No 20 Shaft Project

ANALYST VISIT 20 SHAFT
2 FEBRUARY 2011

Impala lease area – 20 Shaft Location
### History

- Project approved – September 2004
- Surface terrace construction (phase 1) – October 2004
- Main shaft collar construction & pre-sink – November 2004
- Main shaft sinking – October 2005
- Main shaft equipping – November 2007
- Vent shaft collar construction, pre-sink – April 2005
- Vent shaft sinking – July 2005

### Facts

- **Main shaft**
  - 1051m below collar elevation
  - 8.5m diameter (lined)
  - Downcast shaft providing 650kg/s of air
  - Men and material
  - Hoisting capacity of 240 000 tonnes/month
  - Three main stations
    - 22 level – main level for men and material, material and chairlift declines and inclines
    - 23 level – top of silos, airway and conveyor declines and inclines
    - 24 level – bottom of silos, main shaft loading system and main pump station
  - Conventionally sunk

- **Ventilation shaft**
  - 1050m below collar elevation
  - 6.5m diameter (lined)
  - Up cast shaft, 650kg/s of air
  - Conventionally sunk
Shaft Scope and Layout

- 2 Shaft system – main and ventilation
- Main shaft bottom 1 051m deep
- 10 production levels
- Sequential Merensky and UG2 mining from 20 half levels
- 185 000 reef tonnes per month
- Trackless decline development and conventional stoping

No 20 Shaft – Production Profile
Shaft Safety

- LTIFR 6.70
- FFS 780 412 (25 April 2011)
- 90 day safety initiative 70 days

Safety – Key issues

- Blocky ground conditions
  - Shotcrete or TSL on face before blasting
  - Installation of split sets with drill rig
  - Primary barring done with drill rig
  - Installation of welded mesh with split sets done with drill rig
- Training initiatives
  - Supervisor training TM3
  - Drill rig operator training
  - Specialist mining contractor on site
Focus areas

Production

- Training of artisans and SANDVIK technicians on site
- Continuous training of drill rig operators
- Cycle times to improve as operators get more competent in new skills
- Specialist mining contractor on site (Byrnecut)
- Supervisor training initiative
- Assessment of support strategy
- 3 shift cycle started
## Capital Cost

<table>
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<tr>
<th></th>
<th>R’m</th>
<th>Vote</th>
<th>PTD DEC10</th>
<th>Remaining</th>
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<tbody>
<tr>
<td>Surface Complex</td>
<td>462</td>
<td>405</td>
<td>57</td>
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<tr>
<td>Ventilation Shaft</td>
<td>352</td>
<td>260</td>
<td>92</td>
<td></td>
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<tr>
<td>Main Shaft Equipping</td>
<td>1,060</td>
<td>663</td>
<td>397</td>
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<td>Decline Development</td>
<td>1,797</td>
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<td>Footprint Development</td>
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<td>Indirect Cost</td>
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<td>Contingency</td>
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<td>Escalation</td>
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<tr>
<td><strong>Total Cost</strong></td>
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