

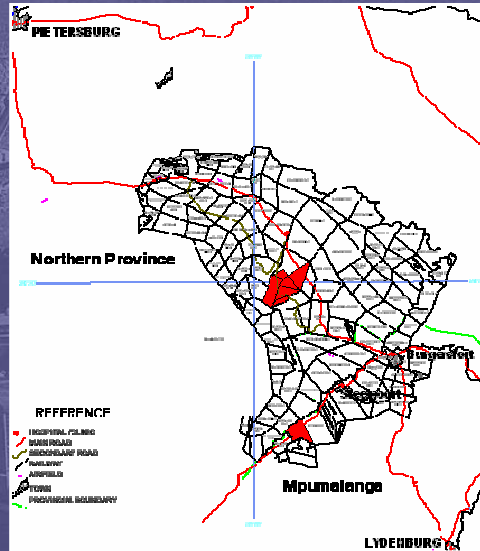
Winnaarshoek – Les Jagger



Winnaarshoek



Winnaarshoek



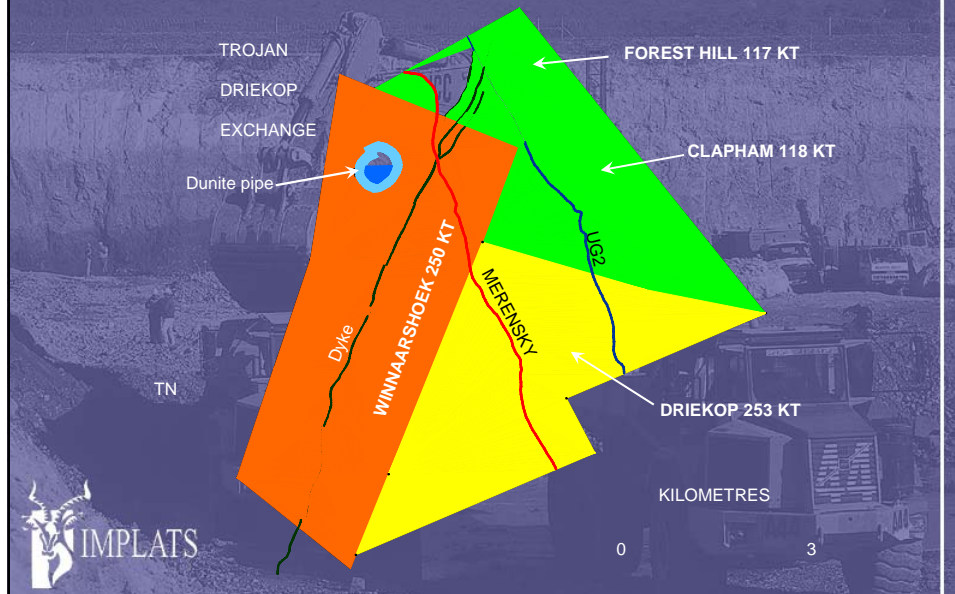
Winnaarshoek

Mining area covers four farms

- ❖ Winnaarshoek
- ❖ Clapham
- ❖ Forest Hill
- ❖ Portion of Driekop



Winnaarshoek project area



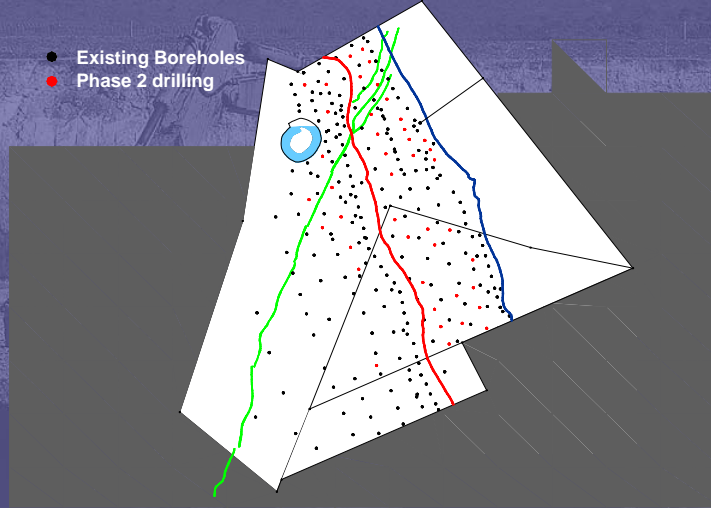
Geology

- ❖ Extensive exploration drilling conducted
- ❖ Both the UG2 and Merensky reefs are present
- ❖ Average Dip of 13 degrees to southwest
- ❖ Vertical separation of 400m
- ❖ One prominent dyke and a dunite pipe
- ❖ No significant faulting



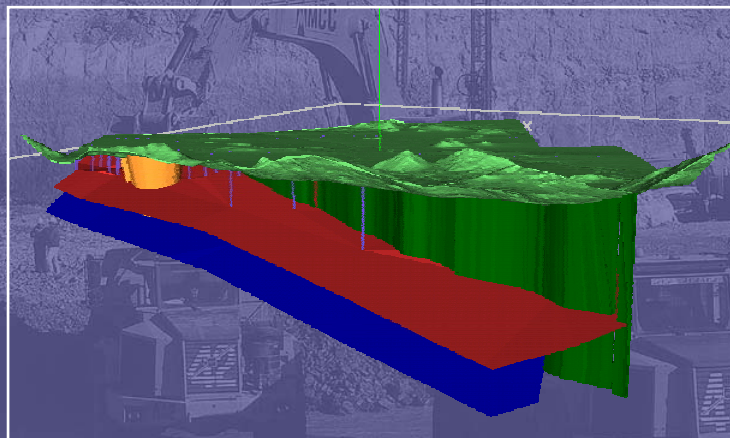
Exploration boreholes

- Existing Boreholes
- Phase 2 drilling



Datamine 3D DTM Model

3D VIEW LOOKING EASTWARDS



Reserves and resources

UG2

- ❖ mineable channel to 500m below surface = 22.9M tons
- ❖ yearly mined channel tonnage = 2.2M tons
- ❖ Resource extends at depth to support a life of mine of 20 years plus

Merensky

- ❖ mineable channel to 500m below surface @ 110cm = 45.4M tons
- ❖ yearly mined tonnage = +-2.3M tons
- ❖ Life of mine thus about +-20 years



Mining

- ❖ Optimum mining plan based on trackless mechanised room and pillar mining method.
- ❖ Practised at Kroondal Platinum and various chrome mines (Xstrata eg Thorncliffe)
- ❖ A mining height of 180cm
- ❖ Dense Media Separation technology
- ❖ Mining will start on the UG2 reef and exploitation of the Merensky reef horizon as an expansion to the project



Mining

- ❖ Access by way of two decline systems
 - Clapham shaft and Driekop shaft
 - Three portals out of each
 - Develop at minor dip of 9,5 degrees
 - Main decline development on reef
 - Reef tonnage stockpiled
 - LHD cleaning onto strike conveyors
 - Dip conveyor to surface
 - Each system to produce about 200 000 ROM tons per month



Clapham shaft



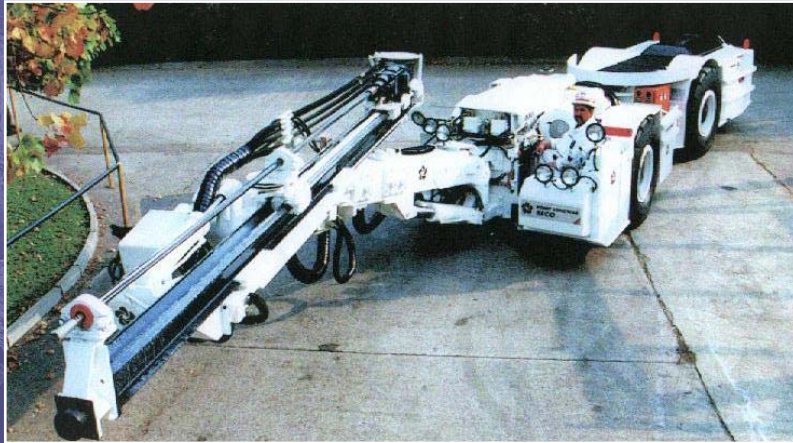
Decline shaft access



Low profile roofbolter



Low profile drillrig



Low profile loader



Infrastructure

- ❖ New access road from existing Burgersfort-Pietersburg (R37) road
- ❖ Secondary roads to the shafts, concentrator plant, etc
- ❖ Bulk water from Lebalelo Water scheme will be purified on site
- ❖ Biofilter sewage treatment works



Infrastructure

- ❖ Temporary power available November 2001 - permanent power from September 2002
- ❖ Centralised offices, workshop, ablutions, training centre and clinic at concentrator plant
- ❖ Each decline system: own offices, change house and lamproom/crush



Concentrator plant

- ❖ Dense media separation
- ❖ Conventional UG2 two-stage milling and froth flotation
- ❖ Two primary and two secondary mills ie a twin stream
- ❖ Filter cake to Impala for smelting in Rustenburg and refining by IRS in Springs
- ❖ Reef from development/stoping stockpiled on surface
- ❖ Stockpile processing starts with plant commissioning



Staffing

- ❖ Total labour force will be 1800
 - Clapham Decline - 757
 - Driekop Decline - 724
 - Concentrator - 186
 - Central Services - 133



Staffing

- ❖ Decline development using contractors for the first two years, commencing February 2002
- ❖ Thereafter production with mine staff
- ❖ Training at Impala until facilities available on site
- ❖ Preference is to utilise local labour from the project area



Project schedule

- ❖ Commence Decline sinking
- ❖ Hot commissioning of concentrator plant
- ❖ Full monthly milling tonnage achieved
- ❖ February 2002
- ❖ July 2003
- ❖ December 2003



Project financials

- ❖ Viable project
- ❖ Joint Venture: Black Economic Empowerment group
- ❖ Capital cost approximately R1600m, over a four year period
- ❖ Project will realise a profit after capital expenditure from financial year 2004
- ❖ Project cash flow will be positive from financial year 2009
- ❖ Future Merensky reef expansion from financial year 20053

