
Karstifiable rocks
(potential karst aquifer)
Continuous carbonate rocks
Continuous carbonate rocks
WOKAM database;
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ZAMBIA
ANGOLA
ZIMBABWE
NAMIBIA
BOTSWANA
MOZAMBIQUE
Upper and Lower
Fountains
Kuruman eye
ESWATINI
SOUTH AFRICA
LESOTHO
ATLANTIC
OCEAN
INDIAN
OCEAN
N
W
E
S
0
325
650
Km

Country	MIKAS springs	Coordinates / Nearby City	Spring discharge (Q in l/s,min/av/max) / tapped or not	Criteria* in order / Main justification */ H-historic, A-aesthetic, S-scientific, E-Economic, Ec-ecologic	Data collected by
South Africa 	1. **Upper Fountain and Lower Fountain**	-25.784723° 28.194686° Z = 1260 m asl Pretoria	- / 278 / - Tapped, used for water supply of the capital city of Pretoria	***E, H, Ec, S, A*** *The two springs are situated in the Groenkloof Nature reserve. The Upper and Lower fountain are issuing from dolomites of Transvaal Supergroup (Proterozoic). These springs are separated from each other by a syenite dyke. Pretoria was founded by General MW Pretorius due to the large unlimited water availability from these two springs. The springs were purchased by the municipality in 1863. In 1889 a collection chamber was built to collect the water from both springs while water diverted via an underground canal to the mid-city Church Square (~4.8 km). The water in the collection chamber of Lower Fountain has remained constant since its initial tapping. Water is slightly hard and mineralized, but no any treatment is needed. The volume of water used by the city reduces slightly the ecological flow required for associated wetland and unique biosphere of the Fountains Valley and Groenkloof Nature Reserve.*	Matthys Dippenaar
	2. **Kuruman eye (Die Oog)**	-27.463564° 23.436288° Z = 1323 m asl Kuruman, Northern Cape Province	- / 230 / - Tapped and used for water supply of Kuruman city	***E, H, Ec, S*** *The spring is issuing from Transval Supergroup dolomite (Proterozoic). The dolomite outcrops at spring site shows remarkable "elephant skin" weathering. The spring was discovered in 1801 during an expedition. An Afrikaans rock commemoration stone was revealed in 1974, and declared as a natural monument in 1992. The stream from this spring houses goldfish, carp, barmen, and some endangered species. Despite located in the middle of city this is a recreational area and site is well preserved.*	Matthys Dippenaar

MIKAS – Upper and Lower Fountain



The locality and local geology of the Lower Fountain in Pretoria



Collection Chamber and entrance door with outflow of Lower Fountain (Photo by Matthys Dippenaar)

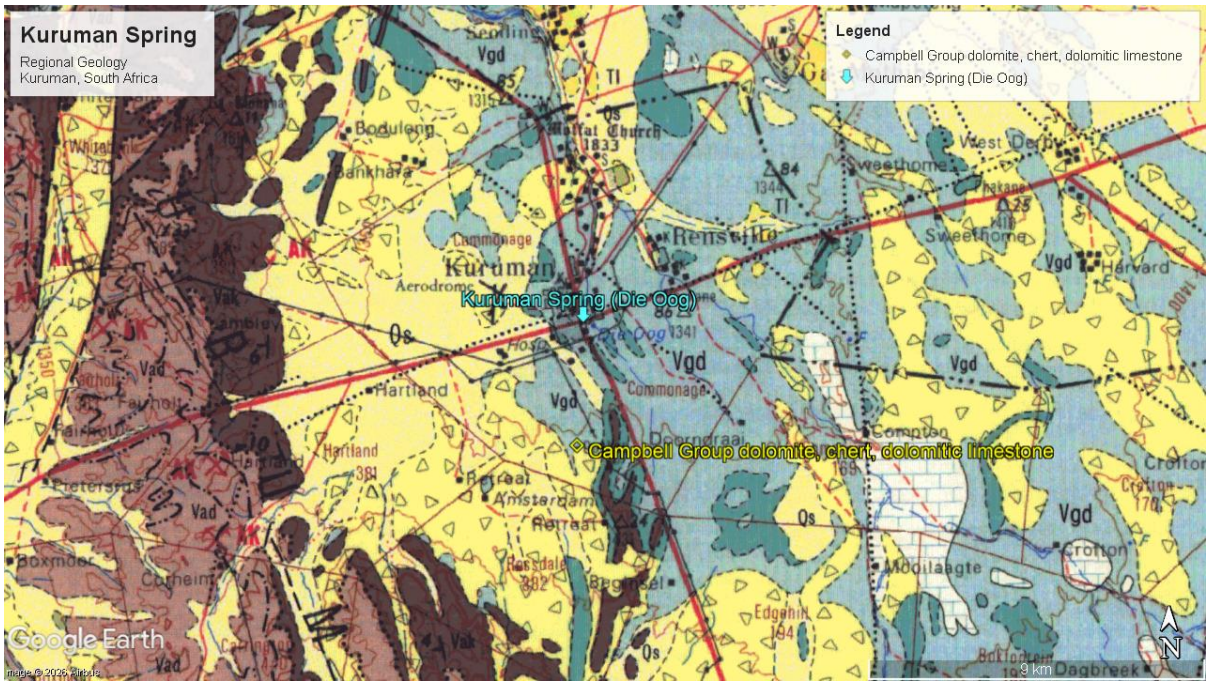


The Upper and Lower Fontain are supplemented by two other springs covering other parts of Pretoria, namely Grootfontein (Afrikaans for Big Fountain) and Sterkfontein (Afrikaans for Strong Fountain). This is interior of Grootfontein intake collection chamber



Pump House (originally coal fired) pumping Lower and Upper Fountain Water with the Apies River outflow from the Spring (courtesy of Gerrit Burger)

MIKAS – Kuruman eye



Location map and geology surrounding Kuruman eye



Kuruman Eye - view of spring (photo by Matthys Dippenaar)



The bridge over Kuruman eye (photo by Matthys Dippenaar)





Kuruman Eye Dolomite Outcrop (left) and details of "elephant skin" weathering (photos by Matthys Dippenaar)