



## Xstrata marvels at Verderflex muscle! Pumping Ferrovanadium

*Located in Bethanie, North-West Province of South Africa, Xstrata's Rhovan vanadium facility relies on the most appropriate and reliable equipment to run its impressive Ferrovanadium Plant constructed in 2002. Annual production capacity at Xstrata Alloys Rhovan vanadium operations' pentoxide production is 22 000 lbs and 6 000 kg Ferrovanadium.*

VERDERFLEX®

"A pump so reliable - it's only downtime is for hose replacement and annual plant maintenance!" claims Xstrata Alloys Rhovan's Acting HOD Christelle van Vuuren, regarding the Verderflex pump installed at the operation's precipitation plant.

All vanadium in the ore occurs in solid state in the titaniferous magnetite. After the first stage of processing, the magnetite concentrate is subjected to a conventional roast leach precipitation process for the recovery of vanadium. To achieve the desired final product quality, Silica (SiO<sub>2</sub>) is removed from the pregnant solution. Precipitation of Vanadium from the pregnant solution is achieved by the addition of Ammonium Sulphate ((NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub>).

The vanadium recovery process makes use of an evaporation process to recover sodium sulphate salt from the barren solution after precipitation. This salt is recycled back to the kiln, displacing the need for a portion of the sodium carbonate flux requirement.

The VF 40 pump is used to pump the barren slurry at the plant, at approximately 6 – 8 m<sup>3</sup>/hr at 60% solids handling. Abrasive mining slurries have sub-micron solid contents in excess of 80% with slurry SGs in excess of 2.0. Only hose pumps can pump such dense fluids whilst maintaining high levels of plant availability unlike centrifugal pumps which suffer from continuous downtime and are unable to pump such high SG slurries; lower plant performance.

Since the plant was commissioned, the operation has replaced other hose pumps for the easier to maintain VF pump, due to its quick maintenance capabilities. "With no gland water used by the operation, the pump can run dry, and the rotor design and flange arrangement makes the pump a hit at our plant for easy maintenance," says Harrison.



"It just runs and works when you need it to," confirms Van Vuuren. "The pump is only 'offline' for spare part replacement and planned plant maintenance. Quite simply: a reliable pump!" she adds.

**VF pumps are easy to maintain, with hoses the only wear part in the pump. VF hoses are specifically designed and manufactured to minimise the effect of fatigue, resulting in an extremely long hose service life.**