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# Mark Wanless — a journey of exploration

With more than two decades of experience in geology, Mark Wanless shares some of his insights with Leon Louw.

## Mark, where did your career as a geologist begin?

After I graduated with a Bachelor of Sciences (Honours) degree in geology from the University of Cape Town in 1995, my first job was with JCI at their Joel underground gold mine in the Free State, on the south-western edge of the Witwatersrand Basin. I began as a graduate geologist for my first couple of years. Over the next five years after that, I went on to hold positions of mine geologist, mine

designer, and finally chief designer at Joel. I then spent a year at Bambanani gold mine as mining graphics systems coordinator.

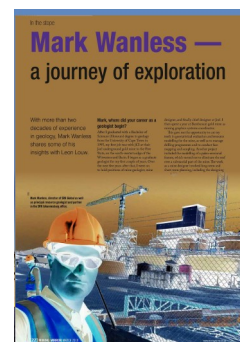
This gave me the opportunity to cut my teeth in geostatistical evaluation and resource modelling for the mine, as well as to manage drilling programmes and to conduct face mapping and sampling. Another project included the modelling of a paleo-erosional feature, which turned out to eliminate the reef over a substantial part of the mine. The work as a mine designer involved long-term and short-term planning, including the designing

SRK  
Mark Wanless, director of SRK Global as well as principal resource geologist and partner in the SRK Johannesburg office.



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and scheduling of a triple decline and a vertical shaft at Joel.

In 2002, I moved into the consulting field as a project mine designer, before joining SRK Consulting in 2003 as a senior resource geologist. This has involved me extensively in geological and ore body modelling, geostatistical and resource modelling, and quality assurance and quality control (QAQC) — among other work. One interesting aspect has been working across commodities, including gold, platinum group elements, copper, lead, zinc, iron, manganese, fluorspar, and mineral sands. Working for SRK has given me the opportunity to work in international resource geology projects, specialising in the evaluation of mineral resources, from early-stage exploration targets through to production.

### What was it like to transition from the operational mining environment to a consultancy? And how did the focus of your work change?

Working on an operational mine is often quite short term in nature as you work with day-to-day operational problems. In the consulting environment, the focus is often on the longer term, specifically dealing with feasibility studies on new projects. In addition, working as a consultant provided the opportunity to broaden my areas of expertise from just working on a single-commodity mine, to working with a range of commodities around the world. It has also given me exposure to how other consultants and mining operations do their work, which has helped me improve my own skill sets.

### What has technology brought to the field of resource geology?

Advances in software development have increased the speed and accuracy with which models can be produced. As the techniques have developed, we are continually improving how we build models and the validations we can undertake to ensure that the models represent the exploration data. For me, this has meant becoming proficient in a number of cutting-edge 3D geological modelling, statistical, and geostatistical software packages — such as Isatis, Datamine, Leapfrog, and GEMS software.

### What are some of the opportunities that South Africa can grasp to facilitate more exploration in the country?

The absence of easily accessible information on prospecting has become a significant challenge to local and foreign exploration companies. The Department of Mineral Resources does not have a portal where explorers or investors can quickly find out who needs which prospecting licences and what licences are available to interested parties. While it used to be possible to get a prospecting licence within a day for a nominal

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fee, the process is now quite opaque, time-consuming, and expensive.

There is also no proper geological survey — which is really vital if we are to be able to provide explorers with ready access to geological information for the country's resources. The Council for Geoscience does hold a great deal of valuable information, but it has no efficient and accessible mechanism for sharing it effectively with those who could really use it.

### It has been suggested by many junior miners that South Africa is a risky place to explore. Why is that?

I have heard juniors express concern about the way that the Department works, leading to high levels of uncertainty about the outcomes of application processes. They have said, for instance, that corruption is a particular challenge — with the bribing of officials apparently becoming a common means of ensuring that applications are processed. These issues add to the difficulty of fundraising on the Johannesburg Stock Exchange (JSE), even though the JSE has tried to provide a less costly and quicker route to listing for juniors.

The regulatory environment is also not conducive for their kind of business, where early-stage risk is particularly high, and investors in exploration are hard to find at the best of times. Requiring companies to comply with onerous black economic empowerment (BEE) requirements before a deposit has even been delineated, for example, exacerbates an already difficult task. Juniors find that having a large BEE shareholder with limited funding capacity only raises the hurdle when approaching investors for capital funding.

### How would you describe the value of consultants in the field of geology?

A good consultant should work to complement the skills and experience on projects and mining operations. The experience gained working on multiple mining operations and with multiple commodities allows the consultant to advise on the best practice developed in the industry, and to pass these skills and methods on to our clients' teams to help improve how they operate.

### What advice would you give young people who want to follow a career in geology?

No amount of consulting experience will ever be as valuable as the experience you gain starting work in an operational environment. If you don't understand how the work you do — and the models you produce — will be used in a mining operation, your work is likely to fail to meet the expectations of your clients. Also, you shouldn't be afraid to get experience in associated disciplines on a mine; seeing how a geologist's work is used by mine planners, for example, gives you an appreciation of what is important to the people who will have to rely on your work.

### Which have been the most interesting projects that you have worked on in South Africa during your career — and what made them so?

I have had the opportunity to work on some world-class international deposits in my time with SRK, but South Africa is host to two truly extraordinary deposits: the Witwatersrand Basin and the Bushveld Complex. The Witwatersrand Basin hosts a large number of reefs, in several goldfields; my work on all the major reefs in the Witwatersrand goldfields has given me an appreciation of the massive size of the mineralising system, as well as the differences and complexities in the different reef packages in each area. The Bushveld Complex, by comparison, has a couple of major reefs only but is equally impressive in its size and continuity of the ore bodies.

### What in particular excites you about the future of your profession?

What keeps geology interesting is that no two deposits are the same, and so no one solution will necessarily work for two deposits. In addition, over time the biggest and simplest deposits have been found, requiring innovative thinking to find and model new deposits. So, geologists with good critical and analytical thinking skills will always have a role to play in the industry. ■