



# MARULA PLATINUM

Friday, 4 October 2002

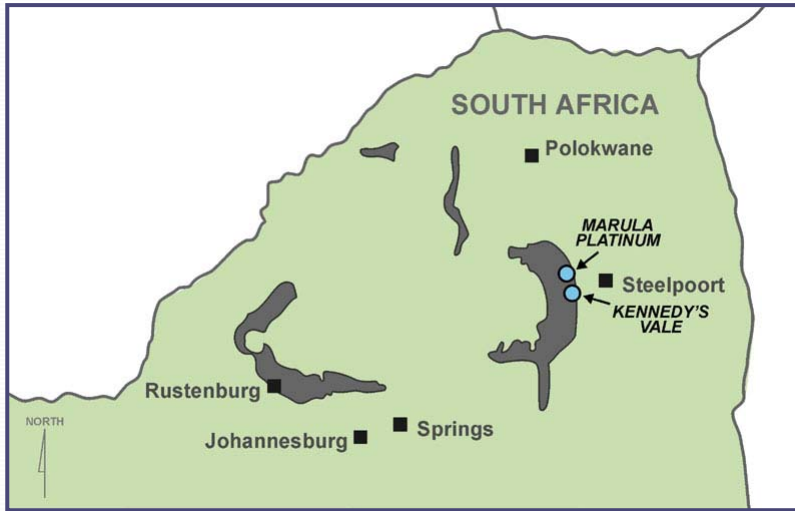


## Welcome and Introduction

*Rob Dey*



## LOCATION MAP

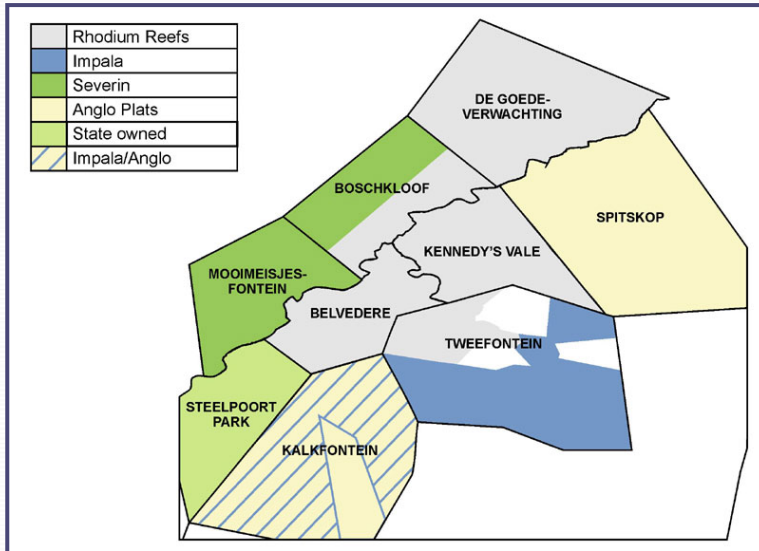


## Kennedy's Vale Exploration Project

*Les Paton*



## MINERAL HOLDINGS

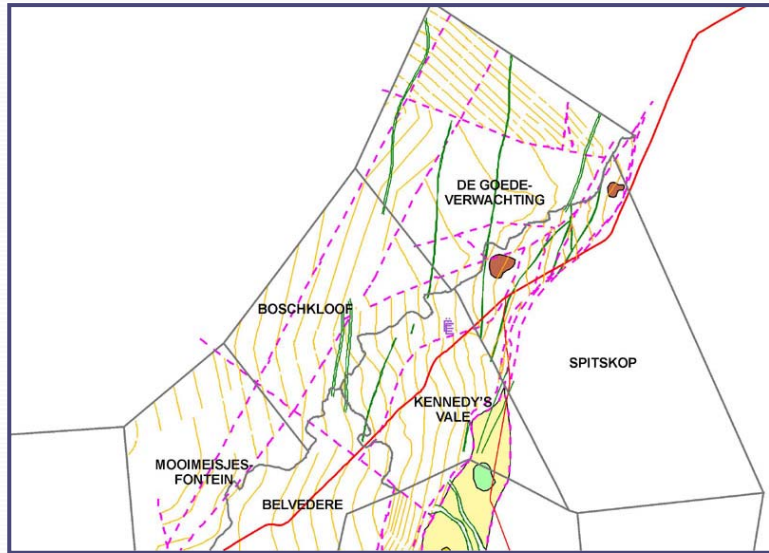


## GEOLOGICAL WORK

Year	Company	Exploration Drilling	
		Boreholes Drilled	Deflections Drilled
Pre 1990	Various	49	318
2000-2002	Barplats – Kennedy's Vale	41	198
Other Activities Completed		Digital Terrain Map	
		Field Mapping	
		Down-hole Geophysical Logging x 7	
		Helicopter-borne Magnetic Survey	
		3-D Seismic Survey	

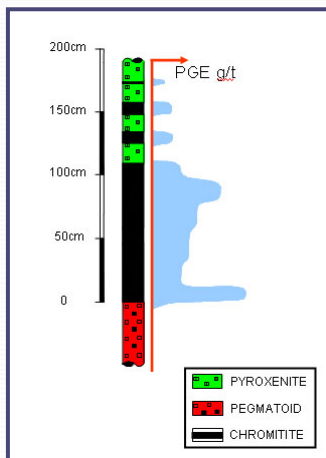


## UG2 CONTOUR PLAN

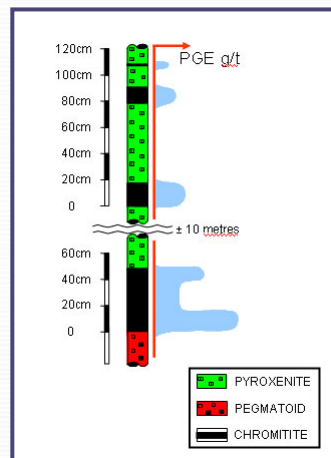


## UG2 REEF

Typical UG2 profile at Kennedy's Vale



Typical UG2 profile at northern part of De Goedeverwachting



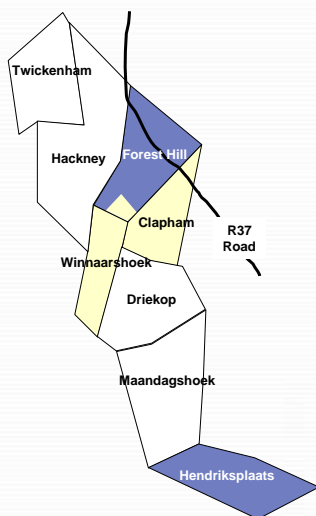
## ORE RESOURCES

Orebody	Farm	Category	5 PGE & Au In Situ		
			(g/t)	Tonnes	Pt (oz)
UG2	Kennedy's Vale	Indicated	3.49	82 627 360	4 257 377
	De Goedeverwachting	Indicated	3.42	163 929 534	8 277 062
	Boschkloof	Indicated	4.77	35 508 619	2 500 605
	Belvedere	Indicated	4.02	4 940 538	293 220
	Tweefontein	Inferred	3.47	32 546 313	1 667 340
	<b>TOTAL</b>		<b>3.80</b>	<b>371 429 364</b>	<b>20 843 656</b>

\* Grades calculated over a minimum mining width of 170 cm



## PLANNED ACTIVITIES



- Seismic interpretation
- Exploration drilling
- Bulk samples and metallurgical testwork
- Feasibility study
- Mine planning



# **Marula Platinum**

*Rob Dey*



## **BACKGROUND**

- Acquired all assets of Platexco (Winnaarshoek) – R950 million
- Exchanged Hendriksplaats for Clapham and portion of Forest Hill
- Sublease of portion of Driekop
- 20% Black Economic Empowerment
- Phase 1 approved in June 2002



## **SAFETY**

- Safety initiatives
- Implemented Du Pont's SMAT system
- Platinum Rules established
- Statistics to date
  - Three lost time injuries

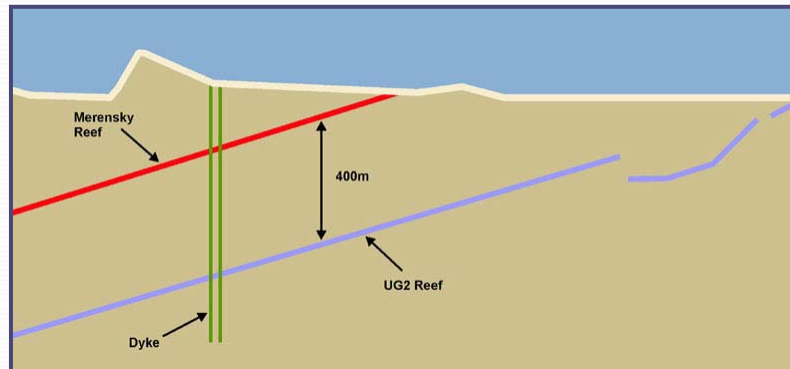


## **Geology and Mining**

*Ivan Manini*



## GEOLOGY



## RESERVES AND RESOURCES

- Evaluation drilling continuing
- Resources
  - UG2 48.6 million tonnes
  - Merensky 45.4 million tonnes
- Phase 1 to be UG2 Reef, with Merensky mined at a later stage





## GEOLOGY

- UG2 is of a higher grade and conducive to mechanised mining
- UG2 layer consists of densely packed chromitite with pyroxenite hanging wall and pegmatoid footwall

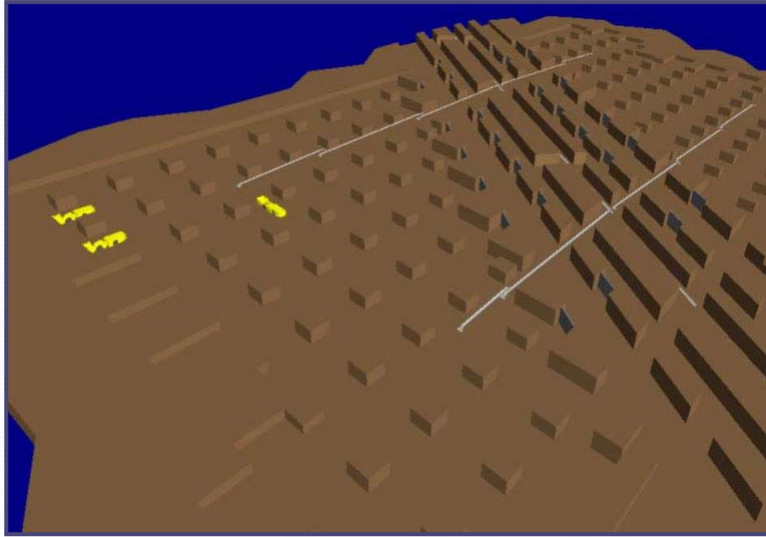


## MINE PLAN

- Mining based on trackless semi-mechanised room and pillar method
- Two decline accesses
  - Clapham
  - Driekop
- Mine UG2 to a depth of 600 metres
- 233 000 ROM tonnes per month (103 000 oz Pt per annum)
- Infrastructure designed on a modular basis to facilitate future expansion
- Life-of-mine of 22 years



## TYPICAL STOPING AND DEVELOPMENT LAYOUT



## SORTING PROCESS



## LOAD HAUL DUMPER



## AUTODRILL



## **Metallurgy, Infrastructure and Social Involvement**

*Francois Vermeulen*

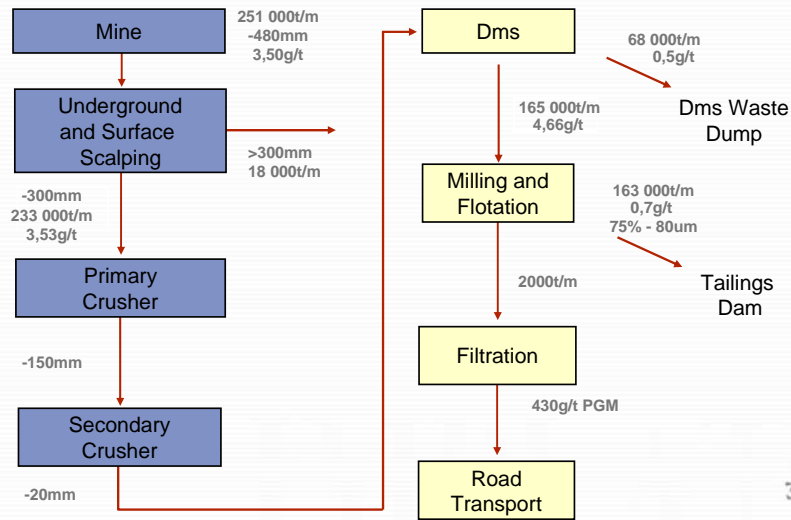


## **MINERAL PROCESSING**

- Design based on Mintek test work data
- Overall metallurgical recovery set at 82% of ROM grades (after mine call factor and scalping)
- Ball milling selected
- Designed on a modular basis to facilitate future expansion
- Final concentrate transported to Mineral Processes



## FLWSHEET



## INFRASTRUCTURE

- New access road
- Bulk water supply
- Power supply
- Bio-filter sewage treatment works
- Central offices, workshops, ablutions, training facilities and clinic
- Offices, change house and lamp room at each shaft





## ACCESS ROAD



## HLAHLANA PRIMARY SCHOOL



## LEBALELO RAW WATER DAM



## ESKOM POWER



## PROJECT PROGRAMME

- Project duration 26 months to steady-state production
- Key dates for 2002
  - July Mining contract award
  - August Plant construction starts
  - September Mine development starts
- Key dates for 2003
  - September Cold commissioning starts
  - October Stopping starts
  - December Hot commissioning starts
- Key dates for 2004
  - March Full throughput
  - August Steady-state



## CAPITAL COST

Mining	279 020
Process Plant	406 413
Infrastructure	47 609
Direct Field Costs	733 042
Indirect Costs	191 216
<b>SUB TOTAL</b>	<b>924 258</b>
Up-front Commitments	210 015
Contingency	122 475
Escalation	99 456
<b>TOTAL</b>	<b>1 356 505</b>





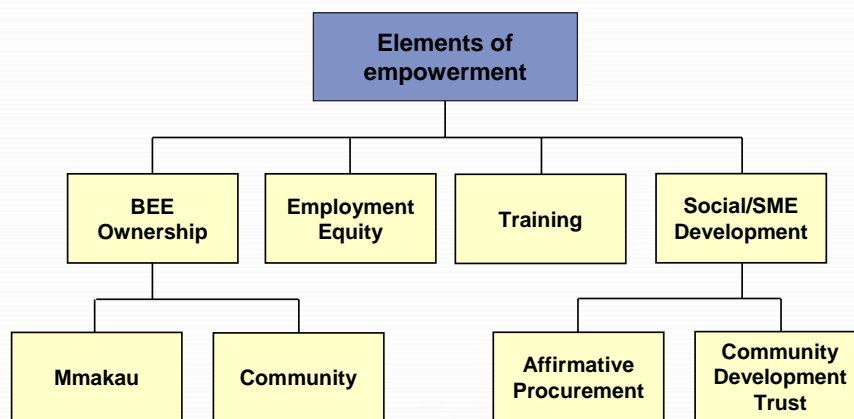
## OPERATING COST

Costs apply to the mine operating at a steady-state of 233 000 ROM tonnes per month.

Item	R/ ROM tonne
Mining operating costs	70
Plant operating costs	48
General overheads & admin (G&A)	7
<b>Total estimated monthly cost</b>	<b>125</b>

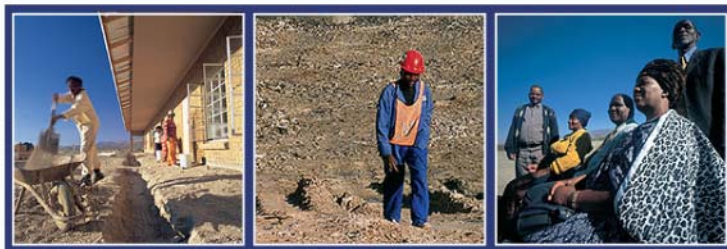


## EMPOWERMENT MODEL



## SOCIAL INVOLVEMENT

- Preference to local contractors and suppliers
  - Building trades
  - Security
  - Fencing
  - Catering
- Mining and concentrator operations to be outsourced initially
- Small owners team responsible for overall management



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