

## South Africa: Mine Water, Rock and Colorful People

The shortest summary of my two-month stay in South Africa consists of only two words: laboratory and rock. Those two cover a huge majority of my time and memories.

I traveled to both the southern hemisphere and the African continent for the first time in my life in order to conduct the practical, preparatory work for my Bachelor's thesis. My supervisor down there at Tshwane University of Technology (TUT) is Prof. Christian Wolkersdorfer, who holds the South African Research Chair for Mine Water Management and provided me with the opportunity to do this project at TUT. "Down there" is actually not at all the right expression, with Pretoria, one of the country's three capitals, being situated at an elevation of about 1370 m ASL.

For the first month I stayed at a guest house and afterwards moved into a room in an apartment, both located in a tidy little area called Eastwood, which roughly lies between the Union buildings, seating the South African government and President's office, to the West and one of the President's official residences to the East.

I spent most of my weekdays on TUT's Arcadia Campus just east of the city center, including many of the public holidays they have there this time of the year. To start off with my project, I was reading in my professor's little office, where an ant regularly kept our company, like it also happened in many other random places – they are everywhere!

One of the highlights of my stay was a multiple-day sampling trip we undertook with a rented off-road pick-up through the provinces Gauteng and Mpumalanga, the latter being particularly beautiful,



Fig. 2 mine water sampling at Wince 18 in the Westrand

with rich vegetation and nature reserves where sightings of the famous African mammals are guaranteed. We took mine water samples mostly from the proximity of former gold and coal mines all over the area. South Africa has a large number of mines that were simply abandoned without proper steps of mine closure being taken and thus uncontrolled flooding causes mine water to interact with natural ground and surface waters.



Fig.1 Nelson Mandela statue in front of the Union Buildings

After the sampling my routine for over a month started, where I spent long days in the laboratory, determining total dissolved solids (TDS) contents through evaporation and analyzing the temperature dependence of the electrical conductivity (EC) of my water samples. The conversion factor between EC and TDS is the subject of

interest in this project. I very much enjoyed this work, with an international team of lab mates around, most of them involved in waste water treatment and microbiology.

In general the very diverse population of South Africa has only started to mix slowly, 20 years after the end of Apartheid. Where I stayed, I didn't feel any hostility between the groups, but separation is simply very much anchored in people's everyday lives. The cultural diversity in my opinion still offers a lot of interesting exploring possibilities – almost everyone I met is extremely friendly and welcoming.

Safety is a big issue for everyone traveling to South Africa, I know. But throughout my stay I learned that if I just took a couple of precautions I didn't need to be as scared as people made me with their stories before I went. That fear unnecessarily restricts freedom. I felt perfectly safe biking around the bustling city at daytime, which gave me much needed independence from car-owning friends and colleagues.

Rock, the second word I'm defining my stay with, this time doesn't relate to my work, despite me being a student of geology. It stands for my free time, which I spent outdoors as much as possible, mostly with Exploratio, the University of Pretoria's (UP) outdoor club. I was lucky and am grateful I found that group of climbers in my first week there. It was also mostly them who made me more and more curious about all the rest of the huge country that I didn't get to see. I'll definitely be back.



Fig. 3 summit of the West Tower at Rensburgcop

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