

Directors' review of operations – Veremo



Veremo Holdings (Pty) Limited (Veremo), which holds a substantial magnetite ore resource near Stoffberg in Mpumalanga Province was jointly acquired by Framework Investments Limited (Framework), a wholly owned subsidiary of Kermas Limited, and Petmin Limited in April 2008. Petmin has a 25% interest, and Framework holds the remaining 75%.

During the year under review, Petmin capitalised its R25 million loan to Veremo. The financial effect of the transaction is that Petmin's interest in Veremo Minerals (Pty) Ltd increased to an effective economic interest of 34.9% (2008: 25%).

Project overview

The Veremo project is an iron-ore deposit of Layer 21 of the magnetite layers of the Upper Zone of the Bushveld Complex. It is attractive for the development of a pig-iron operation because of the lateral continuity and considerable thickness of the orebody, which is up to 60 metres, and the good accessibility due to relative shallow dips and surface exposure. This is the first Ti-magnetite occurrence to be discovered in South Africa that is capable of generating such large resources per hectare.

The land over which the two parties have mineral rights includes five contiguous farms covering approximately 2,989 hectares with a strike length of at least 6 kilometres which outcrops on surface.

Exploration update

In 2008, we reported on the previous exploration programme. This included the drilling of 90 holes amounting to 6,000 metres, 306 trenches and 15 pits. The last mentioned were excavated to expose in-situ and eluvial ore and to determine the position of foot- and hanging-wall contacts. Industry Consultants, MSA Geoservices, were appointed to carry out a technical review and data validation on the project. This work included the re-analysis of core samples, mineralogical studies, and the re-calculation of the previous resource model.

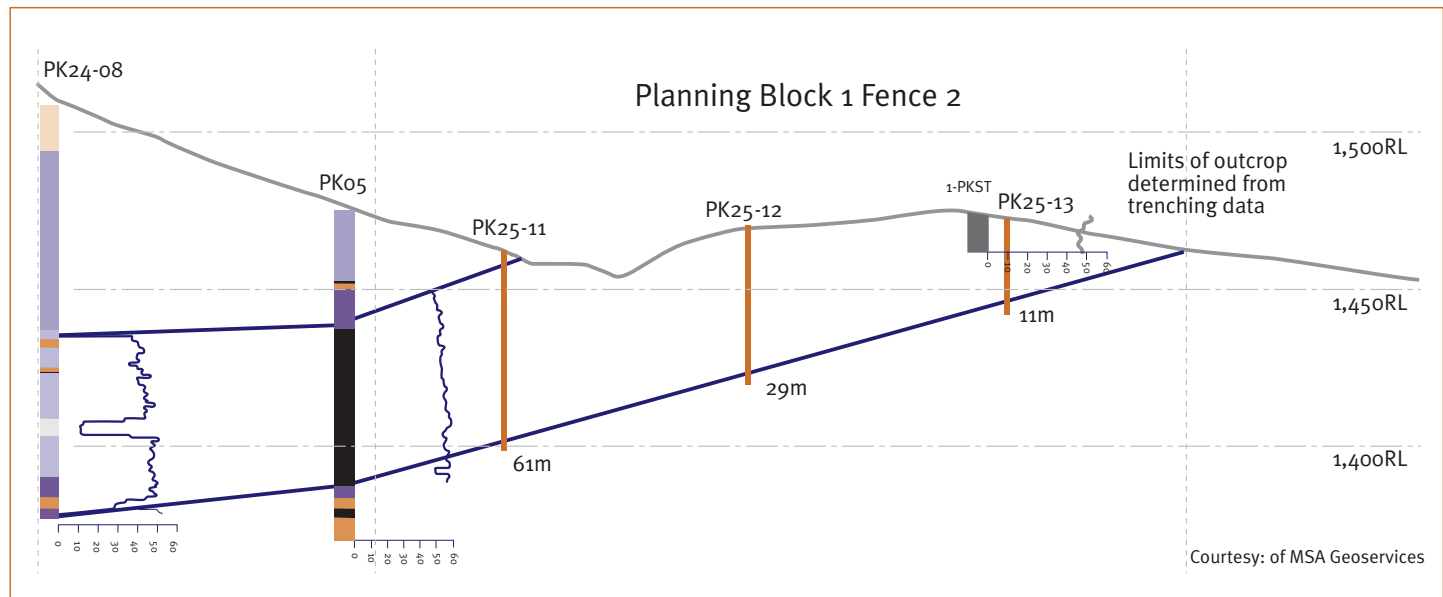
In 2009 MSA designed and managed an in-fill core drilling and sampling programme as part of a geological scoping study with the aim of delineating a SAMREC-compliant measured resource in selected high priority areas identified from previous drilling campaigns. In particular, the highly weathered 'cap' of Ti-magnetite Layer 21 in the so-called 'platform' areas was singled out for this exercise.

Previous analytical test work on mini-bulk samples from several deep pits has shown that the weathered material has higher FeO and substantially lower SiO₂ concentrations compared with the fresh material and might therefore not require a costly grinding/milling stage prior to pyro-metallurgical processing.

Additional drilling of approximately 1,150 metres in 38 holes has been completed. The drill contractor has successfully managed to optimise the drill technique to increase core recovery to nearly 100% in the weathered zone following experimentation with differing equipment.

Directors' review of operations – Veremo (continued)

Figure 1: Example of a borehole fence used to calculate the position and estimated depth of each borehole



The highly weathered material was intersected with a customised triple-tube (HMLC), coring technique while a wire-line HQ₃ triple tube was used in the underlying un-weathered Ti-magnetite.

A shortfall in the previous drilling campaign was that it failed to obtain acceptable core recoveries in the up to 20m thick weathered zone. The result was that the analytical data from the weathered material not representative and unsuitable for resource calculations.

The current drilling has shown that the thickness of the weathered zone is variable, ranging from less than 10m to 20m, and appears to be controlled in each particular area by the relative amount of erosion of the old weathering profile.

There is no sharp boundary between weathered and fresh material and the final position depends very much on how the weathered material is defined. At this stage it is not clear which mineralogical, chemical or physical parameters or a combination of these (that is colour, chemical composition including loss of ignition (LOI), bulk density and specific gravity, hardness, abundance of secondary clay minerals and so forth) will provide the most reliable and consistent classification criteria for 'weathered material'. The main objective is to determine which part of Layer 21 can be mined and processed to obtain a clean Ti-magnetite concentrate with high FeO and low SiO₂, concentrations without the need for grinding/milling.

Core sampling and chemical analyses

All boreholes drilled to date have been sampled and the material submitted for multi-element XRF analyses and SG determinations to an accredited laboratory. A document describing the procedures for drilling, logging, sampling and analytical Quality Assurance and Quality

Control (QAQC) has been compiled and all activities are carried out in compliance with the written protocol. Drill core sampling followed the previous practice, namely submitting all Layer 21 intersections as individual 1-metre long split-core samples.

A technique of splitting the friable and weathered core in a way that the samples are duly representative has been developed. This has involved manufacturing a core holder which prevents the core from disintegrating and also minimises the exposure of the core to the coolant water during the sampling process.

Mineralogical studies

Previous mineralogical studies conducted on selected core material from Layer 21 showed that ilmenite (FeTiO₃) occurs in variable quantities ranging from 1% to over 20% of the total Fe-oxide minerals with a general trend of increasing abundance with stratigraphic height.

Detailed petrographic studies revealed that ilmenite occurs as:

- very fine exsolution lamellae (<10µm) within Ti-magnetite grains;
- as embayed and highly irregularly-shaped elongated crystals (up to 3mm in length) showing complex intergrowth with Ti-magnetite and silicates; and
- as discrete subhedral grains up to 6mm in size.

Only the latter variety has potential economic significance as a marketable by-product.

In order to quantify the abundance of ilmenite and to test if ilmenite could be liberated and extracted from Layer 21, two composite samples from un-weathered borehole material were submitted for laboratory test work. Preliminary results show that crushing and milling to 600µm, followed by low intensity magnetic separation (LIMS), produces less



than 1% of discrete ilmenite grains. A better liberation/separation and hence a higher recovery of ilmenite could be achieved by milling the fresh material to smaller size (300µm). Early indications show that the weathered material is more amenable to ilmenite separation without the need for the fine milling. Further tests will be required to determine the optimal setting for an efficient LIMS process.

The final results of the test work will be ready in the first quarter of 2010.

Mapping and trenching

Aerial photography and other imagery have been compiled to assist in the surface mapping exercise. However, the general lack of outcrop of the widespread occurrence of scree and overburden material prevented an accurate mapping of Level 21 and the verification of the positions known and suspected faults.

For this reason, several trenches were mechanically excavated to determine the foot- and hanging-wall contacts of Layer 21.

Renewal of new order prospecting rights approved

The application for the renewal of all five new order prospecting rights were approved by the Department of Mineral Resources and became effective in May 2009.

Safety, Health and Environment

No incidents or occurrences of non-compliance with acceptable health and safety standards have been reported since project inception. All surface right owners have been briefed on the current drilling activities. The necessary steps to secure the open pits have been made with the purchase of specialised fencing equipment.

Way forward

In the financial year ending June 2010, management will focus on ensuring that the geological validation programme is completed.

Concurrently with the drill and sampling programme, which will be used for an updated resource statement, extensive metallurgical test work is planned on representative ore samples from both weathered and fresh zones of Level 21. The conclusion of this test work is expected to provide all key parameters for a pilot plant programme in 2010. Thereafter it is anticipated that the processing flow sheet for the production of pig-iron can be finalised.

