Agenda

- Introduction
- Geology
- Mining
- Mineral Processing
- Safety
- Environment
- Infrastructure
- Social Involvement
INTRODUCTION

Location map

SOUTH AFRICA
- Polokwane
- Ru...
Background

- Acquired all assets of Platexco (Winnaarshoek) – R950 million in Dec 2000
- Exchanged Hendriksplaats for Clapham and portion of Forest Hill
- Sublease of portion of Driekop
- 20% Black Economic Empowerment
- Phase 1 approved in June 2002

Capital cost (Rm)

- Phase 1 FY04
  - Mining and infrastructure 765
  - Process plant 382
  - indirect costs 203
  - Total 1 350

- Total revised mining plan ± 1850
The owners of Marula Platinum

<table>
<thead>
<tr>
<th>Owner</th>
<th>%</th>
<th>Role</th>
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<tbody>
<tr>
<td>Implats</td>
<td>80</td>
<td>Technical, managerial, financial and operational support and expertise. Reputation allows capital to be raised for Marula Platinum and BEE owners</td>
</tr>
<tr>
<td>Mmakau Mining</td>
<td>10</td>
<td>BEE with proven sustainability and mining expertise. Will have strategic input into Marula Platinum</td>
</tr>
<tr>
<td>Marula Community Trust</td>
<td>5</td>
<td>Enables sustainable benefit to flow to community over life of mine and beyond</td>
</tr>
<tr>
<td>Business consortium</td>
<td>5</td>
<td>Long-term, committed, empowerment investor</td>
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Project programme

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
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</thead>
<tbody>
<tr>
<td>August 2002</td>
<td>Construction started</td>
</tr>
<tr>
<td>November 2003</td>
<td>Commissioning started</td>
</tr>
<tr>
<td>February 2004</td>
<td>First concentrate shipped</td>
</tr>
<tr>
<td>June 2004</td>
<td>Produced 13 280 oz Pt (in concentrate) for financial year</td>
</tr>
<tr>
<td>June 2006</td>
<td>125 000 oz Pt in concentrate</td>
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GEOLOGY

Generalised section of geology

Merensky Reef

400m

Dyke

UG2 Reef
Dip variation plan

- Depicts structural interpretation
- Dip steeper in shallow/slump area
- Ave 13 degrees
- Detailed variability influenced by borehole density
- Variability expected in “clean areas”

UG2 horizon

- UG2 Pyroxenite
- UG2 Main Chrome
- UG2 Pegmatoid

UL1

UL2

ULT

50 cm

60 cm

20 cm
Marula UG2 - PGE splits

Reserves and resources

- **Mineral Reserve:**
  - UG2: 41.3 Mt

- **Mineral Resource:**
  - Merensky and UG2: 66.6 Mt

- **Phase 1 UG2 Reef**
  - (Merensky mined at a later stage)

- Evaluation drilling continuing on Merensky
Mine plan - phase one

- Original mining based on trackless Bord and Pillar
- 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 bord-and-pillar method

Stope layout

Original layout

Dip @ 9°

14m

16m

Dip @ 18°

Typical

3.1m

Waste

Dip @ 5°
Effect of reef dip on dilution

Reef Dip vs Additional % Dilution (Bord and Pillar layout)

Revised mine plan

- Dips
- High dilution
- Poor equipment efficiencies
- Poor extraction rates at depth
  - 65% at 500m
  - 50% with geological losses
- Low-resource utilization
- High cost per ounce
- Long ounce buildup profile
Semi-mechanised layout

Hybrid mining method

Scoop
Scoop gate

To main dip conveyor

Semi-mechanised layout

Panel 1
Panel 2

Typical section showing Trackless drive with conventional panel
Breast mining layout

Mining methods evaluated

- Bord and pillar (1.6 or 1.8m)
- Semi-mechanised (3 or 2 shifts)
- On Reef Breast
- On Reef Dip
- Off Reef Breast (conveyors or trucks)
- Off Reef Dip (conveyors or trucks)
Grade comparison

Cost per tonne comparison
Cost per ounce comparison

![Cost per ounce comparison chart]

Mining method selected - conclusion

- Conventional breast stoping method chosen for the Life Of Mine Plan
- Footwall infrastructure and development
- Conventional stoping and strike development to be done in house
- Main development outsourced
The way forward

- Transitional phase to full production
- Detailed design work in progress
- Initiated footwall development
- EPCM contract to manage process
- Maintain ounce profile from current workings
- Maximise semi-mechanised operations
- Opportunities for breast mining on-reef

Best practice

- Use of DDT drill jigs for stope and ASG drilling
- Support drilling with Auto drill
- Support with hydrabolts on face and pre-stressed stick support
DDT drill jigs - objectives

- To reduce the physical effort
- Improved safety through face support in the form of roof-bolts
- Improving the quality of drilling
- Improving the face advance
- Improved hanging wall control

Support drilling in-stope
Hydrabolt

Installed hydrabolt support
Pre-stressed stick support

- Panel length: 24.0m
- Face advance: 22.0m
- Square meters/panel: 528 m²
- Labour required:
  - RDO: 4
  - Winch operator: 2
  - TBR/support: 2
  - LHD: 1
  - Miner assistant: 1
  - PTV: 1
- Efficiency: 48 m²/man
Mineral processing overview

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

- Plant commissioned March 2004
- Plant operating as per design expectations
- Completed on time and below budget
- DMS plant by-passed

Tonnage profile
Ounces profile

Tonnes milled
PGM % recovery

<table>
<thead>
<tr>
<th>Month</th>
<th>Jul-04</th>
<th>Aug-04</th>
<th>Sep-04</th>
<th>Oct-04</th>
<th>Nov-04</th>
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<td></td>
<td></td>
<td></td>
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SAFETY
Safety statistics

![Lost Time Injury Frequency Rate](image)

Safety initiatives

- 5 Platinum rules established
- Implemented the Meerkat system
- Training Centre underground to train workers in working environment
- Road safety awareness through propaganda and photographs
- Revised support methods
- Fall of ground campaign ‘DROP THAT ROCK BEFORE IT DROPS YOU’
ENVIRONMENT

Environment

- Water permit application submitted
- Sewerage plant in full operation
- Water treatment plant in full operation
- Slimes dam operational
- Water Management Committee established
- Ground water monitoring with SRK
INFRASTRUCTURE

Infrastructure

- 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
Lebalelo raw water dam

Eskom power
SOCIAL INVOLVEMENT

Hlahlana primary school
Empowerment model

Elements of empowerment

- BEE Ownership
- Employment Equity
- Training
- Social/SME Development
- Affirmative Procurement

Mmakau

Community

Trust

Local direct stakeholding

Marula Community trust

- Trust formed 5 August 2004 after 14 months of negotiations with all stakeholders
- R1m cheque presented by Impala to the Marula Community Trust
- 11 Trustees have been appointed to represent the relevant stakeholders
Employment

- 50.4% of workforce currently made up of local labour
- Committed to the Mining Charter, Social and Labour Plan and Implats’ submission on Employment Equity Act
- 10 local miners trained and achieved blasting certificates
- 13 local apprentices qualified
- 4 local bursary students currently at university

Training

- Transfer of skills to the local community
- Skills training includes
  - Construction
  - Mining
  - Engineering
Social involvement

- Preference to local contractors and suppliers
  - Building trades
  - Security
  - Fencing
  - Catering
  - Transport

Mining Charter Categories - procurement

- Black Empowered 23%
- Black Owned 22%
- Black Influenced 55%

R49m 1 July 03 – 30 June 04
THANK YOU