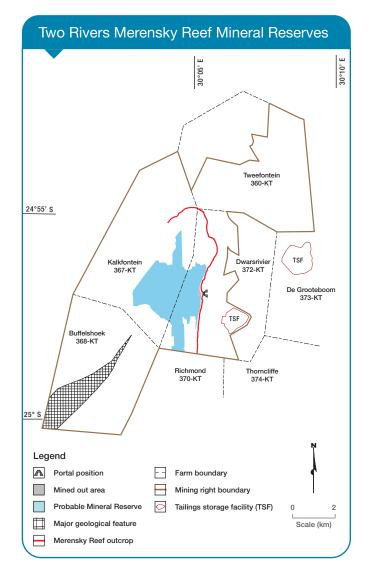
Two Rivers has a concentrator plant on-site where initial processing is undertaken. It comprises a standard MF2 design as generally used in the industry for UG2 Reef ore. A new concentrator will conduct Merensky Reef processing. Concentrate is transported by road to Impala Mineral Processes in Rustenburg, where further processing occurs in terms of an agreement with Impala.

## LOM, VALUATION AND SENSITIVITY

The estimated 20-year LoM profile for Two Rivers is shown below. LoM I constitutes production from the Main and North Decline Shafts and also the Merensky Reef. LoM II is an extension of the Main Decline infrastructure into the Kalkfontein RE and portions 1 and 2. The UG2 Reef at Buffelshoek is excluded and does not form part of LOM II. The profile is based on assumptions and may change in future. Trial mining and a feasibility study were conducted in 2012/13 on the Merensky Reef; the feasibility study was revisited and completed in 2021. The study confirmed a LoM of 24 years for the Merensky Reef at 245koz 6E per annum at steady state. The JV board approved the capital of R5.7bn for the Merensky Reef project.

The economic viability of the Two Rivers Mineral Reserves is tested by Implats using net present value calculations over the LoM of the Mineral Reserve, determining the lowest real rand basket price that would still render the Mineral Reserve viable. These calculations generate basket prices based on the local PGM metal ratios and differ from the overall Group basket prices. This is then tested against the internal estimate of the real long-term basket price and the spot price as at 30 June 2021. These tests by Implats indicate that the Two Rivers operation requires a real long-term basket price of between R17 000 and R18 000 per 6E ounce to be economically viable. While the real spot basket price for Two Rivers as at 30 June 2021 was R44 240 (US\$3 097) per 6E ounce, the Two Rivers internal long-term real basket price R24 083 (US\$1 741). Key operating statistics are shown on page 38 together with the production summaries.

#### **Two Rivers** (continued)



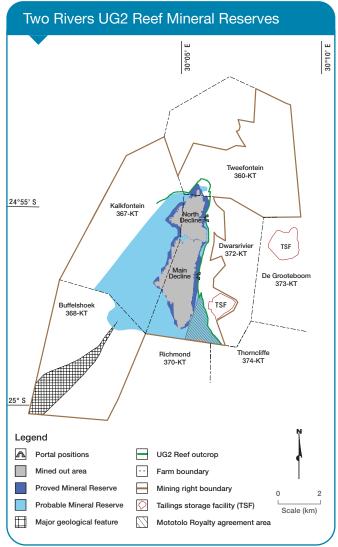
## Geologists and mining engineers of Implats conducted internal

**COMPLIANCE** 

technical reviews of the Mineral Resource and Mineral Reserves. No critical issues/fatal flaws were found that could have a material impact on the Mineral Resources and Mineral Reserve estimates.

The estimates have been found to be SAMREC (2016) compliant, hence no impediments which would prevent the inclusion of the results as part of Implats' annual declaration of Mineral Resources and Mineral Reserves.

The Competent Person for Two Rivers Mineral Resources is Juan Coetzee, a full-time employee of Two Rivers. He holds a BSc (Hons) (Geology) qualification, is registered as PrSciNat with SACNASP, with registration number 114086 and has 18 years' relevant experience. The Competent Person for Two Rivers Mineral Reserves is Tobias Horak. He holds NHD (Mine Surveying) and GDE (Mining) qualifications and is a member in good standing with IMSSA, with registration number 1113 and has 22 years'



relevant experience. Implats has written confirmation from the Competent Persons that the information disclosed in terms of these paragraphs are compliant with the SAMREC Code (2016) and, where applicable, the relevant SAMREC Table 1, Appendices and JSE section 12 Listings Requirements. They confirmed that the information may be published in the form, format and context in which it was intended.

## TWO RIVERS TOP RISKS

The Group risk management process is described on page 25, where the top Group risks are listed.

The additional top risks identified by Two Rivers Mine that could potentially impact RPEEE, are:

- · Delay in the execution of the Merensky Reef project
- Delay in the completion of the mine deepening project
- Increase in the fall of ground (FOG) incidents
- · Below plan mill grades and recovery rates
- Impact of Covid-19 infections.

INTRODUCTION • AND OVERVIEW SCENE SETTING •

THE DETAILS - • MINERAL RESOURCES AND MINERAL RESERVES

## **Zimplats**



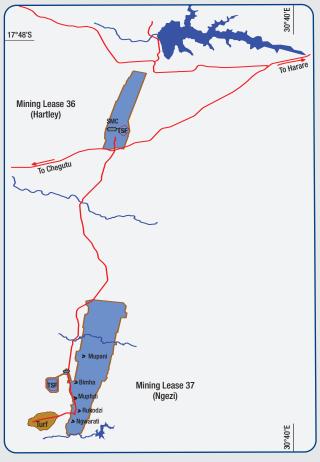
Zimplats' operations are located in the Mashonaland West province of Zimbabwe.

APPENDICES •

Mining right 24 632ha

Implats' interest 87% managed

## ZIMPLATS LOCALITY MAP



## Location

The mines at Ngezi are located on Mining Lease 37, approximately 150km southwest of Harare, at the southern end of the Sebakwe sub-chamber of the Hartley Complex on the Great Dyke. Hartley Mine and the Selous Metallurgical Complex (SMC) are located on Mining Lease 36, in the Darwendale sub-chamber of the Hartley Complex of the Great Dyke, approximately 80km west-southwest of Harare and 77km north of the Ngezi mines.



#### Legend



#### **BRIEF HISTORY**

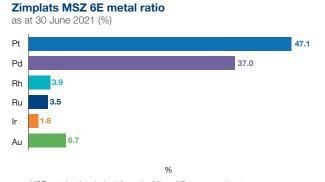
Delta Gold brought BHP into a joint venture (66.7% BHP and 33.3% Delta Gold) to develop Hartley Platinum Mine, and development started in 1994. By 1998 Delta Gold had extended its cover to include interests in all the platinum Mineral Resources of the Hartley Complex. In 1998, Delta Gold demerged its platinum interests into a special purpose vehicle, Zimplats. In 1999 it became apparent that Hartley Platinum Mine had failed to meet its development targets and was put on care and maintenance by BHP. Zimplats subsequently took over BHP's share of Hartley, Selous Metallurgical Complex (SMC) and initiated the Ngezi/SMC project in 2001 with the assistance of Implats and ABSA Investment Bank. A 2.2 million tonne per year open-pit mine was established at Ngezi, whose ore was trucked to Selous, where it was processed in the SMC concentrator and smelting facilities.

The first converter matte was exported to South Africa in April 2002. Implats progressively increased its shareholding in Zimplats until 2003, when it made an unconditional cash offer to minority shareholders in Zimplats. In 2003, Zimplats embarked on developing underground operations at Ngezi to replace the east and west open pits. Over the years, the production volumes from the operations have been increased to the current 7.2 million tonnes of ore per year from five underground portals, all of which feed the two concentrator modules at Ngezi and the SMC concentrator. Zimplats is one of Implats managed operations. Implats has 87% shareholding, while minority shareholders hold the remaining 13%.

### **GEOLOGICAL SETTING**

The Great Dyke of Zimbabwe developed as a series of initially discrete magma chamber compartments which coalesced as the chambers filled. The Great Dyke has been sub-divided into five sub-chambers, namely the Wedza, Selukwe (Shurugwi), Sebakwe, Darwendale and Musengezi sub-chambers. The stratigraphic units in each sub-chamber are classified into the ultramafic (lower) and the mafic (upper) sequence. The ultramafic rocks are dominated from the base upwards by dunite, harzburgite and pyroxenite, while the mafic rocks consist mainly of gabbro and gabbronorite. Thin layers of chromitite occur at the bottom of cyclic units throughout the ultramafic sequences. The PGM-bearing horizon is known as the Main Sulphide Zone (MSZ), which is part of the lower sequence and is located below the contact with the mafic sequence. The MSZ is located in the P1 pyroxenite, from 5m to about 50m below the ultramafic/mafic contact. The MSZ is a continuous layer, 2m to 10m thick, and forms an elongated basin. The Zone strikes north-northeast, dips between 5° and 20° on the margins, and flattens towards the axis (centre) of the basin. Peak base metal and PGM values are offset vertically with palladium peaking at the base, platinum in the centre and nickel towards the top. Visual identification of the MSZ is difficult; therefore, systematic monitoring of the reef using various sampling methods is needed to guide mining.

Mining occurs in areas where the dip is less than 9°, which are referred to as the 'Flats' and those with dips between 9° and 14° which are referred to as the 'MSZ Upper Ores' (UOR I). Those areas whose dip is above 14° are referred to as the 'MSZ Upper Ores' (UOR II).



MSZ metal ratios derived from the Mineral Resource estimate.

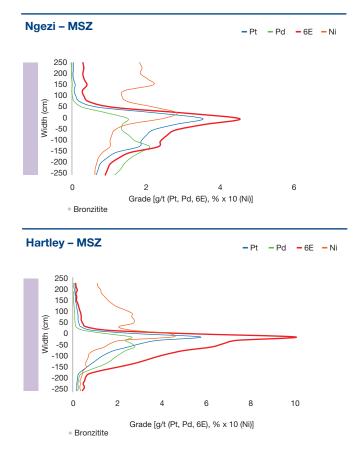
## **EXPLORATION AND STUDIES**

During the year, the company carried out exploration activities to evaluate the Mineral Resources on existing mines and projects at both mining leases. The primary focus was on Mupfuti, Bimha and Mupani mines and a twin drilling programme at Hartley.

During the past period, the surface exploration drilling was aimed at increasing the geological confidence in the orebodies and upgrading the relevant Mineral Resources categories in drilled areas. Surface drilling information was used to enhance the geotechnical interpretation of projects to manage the risk posed by ground conditions and geological structures on the operations and development projects. Routine underground core drilling continued throughout the year. This is an essential strategy that allows the mines to interpret smaller scale geological structures that would otherwise not be captured by the surface drilling method and is critical to improving the efficiency of the short-term mining plan. All drill holes were sampled on the reef horizon and the half-core split was dispatched for analysis at the internal or external laboratories.

The underground core drilling for reef profiling and geotechnical assessment was completed in all the active mines. The information obtained from the logging and sampling of the holes has improved the characterisation of the orebody ahead of mining. Completed surface and underground core drilling work for FY2021 is shown in the table below.

	Surface	drilling	Underground drilling				
Drilling site	Number of drill holes	Total drilling (m)	Number of drill holes	Total drilling (m)			
Ngwarati Mine	_	_	6	600			
Rukodzi Mine	-	-	9	900			
Mupfuti Mine	6	534	18	1 800			
Bimha Mine	14	2 619	22	2 200			
Mupani Mine	24	6 650	8	800			
Hartley	25	7 828	-	-			

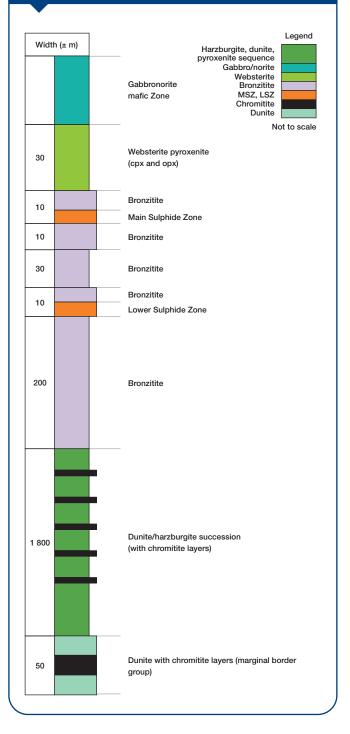


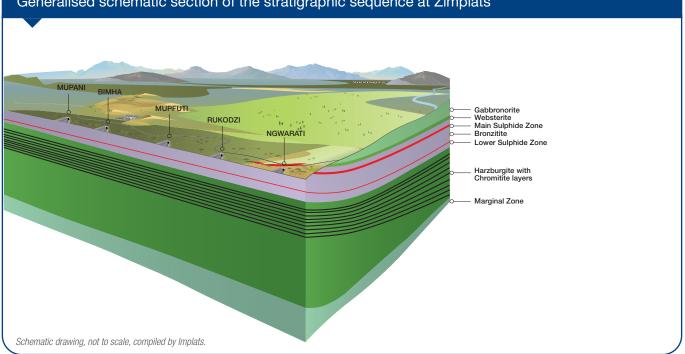
A feasibility study for the replacement of Mupfuti Mine after its scheduled depletion in FY2027 was completed during the year. The study evaluated the viability of replacing the 2Mtpa ore contribution from Mupfuti Mine through upgrading the shaft capacities of Bimha and Mupani mines by FY2028.

The outcome confirmed that it is feasible to increase the shaft capacity of Bimha Mine from the current design capacity of 2Mtpa to 3.1Mtpa and Mupani Mine from its design of 2.2Mtpa to 3.6Mtpa. The production ramp-up aimed at creating more underground face-length to accommodate new teams at these two mines has been incorporated into the business plan and will commence while Mupfuti Mine is still on full production. This will allow the operations to achieve higher production rates during the five-year period (along with the benefits of ongoing productivity improvements).

A corresponding feasibility study to install additional milling capacity at the Ngezi concentrator site was undertaken during the year. The study demonstrated that it is feasible to commission a 0.9Mtpa concentrator module to treat excess ore from the mines starting in FY2023. This project was approved and work on the project has commenced.







#### Generalised schematic section of the stratigraphic sequence at Zimplats

### **MINERAL RIGHTS AND LEGAL TENURE**

Zimplats previously released portions of land to the government of Zimbabwe. The impact of the land released on the Mineral Resources estimate was described in the 2018 annual report, which is available on the company's website (www.zimplats.com). Zimplats holds title to two mining leases, namely Mining Lease Number 36 (ML36), which covers the Hartley area incorporating SMC operations and Mining Lease Number 37 (ML37), covering Ngezi operations. The two mining leases (ML36 and ML37) are valid for the life of the Zimplats operations. The Zimplats processing operations are located on both ML36 and ML37.

Zimplats has legal entitlement to the minerals being reported upon without any known impediments. There are no legal proceedings or other material matters that may impact the ability of Zimplats to continue with exploration and mining activities.

## **ENVIRONMENTAL MANAGEMENT AND SOCIAL LICENCE TO OPERATE**

Summary details about the Implats Group environmental management and policy are listed on page 22. This includes the focus areas such as compliance, water stewardship, air quality, managing waste streams and promoting land management practices. Zimplats implements an environmental management system (EMS) based on the ISO 14001:2015 standard requirement. During FY2021, the organisation retained its ISO 14001:2015 certification with no significant non-conformities. Both internal and external audits were conducted to check compliance with the EMS requirements. In addition to the audits, the environmental incident reporting system is in operation. All the environmental incidents

reported during the year were classified as level one incidents, given the negligible environmental impact. The organisation's strategic thrust is to ensure full environmental compliance, promote water stewardship, respond to climate change, promote responsible energy management, air quality management, land stewardship and waste management.

Zimplats' licence to operate is illustrated by the following:

- Mining right: ML 36 and ML 37 valid for the life of the operation
- EMP: EIA certificates for all operations
- Valid permits for waste disposal, air emission
- Certification: ISO 14001:2015.

#### GENERAL INFRASTRUCTURE

Infrastructure to support production consists of integrated road networks, five production declines, conveyor networks and ore load-out facilities for road trains. Ore processing infrastructure consists of two concentrator modules at Ngezi, one concentrator and a smelter at SMC. Water for the Ngezi operations is drawn from the Ngezi and Chitsuwa dams. Zimplats' annual allocation from the two dams is 11 000MI, and this exceeds the current requirements. The SMC processing infrastructure includes a concentrator, a smelter, tailings storage facilities, stores, and offices. Water for the SMC operations is abstracted from the Manyame Dam, where Zimplats has an annual allocation of 5 000Ml. Power from the Zimbabwe Electricity Supply Authority's (ZESA) Selous sub-station is fed to the transformers at Ngezi and SMC via the 132kV overhead lines. These assets and the wide network of information and communication technology equipment provide services to the business.

## MINERAL RESOURCE ESTIMATION AND CLASSIFICATION

The Mineral Resources and Mineral Reserves for ML37 are based mainly on external nickel sulphide collection fire assays with ICP-MS finish. The ML36 (Hartley) Mineral Resources are primarily based on historical data from drilling campaigns conducted before the take over of operations by Zimplats, and the estimates were updated to bring alignment of the estimation methodology, with that applied at Ngezi, utilising the original data set which was based on lead collection fire assays with ICP-MS finish. A twin hole drilling programme that aims at improving the confidence in interpreting of historical data is underway and will be completed during the year.

Oxide ores on the Great Dyke are defined as the weathered to semi-weathered material near the sub-outcrop of the MSZ. These oxide ores have lower metallurgical recoveries than unweathered sulphide ore using conventional extraction technology and are currently marginal to sub-economic. Mineral Resources have been estimated using kriging techniques on assay data derived from surface drill holes. Estimates are derived from composite widths, which are based on appropriate economic parameters. The classification of Mineral Resources at Zimplats is informed by a matrix of factors which incorporates geological complexity and the confidence in the geostatistical estimation. In broad terms, confidence is derived from surface drill hole spacing, and this has the largest weighting on the classification of Mineral Resources. For Ngezi (ML37), the following applies:

- Drillhole spacing of 250m or less supports Measured Mineral Resources
- Drillhole spacing between 250m and 1 000m supports Indicated Mineral Resources
- Drillhole spacing greater than 1 000m supports Inferred Mineral Resources.

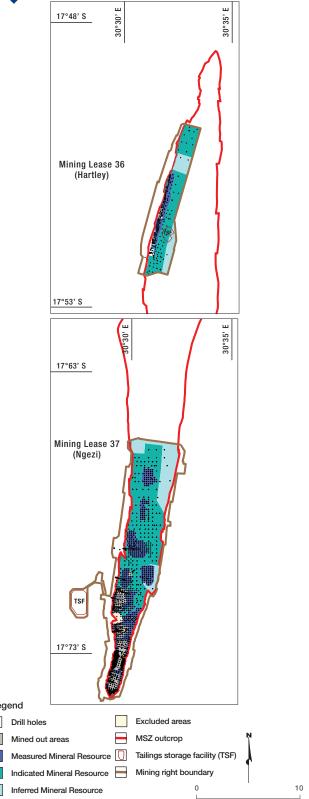
For Hartley (ML36), the density of drill holes in some portions of the Indicated and Measured Resources are wider than for ML37. The interpretation of existing data shows geological continuity of the orebody and consistency of grades in these areas. The modelling remains consistent with the known characteristics of the mined footprint at Hartley though revalidation of all historical data using twin hole drilling is currently in progress.

The Mineral Resource estimate reflects the actual spatial depletion as at 31 May 2021 and the non-spatial forecast depletion to 30 June 2021. More details regarding the Mineral Resources and Mineral Reserves can be obtained from the 2021 Zimplats annual report (www.zimplats.com).

## **REASONABLE PROSPECTS FOR EVENTUAL ECONOMIC EXTRACTION (RPEEE)**

Rigorous RPEEE testing considers (a) security of tenure, (b) exclusion due to ESG considerations, (c) infrastructure, (d) technical constraints (eg VRT), (e) data quality and distribution, (f) confidence in estimation and (g) economic testing for reasonable prospects for eventual economic extraction. All the Mineral Resources reported for Zimplats are considered for RPEEE. For example, a sizeable area between the Mupfuti and Bimha portal is excluded from Mineral Resource and Mineral Reserve estimates in view of the inherent low grades (see also valuation and sensitivities on page 79).

17°73' S Leaend Drill holes Mined out areas Measured Mineral Resource Indicated Mineral Resource Inferred Mineral Resource



Scale (km)

## **MODIFYING FACTORS**

The following modifying factors were applied to the Mineral Resources:

Mineral Resource Key assumptions	Main Sulphide Zone
Geological losses	5 – 20%
Area	149 million ca
Channel width	180 – 250cm

Mineral Reserve Modifying factors	Main Sulphide Zone
Dilution	5 – 7.5%
Pillars	19 – 35%
Mine call factor	97%
Relative density	3.18 – 3.25
Stoping width	250 – 265cm
Concentrator recoveries	78 – 81%

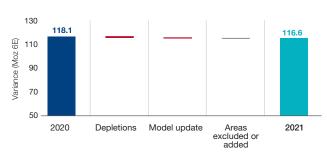
The modifying factors used to convert Mineral Resources to Mineral Reserves are derived from historical performance while considering future anticipated conditions. Implats' long-term price assumptions in today's money (supporting Mineral Reserve estimates) are shown on page 41.

## **MINERAL RESOURCE RECONCILIATION**

The reduction in Mineral Resource tonnage attributed to mining depletion amounted to 6.2Mt during the year. The year-on-year reconciliation of the PGE Mineral Resource estimate shows an overall decrease from 118.1Moz 6E to 116.6Moz 6E due to depletion and model updates.

#### **Total Zimplats 6E Mineral Resources**

as at 30 June 2021 (variance Moz 6E)



## Zimplats Mineral Resource estimate (inclusive reporting)

	As at 30 June 2021												
Orebody			Ngezi	i MSZ		Hartley MSZ				MSZ			
Category		Measured	Indicated	Inferred	Total	Measured	Indicated	Inferred	Total	Indicated	Inferred	Total	Total
Tonnes	Mt	220.6	381.8	122.1	724.5	32.1	138.0	43.6	213.8	16.0	39.3	55.4	993.6
Width	cm	245	230	210		180	180	180		250	216		
4E grade	g/t	3.36	3.38	3.33	3.37	4.05	3.78	3.44	3.75	3.42	3.55	3.51	3.46
6E grade	g/t	3.55	3.57	3.51	3.55	4.28	3.99	3.62	3.96	3.61	3.75	3.71	3.65
Ni	%	0.11	0.12	0.12	0.12	0.13	0.12	0.11	0.12	0.10	0.12	0.11	0.12
Cu	%	0.08	0.09	0.09	0.08	0.11	0.10	0.09	0.10	0.07	0.10	0.09	0.09
4E oz	Moz	23.8	41.5	13.1	78.4	4.2	16.8	4.8	25.8	1.8	4.5	6.3	110.5
6E oz	Moz	25.2	43.9	13.8	82.8	4.4	17.7	5.1	27.2	1.9	4.7	6.6	116.6
Pt oz	Moz	11.9	20.7	6.8	39.4	2.0	8.8	2.6	13.5	0.9	2.2	3.1	56.0
Pd oz	Moz	9.3	16.0	4.7	29.9	1.6	5.9	1.6	9.2	0.7	1.7	2.4	41.5

Orebody			Ngezi	MSZ			Hartley MSZ				MSZ Oxides – all areas			
Category		Measured	Indicated	Inferred	Total	Measured	Indicated	Inferred	Total	Indicated	Inferred	Total	Total	
Tonnes	Mt	191.4	409.1	130.2	730.7	32.1	138.0	43.6	213.8	16.0	39.3	55.4	999.8	
Width	cm	245	230	210		180	180	180		250	216			
4E grade	g/t	3.38	3.41	3.39	3.40	4.05	3.78	3.44	3.75	3.42	3.55	3.51	3.48	
6E grade	g/t	3.57	3.61	3.57	3.59	4.28	3.99	3.62	3.96	3.61	3.75	3.71	3.67	
Ni	%	0.10	0.11	0.12	0.11	0.13	0.12	0.11	0.12	0.10	0.12	0.11	0.11	
Cu	%	0.08	0.08	0.09	0.08	0.11	0.10	0.09	0.10	0.07	0.10	0.09	0.09	
4E oz	Moz	20.8	44.9	14.2	79.9	4.2	16.8	4.8	25.8	1.8	4.5	6.3	111.9	
6E oz	Moz	22.0	47.4	14.9	84.3	4.4	17.7	5.1	27.2	1.9	4.7	6.6	118.1	
Pt oz	Moz	10.5	22.6	7.2	40.3	2.0	8.8	2.6	13.5	0.9	2.2	3.1	56.9	
Pd oz	Moz	8.0	17.2	5.3	30.5	1.6	5.9	1.6	9.2	0.7	1.7	2.4	42.1	

As at 30 June 2020

## **MINING METHODS**

A mechanised room and pillar mining method is employed to extract ore from stopes whose nominal stope width is 2.5m. Mine access is through declines which are generally located centrally in each Mineral Resource block. Any asymmetry is accounted for in the mine production scheduling. The main production suite of equipment includes a single boom face rig for drilling, a roof bolter for support drilling, a 10t loader (LHD) and a 30t dump truck, which are deployed into specialised functional teams in each of the production sections underground.

The productivity per crew varies from approximately 16 500t to greater than 23 000t of ore per month, depending on the particular mine, the dip of the reef and the existing pillar layout. The typical design comprises 7m panels with a minimum of 4m x 4m size in-stope pillars, which are determined by depth below surface, and these are surrounded by large barrier pillars which form paddocks. The paddocks are meant to arrest pillar unravelling in the event of a collapse. Ngwarati and Rukodzi mines do not have barrier pillars or paddocks owing to their relatively shallow depth below surface. At all the mines, the spans of rooms may decrease, and pillar dimensions may increase in very bad ground. A combination of roof bolts and tendons is integral to the support design.

#### **Zimplats Mineral Reserve estimate**

As at 30 June 2021											
Orebody		Nge	zi MSZ								
Category		Proved	Probable	Total							
Tonnes	Mt	116.4	124.2	240.6							
Width	cm	265	265								
4E grade	g/t	3.19	3.18	3.18							
6E grade	g/t	3.37	3.35	3.36							
Ni	%	0.10	0.10	0.10							
Cu	%	0.07	0.08	0.08							
4E oz	Moz	12.0	12.7	24.6							
6E oz	Moz	12.6	13.4	26.0							
Pt oz	Moz	5.9	6.3	12.2							
Pd oz	Moz	4.7	5.0	9.6							

### **MINERAL RESERVE RECONCILIATION**

A net increase in Mineral Reserve of approximately 3Mt is reported mainly due to increase in drilling coverage and geological confidence over the UOR I areas which allowed for their inclusion in the mining plan and conversion to Mineral Reserves. The declared Mineral Reserves subsequently increased by 0.2Moz 6E after mining depletion.

More details related to this change can be found on the Zimplats website (www.zimplats.com).

### PROCESSING

Ore from the mines is processed by two concentrators (at Ngezi and SMC). The concentrator at Ngezi has two similar modules which have a capacity of 2.1Mtpa each, and makes up a total of about 4.2Mtpa. The SMC concentrator has an upgraded design capacity of about 2.4Mtpa.

## **MINE PLANNING PROCESS**

The primary intention of the planning function at Zimplats Operations is to provide, plan and direct the planning activities of the mining operations to maximise the strategic aims and targets of the mine as it relates to production efficiencies and costeffectiveness. While all MSZ 'Flats', MSZ 'Upper Ores I and II' are included in the Mineral Resource estimate, only the MSZ 'Flats', MSZ 'Upper Ores I' are progressed to the Mineral Reserve estimate, based on the current viable mining methods and economic considerations.

The mine planning and scheduling for all the operations at Ngezi are undertaken as per the group cycle using modern software such as Datamine and Vulcan.

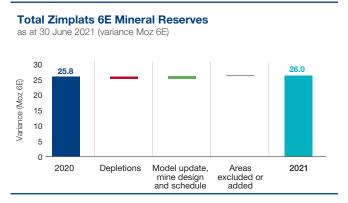
The Mineral Reserve estimate results from the planning process applied against the Measured and Indicated Mineral Resources only, through the application of detailed modifying factors; notably, the process is subjected to rigorous economic viability testing at given market conditions.

As at 30 June 2020											
Orebody		Nge									
Category		Proved	Probable	Total							
Tonnes	Mt	103.3	134.3	237.6							
Width	cm	265	265								
4E grade	g/t	3.19	3.20	3.20							
6E grade	g/t	3.37	3.37	3.37							
Ni	%	0.10	0.10	0.10							
Cu	%	0.07	0.07	0.07							
4E oz	Moz	10.6	13.8	24.4							
6E oz	Moz	11.2	14.6	25.8							
Pt oz	Moz	5.3	6.9	12.1							
Pd oz	Moz	4.1	5.4	9.5							

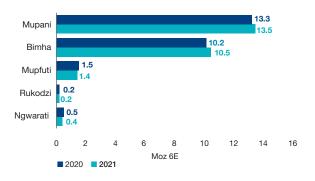
Approximately one-third of the mined ore (2.4Mt) is transported by road trains to the concentrator at SMC. The rest is transported by an overland conveyor to the concentrator modules at Ngezi. Concentrates from both the Ngezi and SMC concentrators are then smelted in an arc furnace and converted to matte at SMC. The resulting matte is dispatched to Impala's refinery in Springs under an LoM agreement with Impala.

## LOM, VALUATION AND SENSITIVITY

The LoM Plan for Zimplats Operations is a design and costing study of an existing or future operation in which the following aspects have been realistically assessed: geological, mining, metallurgical, engineering, operational, economic, marketing, legal, environmental, social, governmental, and all other modifying factors to demonstrate that, at the time of reporting, extraction is reasonably justified. The high-level LoM profile is depicted in the accompanying graph on page 80.



**Zimplats Mineral Reserve distribution** as at 30 June 2021 (Moz 6E)



The economic viability of the Zimplats Mineral Reserves is tested by Implats using net present value calculations of the Mineral Reserve, determining the lowest real rand basket price that would still render the Mineral Reserve viable. These calculations generate basket prices based on the local PGM metal ratios and differ from the overall Group basket prices. This is then tested against the internal Zimplats estimate of the real long-term basket price and the spot price as at 30 June 2021. These tests indicate that the Zimplats operation requires a real long-term basket price of between R12 000 and R13 000 per 6E ounce to be economically viable. While the real spot basket price for Zimplats as at 30 June 2021 was R40 077 (US\$2 806) per 6E ounce, the Zimplats internal long-term real basket price is R22 503 (US\$1 626). The commodity market remains fluid. Key operating statistics are shown on

page 38 together with the production summaries.

#### COMPLIANCE

The Competent Persons designated in terms of the SAMREC Code (2016), are Steven Duma BSc (Hons) Geology, the University of Zimbabwe (Pr. Sci. Nat, SACNASP, AusIMM) and Wadzanayi Mutsakanyi BSc (Hons) Mining Engineering, University of Zimbabwe (MAusIMM, MSAIMM). Both are full-time employees of Zimplats. Steven is responsible for Mineral Resources and has 24 years of experience in mining and exploration, of which 12 years have been in the platinum mining industry in Zimbabwe and South Africa. Wadzanayi is responsible for Mineral Reserves and has 26 years of experience in mining, of which 13 years have been in the platinum mining industry in Zimbabwe. Implats has written confirmation from the Competent Persons that the information disclosed in terms of these paragraphs are compliant with the JORC Code (2012 edition) and SAMREC Code (2016) and, where applicable, the relevant Table 1, Appendices and JSE section 12 Listings Requirements. The CPs concurred that the information may be published in the form, format and context in which it was intended.

Implats appointed The MSA Group to undertake the 2021 Mineral Resources and Mineral Reserves audit. It was a follow-up on their 2020 audit. MSA could not find any fatal flaws and confirmed that the Mineral Resource and Mineral Reserve estimates are SAMREC (2016) compliant and no impediments for inclusion into Implats' year-end Mineral Resource and Mineral Reserve statement was derived.

### ZIMPLATS TOP RISKS

The Group risk management process is briefly described on page 25, where the Implats Group top risks are listed.

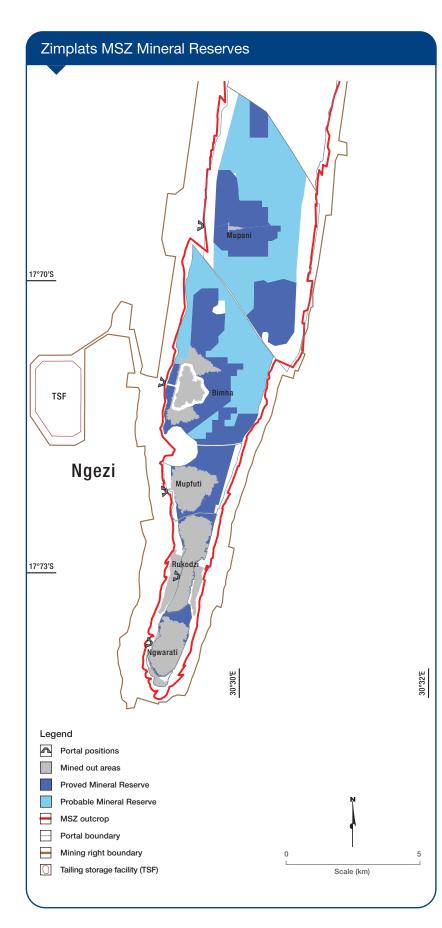
In this context, the top risks identified at Zimplats that potentially could impact RPEEE, are:

- Impact of the Covid-19 pandemic on operations
- · Foreign currency availability threat, currency instability and excess ZWL
- · Policy inconsistencies and uncertainties leading to high sovereign risk
- Power supply risks
- Disruption in supply chain and associated procurement risks.

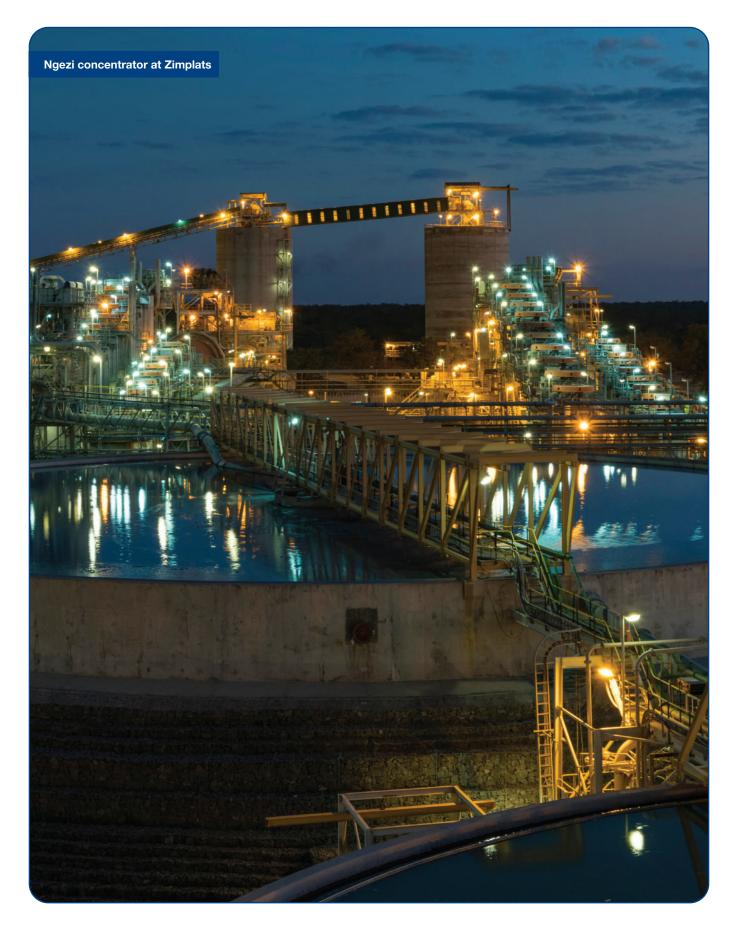


#### Zimplats estimated 20-year 6E LoM ounce profile as at 30 June 2021

## 80







INTRODUCTION • AND OVERVIEW

SCENE SETTING •

THE DETAILS - • MINERAL RESOURCES AND MINERAL RESERVES

## Mimosa

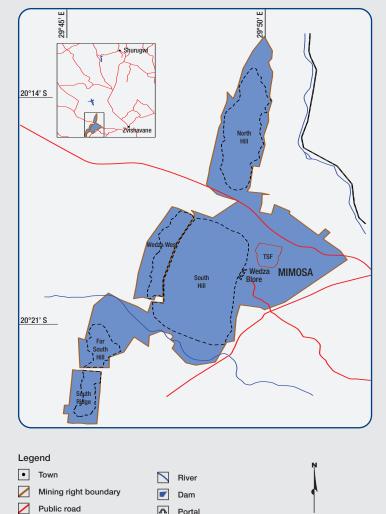


**Mimosa Mining Company** is situated 32km west of Zvishavane town, approximately 340km southwest from the capital city of Harare in Zimbabwe.

**Mining right** 7 653ha

Implats' interest 50% non-managed

## **MIMOSA REGIONAL LOCALITY MAP**



Δ Portal

MSZ outline

 $\mathbb{Z}$ 

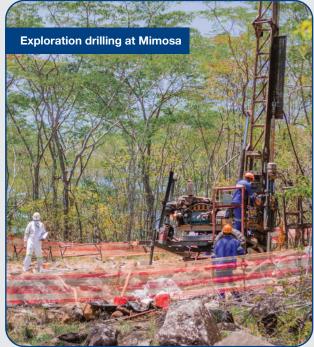
0

Railway line

Tailings storage facility (TSF)

## Location

Mimosa Mine is located on the Wedza Geological complex of the Great Dyke, about 150km east of Bulawayo in the southern part of the Midlands province, Zimbabwe. The mine is located some 80km southsouthwest of the Unki Platinum Mine, operated by Anglo Platinum.



Scale (km)

## Mimosa (continued)

#### **BRIEF HISTORY**

Mining operations started in 1926 at North Hill and lasted approximately two years, with some 60oz of platinum recovered. Union Carbide Zimbabwe secured an EPO in the Wedza area over the Mimosa deposit in 1962. Exploration and trial mining were periodically undertaken over 30 years. Zimasco acquired Mimosa from Union Carbide in 1993. Zimasco piloted platinum mining in Zimbabwe by resuscitating the operation and steadily increasing production to 1 000t per day by 1998. In July 2001, Implats acquired a 35% stake in Mimosa and increased this stake to 50% with a further acquisition of 15% in the following year. Aquarius acquired a 50% stake in Mimosa during the same year. Sibanye-Stillwater concluded a deal in 2016, which resulted in Sibanye-Stillwater acquiring all the shares that formerly belonged to Aquarius. Mimosa Investments Limited wholly owns Mimosa, a Mauritius-based company held by Implats and Sibanye-Stillwater and is a non-managed operation in the Implats portfolio.

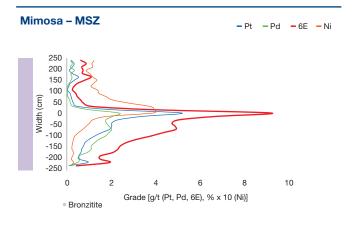
#### **GEOLOGICAL SETTING**

PGM mineralisation at Mimosa is located in four isolated and fault-bounded blocks, namely, from north to south, the North Hill orebody, South Hill orebody, Mtshingwe Fault Block orebody and Far South Hill orebody areas. Each block is host to a pyroxenite layer known as the P1 pyroxenite layer, which is overlain by a gabbro layer. The platinum-bearing Main Sulphide Zone (MSZ) is located in the P1 pyroxenite some 10m below the ultramafic/mafic contact. The MSZ is a continuous layer, 2m to 6m thick, and forms an elongated basin. The mineralised zone strikes in a northnortheasterly trend and dips at about 14° on the margins, flattening towards the axis of the basin. The MSZ at Mimosa has a welldefined grade profile where peak base metal and PGM values are offset vertically, with palladium dominant towards the base, platinum in the centre and nickel towards the top. The MSZ is visually identified using pyroxene and sulphide mineralisation. Minor faults and dykes are present at Mimosa. Although no potholes have been identified, low-grade areas and areas of no mineralisation, or "washout channels", have been intersected.

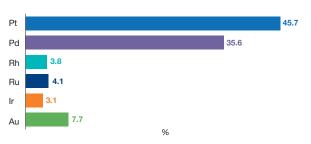
## **EXPLORATION AND STUDIES**

The lease area has been explored by a total of 524 exploration core-recovering drill holes. The site has also been explored by surface mapping and trenching. The drill holes were drilled and assayed over a series of drilling campaigns spanning the life of the mine. The drill core is largely NQ size though the unconsolidated part of the hole is drilled HQ size. All drill holes are logged lithologically and geotechnically. All lithological and assay data are verified, 3 745m in total drilled in 44 surface drill holes (including geotechnical holes) for integrity before being imported into the database. Surface exploration drilling continued during the past year at the cost of US\$0.5m. The exploration results assist with ongoing mining operations and contribute to the geological modelling of the various project areas and related feasibility studies.

An agreement was concluded in 2021 which resulted in Mimosa acquiring mining claims adjacent to the South Hill workings and also to the south of Far South Hill.



#### Mimosa MSZ 6E metal ratio



MSZ metal ratios derived from the Mineral Reserve estimate.

During the past year, feasibility studies focused on the due diligence work required to incorporate the adjoining Anglo American Platinum claims, now known as Wedza West Claims, into the Mimosa operation. Work continues on the feasibility study for the proposed North Hill mining operations.

#### MINERAL RIGHTS AND LEGAL TENURE

Mimosa has legal entitlement to the minerals being reported upon without any known impediments. There are no legal proceedings or other material matters that may impact the ability of Mimosa to continue with exploration and mining activities. The Mimosa mining rights are covered by a contiguous mining lease, individual mining claims and a special grant all amounting to 7 653ha. The mining lease, namely Lease No 24, was granted to Mimosa on 5 September 1996. In 2021 Mimosa acquired mining claims adjacent to the Mimosa mining lease from Anglo American Platinum. The Mineral Resources and Mineral Reserves for this area (Wedza West) are included in the updated 2021 estimates. This unlocks immediate opportunities for the South Hill complex, with a resultant significant increase in the Mineral Resources, Mineral Reserves and LoM.

APPENDICES •

Generalised geological succession of the

u	Width (± m)       Pyroxenite/harzburgite, dunite sequence       Legend         Bronzitite       Bronzitite       Bronzitite         Dunite       Sz and LSZ       Chromitite         Dunite       Gabbro/norite       Not to scale											
		(± m)	dunite sequence Gabbro/norite Websterite Bronzitite MSZ and LSZ Chromitite Dunite									
			Websterite pyroxenite									
	16		Webstente pyroxenite									
	5		Main Sulphide Zone – Bronzitite									
	32		Bronzitite :	P1 pyroxenite								
	30		Lower Sulphide Zone	5								
	200		Bronzitite underlain by harzburgite									
	1 800		Pyroxenite/harzburgite succession (with chromitite layers) Multiple successions	P2 to P6 pyroxenite layer								
	900		Dunite with chromitite layers (marginal border group)									

# ENVIRONMENTAL MANAGEMENT AND SOCIAL LICENCE TO OPERATE

Summary details about the Group environmental management and policy are listed on page 22. This includes the focus areas such as compliance, water stewardship, air quality, managing waste streams and promoting land management practices. Mimosa is certified to operate on an ISO 14001 and ISO 45000 Business Management system. The system has a comprehensive, auditable method of identifying, implementing, monitoring and tracking all aspects and impacts of its activities on the environment. The system is subjected to internal reviews, internal audits and also external audits.

All environmental parameters are covered in the mine's Environmental Impact Assessment (EIA) covering the whole mining lease. Project-specific EIAs are also carried out as and when required. Mimosa has 17 environmental permits which are renewed annually.

Mimosa has implemented an integrated waste management programme which prioritises re-use, recycle and disposal as a last option. Mimosa conducts quarterly community liaison meetings with key stakeholders, this caters for potential environmental concerns also. Air quality monitoring includes waste incineration and the monitoring of 10 fallout dust buckets. About 40% of water usage at Mimosa is from recycled water.

## **GENERAL INFRASTRUCTURE**

The mining operation is well established with a mature infrastructure. The mine currently extracts 2 900Ml raw water per annum from the Khumalo weir. The power supply to the mine is through a 132kV overhead powerline feeder teeing off Mberengwa switching station located some 15km south of the Mimosa Mine consumer sub-station. The maximum load capacity of the line feeding the mine consumer sub-station is 118MVA. It is adequate to accommodate an additional load. The access surface tarred road to the mine is in good condition and well maintained. The nearest railway station (Bannockburn) is 16km from the mine. General infrastructure includes offices, stores, canteen, two declines, a concentrator and a TSF facility.

# MINERAL RESOURCE ESTIMATION AND CLASSIFICATION

The Mineral Resource estimates have been computed using Surpac<sup>™</sup> software using inverse distance techniques. The estimation block model cut-off for incorporating additional drill hole data was in December 2020. The Mineral Resource estimate reflects the actual spatial depletion as at 30 April 2021 and the non-spatial forecast depletion to 30 June 2021.

## Mimosa (continued)

The classification of Mineral Resources at Mimosa is informed by a matrix considering geological complexity and the confidence in the geostatistical estimation. In broad terms, confidence is derived from surface drill hole spacing, and this has the largest weighting on the classification of Mineral Resources:

- Drillhole spacing less than 250m apart supports Measured Mineral Resources
- Drillhole spacing between 250m and 500m supports Indicated Mineral Resources
- Drillhole spacing greater than 500m supports Inferred Mineral Resources.

## REASONABLE PROSPECTS FOR EVENTUAL ECONOMIC EXTRACTION (RPEEE)

Rigorous RPEEE testing considers (a) security of tenure,
(b) exclusion due to ESG considerations, (c) infrastructure,
(d) technical constraints (eg VRT), (e) data quality and distribution,
(f) confidence in estimation and (g) economic testing for reasonable prospects for eventual economic extraction. All the Mineral Resources reported for Mimosa are considered for RPEEE. Various areas at South Hill and North Hill have been excluded from Mineral Resource estimates due to the inherent low grades (see also
valuation and sensitivities on page 89).

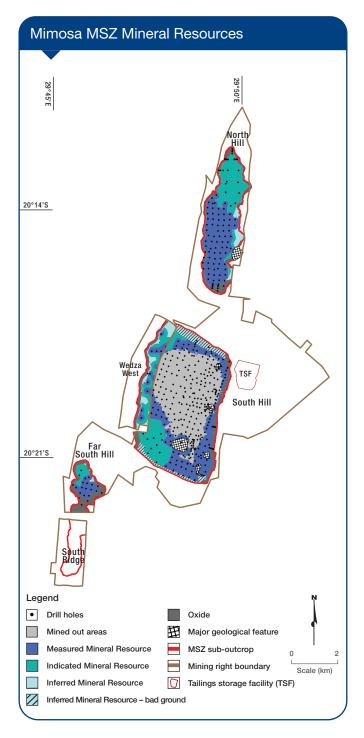
## **MODIFYING FACTORS**

 The modifying factors used to convert Mineral Resources to Mineral Reserves are derived from historical performance while considering future anticipated conditions. Implats' long-term price assumptions in today's money (supporting Mineral Reserve
 estimates are shown on page 41). The following other modifying

factors were applied to the Mineral Resources:

Mineral Resource Key assumptions	Main Sulphide Zone
Geological losses	7 – 26%
Area	23 million ca
Channel width	210cm

Mineral Reserve Modifying factors	Main Sulphide Zone
Dilution	1 – 2%
Pillars	24 – 25%
Mine call factor	95 – 99%
Relative density	3.15 – 3.18
Stoping width	213cm
Concentrator recoveries	78 – 80%



## MINERAL RESOURCE RECONCILIATION

The reconciliation of the Mineral Resources is positively impacted by the recent acquisition of adjoining Anglo American Platinum claims (Wedza West). An increase in the estimated width and review of the estimated geological losses at North Hill further contributed to the increase. Normal mining depletion offsets the growth to some extent.

APPENDICES •

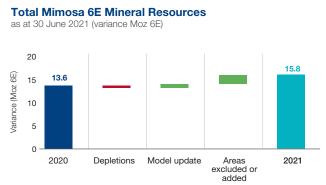
## Mimosa (continued)

#### Mimosa Mineral Resource estimates (inclusive reporting)

	As at 30 June 2021													
Orebody			South I	Hill MSZ			North H	Hill MSZ		Far South Hill MSZ				
Category		Measured In	idicated	Inferred	Total	Measured In	ndicated	Inferred	Total	Measured	Indicated	Inferred	Total	Total
Tonnes	Mt	33.2	18.9	18.6	70.8	26.8	14.6	9.6	51.0	3.9	2.1	6.2	12.1	133.9
Width	cm	210	210	210		210	210	210		210	210	210		
4E grade	g/t	3.60	3.40	3.40	3.49	3.41	3.52	3.43	3.45	3.49	3.72	3.30	3.43	3.47
6E grade	g/t	3.83	3.60	3.55	3.70	3.61	3.74	3.64	3.65	3.71	3.95	3.51	3.65	3.67
Ni	%	0.15	0.16	0.15	0.15	0.16	0.17	0.16	0.16	0.15	0.16	0.14	0.15	0.16
Cu	%	0.12	0.13	0.13	0.12	0.12	0.13	0.12	0.12	0.13	0.13	0.12	0.12	0.12
4E oz	Moz	3.8	2.1	2.0	8.0	2.9	1.7	1.1	5.6	0.4	0.2	0.7	1.3	14.9
6E oz	Moz	4.1	2.2	2.1	8.4	3.1	1.8	1.1	6.0	0.5	0.3	0.7	1.4	15.8
Pt oz	Moz	1.9	1.0	1.0	3.9	1.4	0.8	0.5	2.8	0.2	0.1	0.3	0.7	7.3
Pd oz	Moz	1.5	0.8	0.8	3.1	1.1	0.6	0.4	2.1	0.2	0.1	0.2	0.5	5.7

As at 30 June 2020														
Orebody			South I	Hill MSZ			North Hill MSZ				Far South Hill MSZ			
Category		Measured In	ndicated	Inferred	Total	Measured	Indicated	Inferred	Total	Measured	Indicated	Inferred	Total	Total
Tonnes	Mt	31.8	12.0	11.2	55.0	18.0	16.3	9.5	43.8	3.7	2.0	6.0	11.7	110.4
Width	cm	200	200	200		200	200	200		200	200	200		
4E grade	g/t	3.75	3.45	3.54	3.64	3.48	3.62	3.54	3.54	3.70	3.87	3.43	3.59	3.60
6E grade	g/t	3.97	3.67	3.76	3.86	3.68	3.84	3.75	3.76	3.93	4.12	3.66	3.82	3.82
Ni	%	0.14	0.15	0.14	0.14	0.14	0.16	0.14	0.15	0.14	0.15	0.13	0.14	0.14
Cu	%	0.11	0.11	0.12	0.11	0.10	0.12	0.11	0.11	0.11	0.11	0.10	0.11	0.11
4E oz	Moz	3.8	1.3	1.3	6.4	2.0	1.9	1.1	5.0	0.4	0.2	0.7	1.4	12.8
6E oz	Moz	4.1	1.4	1.4	6.8	2.1	2.0	1.1	5.3	0.5	0.3	0.7	1.4	13.6
Pt oz	Moz	1.9	0.6	0.6	3.2	1.0	0.9	0.5	2.5	0.2	0.1	0.3	0.7	6.3
Pd oz	Moz	1.5	0.5	0.5	2.5	0.8	0.7	0.4	1.9	0.2	0.1	0.2	0.5	4.9





### **MINING METHOD**

Mimosa is a shallow underground mine accessed by the two decline shafts, Wedza Decline and Blore Shaft. Mechanised bord and pillar mining method is used to extract ore over average stoping width of 2.13m. Historically, the bord widths have varied from 15m to 6m wide, depending on the ground control district. Minimum pillar sizes are dependent on depth to give a safety factor greater than 1.6. Current mining consists of 5.5m to 7m bord sizes with 8m by 4m pillars for the whole mine.

The mining cycle involves mechanised support drilling and installation, MSZ channel definition and marking, mechanised face drilling, charging and blasting, followed by mechanised lashing onto a conveyor network feeding to an underground bunker. The ore is conveyed to a surface stockpile ahead of feeding into the processing plant from the bunker. Optimum stoping widths and mining cut selection are regularly reviewed. The currently planned mining horizon is a 2.1m slice defined by the hangingwall at 0.60m above and the footwall at 1.5m below the Platinum peak position. This overbreaks to an actual mining width average of 2.13m. The reported mined grade is based on inverse distance block modelling of drill hole values using Surpac<sup>™</sup>.

#### **Mimosa Mineral Reserve estimate**

As at 30 June 2021										
Orebody	ebody South Hill MSZ									
Category		Proved	Probable	Total						
Tonnes	Mt	17.6	15.4	33.1						
Width	cm	210	210							
4E grade	g/t	3.58	3.44	3.51						
6E grade	g/t	3.85	3.69	3.78						
Ni	%	0.14	0.15	0.15						
Cu	%	0.11	0.12	0.11						
4E oz	Moz	2.0	1.7	3.7						
6E oz	Moz	2.2	1.8	4.0						
Pt oz	Moz	1.0	0.8	1.8						
Pd oz	Moz	0.8	0.7	1.4						

#### **MINE PLANNING PROCESS**

Mine design and scheduling are computer-aided using MineShed<sup>™</sup> software. The mine plan is derived from a target milling throughput, including providing a strategic surface stockpile. Losses due to mining modifying and geological factors are applied in production scheduling to produce an LoM production (tonnage and grade) profile. A tail-cut has been effected on LoM I to exclude the last three years whose cash flows are negative.

The Mineral Reserve estimate results from the planning process applied against the Measured and Indicated Mineral Resources only, through the application of detailed modifying factors; this process is subjected to rigorous economic viability testing at given market conditions.

## MINERAL RESERVE ESTIMATION AND CLASSIFICATION

Current Mineral Reserve estimates have included the latest drilling, assay results, mine design and updated modifying factors. The Mineral Reserves quoted reflect anticipated feed grades delivered fully diluted to the mill. The estimations align with the business plan by scheduling ore tonnages and grades at a 213cm stoping width. The conversion and classification of Mineral Reserves at Mimosa are informed by:

- Feasible mine plan and project studies, board approval and available funding
- Economic testing at given market conditions (price deck)
- Indicated Mineral Resources can be classified as Probable Mineral Reserves if the mine plan, approval, funding and economical test is passed
- Measured Mineral Resources can be classified as Proved Mineral Reserves if the mine plan, approval, funding and economical test is passed
- In certain exceptional circumstances, the Competent Person may elect to convert Measured Mineral Resources to Probable Mineral Reserves if the confidence in the modifying factors is being confirmed
- No Inferred Mineral Resources are converted to the Mineral Reserve category, and no Inferred Mineral Resources were included in feasibility studies or LoM schedules.

	As at 30 J	lune 2020							
Orebody	South Hill MSZ								
Category		Proved	Probable	Total					
Tonnes	Mt	18.4	9.2	27.6					
Width	cm	200	200						
4E grade	g/t	3.51	3.34	3.45					
6E grade	g/t	3.76	3.58	3.70					
Ni	%	0.14	0.15	0.15					
Cu	%	0.11	0.11	0.11					
4E oz	Moz	2.1	1.0	3.1					
6E oz	Moz	2.2	1.1	3.3					
Pt oz	Moz	1.0	0.5	1.5					
Pd oz	Moz	0.8	0.4	1.2					

**IMPLATS –** MINERAL RESOURCE AND MINERAL RESERVE STATEMENT 2021

INTRODUCTION • AND OVERVIEW SCENE SETTING •

## **MINERAL RESERVE RECONCILIATION**

The year-on-year reconciliation of the Mimosa Mineral Reserve estimate is positively impacted by the inclusion of the Anglo American Platinum Claims (Wedza West) and, to a lesser extent, by the mining width and other mining parameters. Normal mining depletion impacted negatively on the year-on-year reconciliation.



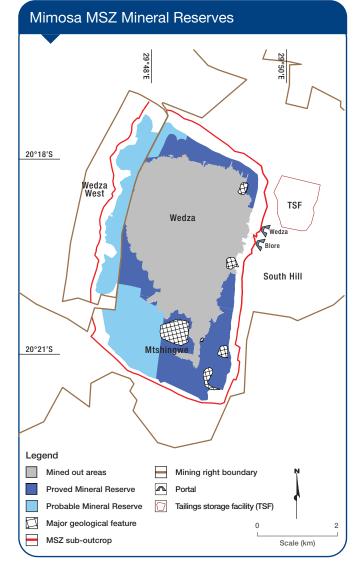
## PROCESSING

Mimosa has a concentrator plant on-site where initial processing is undertaken to produce a concentrate. The concentrates are transported by road to Impala Mineral Processes in Rustenburg regarding an offtake agreement with Impala. An alternative option for local beneficiation is being investigated.

## LOM, VALUATION AND SENSITIVITY

The LoM I tail-cut tonnage is classed as LoM IA for opportunity extraction with LoM II. North Hill Mine is now at the BFS stage and is classified as LoM II. LoM I comprises extraction from the orebody's Mineral Reserves at Wedza and Mtshingwe, which is the southern part of the South Hill orebody and Wedza West. Work is underway to assess various options to optimise extraction from different ore sources of the remaining Mineral Resources of Mimosa. The updated LoM includes the newly added Anglo American Platinum claims.

The economic viability of the Mimosa Mineral Reserves is tested by Implats using net present value calculations over the LoM of the Mineral Reserve, determining the lowest real rand basket price that would still render the Mineral Reserve viable. These calculations generate basket prices based on the local PGM metal ratios and differ from the overall Group basket prices. This is then tested against the internal Mimosa estimate of the real long-term basket price and the spot price as at 30 June 2021. These tests by Implats indicate that the Mimosa operation requires a real long-term basket price of between R16 000 and R17 000 per 6E ounce to be economically viable. In comparison, the real spot basket price for Mimosa as at 30 June 2021 was R40 235 (US\$2 817) per 6E ounce, the Mimosa internal long-term



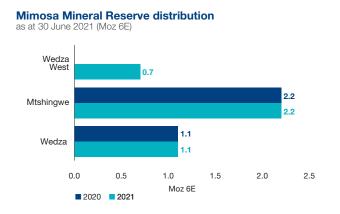
real basket price is R23 554 (US\$1 702) per 6E ounce. The commodity market remains fluid. Key operating statistics are shown on page 38 together with the production summaries.

## COMPLIANCE

Mimosa has adopted the SAMREC Code (2016) for its reporting. The Competent Person for Mimosa's Mineral Resources is Dumisayi Mapundu (CertNatSci SACNASP), BSc (Geology), a full-time employee of Mimosa with 27 years of relevant experience. The Competent Person for Mimosa's Mineral Reserves is Paul Man'ombe (ZIE and SAIMM), BSc Eng (Hons) (Mining), MBA with 25 years' experience. Implats has written confirmation from the Competent Persons that the information disclosed in terms of these paragraphs are compliant with the SAMREC Code (2016) and, where applicable, the relevant

APPENDICES •

## Mimosa (continued)



SAMREC Table 1, Appendices and JSE section 12 Listings Requirements. They concur that the information may be published in the form, format and context in which it was intended.

Mimosa estimated 20-year 6E LoM ounce profile

Geologists and mining engineers of Implats conducted internal technical reviews of the Mineral Resources and Mineral Reserves. No critical issues/fatal flaws were found that could have a material impact on the Mineral Resource and Mineral Reserve estimates. The estimates have been found to be SAMREC (2016) compliant, hence there are no impediments which would prevent the inclusion of the results as part of Implats' annual declaration of Mineral Resources and Mineral Reserves.

## **MIMOSA TOP RISKS**

The Group risk management process is briefly described on page 25, where the Implats Group top risks are listed.

In this context, the top risks identified at Mimosa that potentially could impact RPEEE, are:

- Covid-19 pandemic
- Disruptions in the export and import of goods and services
- Regulatory uncertainty
- Foreign currency shortages
- Energy supply security and cost.





INTRODUCTION • AND OVERVIEW SCENE SETTING •

THE DETAILS - • MINERAL RESOURCES AND MINERAL RESERVES

## Impala Canada



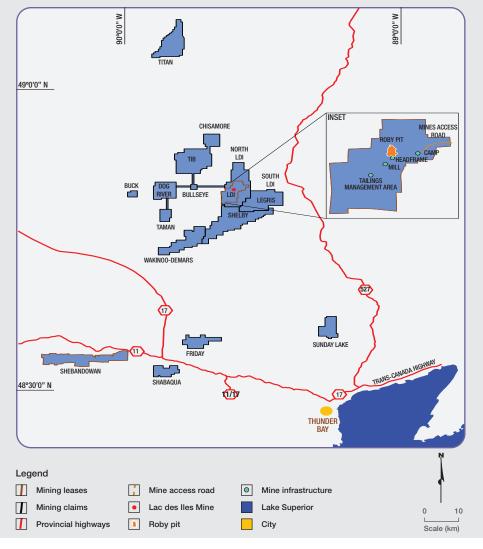
Impala Canada owns and operates the Lac des Iles Mine (LDI), and has a shareholding in two exploration properties, and operates three offices: a corporate office in Toronto, Ontario, and an exploration and finance office in Thunder Bay, Ontario.

APPENDICES •

Mining rights 78 234ha

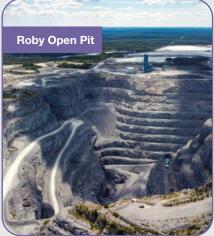
Implats' interest 100% managed

## **REGIONAL LOCALITY MAP**



## Location

Impala Canada's Lac des Iles Mine (LDI) property is located 90km northwest of the city of Thunder Bay in Northwestern Ontario. The mine properties comprise approximately 78 234ha of mining leases and mineral claims in total.



#### **BRIEF HISTORY**

Geological investigations began with reconnaissance mapping in the early 1930s and again in the late 1960s, sparked by discovering aeromagnetic anomalies in the late 1950s. Various exploration programmes were undertaken over the next 25 years by several companies. Lac des lles acquired the property in 1992, and open-pit production commenced in 1993. Mining initially concentrated on the Roby Zone by open-pit methods. In 2006, underground mining started via ramp access. In 2010, a significant mine expansion began, including shaft sinking and extension of the ramp system to access the Offset Zone for underground mining. Through 2016 to 2017, a transition from a longhole stoping to a sub-level shrinkage (SLS) mining method commenced in the main Offset Zone.

Impala Platinum Holdings Limited acquired North American Palladium Limited in 2019 to form Impala Canada Limited, a wholly owned subsidiary of Implats.

## **GEOLOGICAL SETTING**

The Lac des lles mine property captures the known extents of two discrete intrusive complexes, including the South Lac des lles Intrusive Comlex (IC) comprising the former Mine block, South Lac des lles and Camp Lake intrusions, and the North Lac des lles IC. The North Lac des lles IC is a polyphase intrusive body consisting of nested to locally crosscutting intrusions.

Intrusive contacts between the two bodies suggest that the southern part of the North Lac des Iles IC was younger than the northern margin of the South Lac des Iles IC.

Most of the North Lac des Iles IC consists of layered ultramafic rocks distributed within two types of cyclic units, including an orthopyroxene-bearing cyclic unit and an orthopyroxene-free cyclic unit. Historical surface prospecting, mapping and limited trenching and diamond drilling have identified several areas in the North Lac des Iles IC hosting PGE occurrences exceeding 1.0g/t of combined Pd+Pt+Au. These PGE occurrences are interpreted to represent stratiform or reef-type magmatic PGM mineralisation.

The South Lac des Iles IC was emplaced into predominantly intermediate composition orthogneiss basement rocks. The emplacement age of the Main Block intrusion has been established as 2.689 to 2.693 billion years. Four major intrusive sequences (series) are recognised in the complex. Mapping and drilling have shown that the central-east part of the South Lac des Iles IC is an upright, homoclinal sequence (south-facing igneous stratigraphy) with a general north-easterly strike direction and steep southerly dips. In contrast, the major units in the western end of the complex that host most of the palladium mineralisation on the property display a general northerly strike direction and steep easterly to vertical dips. Both domains are believed to reflect the influence of pre-Lac des lles structures on magma emplacement. The Shelby Lake structure is visible as a linear, positive magnetic anomaly to the south of the property. It is visible in the Roby pit and underground workings as an intensely recrystallised schistose melanorite unit that hosts the majority of mined out and remaining higher-grade palladium Mineral Resources at Lac des lles.

A second important pre-intrusion feeder structure to the South Lac des Iles IC has recently been inferred from geological and geophysical data, drill hole logging, lineament analysis, and metal grade trends. It is referred to as the Roby Central Fault and has an east-northeast strike, moderate to steep south dip and bisects the northeastern part of the complex. The intersection of these two structures corresponds to the thicker, central parts of both the Roby and Offset Zones.

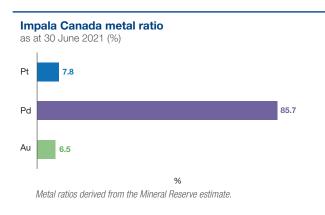
Mineral Resources on the property are classified as palladium-rich (disseminated) magmatic sulphide deposits located in the northwestern part of the noritic South Lac des lles IC. The South Lac des lles IC is one of several 2.68 billion-year-old maficultramafic intrusions in the region, most of which are covered by mineral claims held by Impala Canada Limited. In contrast to most of the Bushveld Complex PGE deposits, the Lac des lles orebodies show extreme palladium enrichment over platinum and appear to have formed within or directly adjacent to feeder structures, resulting in near-vertical orientations and true widths locally exceeding 100m.

The two principal ore zones at Lac des lles are the Roby Zone and the Offset Zone, separated by the Offset Fault. Previous surface mining included production from the Roby and Twilight Zones from the now-dormant Roby open pit. In late 2017, ongoing open pit mining recommenced at surface in the area around the Twilight Zone. Underground mining, which commenced in 2006, initially focused on the central portions of the Roby Zone beneath the Roby pit and began transitioning to the deeper Offset Zone Mineral Resources starting in 2010.

The average ratio of Pt:Pd:Au, based on the combined 2021 Mineral Reserve estimate, is shown below. The dominance of palladium is clearly illustrated as this represents some 85.7% of the combined average PGE grade. Historic internal reviews and academic studies show that the other PGE grades are negligible compared to Pd, Pt and Au.

THE DETAILS - • MINERAL RESOURCES AND MINERAL RESERVES

## Impala Canada (continued)

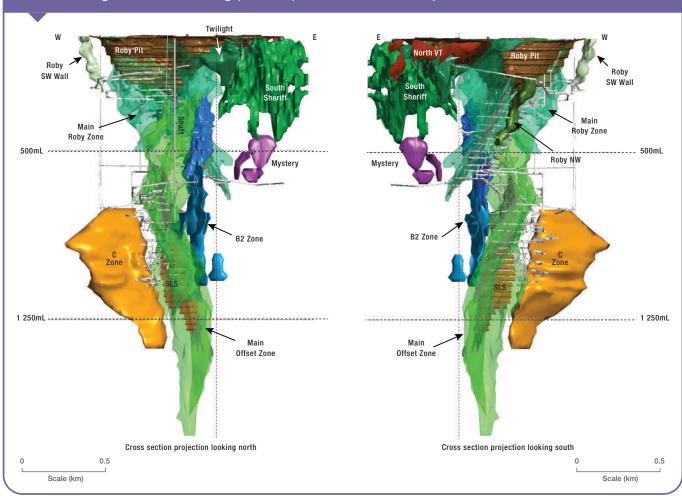


## **EXPLORATION AND STUDIES**

Exploration activities at Impala Canada Limited are focused on near-mine targets as well as key regional properties located within 50km of the Lac des Iles Mill. The near-mine exploration continues to be the company's primary vehicle to expand its Mineral Resources and extend the life of the Lac des lles operation. In addition to this, there will also be work conducted on exploring the greenfields properties to identify and evaluate the growth potential for the company.

Impala Canada's exploration effort for BP2021 remained predominately on supporting the conversion of Mineral Resources to extend the life-of-mine (LoM). With a focus on conversion drilling in 2021 at Lac des Iles, there was a significant increase in the Measured and Indicated Mineral Resource categories while the Inferred Mineral Resource category, conversely, was reduced.

BP2021 focused on underground drilling on the conversion of Offset, B-Zone and C-Zone Mineral Resources (17 500m), the delineation of C-Zone and Offset Mineral Resources (25 900m) and exploratory drilling (12 700m), including 4 600m testing the Camp Lake Target. Delineation drilling at C-Zone has been successful to date, with every hole intersecting mineralisation with numerous



#### North-looking and south-looking (inverted) cross sections of Impala Canada orebodies

## Impala Canada (continued)

significant intersections. Exploratory drilling of the Camp Lake target has been encouraging with recent significant intersections.

The past exploration expenditure for 2021 is illustrated below.

Exploration drilling 2021											
Location	Total (number)	Length (m)	Amount C\$m								
Underground Lac des lles	167 0	56 244	10.8								
Total	167	56 244	10.8								

\* R10.91 per C\$ as at 30 June 2021.

Exploration drilling 2020											
Location	Total (number)	Length (m)	Amount C\$m								
Underground Lac des lles	45	18 821	3.8								
Surface Lac des lles	9	3 497	0.9								
Total	54	22 318	4.7								

\* R10.91 per C\$ as at 30 June 2021.

BP2022 budget and planning has scheduled a programme to enhance the LoM with a target gain of 300 000oz Pd in Measured and Indicated Mineral Resources. Some 27 000 metres are planned for conversion drilling at C-Zone, Offset Zone, Offset South and Roby South, and an additional 7 000 metres are being allocated to delineate further C-Zone Mineral Resources above the 800 level and below the 1 300 level. Approximately 20 000 metres of exploratory drilling is planned for the Camp Lake target. The BP2022 exploration programme at Lac des lles is estimated at R184 million (C\$16.86 million).

#### **Summary of mining leases**

With a focus on optimising, de-risking and investing to create a sustainable operation for the long term, ongoing studies are scheduled for the upcoming year. These will include evaluating alternate tailings options and an improved UG material handling system.

## **MINERAL RIGHTS AND LEGAL TENURE**

Impala Canada Limited holds a 100% interest in mining leases encompassing 3 513ha, as shown in the table below, and 62 998ha of mining claims. Additionally, Impala Canada has a 51% interest in the Sunday Lake JV mining claims and leases, encompassing 3 677ha and 140ha, respectively, and a 50% interest in the past-producing Shebandowan mine property, containing 8 046ha. A regional map displaying the bulk of Impala Canada's mining claims and leases is indicated in the regional locality map on page 91.

All Lac des lles mining operations on the mining leases are subject to a 5% net smelter return (NSR) royalty. The royalty is in effect until the expiration of the leases. The term NSR is defined in the Lac des lles-SPG-Sheridan royalty agreement as the net proceeds receivable by Lac des lles from the production and sale of concentrates from Lac des lles after deducting: the costs of sampling, assaying, transportation and insuring of concentrate, smelting, processing, and refining charges and penalties (excluding Lac des lles milling costs).

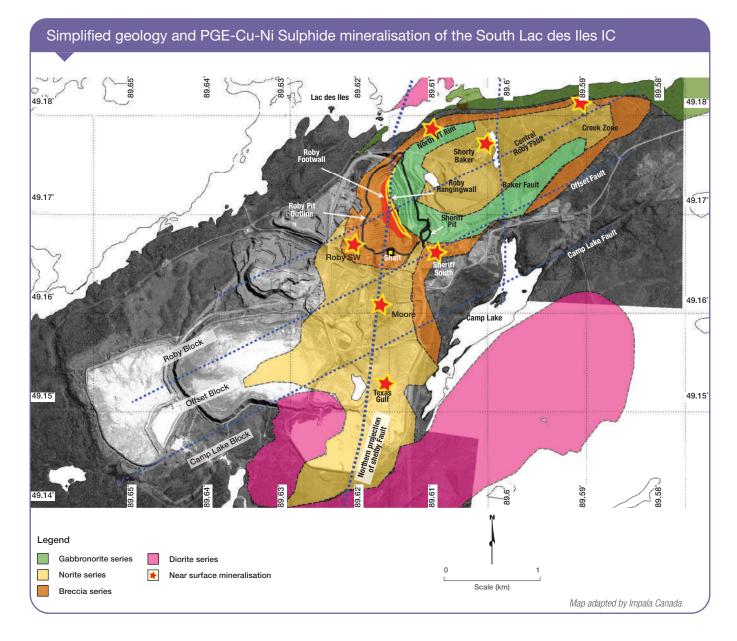
All claims and leases are in good standing, and sufficient assessment credits exist to renew the claims for several years. All of the current mine leases have a renewal date in 2027, at which time the company has the exclusive right to apply for their renewal. The company has the legal entitlement to the minerals being reported upon together with any known impediments. The directors confirmed with a written statement that there are no legal proceedings or other material conditions that may impact the company's ability to continue with future mining or exploration activities.

Claim number	Parcel	Area (ha)	Lease number	Due date	Annual taxes (C\$)	Comments
CLM251	2982L TB	235.0	107910	31 Aug 2027	705	Surface and mining rights
CLM252	2983L TB	341.4	107911	31 Aug 2027	1 024	Surface and mining rights
CLM253	2985L TB	395.7	107909	31 Aug 2027	1 187	Surface and mining rights
CLM254	2984L TB	497.4	107908	31 Aug 2027	1 492	Mining rights only
CLM430	2531L TB	348.4	108139	30 Sep 2027	1 045	Surface and mining rights
CLM431	2532L TB	1 695.3	108138	30 Sep 2027	5 086	Surface and mining rights
Total	6	3 513.2			10 539	



SCENE SETTING •

## Impala Canada (continued)



## ENVIRONMENTAL MANAGEMENT AND SOCIAL LICENCE TO OPERATE

Lac des lles has developed management plans to comply with the requirements for environmental impact monitoring during operations. This includes a comprehensive environmental monitoring programme following federal and provincial regulatory requirements and under the relevant permits. Environmental effects monitoring at Lac des lles include, but are not limited to, surface water and groundwater quality, sediment quality, benthic invertebrate community monitoring, fish population studies and air quality monitoring. The ongoing operational monitoring, reporting, and regulatory filings related to the environment will be continued at Lac des lles after the mine has closed, as outlined in the Mine Closure Plan. The Lac des lles site is located in an area of interest to five indigenous groups that have asserted treaty rights and/or traditional usage under the Federal Government of Canada and Province of Ontario criteria. The five communities include Gull Bay First Nation (Kiashke Zaaging Anishnaabek), Whitesand First Nation, Fort William First Nation, Red Sky Independent Métis Nation and Métis Nation of Ontario (Thunder Bay Métis Council). Impala Canada is committed to ensuring appropriate consultation with indigenous communities that may be affected by Lac des lles mining and exploration activities.

## **GENERAL INFRASTRUCTURE**

The Lac des Iles Mine has been in operation for several years and has a well-established permanent infrastructure. Due to its distance from the nearest city, Thunder Bay, Ontario, the mine is operated on a 'remote mine' basis in which most of the employees work on a '14 day in/14 day out' basis.

The existing infrastructure at the site includes a 15km gravel access road, the main camp accommodation, a separate construction camp, a potable water treatment plant, an exploration office, core storage area and core-shack, open-pit maintenance facility and warehouse, a fuel farm, No 1 shaft with the headframe, intake and exhaust fans, hoist house and compressor building. In addition, there are among others also administration and mine dry buildings, the concentrator complex, mill complex and the tailings management facility.

In addition to this, the site has an electrical power capacity of 47MW supplied by Hydro One via a 115kV line.

## MINERAL RESOURCE ESTIMATION AND CLASSIFICATION

Mineral Resource estimates are reported for five metals at Lac des lles – palladium, platinum, gold, copper and nickel. Base metal assays are based on four-acid digestion using perchloric, nitric, hydrofluoric and hydrochloric acids. This procedure results in near-total digestion. The grades are estimated from block models interpolated utilising a combination of ordinary kriging and inverse distance squared estimation methods where domains have inadequate data density or inconclusive variography. Dynamic anisotropy has been applied in some domains to better control the search ellipse orientation based on the domain geometry. Data included in the block model-based estimation of Mineral Resources has been restricted to only diamond drilling data that meets the SAMREC Code (2016). However, boundaries of mineralisation domains have been created in consideration of definition diamond drilling data, underground chip, and pit blast hole sample data.

The selection of Mineral Resources was done through a combination of engineering design shapes and using Datamine RM Studio's 'Mineable Reserve Optimizer®' to identify areas with sufficient grade and tonnage for potential mining. Cut-off grades are based on palladium only and were determined on the mining method likely to be used. Offset SLS and Roby SLC cut-off grades are set at 1.5g/t Pd and 1.0g/t Pd, respectively. Stoping cut-off grades vary depending on proximity to infrastructure and depth from surface (1.0g/t Pd to 1.8g/t Pd). The evaluation is undertaken to ensure RPEEE of the estimated Mineral Resource.

Near-surface Mineral Resources were identified using Whittle<sup>®</sup> optimised pit shells. A cut-off grade of 0.68g/t Pd was used to report the Mineral Resources inside the Whittle shells.

The classification of Mineral Resources is tied directly to the estimation search ellipse and strategy for each domain and is based on the continuity of mineralisation and data density. In some domains where interpretation of the geology is still in the early stages, classifications have been post-processed and downgraded, awaiting further information.



THE DETAILS - • MINERAL RESOURCES AND MINERAL RESERVES

Impala Canada (continued)

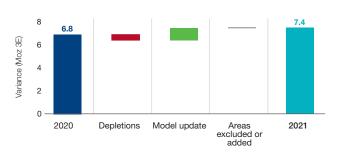
# **REASONABLE PROSPECTS FOR EVENTUAL ECONOMIC EXTRACTION (RPEEE)**

Rigorous RPEEE testing considers (a) security of tenure,
(b) exclusion due to ESG considerations, (c) infrastructure,
(d) technical constraints, (e) data quality and distribution,
(f) confidence in estimation and (g) economic testing for reasonable prospects for eventual economic extraction. All the Mineral Resources reported for Lac des lles are considered for RPEEE
(see reference to cut-off grades in the section on page 96 and
valuation and sensitivities on page 102).

### **MINERAL RESOURCE RECONCILIATION**

The combined Measured, Indicated and Inferred Inclusive Mineral Resource estimate as at 30 June 2021 is 7.41Moz 3E and 6.34Moz Pd, net of depletion as at 30 June 2021. The waterfall graph below depicts the value add attributable mainly to the model update with the exploration data gained in 2021.





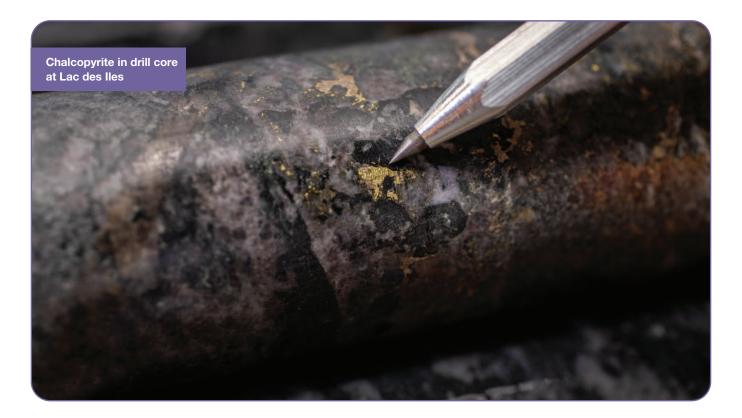
### **MINING METHODS**

Mine production at Lac des lles occurs from three areas: the Offset Zone, the Roby Zone and the Open Pit. These areas are broken down further by mining method and mineralisation zone and/or spatial location. For the Offset Zone, except for the near-surface Sheriff South Zone, the ore is typically hoisted to the surface through the shaft. Ore tonnes from the Roby Zone are transported via haul truck through a ramp and the lower portal; a new replacement portal and ramp to the surface were completed during FY2021.

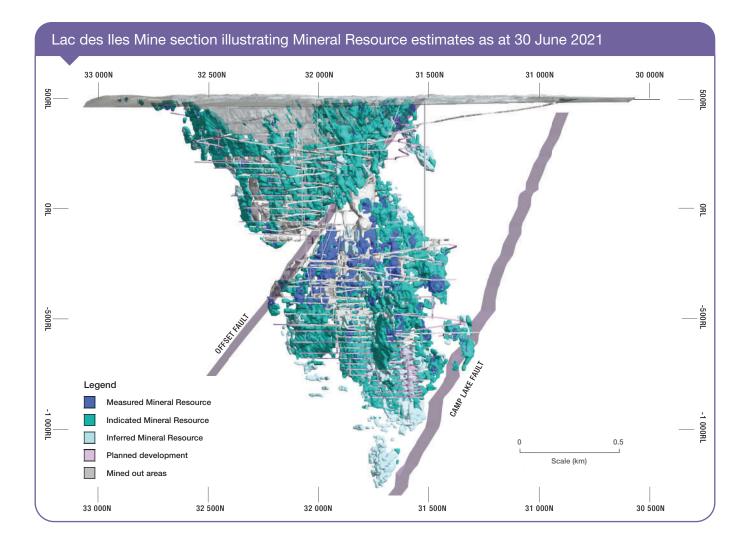
The majority of the planned production for the Roby Zone involves sub-level caving (SLC) targeting ore below and southwest of the current dormant pit. Production from these near-surface zones will involve a gradual ramping up of the caving operations culminating in steady-state production in FY2022. Production from the Offset Zone includes production by the open hole stoping (OHS) and sub-level shrinkage (SLS) methods. The SLS production represents the bulk of the Offset Zone production. Production from each of the lower mine zones will remain relatively constant over the LoM.

### **MINE PLANNING PROCESS**

Mine design and scheduling are undertaken using Deswik.CAD<sup>®</sup> and Deswik.Sched<sup>®</sup> software with all geological Mineral Resource block models generated using Datamine software. The planning sequence allows for a cycle that starts with a comprehensive review of the LoM mine plan followed by the detailed scheduling of a five-year development schedule and a two-year detailed month-by-month stoping schedule.



## Impala Canada (continued)





## Impala Canada (continued)

## Impala Canada Mineral Resource estimate (inclusive reporting)

As at 30 June 2021																		
Orebody		R	GO Stock	Pile		Surface Pit Roby Underground				Offset Underground								
Category		Measured In	idicated Inf	ferred	Total	Measured I	ndicated	Inferred	Total	Measured	Indicated	Inferred	Total	Measured I	ndicated	Inferred	Total	Total
Tonnes	Mt	_	_	_	-	0.8	6.7	0.2	7.7	1.5	31.9	1.5	35.0	8.0	33.5	8.8	50.3	92.9
3E grade	g/t	-	-	_	-	1.65	1.51	1.81	1.54	2.27	2.07	1.80	2.07	3.07	2.95	2.62	2.91	2.48
Ni	%	-	_	_	-	0.06	0.05	0.04	0.05	0.06	0.05	0.05	0.05	0.09	0.09	0.07	0.09	0.07
Cu	%	-	_	_	-	0.05	0.05	0.04	0.05	0.05	0.05	0.05	0.05	0.07	0.08	0.06	0.07	0.06
3E oz	Moz	-	_	_	-	0.04	0.32	0.01	0.38	0.11	2.12	0.09	2.32	0.79	3.18	0.74	4.71	7.41
Pt oz	Moz	_	-	_	-	0.00	0.03	0.00	0.04	0.01	0.20	0.01	0.22	0.06	0.24	0.06	0.36	0.62
Pd oz	Moz	-	-	_	-	0.03	0.27	0.01	0.32	0.09	1.80	0.08	1.97	0.68	2.74	0.64	4.06	6.34

As at 30 June 2020																		
Orebody	Orebody RGO Stock Pile					Surface Pit			Roby Underground			b	Offset Underground					
Category		Measured In	ndicated I	nferred	Total	Measured In	ndicated	Inferred	Total	Measured In	ndicated	Inferred	Total	Measured I	ndicated	Inferred	Total	Total
Tonnes	Mt	_	1.0	_	1.0	0.5	9.2	0.3	10.1	0.5	21.5	0.8	22.7	7.9	27.3	11.0	46.1	79.9
3E grade	g/t	-	1.07	_	1.07	1.83	1.69	1.95	1.70	2.81	2.44	2.39	2.45	3.03	3.05	2.90	3.01	2.66
Ni	%	-	0.06	_	0.06	0.06	0.05	0.04	0.05	0.05	0.05	0.05	0.05	0.09	0.09	0.08	0.09	0.07
Cu	%	-	0.03	_	0.03	0.05	0.06	0.04	0.05	0.04	0.05	0.05	0.05	0.07	0.07	0.08	0.07	0.06
3E oz	Moz	-	0.04	-	0.04	0.03	0.50	0.02	0.55	0.05	1.68	0.06	1.79	0.76	2.68	1.02	4.46	6.84
Pt oz	Moz	-	0.00	_	0.00	0.00	0.05	0.00	0.06	0.00	0.15	0.00	0.15	0.06	0.20	0.08	0.33	0.55
Pd oz	Moz	-	0.03	_	0.03	0.03	0.42	0.02	0.46	0.04	1.44	0.05	1.53	0.66	2.31	0.89	3.86	5.88

# MINERAL RESERVE ESTIMATION AND CLASSIFICATION

The updated Mineral Reserve estimates are tabulated below and reflect the total Mineral Reserve estimate for Lac des Iles (Impala Canada) as of 30 June 2021. Mineral Reserve grades are quoted after applying mine to mill modifying factors. Current Mineral Reserve estimates have included the latest drill hole information, assay results, revised mine design and updated modifying factors. The conversion and classification of Mineral Reserves at Lac des Iles (Impala Canada) are informed by:

- Feasible mine plan and project studies, board approval and available funding
- Economic testing at given market conditions (price deck) to ensure RPEEE
- Due to the bulk nature of the SLS and SLC mining methods, all Measured Mineral Resources included in the caving zone/footprint are classified as Probable Mineral Reserves
- No Inferred Mineral Resources are converted to the Mineral Reserve category. All mine designs were completed using only the Measured and Indicated Mineral Resources. Due to the disseminated nature of the orebody and the mass mining methods, some incidental Inferred Mineral Resources (mineralised waste) are contained within the stope designs but is treated as waste dilution material with all metal grades set to zero. This is deemed insignificant.

Mineral Reserve estimate results from the planning process applied against the Measured and Indicated Mineral Resources only, through the application of detailed modifying factors; importantly, this process is subjected to rigorous economic viability testing at given market conditions.

## **MODIFYING FACTORS**

When determining the appropriate external dilution and mining recovery factors to apply, consideration was given to the size, sequence and whether the shape would be open or full of cave/unconsolidated backfill material during mucking operations. Consideration was also given to draw control strategy and where and how the cave material would enter into the shape from one, two or multiple directions.

Power Geotechnical Cellular Automata® (PGCA®) software was utilised to estimate the recovered and diluted material from the Offset Central (SLS) production mining and the Roby Central (SLC). Dilution for these cave mining areas was determined as part of the PGCA® flow modelling. The flow model for the Offset Central (SLS) Zone incorporates all measured and indicated Offset Mineral Resource blocks less depletions as well as an estimated ore blanket of rockfill and blasted pillar material. The Roby Central (SLC) Zone model incorporates all Roby Block Measured and Indicated Mineral Resources and the estimated grades and tonnes for the historically backfilled stopes less depletion of all mining before the start of sub-level caving. Any material in either of these two cave mining areas that are not rockfill from historical mining, is not part of the ore blanket or is not of the Measured or Indicated Mineral Resource category, has a default grade of zero for all metals and has a density of 2.89t/m<sup>3</sup>.

A summary of the weighted average modifying factors for the various mining zones are shown below:

#### Weighted average modifying factors by mining zone

Mining zone	Dilution factor	Recovery factor
Roby SLC	20 <sup>1</sup>	80 <sup>1</sup>
Roby Central OHS	47	54
Roby SW Floor	15	85
Roby S	14	86
Roby NW	15	85
Roby NE	20	76
Offset SLS	20 <sup>1</sup>	80 <sup>1</sup>
Offset NE/SW OHS	12	88
Offset Central OHS	23	72
Sheriff S	15	85
B2	16	92
Sheriff Pit	5	95

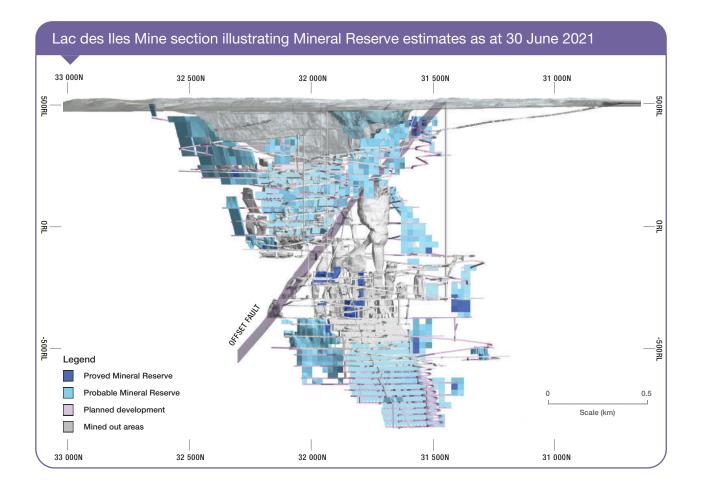
Offset SLS and Roby SLC recovery and dilution are estimates; particle flow modelling was used to determine recovered.

As at 30 June 2021														
Orebody		F	RGO Stock F	Pile		Surface Pit Roby Underground			Offset Underground					
Category		Proved	Probable	Total	Proved	Probable	Total	Proved	Probable	Total	Proved	Probable	Total	Total
Tonnes	Mt	_	_	-	0.1	1.0	1.1	0.5	22.3	22.8	1.3	19.3	20.7	44.6
3E grade	g/t	_	_	-	1.88	1.33	1.36	2.27	1.82	1.83	2.69	2.85	2.84	2.29
Ni	%	_	_	-	0.05	0.04	0.04	0.05	0.05	0.05	0.08	0.09	0.09	0.06
Cu	%	_	-	-	0.04	0.05	0.05	0.04	0.05	0.05	0.06	0.07	0.07	0.06
3E oz	Moz	_	_	-	0.00	0.04	0.05	0.04	1.31	1.34	0.12	1.77	1.89	3.28
Pt oz	Moz	_	_	-	0.00	0.00	0.00	0.00	0.12	0.12	0.01	0.12	0.13	0.26
Pd oz	Moz	-	_	-	0.00	0.04	0.04	0.03	1.10	1.14	0.10	1.53	1.63	2.81

#### Impala Canada Mineral Reserve estimate

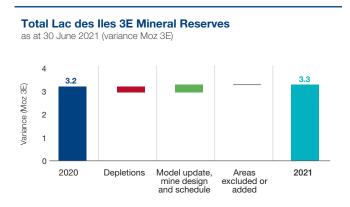
As at 30 June 2020														
Orebody		F	RGO Stock P	ile		Surface Pit Roby Underground		Offset Underground						
Category		Proved	Probable	Total	Proved	Probable	Total	Proved	Probable	Total	Proved	Probable	Total	Total
Tonnes	Mt	_	1.0	1.0	_	1.4	1.4	0.2	18.9	19.1	2.2	19.4	21.5	43.0
3E grade	g/t	-	1.07	1.07	-	1.30	1.30	2.19	1.94	1.95	2.49	2.78	2.75	2.31
Ni	%	_	0.06	0.06	-	0.05	0.05	0.04	0.05	0.05	0.08	0.09	0.08	0.07
Cu	%	_	0.03	0.03	-	0.05	0.05	0.03	0.05	0.05	0.06	0.07	0.07	0.06
3E oz	Moz	_	0.04	0.04	-	0.06	0.06	0.02	1.18	1.20	0.17	1.73	1.90	3.19
Pt oz	Moz	_	0.00	0.00	-	0.01	0.01	0.00	0.10	0.10	0.01	0.12	0.13	0.25
Pd oz	Moz	-	0.03	0.03	-	0.05	0.05	0.01	1.00	1.02	0.15	1.49	1.64	2.74

Impala Canada (continued)

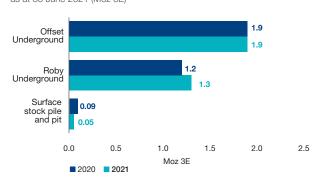


### **MINERAL RESERVE RECONCILIATION**

The reconciliation with the Mineral Reserve estimate as at 30 June 2021 is shown below. There has been a marginal increase in the 3E Mineral Reserves net of depletion, given the additional areas added during the past year.



#### Lac des lles Mineral Reserve distribution as at 30 June 2021 (Moz 3E)



#### PROCESSING

The Lac des lles mill has a nominal capacity of 13 500t per day and is designed to operate for 365 days per year at an 85% availability. The resulting working capacity is, therefore, 4 170 000t per year (tpa). The run-of-mine (RoM) ore feed is crushed before reporting to the milling circuit. High-grade polymetallic sulphide concentrate is produced and shipped via trucks to its final destination. The concentrate's principal value is generated from palladium, with lesser values from platinum, gold, copper, silver, nickel and cobalt. The concentrate produced is currently sold under contract to Glencore. This current off-take agreement will remain in effect through 31 December 2021 and includes an evergreen clause to extend the contract on mutual agreement.

### LOM AND VALUATION AND SENSITIVITY

The Lac des Iles LoM I currently extends for 10 years, as supported by the available geological information, Mineral Resource estimates and mine design and schedule. Work continues to expand the footprint.

The economic viability of the Lac des Iles Mineral Reserves is tested by Implats using net present value calculations over the LoM of the Mineral Reserve, determining the lowest real rand basket price that would still render the Mineral Reserve viable. These calculations generate basket prices based on the local PGM metal ratios and differ from the overall Group basket prices. This is then tested against the internal estimate of the real long-term basket price and the spot price as at 30 June 2021. These tests by Implats indicate that the Lac des Iles operation requires a real long-term basket price of between R13 000 and R14 000 per 3E ounce to be economically viable. While the real spot basket price for Lac des lles as at 30 June 2021 was R38 436 (US\$2 691) per 3E ounce, the Lac des lles internal long-term real basket price is R17 561 (US\$1 269). The commodity market remains fluid.

Key operating statistics are shown on page 38 together with the production summaries.

#### **COMPLIANCE**

Impala Canada has adopted the SAMREC Code (2016) for its reporting. The Competent Person for the Lac des Iles (Impala Canada) Mineral Resources is Stuart Gibbins, a full-time employee of Impala Canada, who holds an MSc (Geology) degree and is registered with PGO, with registration number 0754, has 25 years' relevant experience. The Competent Person for the Impala Canada Mineral Reserves is Kris Hutton, a full-time employee of Impala Canada, who holds a B Applied Science and Engineering (Mineral Engineering) degree and is registered with PEO, with registration number 100195677 and has 17 years' relevant experience. Implats has written confirmation from the Competent Persons that the information disclosed in terms of these paragraphs are compliant with the SAMREC Code (2016) and, where applicable, the relevant SAMREC (2016) Table 1, Appendices and JSE section 12 Listings Requirements. They concur that the information may be published in the form, format and context in which it was intended.

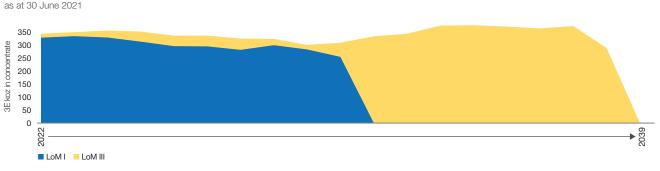
Implats appointed The Mineral Corporation (TMC) to complete an independent review of the Lac des Iles Mineral Resources and Mineral Reserves estimate as at 30 June 2021. TMC concluded that there are no apparent fatal flaws related to the estimation of the Lac des Iles Mineral Resources and Mineral Reserves. They noted that overall, the preparation and reporting of the Mineral Resources and Mineral Reserves for Lac des Iles followed the principles and guidelines of the SAMREC Code (2016). Accordingly, the 2021 Mineral Resources and Mineral Reserves for Lac des Iles (Impala Canada) can be included in the Implats Mineral Resource and Mineral Reserve Statement for 2021, with no impediments identified for public disclosure. In addition, the review by TMC confirmed that the RPEEE assessment of the Lac des Iles Mineral Resources and Mineral Reserves remains positive (page 121).

### **IMPALA CANADA TOP RISKS – 2021**

The Group risk management process is briefly described on page 25 where the Group top risks are listed.

In this context, the top risks identified at Impala Canada are:

- Permitting required for continued operations
- Indigenous relations
- Employee turnover
- Deterioration of Ore Pass system
- Short-term tailings capacity.

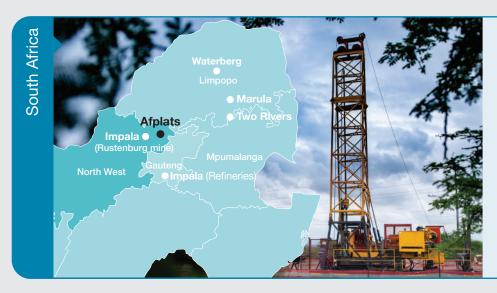


INTRODUCTION • AND OVERVIEW

SCENE SETTING •

THE DETAILS - • MINERAL RESOURCES AND MINERAL RESERVES

## **Afplats Project**



**Mining right** 4 602ha

**Prospecting right** pending Section 102 to include in mining right 1 065ha

APPENDICES •

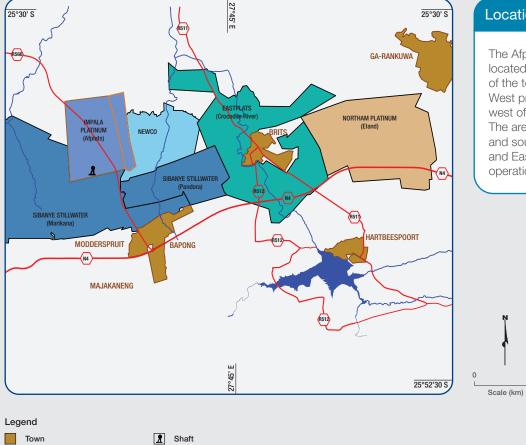
Implats' interest 74% managed

## **AFPLATS REGIONAL LOCALITY MAP**

Mining right boundary

Prospecting right

Public road



River

🗾 Dam

## Location

The Afplats Leeuwkop project is located approximately 23km west of the town of Brits in the North West province and some 2km due west of the R566 road to Sun City. The area is bordered to the west and south by Western Platinum and Eastern Platinum, two of the operations of Sibanye-Stillwater.

10

**IMPLATS - MINERAL RESOURCE AND MINERAL RESERVE STATEMENT 2021** 

## Afplats Project (continued)

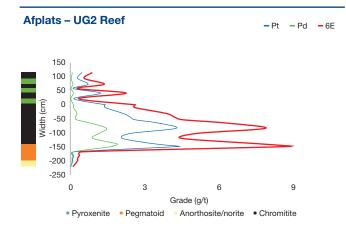
#### **BRIEF HISTORY**

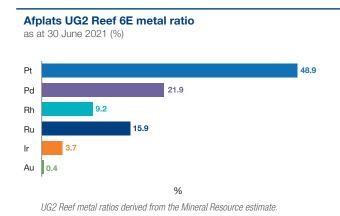
The Afplats project comprises the farms Leeuwkop, Kareepoort, and Wolvekraal and is jointly owned by Implats (74%) and the Bakwena community (Ba-Mogopa Platinum Investments (Pty) Ltd, 26%). In November 2010, the respective boards approved the commencement of a feasibility study with a conventional mine design. The early work for the pre-sink of the Leeuwkop main shaft commenced on 1 April 2011. In November 2013, a decision was made that another feasibility study must be undertaken that would convert the conventional mining layout into a bord and pillar layout. This work was completed by December 2014, by which time the main shaft had been sunk to 1 198m below surface. The vertical shaft sinking project has been suspended.

## **GEOLOGICAL SETTING**

Both the Merensky and UG2 Reefs have been explored at Afplats, but only the UG2 Reef is considered economically exploitable. The Merensky Reef is the upper portion of the pyroxenite layer, with a very thin chromitite stringer close to the hangingwall contact.

Mineralisation peaks over the chromitite stringer and decreases into the footwall. The UG2 Reef occurs about 1 050m below surface at the southern boundary of the Leeuwkop farm. The vertical separation between the Merensky and UG2 Reefs averages 200m, and both reefs dip northwards at 9°. The UG2 Chromitite Layer consists of two layers of chromitite, separated by thin layers of pyroxenite and is on average 1.30m thick across the Afplats area. The two UG2 Chromitite Layers were combined in the grade estimation and reported as the Mineral Resource width. The reefs are disrupted by faults, dolerite dykes, late-stage ultramafic replacement pegmatoid bodies and potholes. The global extraction rate for Afplats is estimated at 78%.





## **EXPLORATION AND STUDIES**

No exploration or feasibility studies were undertaken during the past year.

### **MINERAL RIGHTS AND LEGAL TENURE**

Afplats is currently the holder of the Leeuwkop mining right, under Mining Right number MR 40/2008 (DMRE Ref: No NW 30/5/1/2/2/256MR), in respect of the farm Leeuwkop 402 JQ. Afplats is the holder of the Kareepoort 407 JQ and Wolvekraal 408 JQ prospecting right 613/2007 PR (DMRE Ref: NW 30/5/1/1/2/1033PR). The prospecting right was awarded for five years and renewed for a further three years. The prospecting right expired on 7 February 2020, and a closure application was submitted. An application was lodged on 6 June 2013, under Section 102 of the MPRDA, to amend the Leeuwkop mining right by incorporating the Kareepoort/Wolvekraal prospecting area into the existing mining right. This application is pending approval by the DMRE. Given the pending Section 102 application, the Mineral Resource estimate for Kareepoort 407 JQ and Wolvekraal 408 JQ is still included in the Afplats estimates. There will be no underlying right remaining if the Section 102 is not approved to secure the rights further.

Afplats continues to engage with the DMRE to address and close out the findings of the Afplats Section 93 order (in respect of its SLP for the period 2008 to 2013), as well as the Afplats Section 29 directive (in respect of its SLP for the period 2013 to 2018) as received in FY2020.

Implats is currently re-evaluating the viability towards a prefeasibility study earmarked for October 2021, with the aspiration of concluding a feasibility study by May 2022.

## Afplats Project (continued)

## ENVIRONMENTAL AND SOCIAL LICENCE TO OPERATE

Summary details about the Group environmental management and policy are listed on page 22. This includes the focus areas such as compliance, water stewardship, air quality, managing waste streams and promoting land management practices. Surface topography, geohydrological reports, and environmental study recommendations have been considered in positioning the future surface infrastructure. The location of known heritage sites has been identified and demarcated. Suitable positions have been identified for the future waste dump and tailings dam. A noise berm of adequate dimension to the south of the Leeuwkop Shaft has been designed to minimise possible noise interference with the local village of Segwaelane, some 800m away from the shaft.

## **GENERAL INFRASTRUCTURE**

Afplats' Leeuwkop Shaft is accessed by an existing tarred road from the existent provincial road R556. The current infrastructure includes the shaft sinking headgear and winder houses, electricity supply by Eskom through the Big Horn sub-station, potable water supply from the Madibeng Municipality, offices and change houses for the sinking contractor and Afplats employees. The exploration core yard used by Afplats is also situated here. All infrastructure is in a secured fenced off area.

## MINERAL RESOURCE ESTIMATION, CLASSIFICATION AND RECONCILIATION

No data was added to the Mineral Resource estimation. The following notes should be read in conjunction with the Mineral Resource table:

- The statement below reflects the total estimate for Afplats
- The estimate has been conducted using the lsatis™ software
- There is no change in the UG2 Reef Mineral Resource estimate since the previous statement
- Rounding of numbers may result in minor computational discrepancies; Mineral Resource estimates are inherently imprecise; the results tabulated in this report must be read as estimates and not as calculations

## **REASONABLE PROSPECTS FOR EVENTUAL ECONOMIC EXTRACTION (RPEEE)**

Rigorous RPEEE testing considers (a) security of tenure, (b) exclusion due to ESG considerations, (c) infrastructure, (d) technical constraints (eg VRT), (e) data quality and distribution, (f) confidence in estimation and (g) economic testing for reasonable prospects for eventual economic extraction. Given the changing economic and operating environments, the RPEEE for the Afplats Mineral Resources, both the mining right and prospecting rights, are regularly tested. The Afplats assets remain of strategic interest to Implats, and it is estimated that the Leeuwkop project would be viable at a real basket price of between R23 000 and R24 000 per 6E ounce. Implats has chosen not to publish Merensky Reef Mineral Resource estimates as the reasonable prospect for eventual economic extraction (RPEE) is in doubt.

#### Afplats Mineral Resource estimate (inclusive reporting)

		As at 3	0 June 202 <sup>-</sup>	1	
Orebody			UG2 Reef		
Category	,	Measured	Indicated	Inferred	Total
Tonnes	Mt	98.4	10.8	55.9	165.1
Width	cm	133	136	129	
4E grade	g/t	5.19	5.11	5.06	5.14
6E grade	g/t	6.46	6.36	6.25	6.38
Ni	%	0.03	0.03	0.03	0.03
Cu	%	0.01	0.01	0.01	0.01
4E oz	Moz	16.4	1.8	9.1	27.3
6E oz	Moz	20.4	2.2	11.2	33.9
Pt oz	Moz	10.0	1.1	5.5	16.6
Pd oz	Moz	4.5	0.5	2.5	7.4

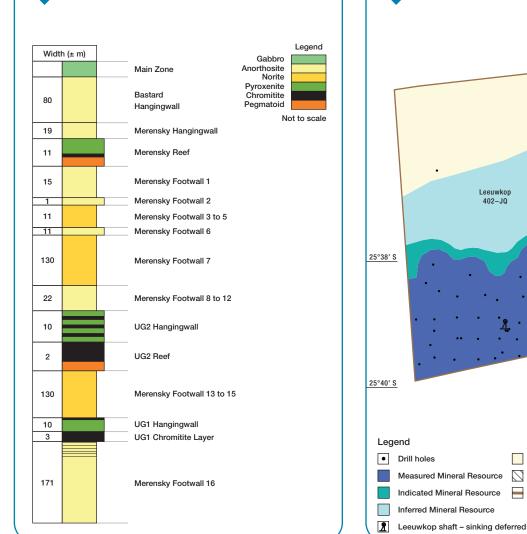
#### As at 30 June 2020

Orebody					
Category		Measured	Indicated	Inferred	Total
Tonnes	Mt	98.4	10.8	55.9	165.1
Width	cm	133	136	129	
4E grade	g/t	5.19	5.11	5.06	5.14
6E grade	g/t	6.46	6.36	6.25	6.38
Ni	%	0.03	0.03	0.03	0.03
Cu	%	0.01	0.01	0.01	0.01
4E oz	Moz	16.4	1.8	9.1	27.3
6E oz	Moz	20.4	2.2	11.2	33.9
Pt oz	Moz	10.0	1.1	5.5	16.6
Pd oz	Moz	4.5	0.5	2.5	7.4

#### MINING METHODS AND MINE PLANNING

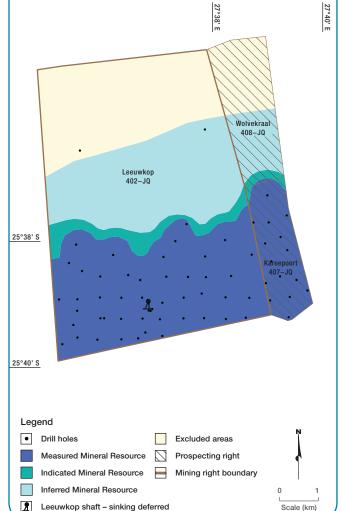
A feasibility study was completed in 2011, based on a conventional method layout. The Implats board approved this feasibility study. In November 2013, a decision was made that another feasibility study must be undertaken that would convert the conventional mining layout into a bord and pillar layout. The mine planning was completed in a 3D spatial environment, and the shaft sinking layout was updated to suit the mining method. This work was completed in December 2014 but not approved by the Implats board. Therefore, the Mineral Resource estimate has not been converted to the Mineral Reserve category pending the full project approval and funding, in line with Implats' practice. The vertical shaft sinking project has been stopped and the Leeuwkop project has been deferred while studies are continuing. By December 2014, the Main Shaft had progressed to a depth of 1 198m below surface, above the planned shaft bottom position of 1 396m below surface.

## Afplats Project (continued)



## Generalised geological succession of the upper portion of the Critical Zone at Afplats

## Afplats UG2 Reef Mineral Resources

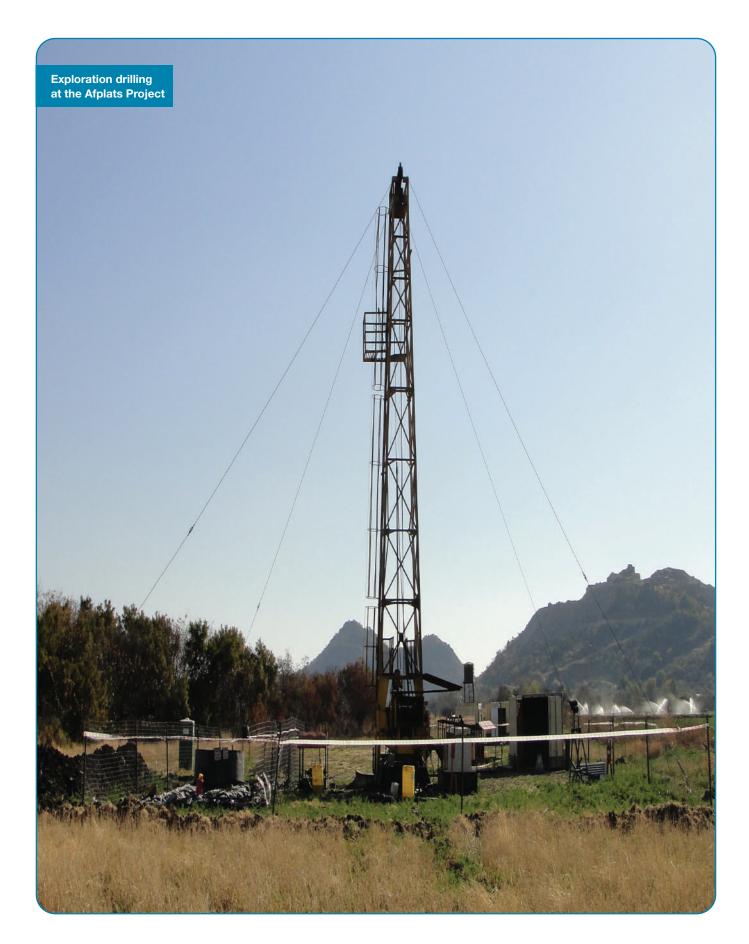


## **COMPLIANCE**

The Competent Person for Afplats is Louise Fouché, a full-time employee of Implats. She holds an MSc (Geology) and Post-Grad Dipl (MRM) degree and is registered with SACNASP, with registration number 400026/99 and 21 years' relevant experience. Implats has written confirmation from the Competent Person that the information disclosed in terms of these paragraphs is compliant with the SAMREC Code (2016) and, where applicable, the relevant SAMREC Table 1, Appendices and JSE section 12 Listings Requirements. She concurs that the information may be published in the form, format and context in which it was intended.

THE DETAILS - • MINERAL RESOURCES AND MINERAL RESERVES

# Afplats Project (continued)



# Waterberg Project

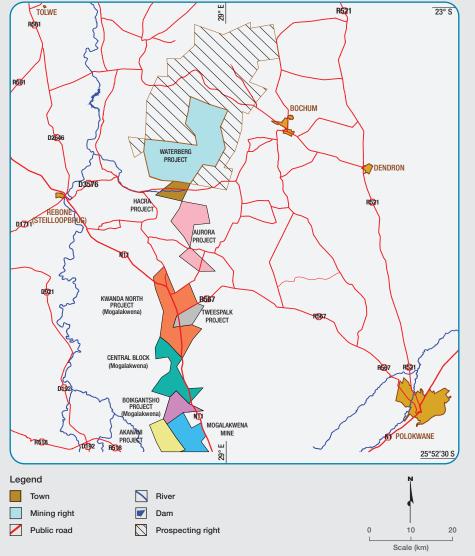


A sub-level highly mechanised longhole stoping (longhole) mining method with backfilling is envisaged. A combination of transverse and longitudinal longhole approaches is currently planned to extract the T-Zone and F-Zone Mineral Resources.

Mining right 20 532ha

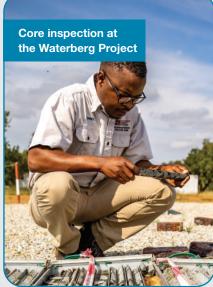
Implats' interest 15% non-managed

### WATERBERG PROJECT REGIONAL LOCALITY MAP



#### Location

The Waterberg project is located 85km north of the town of Mokopane in the province of Limpopo, South Africa, approximately 330km north-northeast from Johannesburg. The total project area, active prospecting rights, and mining right application area cover 79 188ha. The project is accessible by dirt roads by vehicle. The elevation ranges from approximately 880 to 1 365m above sea level.



### **BRIEF HISTORY**

The Waterberg project resulted from a regional target generation initiative of PTM RSA (Pty) Ltd (PTM RSA). PTM RSA targeted this area in 2007 based on its own detailed geophysical, geochemical and geological work, off the north end of the mapped Northern Limb of the Bushveld Complex. The original prospecting area was enlarged over time, and PTM RSA entered into agreements with the Japan Oil, Gas and Metals National Corporation (JOGMEC) and the BEE entity, Mnombo Wethu Consultants (Pty) Ltd (Mnombo).

On 21 September 2017, PTM RSA completed the transfer of all Waterberg project prospecting permits into Waterberg JV Resources (Pty) Limited (Waterberg JV). Effective 21 September 2017, Waterberg JV owned 100% of the prospecting rights comprising the entire Waterberg project area. On completion of the transfer of all the prospecting rights to Waterberg JV, Waterberg JV was owned 45.65% by PTM RSA, 28.35% by JOGMEC and 26% by Mnombo.

On 16 October 2017, definitive agreements were signed with Impala Platinum Holdings Limited (Implats) in terms of which Implats purchased 15% of Waterberg JV shares from PTM RSA (8.6%) and JOGMEC (6.4%).

Implats also acquired a purchase and development option to increase its stake in Waterberg JV to 50.01% through additional share purchases and earn-in arrangements. The agreement included a right of first refusal to smelt and refine Waterberg project concentrate. Current ownership of the Waterberg project is held by Implats (15%), JOGMEC (12.195%), Hanwa (9.755%), PTM (50.02%, inclusive of the interest held in Mnombo) and the remainder by Mnombo.

Since the initial prospecting rights were acquired, significant exploration activities were undertaken by PTM RSA. These were supplemented by various Mineral Resource estimates as published by PTM RSA and available on **(www.sedar.com)**. A Definitive Feasibility Study (DFS) was completed in October 2019.

In June 2020 Implats decided not to exercise the option to increase its shareholding from 15% to 50.01% based on the prevailing economic, balance sheet and funding considerations. At the same time, Implats confirmed their support for the project. With a 15% equity stake in the project, this represents a non-managed project within the Implats portfolio.

### **GEOLOGICAL SETTING**

The Waterberg JV project is situated off the northern end of the Northern Limb of the Bushveld Complex. The Bushveld Complex in the Waterberg project area has intruded across a pre-existing craton scale lithological and structural boundary between two geological zones. The known Northern Limb has a north-south orientation to the edge contact that makes an abrupt strike change to the northeast, coincident with the projection of the east-west trending Hout River Shear system. This major shear marks the southern boundary of the South Marginal Zone (SMZ). The footwall to the Bushveld on Waterberg project is interpreted to comprise facies of the SMZ.

The geology consists predominantly of the Bushveld Main Zone gabbros, gabbronorites, norites, pyroxenites and anorthositic rock types with more mafic rock material such as harzburgite and troctolites that partially grade into dunites towards the base of the package. The Bushveld succession strikes southwest to northeast with a general dip of 34° to 38° towards the west as observed from the drill hole core. The Bushveld Upper Zone is overlain by a 120m to 760m thick Waterberg Group, a sedimentary package predominantly comprised sandstones, and within the project area where sedimentary formations known as the Setlaole and Makgabeng Formations constitute the Waterberg Group. The Waterberg package is flat-lying with dip angles ranging from 2° to 5° towards the west.

PGM mineralisation within the Bushveld package underlying the Waterberg project is hosted in two main layers: the T-Zone and the F-Zone. The T-Zone occurs within the Main Zone just beneath the contact of the overlaying Upper Zone. Three potential economic layers were identified: TZ, T1, and T0. These are composed mainly of anorthosite, pegmatoidal gabbros, pyroxenite, troctolite, harzburgite, gabbronorite and norite. The F-Zone is hosted in a cyclic unit of olivine-rich lithologies near the base of the Main Zone towards the bottom of the Bushveld Complex. This zone consists of alternating units of harzburgite, troctolite and pyroxenites. The 4E metal ratios differ significantly between the T- and F-Zones. Both zones show high palladium ratios. However, the T-Zone is relatively enriched in gold and copper compared to the F-Zone.

## **EXPLORATION AND STUDIES**

The Waterberg project is an advanced project that has undergone extensive exploration, preliminary economic evaluations, a pre-feasibility study (PFS), and resulted in completing a definitive feasibility study in October 2019. Exploration work conducted to date has given the confidence to classify Mineral Resource estimates as Inferred, Indicated, and Measured based on increasing confidence levels. The total project expenditure up to 31 May 2021 since the inception of the project, inclusive of exploration and feasibility studies, amounts to US\$78 million.

The data from which the structure of the mineralised horizons was modelled and grade values estimated were derived from a total of 362 293m of diamond drilling. The drill hole dataset consists of 441 drill holes and 583 deflections at the date of drill data cut-off (1 December 2018).

## **MINERAL RIGHTS AND LEGAL TENURE**

Waterberg JV holds various prospecting rights and a mining right. Applications for new prospecting rights were submitted during FY2021, which are being processed by the DMRE and are pending approval. The aggregate project area measures 79 188ha. The Waterberg Mining Right, measuring 20 532ha, was granted by the Director General of the DMRE on 28 January 2021 and was registered at the Mineral and Petroleum Titles Registration office on 6 July 2021. The Waterberg Mining Right commenced on 13 April 2021 for an initial 30-year period under DMRE reference number LP30/5/1/1/2/10161MR, covering PGMs, chrome, cobalt, copper, gold, iron, lead, molybdenum, nickel, rare earths, silver, vanadium, and zinc.

A notice to appeal the grant of the Waterberg Mining Right, filed by a group of three individuals from a local community, was received on 5 March 2021. In the weeks that followed, two similar appeals were also filed. One group living near planned surface infrastructure filed an application for an order in the High Court of South Africa to review and set aside the decision by the Minister of the Department of Forestry, Fisheries, and the Environment (DFFE) to refuse condonation for the late filing of an appeal against the grant of an environmental authorisation for the mine in November 2020. Waterberg JV is opposing the review application as well as all appeals received.

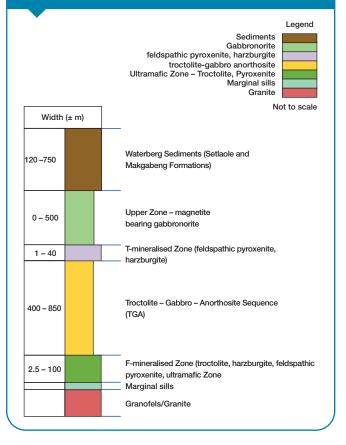
On 30 July 2021, Waterberg JV received a restraint application from the Mining and Environmental Justice Community Network of South Africa, together with a group of residents from communities located near planned surface infrastructure associated with the Waterberg Mine. The application was brought before the court on an urgent basis and was due to be heard on 10 August 2021. Waterberg JV filed an answering affidavit denying urgency and arguing that the application is without merit. The applicants have not responded and were obliged to remove their application from the urgent court roll. The application will proceed as a normal High Court application. A host community intends to join as a party to the application in support of the Waterberg Mine. A timeframe for the hearing of the application is uncertain.

Waterberg JV believes that all requirements specified have been complied with and that the DMRE properly granted the Waterberg Mining Right. The Waterberg Mining Right remains valid and enforceable. No liens, pledges, mortgage bonds, or encumbrances of any nature are registered against the Waterberg JV. The company has the legal entitlement to the minerals being reported upon together without any known impediments. There is no reason currently to cause the permissions, permits, surface, and water use rights not to be achieved; however, these factors are a significant project risk. Such risk is mitigated by following established consultation procedures as prescribed by relevant legislation.

# ENVIRONMENTAL MANAGEMENT AND SOCIAL LICENCE TO OPERATE

In consultation with the community, the mine footprint was planned to exclude areas significant to the community, including prime grazing areas. The table below shows key environmental and social licences and permit applications required for the Waterberg project.

# Generalised geological succession of the Bushveld Complex at the Waterberg project

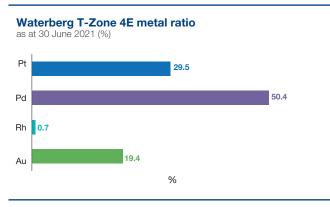


# Status of environmental licences and permits required for the Waterberg project as at 30 June 2021

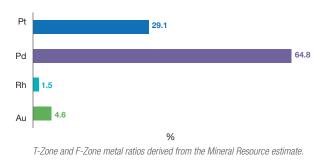
Licence/permit application	Authority	Reference number	Status
Mining Right with Social and Labour Plan (SLP)	DMRE	LP 30/5/1/2/2/ 2/10161MR	Approved
Environmental Authorisation (EA*)	DMRE	LP 30/5/1/2/ 2/10161EM	Approved
Waste Management Licence	DMRE	LP 30/5/1/2/2/ 2/10161MR	Approved
Water Use Licence	DWS	CT11919	Submitted
Heritage Resources Consent for Development	South African Heritage Resource Agency (SAHRA)	LP 30/5/1/2/2/ 2/10161MR - 12878	Submitted

\* Includes Environmental Impact Assessment (EIA), Environmental Management Programme (EMPr) and closure plan. SCENE SETTING •

# Waterberg Project (continued)



Waterberg F-Zone 4E metal ratio as at 30 June 2021 (%)



The most significant impacts from potential mining are anticipated in the eastern (plant footprint) and southeast-central areas of the proposed mining right area from an environmental and social perspective. This delineates the area where surface infrastructure is planned as this marks the shallowest access for underground mining and is topographically relatively flat. The findings of the Environmental Assessment Practitioner and specialists' assessments have shown that the Waterberg project may result in both negative and positive impacts on the environment. Adequate mitigation measures are included in the EMPr to reduce the significance of the identified adverse effects.

## **GENERAL INFRASTRUCTURE**

The Waterberg project is located some 85km north of the town of Mokopane in Seshego and Mokerong, districts of the Limpopo province. The Waterberg project is situated some 56km from the N11 national road that links Mokopane with the Grobler's Bridge border post to Botswana. Current access to the project area from Mokopane and Polokwane includes approximately 34km of unpaved roads. The Waterberg project is located in a rural area with limited existing infrastructure apart from gravel roads, drill hole water, and 22kV rural power distribution with limited capacity. Upgrading is planned for all existing infrastructure, including upgrading 34km of the gravel roads to the N11 national road.

In addition to the three planned mining complexes and one processing facility, the Waterberg project infrastructure required for a successful operation would include constructing a new 132kV electrical supply from the Eskom Burotho 400/132kV main transmission station 74km south of the site. The development and equipping of a local well field spread over 20km to provide water is envisaged.

# MINERAL RESOURCE ESTIMATION AND CLASSIFICATION

Mineral Resources are reported inclusive of Mineral Reserves and are reflected on a 100% project basis. Mineral Resource grades are shown for 4E only, given the lack of available details about ruthenium and iridium. The nickel and copper estimates for the Waterberg project are based on the four-acid digestion method, and this results in a near-total assay, while the nickel and copper reported for all the other southern African Implats operations and projects are based on a partial three-acid digestion method. Mineral Resources were estimated using ordinary kriging (OK) and simple kriging (SK) methods in Datamine Studio3. A process of geological modelling and creation of grade shells using indicating kriging (IK) was applied in the estimation process.

The cut-off grade for the T-Zone and the F-Zone considered costs, smelter discounts, concentrator recoveries from the previous and ongoing engineering work completed on the property by the Waterberg JV and its independent engineers. Two Mineral Resource estimates were compiled based on cut-off grades of 2.0 and 2.5g/t 4E, respectively. A cut-off grade of 2.5g/t 4E was used for the Mineral Resource estimate shown below. The objective of the cut-off grade estimation was to establish a minimum grade for working break even.

The Mineral Resources at the Waterberg project are currently classified according to the combined criteria for sampling (QA/QC), geological confidence, number of samples in each block, semi-variogram range, kriging efficiency and regression slope.

# REASONABLE PROSPECTS FOR EVENTUAL ECONOMIC EXTRACTION (RPEEE)

Rigorous RPEEE testing was applied as part of the feasibility study and considers (a) security of tenure, (b) exclusion due to ESG considerations, (c) infrastructure, (d) technical constraints, (e) data quality and distribution, (f) confidence in estimation and (g) economic testing for reasonable prospects for eventual economic extraction. A depth cut-off of 1 250m below surface has been applied to the estimates, in addition to the economic grade cut-off described in the section above.

# **MODIFYING FACTORS**

Key modifying factors such as overbreak, mining losses, planned dilution and geological losses are considered and applied to the Mineral Resource model to generate tonnage and grade profiles for the mine plan and potential Mineral Reserves. These modifying factors used in the planning process to convert a Mineral Resource to a Mineral Reserve are derived from detailed mine design and planning undertaken and metallurgical test work. Implats' long-term price assumptions in today's money are shown on page 41.

Mineral Resource	T- and
Key assumptions	F-Zones
Geological losses (in addition to known structures)	5-7%

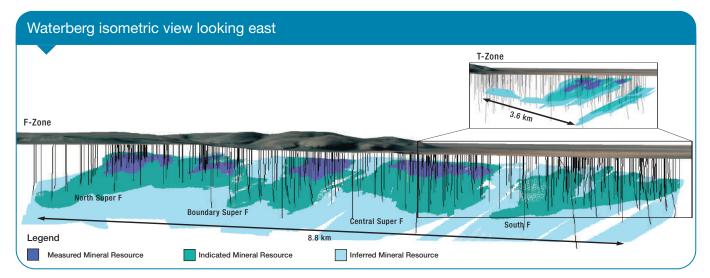
#### Waterberg Mineral Resource estimate (inclusive reporting)

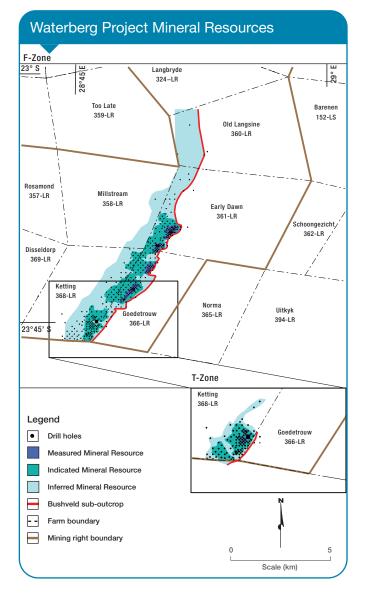
				As	at 30 June 20	)21				
Orebody			T-Zo	one			F-Zone			
Category		Measured	Indicated	Inferred	Total	Measured	Indicated	Inferred	Total	Total
Tonnes	Mt	4.4	17.0	21.8	43.3	54.1	166.9	44.8	265.8	309.1
4E grade	g/t	4.20	4.61	3.86	4.19	3.36	3.24	2.98	3.22	3.36
Ni	%	0.08	0.09	0.10	0.09	0.20	0.19	0.17	0.19	0.17
Cu	%	0.15	0.20	0.20	0.19	0.09	0.09	0.06	0.08	0.10
4E oz	Moz	0.6	2.5	2.7	5.8	5.8	17.4	4.3	27.5	33.4
Pt oz	Moz	0.2	0.7	0.8	1.7	1.7	5.1	1.3	8.0	9.7
Pd oz	Moz	0.3	1.3	1.3	2.9	3.8	11.2	2.8	17.8	20.7

				As	at 30 June 20	20				
Orebody			T-Zo	one			F-Zone			
Category		Measured	Indicated	Inferred	Total	Measured	Indicated	Inferred	Total	Total
Tonnes	Mt	4.4	17.0	21.8	43.3	54.1	166.9	44.8	265.8	309.1
4E grade	g/t	4.20	4.61	3.86	4.19	3.36	3.24	2.98	3.22	3.36
Ni	%	0.08	0.09	0.10	0.09	0.20	0.19	0.17	0.19	0.17
Cu	%	0.15	0.20	0.20	0.19	0.09	0.09	0.06	0.08	0.10
4E oz	Moz	0.6	2.5	2.7	5.8	5.8	17.4	4.30	27.5	33.4
Pt oz	Moz	0.2	0.7	0.8	1.7	1.7	5.1	1.3	8.0	9.7
Pd oz	Moz	0.3	1.3	1.3	2.9	3.8	11.2	2.8	17.8	20.7

## **MINERAL RESOURCE RECONCILIATION**

The Mineral Resource estimate for the Waterberg project was reported as at 4 September 2019 as part of the Waterberg definitive feasibility study. This estimate remains in place and is valid as at 30 June 2021.



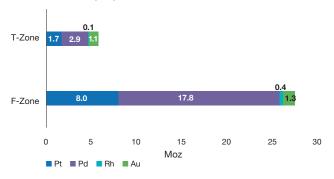


# MINING METHODS AND MINE PLANNING

As per the DFS completed in October 2019, the Waterberg project is planned at a 400ktpm mechanised underground mining operation accessed via declines. The DFS mine design is based on using the sub-level longhole stoping (longhole) mining method and backfilling the mined voids with paste backfill. Additional mining methods could be considered in future at the Waterberg project.

A combination of transverse and longitudinal longhole approaches is currently planned to extract the Mineral Resource. Longhole stoping requires dividing the Mineral Resource targeted for production into individual stopes and establishing mining sub-levels to access the stopes and position development to facilitate drilling, blasting, and extracting the blasted material from between the sub-levels. Once mining of a stope is complete, the stope will be backfilled with paste backfill. Longhole is a non-entry method,

# Waterberg Mineral Resource estimate (platinum, palladium, rhodium and gold) as at 30 June 2021 (Moz)



meaning that personnel will be prohibited from entering the open portion of a stope during mining.

A transverse approach consisting of primary and secondary stopes will be applied to areas where the average true thickness (perpendicular to dip) of the Mineral Resource is 15m or greater. In the transverse approach, stopes are accessed and developed perpendicular to the strike of the orebody. For areas where the true thickness is less than 15m, a longitudinal system requiring less waste rock development will be used. In the longitudinal approach, stopes are developed along (ie, parallel) the strike of the orebody.

The Waterberg project was divided into the following three mining complexes.

- The South Complex, which includes T-Zone and F-South
- The Central Complex, which includes F-Central
- The North Complex includes F-North, F-Boundary North, and F-Boundary South.

The mine plan includes a box cut and portal at each complex, each with twin declines (service decline and conveyor decline) developed to access and service the complex for the LoM.

# MINERAL RESERVE ESTIMATION, CLASSIFICATION AND RECONCILIATION

On completion of the DFS in October 2019, a Mineral Reserve estimate for the Waterberg project was published in a NI 43-101 report entitled 'Independent Technical Report, Waterberg Project Definitive Feasibility Study and Mineral Resource Update, Bushveld Complex, South Africa, effective date 4 September 2019' (www.sedar.com). While the Mineral Reserve estimate is in the public domain, Implats has elected not to include the estimate in this report. In essence, the internal Implats' Group-wide protocol for the estimation, classification and reporting of Mineral Resources and Mineral Reserves requires, among others, that a mining right must be in place, that the board has approved the project, and that funding is in place.

### PROCESSING

The process design for the Waterberg Concentrator Plant was developed based on the extensive metallurgical test work results and studies. The test work programme developed during the PFS and the DFS identified that the mill-float-mill-float (MF2) configuration following three-stage crushing is the most appropriate recovery technique for the PGE and the base metals for the F-Zone and the T-Zone ores. The plant design makes provision for the controlled blending of the two ore types in the crushing circuit. The blending of the ores does not require a conceptual change to the MF2 flowsheet, but the controlled blending is considered advantageous in providing a consistent feed composition to the process. Further optimisation of the reagent addition during operation to achieve the optimal concentrate grade and recovery can be completed. The tailings will be directed to either the backfill plant for placing as cemented fill underground or to the surface tailings storage facility (TSF).

In terms of the contractual agreement, Implats' first right of refusal relating to the concentrate offtake from the project remains unchanged.

### WATERBERG PROJECT TOP RISKS

An integrated risk assessment was completed by SRK Consulting (South Africa) (Pty) Ltd (SRK) as part of their third-party review of the 2019 DFS to identify existing and potential threats or vulnerabilities that could compromise the project. Inputs from each of the project disciplines were examined. Following the completion of the reviews of the individual disciplines, the risk register was populated with descriptions of each relevant risk. The cause of the risk, as well as the consequence of the risk, were described. Each risk was then evaluated for the likelihood of occurrence and significance if realised. The identification of controls intended to mitigate the risks was identified for each risk. Based on the interpretation that the actions for mitigation will be incorporated into risk management, the residual risk ratings were determined.

Fluid market conditions, related potential constrained funding, ESG considerations and the potential uncertain long-term outlook, are considered the main project risks.

## VALUATION

Due consideration of the RPEEE has been given to the Waterberg Mineral Resource estimates. This is aptly illustrated in the PFS and DFS studies that have been completed, where the assessment of environmental, permitting, legal, title, taxation, socio-economic, marketing and political factors were among others considered. The application of cut-off grades at 2.0 and 2.5g/t 4E for the Mineral Resource estimates is described above and included various market and technical considerations.

The turbulent market conditions and the potential impact on the Waterberg are being closely monitored.

### COMPLIANCE

Implats has adopted the SAMREC Code (2016) for its reporting. Mineral Resource and Mineral Reserve reporting for the Waterberg JV has been undertaken in compliance with the SAMREC Code (2016) and well as NI43-101. The Competent Person for the Mineral Resource estimate is Charles Muller, an independent consultant from CJM Consulting (Pty) Ltd. The Competent Person, PrSciNat SACNASP Registration No 400201/04, has 32 years' relevant experience. Implats has written confirmation from the Competent Person that the information disclosed in terms of these paragraphs is compliant with the SAMREC Code (2016) and, where applicable, the relevant SAMREC Table 1, Appendices and JSE section 12 Listings Requirements. He concurred that the information may be published in the form, format and context in which it was intended.

An independent high-level review of the Mineral Resource estimate by the Competent Person was completed by Competent Persons at AMEC GRD SA (Netherlands) (AMEC) in 2019. The AMEC review made comments on the methodologies applied by the Competent Person. The AMEC review identified moderate to low risks, and the CP considered these in the formulation of the SAMREC (2016) compliant Mineral Resource estimate.



SCENE SETTING •

THE DETAILS - • MINERAL RESOURCES AND MINERAL RESERVES

# Chromium ore

The world chromium ore production originates from the mineral chromite (a chromium-iron oxide) in the rock or ore called chromitite. The majority of the chromium Mineral Resources of the world are to be found in the Bushveld Complex of South Africa and the Great Dyke of Zimbabwe, where it occurs as numerous thin and laterally continuous stratiform chromitite layers, interlayered with mafic and ultramafic rocks.

Up to 11 chromitite layers are known in the Great Dyke, named from the top down as Seams 1 to 11. Thirteen chromitite layers are known in the Bushveld Complex, which are further clustered into three groups, the lower, middle and upper groups of chromitite layers. Named from the bottom up, these are termed LG1 to LG7, MG1 to MG4 and the UG1 and UG2. In places, individual chromitite layers may comprise multiple layers of subsidiary chromitite units, separated by intercalated silicate units. Although some of the chromitite layers have been known since 1865, limited mining only commenced in 1916 in the Bushveld Complex and 1919 on the Great Dyke.

The use and mining of chromium escalated after the conclusion of the Second World War, with approximately half of the total world chromium ore production mined from the Bushveld Complex.

In the Bushveld Complex, only the LG6, MG1 and UG2 chromitite layers are generally amenable to underground mining.

The uppermost chromitite layer (UG2 Reef) occurs at a depth range of 50m and 400m below the Merensky Reef and hosts economically exploitable quantities of PGMs within the chromitite. The UG2 chromitite layer is therefore mined at all Implats' operations, principally for the PGMs. Chromium can therefore be seen as a by-product of the UG2 Reef in South Africa. The LG6 and MG1, with an average  $Cr_2O_3$  grade of between 40% and 50%, occurs more than 250m below the UG2 Reef. These units can therefore not be mined from the existing infrastructure at the Implats operations and are mined by other operators close to the surface in opencast and underground mining operations for the chromium content only.

The UG2 Reef at Impala has an average *in situ*  $\text{Cr}_2\text{O}_3$  grade of approximately 33%, and a mined grade of about 14%. The mined ore from the UG2 Reef is milled and processed to recover the PGMs at the mine's two PGM concentrator plants. The tailings from the central concentrator are pumped directly to the tailings dams, as they are predominantly Merensky Reef tailings. Some of the tailings generated by the UG2 PGM recovery plant are reprocessed at two metallurgical plants to recover the chromite. Impala has an offtake agreement with Merafe Resources and annually sells approximately 300kt of chromite concentrate recovered at one of the chromite recovery plants. The second chromite recovery plant, owned by Impala Chrome, is operated by Glencore Operations South Africa (Pty) Ltd.

Currently, 200kt chromite concentrate is produced per annum by Unicorn Chrome, and the remainder is pumped to the tailings dams. The retrieved chromite from the UG2 Reef tailings has an average  $Cr_2O_3$  grade of approximately 40.5%. The number 3 and number 4 tailings dams at Impala currently contain some 510Mt of milled and processed material, with an average  $Cr_2O_3$  grade of less than 8%.

At the Marula Mine, material from the UG2 Reef is milled and processed to retrieve the PGMs at the concentrator of the mine. The Makgomo chrome recovery plant subsequently reprocesses the UG2 Reef tailings generated by the concentrator to extract the chromite. The plant has been operating since 2010. The plant is operated by Chrome Traders, who also has an offtake agreement whereby all of the concentrate produced is purchased on a Free Carrier (FCA) basis. Makgomo Chrome is 50% owned by the Marula Community Chrome (Pty) Ltd, 30% by Implats and 20% by Marula Platinum Mine. In recent years some 140kt of chromium concentrate is produced per annum, and the remainder is pumped to the tailings dams. The in situ grade of the UG2 chromitite layer at Marula has not been determined, but the chromite concentrate has an average Cr<sub>2</sub>O<sub>2</sub> grade of approximately 41%. The tailings dam at Marula currently contains some 25Mt of milled and processed UG2 Reef material at an average Cr<sub>2</sub>O<sub>3</sub> grade of roughly 12%.

At the Two Rivers Platinum Mine, which ARM manages, material from the UG2 Reef is milled and processed to recover the PGMs at the mine's MF2 PGM concentrator. The chromite recovery plant then reprocesses the UG2 Reef tailings generated by the concentrator to recover the chromite. The chromite recovery plant was commissioned in 2013 and is owned and operated by Two Rivers, which also has an offtake agreement with Chrome Traders whereby all of the concentrate produced is purchased on a free carrier basis from Two Rivers. Currently, some 280kt per annum of chromite is produced at a  $Cr_2O_3$  grade of 40.1% and a silica content of less than 3.9%, with the remainder being pumped to the tailings dams. The tailings dams at Two Rivers currently contain some 39Mt of milled and processed material, at an average  $Cr_2O_3$  grade of 15%. The UG2 Reef in this area has an average *in situ*  $Cr_2O_3$  grade of about 20.7%.

No mining has taken place at Afplats. The UG2 Reef in this area has an average *in situ*  $Cr_2O_3$  grade of about 31%.

At Zimplats, the uppermost chromitite layer (Seam 1) occurs 220m below the MSZ and outcrops in a few places within Zimplats' mining leases (MI36 and MI37). Therefore, it cannot be mined from the existing infrastructure but is mined by other operators and artisanal miners close to the surface outcrop for its chromium content only. The lower seams do not outcrop within Zimplats' mining leases. This is also the case at Mimosa.

The available information is insufficient to support a comprehensive Mineral Resource or Mineral Reserve Statement for the chromium ore production by Implats.

# Glossary of terms

3E (equivalent to 2PGE+Au)	Refers to the sum of platinum, palladium and gold content
4E (equivalent to 3PGE+Au)	Refers to the sum of platinum, palladium, rhodium and gold content
6E (equivalent to 5PGE+Au)	Refers to the sum of platinum, palladium, rhodium, ruthenium, iridium and gold content
AA	Atomic absorption spectroscopy
Anorthosite	Igneous rock composed almost entirely of plagioclase feldspar
ASX	Australian Securities Exchange
AusIMM	Australasian Institute of Mining and Metallurgy
BEE	Black economic empowerment
Bord and pillar	Underground mining method in which ore is extracted from rectangular shaped rooms, leaving parts of the ore as pillars to support the roof
Bronzitite	Igneous rock composed mainly of orthopyroxene
CDP	Carbon Disclosure Project
Chromitite	A rock composed mainly of the mineral chromite
CIMA	Chartered Institute of Management Accountants
CRIRSCO	Committee for Mineral Reserves International Reporting Standards
CV	Competent Valuator
DMRE	Department of Mineral Resources and Energy, Republic of South Africa
Diorite	Igneous rock composed of amphibole, plagioclase feldspar, pyroxene and small amounts of quartz
DJSI	Dow Jones Sustainability Index
Dunite	Igneous rock consisting predominately of olivine
DWS	Department of Water and Sanitisation, Republic of South Africa
Dyke	A wall-like body of igneous rock that intruded (usually vertically) into the surrounding rock in such a way that it cuts across the stratification (layering) of this rock
EA	Environmental Authorisation
ECSA	Engineering Council of South Africa
EIA	Environmental Impact Assessment
EITI	Extractive Industry Transparancy Index
EMPr	Environmental Management Programme
EPO	Exclusive Prospecting Order (Zimbabwe)
ESG	Environmental, social and governance
Felsic rock	Igneous rock composed mainly of a light-coloured mineral such as feldspar (or plagioclase) and usually quartz, which is more than 60% by volume
FSAIMM	Fellow of the South African Institute of Mining and Metallurgy
FGSSA	Fellow of the Geological Society of South Africa
Gabbro	Igneous rock composed predominately of plagioclase feldspar and clinopyroxene occurring in approximately equal proportions
g/t	Grams per metric tonne. The unit of measurement of metal content or grade which is equivalent to parts per million
GRI	Global Reporting Initiative
GSSA	Geological Society of South Africa
ha	Hectare is a unit of area measurement equal to 10 000 square metres
Harzburgite	Igneous rock composed mainly of olivine and pyroxene
ICP-MS	Inductively Coupled Plasma Mass Spectrometry
ICMM	International Council on Mining and Metals
IMSSA	Institute of Mine Surveyors of Southern Africa
In situ	In its natural position or place
ISO 31000:2018	International Organisation for Standardisation sets the international standards for risk management
ISO 14001:2015	International Organisation for Standardisation sets the international standards for environmental management
JORC Code	The Australasian Code for Reporting of Mineral Resources and Ore Reserves. This was updated and reissued as the JORC Code 2012
JSE	South African securities exchange based in Johannesburg. Formerly the JSE Securities Exchange and prior to that the Johannesburg Stock Exchange
Kriging	A geostatistical estimation method which determines the best unbiased linear estimates of point values or of averages
LoM	Life-of-mine
116	<b>IMPLATS</b> – MINERAL RESOURCE AND MINERAL RESERVE STATEMENT <b>2021</b>

THE DETAILS - • MINERAL RESOURCES AND MINERAL RESERVES

# Glossary of terms (continued)

MaficIgneous rock composed mainly of dark ferromagnesium minerals which is less than 90% by volumeMCLEFMine Community Leadership Engagement ForumMerensky ReefA horizon in the Critical Zone of the Bushveld Complex often containing economic grades of PGM and ass base metals. The 'Merensky Reef' as it is generally known, refers to that part of the Merensky unit which is economically exploitable, regardless of the rock typeMGSSAMember of the Geological Society of South AfricaMill gradeThe value, usually expressed in parts per million or gram per tonne, of the contained material delivered to the MozMPRDAMineral and Petroleum Resources Development Act of South AfricaMSAIMMMember of the South African Institute of Mining and Metallurgy	s the mill
Merensky ReefA horizon in the Critical Zone of the Bushveld Complex often containing economic grades of PGM and ass base metals. The 'Merensky Reef' as it is generally known, refers to that part of the Merensky unit which is economically exploitable, regardless of the rock typeMGSSAMember of the Geological Society of South AfricaMill gradeThe value, usually expressed in parts per million or gram per tonne, of the contained material delivered to the Million ounces. All references to ounces are troy ounces with the factor being 31.10348 metric grams per 	s the mill
MGSSAMember of the Geological Society of South AfricaMill gradeThe value, usually expressed in parts per million or gram per tonne, of the contained material delivered to 1MozMillion ounces. All references to ounces are troy ounces with the factor being 31.10348 metric grams perMPRDAMineral and Petroleum Resources Development Act of South Africa	s the mill
Mill gradeThe value, usually expressed in parts per million or gram per tonne, of the contained material delivered to the MozMozMillion ounces. All references to ounces are troy ounces with the factor being 31.10348 metric grams per MPRDAMPRDAMineral and Petroleum Resources Development Act of South Africa	
MozMillion ounces. All references to ounces are troy ounces with the factor being 31.10348 metric grams perMPRDAMineral and Petroleum Resources Development Act of South Africa	
MPRDA Mineral and Petroleum Resources Development Act of South Africa	ounce
MSAIMM Member of the South African Institute of Mining and Metallurgy	
MSZ Main Sulphide Zone is the PGM bearing horizon hosted by the Great Dyke	
MSZ 'Flats' Main Sulphide Zone at dips ranging 0° to 9°	
MSZ 'Upper Ores I' Main Sulphide Zone at dips ranging 9° to 14°	
MSZ 'Upper Ores II' Main Sulphide Zone at dips greater than 14°	
Mt Million metric tonnes	
Norite Igneous rock composed mainly of plagioclase feldspar and orthopyroxenes in approximately equal proportion	tions
OHS Open hole stoping mining method	
<b>Pegmatoid</b> Igneous rock which has the coarse crystalline texture of a Pegmatite but lacks graphic intergrowths	
PEO Professional Engineers Ontario (the licensing and regulating body for professional engineering in the provin of Ontario, Canada)	ice
PGE Platinum Group Elements comprising the six elemental metals of the platinum group namely, platinum, pal rhodium, ruthenium, iridium and osmium	ladium,
PGM Platinum Group Metals being the metals derived from PGE	
PGO Professional Geoscientists Ontario	
Pyroxenite Igneous rock composed predominately of pyroxene and minor feldspar	
QAQC Quality Assurance and Quality Control	
RBPlat Royal Bafokeng Platinum	
Reef A local term for a tabular metalliferous mineral deposit	
RPEEE Reasonable Prospects for Eventual Economic Extraction	
RPO Recognised Professional Organisation	
SACNASP South African Council for Natural Scientific Professions	
SAICA South African Institute of Chartered Accountants	
SAGC South African Geomatics Council	
SAIMM Southern African Institute of Mining and Metallurgy	
SAMESG GuidelineThe South African guideline for the reporting of environmental, social and governance (ESG) parameters w the solid minerals and oil and gas industries (The SAMESG Guideline, 2017)	vithin
SAMREC South African Mineral Resource Committee	
SAMREC Code South African Code for the Reporting of Exploration Results, Mineral Resources and Mineral Reserves 2016	Edition
SAMVAL Code South African Code for the Reporting of Mineral Asset Valuation 2016 Edition	
Seismic surveys A geophysical exploration method whereby rock layers can be mapped based on the time taken for wave reflected from these layers to return to surface	energy
SLC Sub-level caving mining method	
SLS Sub-level longhole mining method	
SLP Social and Labour Pan	
SSC SAMREC/SAMVAL Committee	
TCFD Task Force on Climate-Related Financial reporting	
TSF Tailings storage facility	
UG2 Reef A distinct chromitite horizon in the Upper Critical Zone of the Bushveld Complex usually containing econor grades of PGE and limited associated base metals	
Ultramafic rock Igneous rock composed mainly of dark ferromagnesium minerals which constitutes more than 90% by vol	ume
VRT Virgin Rock Temperature	
Websterite         Igneous rock composed almost entirely of clinopyroxene and orthopyroxene	
WUL Water use licence	
ZESA Zimbabwe Electricity Supply Authority	
<b>ZWL</b> Zimbabwean Dollar	

# Mineral Resource and Mineral Reserve definitions

SAMREC Code (The South African Code for the Reporting of Exploration Results, Mineral Resources and Mineral Reserves) -The Code sets out a required minimum standard for the Public Reporting of Exploration Results, Mineral Resources and Mineral Reserves. References in the Code to Public Report or Public Reporting pertain to those reports detailing exploration results, Mineral Resources and Mineral Reserves and which are prepared as information for investors or potential investors and their advisers. SAMREC was established in 1998 and is modelled on the Australasian Code for reporting of Mineral Resources and Ore Reserves (JORC Code). The first version of the SAMREC Code was issued in March 2000 and adopted by the JSE in its Listings Requirements later that same year. The Code has been adopted by the SAIMM, GSSA, SACNASP, ECSA, IMSSA and SAGC, and it is binding on members of these organisations. For background information and the history of the development of the Code, please refer to the SAMREC Code, March 2000. A second edition of the SAMREC Code was issued in 2007 with an amendment being issued in 2009 and the latest edition was released in May 2016. This supersedes the previous editions of the Code.

A 'Competent Person' (CP) is a person who is registered with SACNASP, ECSA or SAGC, or is a Member or Fellow of the SAIMM, the GSSA, IMSSA or a Recognised Professional Organisation (RPO). These organisations have enforceable disciplinary processes including the powers to suspend or expel a member. A complete list of recognised organisations will be promulgated by the SAMREC/SAMVAL Committee (SSC) from time to time. The Competent Person must comply with the provisions of the relevant promulgated Acts. A Competent Person must have a minimum of five years' relevant experience in the style of mineralisation or type of deposit under consideration and in the activity which that person is undertaking. If the Competent Person is estimating or supervising the estimation of Mineral Resources, the relevant experience must be in the estimation, assessment and evaluation of Mineral Resources. If the Competent Person is estimating, or supervising the estimation of Mineral Reserves, the relevant experience must be in the estimation, assessment, evaluation and assessment of the economic extraction of Mineral Reserves. Persons being called upon to sign as a Competent Person must be clearly satisfied in their own minds that they are able to face their peers and demonstrate competence in the commodity, type of deposit and situation under consideration.

A 'Mineral Resource' is a concentration or occurrence of solid material of economic interest in or on the earth's crust in such form, grade or quality and quantity that there are reasonable prospects for eventual economic extraction. The location, quantity, grade, continuity and other geological characteristics of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge, including sampling. Mineral Resources are subdivided, and must be so reported, in order of increasing confidence in respect of geoscientific evidence, into Inferred, Indicated or Measured categories. Geological evidence and knowledge required for the estimation of Mineral Resources must include sampling data of a type, and at spacings, appropriate to the geological, chemical, physical, and mineralogical complexity of the mineral occurrence, for all classifications of Inferred, Indicated and Measured Mineral Resources.

An 'Inferred Mineral Resource' is that part of a Mineral Resource for which quantity and grade or quality are estimated on the basis of limited geological evidence and sampling. Geological evidence is sufficient to imply but not verify geological and grade or quality continuity. An Inferred Resource has a lower level of confidence than that applying to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration.

An 'Indicated Mineral Resource' is that part of a Mineral Resource for which quantity, grade or quality, densities, shape and physical characteristics are estimated with sufficient confidence to allow the application of Modifying Factors in sufficient detail to support mine planning and evaluation of the economic viability of the deposit. Geological evidence is derived from adequately detailed and reliable exploration, sampling and testing and is sufficient to assume geological and grade or quality continuity between points of observation. An Indicated Mineral Resource has a lower level of confidence than that applying to a Measured Mineral Resource and may only be converted to a Probable Mineral Reserve. An Indicated Mineral Resource has a higher level of confidence than that applying to an Inferred Mineral Resource.

A 'Measured Mineral Resource' is that part of a Mineral Resource for which quantity, grade or quality, densities, shape, and physical characteristics are estimated with confidence sufficient to allow the application of Modifying Factors to support detailed mine planning and final evaluation of the economic viability of the deposit. Geological evidence is derived from detailed and reliable exploration, sampling and testing and is sufficient to confirm geological and grade or quality continuity between points of observation. A Measured Mineral Resource has a higher level of confidence than that applying to either an Indicated Mineral Resource or an Inferred Mineral Resource. It may be converted to a Proved Mineral Reserve.

A 'Mineral Reserve' is the economically mineable part of a Measured and/or Indicated Mineral Resource. It includes diluting materials and allowances for losses, which may occur when the material is mined or extracted and is defined by studies at pre-feasibility or feasibility level as appropriate that include application of Modifying Factors. Such studies demonstrate that, at the time of reporting, extraction could reasonably be justified. The reference point at which Mineral Reserves are defined, usually the point where the ore is delivered to the processing plant, must be stated. It is important that, in all situations where the reference point is different, such as for a saleable product, a clarifying statement is included to ensure that the reader is fully informed as to what is being reported.

A 'Probable Mineral Reserve' is the economically mineable part of an Indicated, and in some circumstances, a Measured Mineral Resource. The confidence in the Modifying Factors applying to a Probable Mineral Reserve is lower than that applying to a Proved Mineral Reserve.

A 'Proved Mineral Reserve' is the economically mineable part of a Measured Mineral Resource. A Proved Mineral Reserve implies a high degree of confidence in the Modifying Factors.

'SAMVAL Code' – The South African Code for the reporting of Mineral Asset Valuation (the SAMVAL Code or 'the Code') sets out minimum standards and guidelines for Reporting of Mineral Asset Valuation in South Africa. The process for establishing the SAMVAL Code was initiated through an open meeting at a colloquium convened by the Southern African Institute of Mining and Minerals (SAIMM) in March 2002. The first edition of the SAMVAL Code was released in April 2008, with further amendments in July 2009. After various discussions it became apparent that a review process was required, and this was initiated in September 2011 at an open meeting at which participants were invited to express their opinions on matters that were unclear, or that required inclusion/exclusion or modification, in the 2008 edition and this resulted in the recent update released in May 2016.

A 'Competent Valuator' (CV) is a person who is registered with ECSA, SACNASP, or SAGC, or is a Member or Fellow of the SAIMM, the GSSA, SAICA, or a Recognised Professional Organisation (RPO) or other organisations recognised by the SSC on behalf of the JSE Limited. A Competent Valuator is a person who possesses the necessary qualifications, ability, and relevant experience in valuing mineral assets. A person called upon to sign as a Competent Valuator shall be clearly satisfied in their own mind that they are able to face their peers and demonstrate competence in the valuation undertaken.

The respective codes and related details can be found at the SAMCODES website (www.samcodes.co.za).

# Appendix - Third party assurance



To: Impala Platinum Holding Limited. ("Implats")

And To: Mr Theodore Pegram Executive: Mineral Resources 2 Fricker Road, Illovo Johannesburg, 2196 South Africa

#### RE: Independent Mineral Resources Audit of Impala Rustenburg and Marula Mines, South Africa

Impala Platinum Holdings Ltd ("Implats") appointed Caracle Creek International Consulting MinRes Pty Ltd ("CCIC MinRes") to conduct an independent Mineral Resource Audit ("audit") of their 2021 Mineral Resource Estimates ("MRE") at Impala Rustenburg and Marula mines. The audit was carried out by Sivanesan (Desmond) Subramani, Principal for Geology and Mineral Resources at CCIC MinRes. Desmond has over 25 years of experience working as a geologist, of which the last 18 years have been in Mineral Resource modelling and estimation. The audit was conducted in accordance with The SAMREC Code (2016), Table One, and Implats internal code of practice ("COP") for Estimation, Classification, and Reporting of Mineral Resources and Reserves, Bushveld Operations – "STD 17.11.00". A summary of the audit is follows:

- Recommendations from the 30 June 2020 audit have been either fully addressed or in progress, depending on the rate of new drilling data acquisition. These are:
  - Compiling of a comprehensive rock density database, this is to be completed by November 2021, 0
  - Underground channel samples are now also analysed at an independent assay laboratory, namely SGS 0 Rustenbura.
  - Improve compliance to assay QA/QC "COP", particularly the timeous review and management of QA/QC results, 0
  - Additional transparency with respect to the depletion of Mineral Resources. 0
- Results of the 11 June 2021 audit did not identify any Critical or Fatal Flaws. A few items have been identified, and recommendations to address them are provided. These items, however, do not present a material risk to the Mineral Resource Estimates.
- CCIC MinRes, therefore, confirms that the Merensky and UG2 Mineral Resources at Impala Rustenburg and Marula mines . are in compliance with The SAMREC Code (2016), and that Implats may include these estimates into their annual audited Mineral Resources Statement, as of 30 June 2021.

Dated this 11<sup>th</sup> day of August 2021

Sivanesan (Desmond) Subramani, B.Sc. Honours Geology, Pri.Sci.Nat (400184/06) Principal - Geology and Mineral Resources

> Caracle Creek International Consulting Inc. Mob: +1 705 561 7041 Tel: +1 705 671 1801 1721 Bancroft Drive Sudbury, Ontario Canada, P3B 1R9

CCIC South Africa, Johannesburg CM: 2007/001450/07 Tel: +27-(0)11-880-0278 Fax: +27-(0)11-447-4814 30 7th Avenue; Rosebank, Gauteng, 2196; South Africa

WWW.CARACLECREEK.COM

CCIC MinRes, Johannesburg CM: 2011/128834/07 Mob: +27-(0)82-4407471 Tel: +27-(0)22-007-0035 90 Berly; Avenue; Sandton

Gauteng, 2090; South Africa

#### Appendix – Third party assurance (continued)



The Pivot – Block E 1 Montecasino Boulevard Fourways 2191 South Africa Fraser McGill (Pty) Ltd REG NO: 2016/312801/07 VAT NO: 4270275854 Directors: RB McGill, C Fraser, A Wilkinson www.frasermcgill.com

Mr Theodore Pegram Executive: Mineral Resources Impala Platinum Holdings Limited No 2, Fricker Road, Illovo Johannesburg South Africa 14 June 2021

Dear Mr Pegram,

#### 2021 AUDIT OF THE MINERAL RESERVE STATEMENT FOR IMPALA RUSTENBURG & MARULA MINE OPERATIONS

Fraser McGill (Pty) Limited carried out an independent audit of the Mineral Reserve Statement for Impala Rustenburg and Marula Mine operations as at 30 June 2021 on behalf of Impala Platinum Holdings Limited (Implats). The audit was undertaken by Mineral Reserve Competent Persons from Fraser McGill.

Following the guidelines of the SAMREC Code (2016), the 2021 Mineral Reserve Audits entailed a systematic and detailed inspection of the key elements of the Mineral Reserve estimation process undertaken to validate adherence to Implats standards and procedures, and to identify material errors and/or omissions or improvements. Fraser McGill also assessed compliance to the principles and guidelines of the SAMREC Code (2016) with respect to the estimation, classification and reporting of Mineral Reserve Estimates by both operations.

A detailed review of the mine design and scheduling for the Mineral Reserves of both Impala Rustenburg and Marula Mine was undertaken. Fraser McGill also reviewed the key inputs and outputs of the Business and Life of Mine Planning processes, Life of Mine Plans, economic viability testing of the Life of Mine Plans as well as the estimation, classification and reporting of the Mineral Reserve estimates. Fraser McGill did not perform independent estimation of the Mineral Reserves. In addition, and due to COVID 19 precautions, no site visit was undertaken by the Competent Persons for the purposes of the Audit and all data exchanges were undertaken by electronic platforms, with interactive engagement, discussion and audit feedback sessions were specifically via telephone or by MS Teams.

Fraser McGill were satisfied that both Mineral Reserve Estimates are based on detailed Life of Mine Plans that were tested for economic viability under a set of realistically assumed production levels, Modifying Factors and economic inputs.

No fatal flaws or material issues were identified in the preparation of Mineral Reserve Estimates reported in either the Impala Rustenburg or Marula Mine Mineral Reserve Statements for 2021. However, a number of issues were identified, which, whilst not material, should be addressed for future Mineral Reserve Estimates.

Fraser McGill is satisfied that the Mineral Reserve Estimates are a fair reflection of the economic value of both Impala Rustenburg and Marula Mine and has derived no impediment for inclusion of said Mineral Reserves for public reporting purposes.

This opinion does not imply that Fraser McGill has accepted the role of Competent Person for the purpose of the Mineral Reserve estimation and sign-off for Implats. Such role resides with the nominated personnel of Implats.

Yours sincerely

Robert Goosen Principal Mining Engineer B.Eng. (Mining Engineering), ECSA Pr. Eng (20140368), MSAIMM

Adam Wilkinson Principal Mining Engineer B.Eng. (hons) (Mining Engineering), ECSA Pr. Eng (20100038), MSAIMM

Fraser McGill Ltd - (Reg. No. 2016 / 312801 / 07) Directors: C. Fraser; R.B. McGill; A. Wilkinson

SCENE SETTING •

THE DETAILS - • MINERAL RESOURCES AND MINERAL RESERVES APPENDICES •

# Appendix – Third party assurance (continued)



04 August 2021

Mr Theodore Pegram Executive: Mineral Resources Impala Platinum Holdings Limited No 2, Fricker Road, Illovo Johannesburg South Africa

Dear Theodore,

#### Audit of the 2021 Mineral Resource and Mineral Reserve for Lac des lles Mine

Mineral Corporation Consultancy (Pty) Limited (The Mineral Corporation or TMC), at Impala Platinum Holdings Limited's (Implats') request, carried out an independent audit (the Audit) of the 2021 Mineral Resource and Mineral Reserve estimates for Lac des Iles Mine in Canada for inclusion in the Implats Annual Mineral Resource and Mineral Reserve Statement for 2021. Lac des Iles Mine consists of integrated surface and underground mining and ore processing operations and is operated by Impala Canada Limited (Impala Canada), a wholly owned subsidiary of Implats. It produces platinum group metal (PGM)-base metal concentrate from the mining and processing of the primary Roby and Offset Zone mineralisation in the Lac des Iles Complex.

The Mineral Resource and Mineral Reserve Estimates audited by TMC were prepared and signed off as at 30 June 2021 by in-house Competent Persons appointed by Implats following the guidelines of the 2016 Edition of the South African Code for the Reporting of Exploration Results, Mineral Resources and Mineral Reserves (The SAMREC Code, 2016) and for disclosure by Implats according to Section 12 of the JSE Limited Listing Requirements. The Audit was carried out by Mineral Resource and Mineral Reserve Competent Persons from TMC following the guidelines of The SAMREC Code (2016). It entailed systematic and detailed reviews of the key elements of the Mineral Resource and Mineral Reserve estimation processes to validate adherence to internal procedures and The SAMREC Code (2016). The Audit also included detailed reviews of the input base data, grade block models, Life of Mine, economic testing of the Life of Mine plan, classification and reporting of the Mineral Resource and Mineral Reserve estimates to identify any fatal flaws and material errors and/or omissions for remediation by Impala Canada.

TMC could not identify any fatal flaws or material errors and/or omissions in relation to the input data, estimation, classification and reporting of the 2021 Mineral Resources and Mineral Reserves for Lac des lles Mine. In addition, TMC highlights and commends the strengthening of the internal governance framework and implementation of previous audit recommendations by Impala Canada and is satisfied that the rigorous application of the internal procedures has resulted in the preparation, validation and reporting of the Mineral Resource and Mineral Reserve estimates according to the guidelines of The SAMREC Code (2016). The Mineral Resource Estimate for Lac des lles Mine has been assessed for reasonable prospects for eventual economic extraction and the Mineral Reserve Estimate is based on a detailed Life of Mine Plan that has been sufficiently tested for economic viability under a set of reasonable economic inputs. As a result, TMC concludes that the Mineral Resource and Mineral Reserve Estimates for Lac des lles Mine as at 30 June 2021 can be included in the Implats Mineral Resource and Mineral Reserve Statement for 2021 for disclosure according to Section 12 of the JSE Limited Listing Requirements.

These opinions do not imply that TMC has accepted the role of Competent Person for the purpose of the Mineral Resource and Mineral Reserve estimation and sign-off for Lac des Iles Mine. Such role resides with the nominated personnel of Impala Canada and Implats.

Yours sincerely

C. Mada make

CONIACE MADAMOMBE Director MSc, BSc (Hons), MBA, Pr.Sci.Nat (400093/08), FGSSA

DIRECTORS: JE Murphy (Managing), AH Hart, RA Heins (British), C Madamombe (Zimbabwean), D Portela, GK Wilson

Mineral Corporation Consultancy (Pty) Ltd	Homestead Office Park	P O Box 1346	① +27 11 463 4867
Reg. No. 1995/000999/07	65 Homestead Avenue	Cramerview	금 +27 11 706 8616
Trading as: The Mineral Corporation	Bryanston 2021 South Africa	2060 South Africa	business@mineralcorp.co.za

www.mineralcorp.co.za

> ADVISORS TO THE MINERAL BUSINESS

#### Appendix – Third party assurance (continued)



Specialist Consultants to the Mining Industry

03 August 2021

Theodore Pegram Executive - Mineral Resources Impala Platinum 2 Fricker Road, Illovo Johannesburg, 2196

Dear Sir

#### RE: Zimplats Mineral Resource and Mineral Reserve Audit 2021

At the request of Impala Platinum, The MSA Group (Pty) Ltd ("MSA") completed an Independent Audit of the 2021 Zimplats Ngezi Mineral Resources and Mineral Reserves. The audit covered Mineral Resource and Mineral Reserve estimation, classification and reporting, and included a review of additions and revisions completed since the 2020 audited estimates and measures taken by Zimplats to resolve audit points raised in the 2020 audit that were not of critical nature. The audit process included on-line discussions with the persons responsible for the estimates, analysis of the input data, detailed review of the underlying assumptions and processes, and checks on the resulting estimates.

It is MSA's opinion that the Mineral Resources and Mineral Reserves have been estimated using reasonable assumptions and techniques for the style of mineralisation and mining method at Ngezi. No "Fatal Flaw" or "Critical" items were identified. MSA considers that the Mineral Resources and Mineral Reserves have been prepared in accordance with the guidelines of the 2016 Edition of the South African Code for the Reporting of Exploration Results, Mineral Resources and Mineral Reserves (The SAMREC Code, 2016) and are suitable for Public Disclosure in the Impala Platinum annual report. Significant progress was made on addressing the majority of the 2020 audit points and responding to suggestions towards further optimizing the Mineral Resource and Mineral Reserve processes.

The Mineral Resource audit was completed by Mr. Jeremy Witley (Pri. Sci. Nat.) and the Mineral Reserve audit was completed by Mr. Jonathan Hudson (Pr. Eng.). Both Mr. Witley and Mr. Hudson have the appropriate qualifications, competence and experience to be considered Competent Persons for Mineral Resources and Mineral Reserves respectively under the definitions provided in The SAMREC Code (2016). Neither MSA, Mr. Witley nor Mr. Hudson have any material interest in the assets concerned and have the required independence to complete this external audit. MSA is remunerated based on fees that are not contingent on the outcome of this audit.

On behalf of The MSA Group (Pty) Ltd.

Soremo w - En

Jeremy Witley Head of Mineral Resources Pri. Sci. Nat., FGSSA, BSc (Hons), MSc (Eng)

DNK

Jonathan Hudson Principal Associate Mining Engineer Pr. Eng., FSAIMM, BSC (Eng), MBA

The MSA Group (Pty) Ltd Registration No: 2000/002800/07 Tel: +27 (0)11 880 4209 Fax: +27 (0)11 880 2184 email: info@msagroupservices.com Henley House, Greenacres Office Park: Cnr Victory and Rustenburg Roads, Victory Park, 2195 PO Box 81356, Parkhurst, 2120, South Africa Directors: KD Scott, NNP Makhoba, IG Haddon

# **COMPETENT PERSONS**

Qualifications, experience, appointments, professional registration, addresses and other details

	Comnatant Darron's						Mambarchin	Voaro'	Pontant dataile _Addrage
Mine/Project		Employment	Title	Appointment	Qualifications	Registration RPO	number	experience	(investor@implats.co.za)*
Implats	Theodore Pegram	Full-time Implats	Implats Executive Mineral Resources	Lead CP Mineral Resources	BSc (Hons) (Geology), GDE (Mining)	SACNASP, FGSSA, FSAIMM	400032/03	32	Private Bag X18, Northlands, 2116, Gauteng, South Africa
	Gerhard Potgieter	Full-time Implats	Implats Chief Operating Officer	Lead CP Mineral Reserves	BSc Eng (Mining)	ECSA, MSAIMM	20030236	36	Private Bag X18, Northlands, 2116, Gauteng, South Africa
	Nico Strydom	Full-time Implats	Group Manager - Project Finance	Lead CV (Valuation)	BCompt (Hons), CA(SA), ACMA	SAICA, CIMA	03141381	28	Private Bag X18, Northlands, 2116, Gauteng, South Africa
	Johannes du Plessis	Full-time Implats	Group Head MRM Compliance	CP Mineral Resources & CP Audits	MSc (Geology)	SACNASP, FGSSA	4000284/07	20	Private Bag X18, Northlands, 2116, Gauteng, South Africa
	Louise Fouché	Full-time Implats	Group Head Mineral Resource estimation	CP Geostatistics and databases	MSc (Geology), Post-Grad Dipl (MRM)	SACNASP, FGSSA, MSAIMM	400026/99	24	Private Bag X18, Northlands, 2116, Gauteng, South Africa
Impala Rustenburg	David Sharpe	Full-time Impala Rustenburg	Group MRM Manager	CP Mineral Resources	BSc (Hons) (Geology), BComm	SACNASP, MGSSA	400018/91	32	PO Box 5683, Rustenburg, 0300, Northwest Province, South Africa
	Emmanuel Acheampong	Full-time Impala Rustenburg	Executive: Technical Services	CP Mineral Reserves	MSc Mining Engineering, MBA	ECSA, MSAIMM	980778	28	PO Box 5683, Rustenburg, 0300, Northwest Province, South Africa
	Philip Fouché	Full-time Impala Rustenburg	Geology Manager Exploration	CP Exploration	MSc (MRM), B Compt	SACNASP, MGSSA	400254/05	10	PO Box 5683, Rustenburg, 0300, Northwest Province, South Africa
Marula	Sifiso Mthethwa	Full-time Marula	Technical Services Manager	CP Mineral Resources & CP Mineral Reserves	BSc (Hons) (Geology)	SACNASP, MGSSA	400163/13	18	Private Bag X18, Northlands, 2116, Gauteng, South Africa
Two Rivers	Juan Coetzee	Full-time Two Rivers	Senior Resource Geologist	CP Mineral Resources	BSc (Hons) (Geology)	SACNASP, MGSSA, MSAIMM	114086	18	PO Box 786136, Sandton, 2146, Gauteng, South Africa
	Tobie Horak	Full-time Two Rivers	Chief Surveyor	CP Mineral Reserves	NHD (Mine Surveying), GDE (Mining Engineering)	IMSSA	1113	22	PO Box 786136, Sandton, 2146, Gauteng, South Africa
Zimplats	Steven Duma	Full-time Zimplats	Technical Services Manager	CP Mineral Resources	BSc (Hons) (Geology)	SACNASP, MAUSIMM	991294	24	PO Box 6380, Harare, Zimbabwe
	Wadzanayi Mutsakanyi	Full-time Zimplats	Mine Manager	CP Mineral Reserves	BSc (Hons) (Mining Engineering)	MSAIMM, MAUSIMM	209309	27	PO Box 6380, Harare, Zimbabwe
Mimosa	Dumisayi Mapundu	Full-time Mimosa	Geology and Survey Manager	CP Mineral Resources	BSc (Geology)	SACNASP	200021/05	27	PO Box 6380, Harare, Zimbabwe
	Paul Man'ombe	Full-time Mimosa	Cluster Manager Mine Planning	CP Mineral Reserves	BSc Eng (Hons) Mining, MBA,(UZ) MMCC (Zim)	MSAIMM	705146	26	PO Box 6380, Harare, Zimbabwe
Lac des lles	Stuart Gibbins	Full-time Impala Canada	Chief Mine Geologist	CP Mineral Resources	MSc (Geology)	PGO	0754	22	PO Box 10547, Thunder bay, Ontario, P7B 6T9, Canada
	Kris Hutton	Full-time Impala Canada	Technical Services Manager	CP Mineral Reserves	B Applied Science & Engineering (Mineral Engineering)	PEO	100195677	15	PO Box 10547, Thunder bay, Ontario, P7B 6T9, Canada
	Lionnel Djon	Full-time Impala Canada	Exploration Manager	CP Exploration	Ph.D (Geology)	PGO	2500	<del>.</del>	PO Box 10547, Thunder bay, Ontario, P7B 6T9, Canada
Afplats Project	Louise Fouché	Full-time Implats	Group Head Mineral Resource estimation	CP Geostatistics and databases	MSc (Geology), Post-Grad Dipl (MRM)	SACNASP, FGSSA, MSAIMM	400026/99	24	Private Bag X18, Northlands, 2116, Gauteng, South Africa
Waterberg Project	Charles Muller	Independent Consultant	Director	CP Mineral Resources	BSc (Hons) Geology	SACNASP, MGSSA, MGASA	400051/05	32	CJM Consulting 54 Hayes Road, Protea Ridge, Krugersdorp, Gauteng, South Africa

# Appendix - Competent Person and Recognised Professional Organisations details (continued)

The Mineral Reserve Statements are fully supported by an experienced team of general managers and technical services managers, who approve their respective business plans and take full responsibility for their Mineral Reserve Statements. These responsible people are listed below:

Name	Area of responsibility	Years' relevant experience
Emmanuel Acheampong	Executive Technical Services Impala Rustenburg	28
Tshediso Mohase	General manager Impala Rustenburg 10 Shaft	35
Riaan Swanepoel	General manager Impala Rustenburg 11 Shaft	31
Joseph Tsiloane	General manager Impala Rustenburg 20 Shaft	21
Arthur Kgatlane	General manager Impala Rustenburg EF, 6 and 12 Shafts	32
André Fryer	General manager Impala Rustenburg 14 Shaft	22
Hans Fourie	General manager Impala Rustenburg 16 Shaft	33
Terence Cowley	General manager Impala Rustenburg 1 Shaft	38
Moses Mothageng	General manager Marula Mine	26
Stephen Ndiyamba*	General manager Mimosa Mine	30
Simbarashe Goto	Senior general manager mining Ngezi Mine	24
JJ Joubert*	General manager Two Rivers Mine	29
Allison Henstridge	Technical director Lac des lles Mine	18

\* Non-managed.

#### **RECOGNISED PROFESSIONAL ORGANISATIONS** Addresses and contact details

#### Audiesses and contact details

AusIMM	The Australasian Institute of Mining and Metallurgy PO Box 660, Carlton South, Victoria 3053, Australia Telephone: +61 (3) 9658 6100 Facsimile: +61 (3) 9662 3662 www.ausimm.com
ECSA	Engineering Council of South Africa Private Bag X691, Bruma, 2026, Gauteng, South Africa Telephone: +27 (11) 607 9500 www.ecsa.co.za
GSSA	The Geological Society of South Africa PO Box 91230, Auckland Park, 2006, Johannesburg, South Africa Telephone: +27 (11) 358 0028 www.gssa.org.za
IMSSA	The Institute for Mine Surveyors of Southern Africa PO Box 62339, Marshalltown, 2107, Johannesburg, Gauteng, South Africa Telephone: +27 (11) 498 7682 www.ims.org.za
PGO	Professional Geoscientists Ontario 25 Adelaide Street East, Suite 1100 Toronto, Ontario M5C 3A1 Telephone: + 1 416-203-2746 Facsimile: +1 416-203-6181 www.pgo.ca
PEO (in progress)*	Professional Engineers Ontario 40 Sheppard Ave W Suite 101 Toronto, Ontario M2N 6K9 Telephone: +1 416-224-1100 www.peo.on.ca
SACNASP	South African Council for Natural Scientific Professions Private Bag X540, Silverton, 0127, Gauteng, South Africa Telephone: +27 (12) 748 6500 Facsimile: +27 (86) 206 0427 www.sacnasp.org.za
SAIMM	The Southern African Institute of Mining and Metallurgy PO Box 61127, Marshalltown, 2107, Gauteng, South Africa Telephone: +27 (11) 834 1273/7 Facsimile: +27 (11) 838 5923/8156 www.saimm.co.za
SAICA	The South African Institute of Chartered Accountants Private Bag X32, Northlands, 2116, Gauteng, South Africa Telephone: +27 (86) 1072422 www.saica.co.za

PEO is currently not on the list of RPOs on the SAMCODES website (www.samcode.co.za ), however, the process to facilitate the potential inclusion has been initiated. Note that the Lead CP for Mineral Reserves at Implats, Gerhard Potgieter, takes full responsibility for the Lac des Iles Mineral Reserves.

SCENE SETTING .

THE DETAILS - • MINERAL RESOURCES AND MINERAL RESERVES

APPENDICES •

# Contact details

## **REGISTERED OFFICE**

2 Fricker Road Illovo, 2196 Private Bag X18 Northlands, 2116 Telephone: +27 (11) 731 9000 Telefax: +27 (11) 731 9254 Email: investor@implats.co.za Registration number: 1957/001979/06 Share codes: JSE: IMP ADRs: IMPUY ISIN: ZAE000083648 ISIN: ZAE000247458 Website: http://www.implats.co.za

### IMPALA PLATINUM LIMITED AND IMPALA REFINING **SERVICES**

#### **Head office**

2 Fricker Road Illovo, 2196 Private Bag X18 Northlands, 2116 Telephone: +27 (11) 731 9000 Telefax: +27 (11) 731 9254

#### Impala Platinum (Rustenburg)

PO Box 5683 Rustenburg, 0300 Telephone: +27 (14) 569 0000 Telefax: +27 (14) 569 6548

#### **Marula Platinum**

2 Fricker Road Illovo, 2196 Private Bag X18 Northlands, 2116 Telephone: +27 (11) 731 9000 Telefax: +27 (11) 731 9254

#### **Impala Platinum Refineries**

PO Box 222 Springs,1560 Telephone: +27 (11) 360 3111 Telefax: +27 (11) 360 3680

#### Zimplats

1st Floor South Block Borrowdale Office Park Borrowdale Road Harare Zimbabwe PO Box 6380 Harare Zimbabwe Telephone: +26 (34) 886 878/85/87 Fax: +26 (34) 886 876/7 Email: info@zimplats.com

#### Impala Canada

One University Avenue Suite 1601 Toronto, Ontario M5J 2P1 Telephone: +1 (416) 360 7590 Email: info@impalacanada.com

#### **SPONSOR**

Nedbank Corporate and Investment Banking 135 Rivonia Road Sandton Johannesburg

#### **IMPALA PLATINUM JAPAN LIMITED**

Uchisaiwaicho Daibiru, room number 702 3-3 Uchisaiwaicho 1-Chome, Chiyoda-ku Tokyo Japan Telephone: +81 (3) 3504 0712 Telefax: +81 (3) 3508 9199

## **COMPANY SECRETARY**

Tebogo Llale Email: tebogo.llale@implats.co.za

## **UNITED KINGDOM SECRETARIES**

St James's Corporate Services Limited Suite 31, Second Floor 107 Cheapside London EC2V 6DN United Kingdom Telephone: +44 (020) 7796 8644 Telefax: +44 (020) 7796 8645 Email: phil.dexter@corpserv.co.uk

### PUBLIC OFFICER

Ben Jager Email: ben.jager@implats.co.za

### **TRANSFER SECRETARIES**

Computershare Investor Services (Pty) Ltd Rosebank Towers 15 Biermann Avenue, Rosebank PO Box 61051, Marshalltown, 2107 Telephone: +27 (11) 370 5000 Telefax: +27 (11) 688 5200

### **AUDITORS**

Johannesburg office Deloitte & Touche Johannesburg Office 5 Magwa Crescent Waterfall City Johannesburg 2090 Telephone: +27 (11) 806 5000

#### **Cape Town office**

The Ridge 6 Marina Road Portswood District V&A Waterfront Cape Town 8000 Telephone: +27 (21) 427 5300

### **CORPORATE RELATIONS**

Johan Theron Investor queries may be directed to: Email: investor@implats.co.za





# Impala Platinum Holdings Limited

Tel: +27 11 731-9000 Fax: +27 11 731-9254 investor@implats.co.za 2 Fricker Road, Illovo, 2196 Private Bag X18, Northlands, 2116

# www.implats.co.za

