



AFRIFORUM BRANCH PROJECT REPORT

FOR THE BLUE AND GREEN DROP PROJECT FOR 2017

2017



by

Marcus Pawson & Chris Boshoff

This document forms part of AfriForum's blue and green drop campaign, a project of AfriForum's #CleanWater initiative and launched by

AfriForum Community Affairs

July 2017

A WORD OF THANKS

Thank you to all AfriForum's personnel and branches across South Africa who made this project possible.

Thanks to each member of AfriForum for your participation in this national project and for sharing our vision of sustainable development and responsible water management in South Africa.

Thanks to every municipality who takes the lead in South Africa, do impeccable work by ensuring that water is managed in a responsible manner and who therefore adhere to applicable legislation and regulations for the managing of water. These municipalities should be rewarded for protecting their communities and the environment against pollution and danger.

CONTENT

PAGE

Introduction	5
The facts	6
The project	7
Results	8
Blue drop	8
Green drop	17
Action plan	25
Rubicon Micro	25
Conclusions	27

GRAPHS

PAGE

Graph 1: Blue drop (drinking water) results 2013–2017	9
Graph 2: Green drop (sewage) results 2013–2017	17
Graph 3: Number of sewage treatment plants that do not adhere to sewage standards	17
Graph 4: Green drop (sewage) results per province	28

INTRODUCTION

South Africa is classified as a water-scarce country and solutions must therefore be found to face the extraordinary challenges to sustainably managing fresh water resources. The country currently faces increasing pressure in terms of the supply of and demand for clean drinking water. Growing pressure on existing drinking water and sewage infrastructure contribute to the country's impending drinking water and sewage crisis.

AfriForum enables communities to protect themselves against poor service delivery by Government, especially in terms of water provision. Various AfriForum branches have already erected emergency water points where clean drinking water is made available from private water resources, or repaired municipal boreholes in times of crisis to improve water provision. Costs that the community had to incur in providing water themselves in cases where insufficient or no water provision services existed are claimed back from the relevant municipality.

AfriForum is still committed to research about and striving for independent solutions and the privatisation of water systems under the supervision of Government as the protector of the country's water resources.

The civil rights organisation launched the #CleanWater initiative already in February 2013. The project strives to positively change the management of drinking water and treated sewage across South Africa, as well as to hold relevant officers accountable.

According to the World Health Organization almost 4 million people – of which the majority are younger than five years old – annually die of diseases that can be directly attributed to polluted water. This is more than 330 000 people a month or 10 000 people a day; 400 people an hour or seven people a minute... or one person every eight seconds.



AfriForum tests water at a school in Pretoria.

THE FACTS

Article 24 of the South African Constitution provides for an environment that is not detrimental to the health or wellness of people. It attempts to preserve the environment for coming generations and to prevent pollution and ecological decline. It is also aimed at promoting environmental conservation and ecologically sustainable development.

Article 27(1)(b) provides every person with the right to sufficient water and for this right to progressively improve.

In terms of Article 156 and Schedule 4 of Section B of the Constitution, municipalities hold the executive authority and administrative rights over water and sanitation services. This right is limited to drinking water distribution systems and local waste and sewage outflow systems. The Department of Water and Sanitation (DWS) is responsible for managing and developing water provision and resources.

The DWS published the last official Blue and Green Drop Report in 2012. AfriForum therefore started to act as civil

rights watchdog by ensuring the quality of drinking water and treated sewage in South Africa.



Sewage works at Randfontein that are no longer functional.

THE PROJECT

AfriForum acknowledges the importance of water quality for human consumption and the role that it plays in the ecosystem. It therefore launched the #CleanWater initiative in 2013 to test drinking water and sewage annually.

AfriForum succeeded this year in enabling more than 122 branches across South Africa to test their municipal drinking water and sewage as part of 2017's blue and green drop project. Drinking water (blue drop) and treated sewage (green drop) were tested in May and June this year to allow communities to find out whether there are any health risks and if drinking water and sewage adhere to legal standards. They were accompanied by AfriForum's provincial coordinators and various other stake-holders, including municipal officers, the media and service providers. Participants were encouraged to take photos as proof and to enhance the study's credibility.

AfriForum developed water test kits in cooperation with the University of the Free State that test for the following pathogens and minerals in an easy and efficient manner:

- Escherichia coli (E. coli) ¹
- Faecal coliforms ²
- Nitrates
- Phosphates



AfriForum's kit for testing water quality.

¹ According to SANS: 241 National Standards there may be no E.coli present in drinking water.

² South African Water Quality Guidelines Volume 1: Domestic Water Usage, Second Edition, 1996.

Results

BLUE DROP

AfriForum tested the quality of drinking water in May and June 2017 in 156 towns. Three municipalities did not adhere to quality standards for drinking water, compared to seven out of 132 drinking water systems in 2016. The watchdog role that AfriForum performs by applying pressure helped to ensure that the drinking water of these seven municipalities passed the test this year. It is clear that pressure from AfriForum on municipalities annually paid off.

The report also contains the results of drinking water quality tests done from 2013 to 2016 to provide a comparison with 2017's results.

The blue drop results indicate that three municipalities did not adhere to minimum water quality standards, namely:

1. *Ellisras* – Lephalale Local Municipality (E. coli)¹
2. *Heilbron* – Ngwathe Local Municipality (high concentrations of faecal coliforms)
3. *Villiers* – Mafube Local Municipality (high concentrations of faecal coliforms)

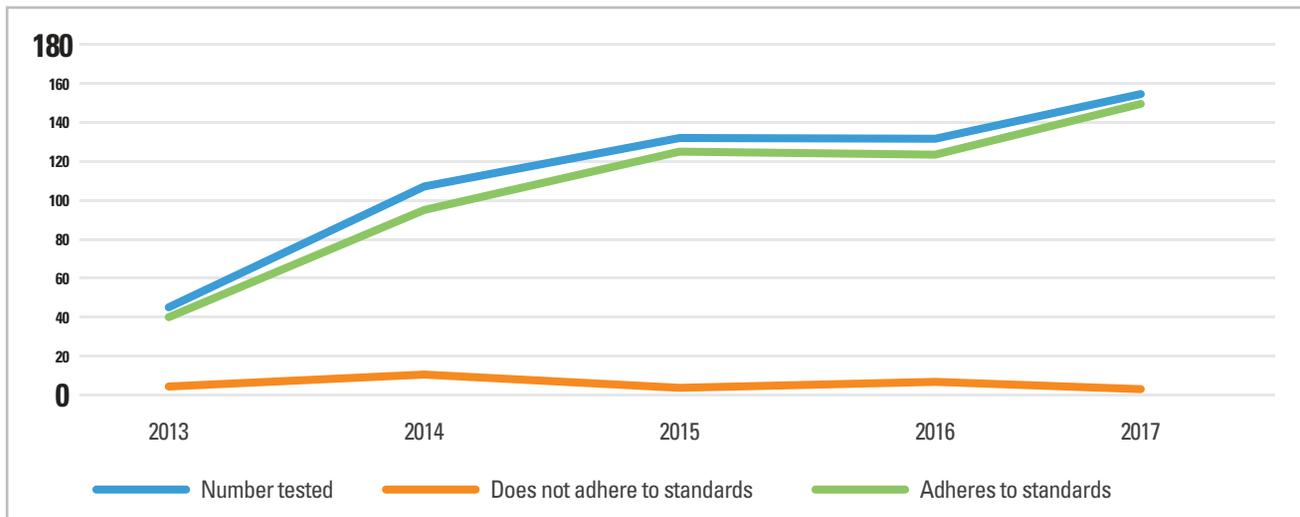
AfriForum warned the relevant communities immediately not to drink the water. Municipalities were placed on terms to immediately address the poor water quality. Follow-up test which were performed at least seven days after the initial tests indicated that the water was now clean.



One of the tests that AfriForum performs makes use of test strips to test the phosphate levels in water.

The graph on the next page indicate the blue drop results from 2013 to 2017.

¹ According to SANS: 241 National Standards there may be no E.coli present in drinking water.



Graph 1: Blue drop (drinking water) results 2013–2017

The table below indicates the areas where samples were taken, as well as the results since the project’s inception in 2013.

GAUTENG NORTH						
Branch	Municipality	AfriForum blue drop 2013	AfriForum blue drop 2014	AfriForum blue drop 2015	AfriForum blue drop 2016	AfriForum blue drop 2017
Apies River	Tshwane Metro	Clean	Clean	Clean	Clean	Clean
Bronkhorstspuit	Tshwane Metro	-	-	-	-	Clean
Centurion	Tshwane Metro	-	Clean	Clean	Clean	Clean
Cullinan	Tshwane Metro	-	Clean	Clean	Clean	Clean
Kameeldrift	Tshwane Metro	-	-	-	-	Clean
Meyerspark	Tshwane Metro	-	Clean	Clean	Clean	Clean
Moot	Tshwane Metro	-	-	-	Clean	Clean
Moot West	Tshwane Metro	-	-	-	Clean	Clean
Pretoria East	Tshwane Metro	-	-	-	Clean	Clean
Pretoria West	Tshwane Metro	-	-	-	High phenol and chromium concentrations	Clean
Rayton	Tshwane Metro	-	Clean	Clean	Clean	Clean
Zambezi	Tshwane Metro	-	Clean	Clean	Clean	Clean
Other:						
Tuks Campus	University van Pretoria	-	-	-	Clean	Clean

GAUTENG SOUTH

Branch	Municipality	AfriForum blue drop 2013	AfriForum blue drop 2014	AfriForum blue drop 2015	AfriForum blue drop 2016	AfriForum blue drop 2017
Alberton	Ekurhuleni Metro	-	-	-	Clean	Clean
Bedfordview	Ekurhuleni Metro	-	-	-	-	Clean
Benoni	Ekurhuleni Metro	-	-	-	Clean	Clean
Boksburg	Ekurhuleni Metro	-	-	-	-	Clean
Brakpan	Ekurhuleni Metro	-	-	-	-	Clean
Edenvale	Ekurhuleni Metro	-	-	-	-	Clean
Heidelberg	Lesedi LM	-	Clean	Clean	Clean	Clean
Kempton Park	Ekurhuleni Metro	-	Clean	Clean	Clean	Clean
Lochvaal	Emfuleni LM	-	Clean	Clean	Clean	-
Midvaal	Midvaal LM	-	-	-	-	Clean
Nigel	Ekurhuleni Metro	-	Clean	Clean	Clean	Clean
Randburg	Johannesburg Metro	-	Clean	Clean	Clean	Clean
Randfontein	Rand West LM	-	-	-	-	Clean
Springs	Ekurhuleni Metro	-	Clean	Clean	Clean	Clean
Vanderbijlpark	Emfuleni LM	-	Clean	Clean	Clean	Clean
Vanderbijlpark West	Emfuleni LM	-	Clean	Clean	Clean	Clean
Vereeniging	Emfuleni LM	-	Clean	Clean	Clean	Clean
Westonaria	Rand West LM	-	Clean	Clean	Clean	Clean

WESTERN CAPE

Branch	Municipality	AfriForum blue drop 2013	AfriForum blue drop 2014	AfriForum blue drop 2015	AfriForum blue drop 2016	AfriForum blue drop 2017
Bitterfontein	Matzikama LM	-	-	-	Clean	-
Cape Town	Cape Town Metro	-	-	Clean	Clean	Clean
Citrusdal	Cederberg LM	-	Clean	Clean	Clean	-
George	George LM	-	Clean	Clean	Clean	Clean
Hermanus	Overstrand LM	-	Clean	Clean	Clean	-
Hessequa (Stillbay)	Hessequa LM	-	-	-	Clean	Clean
Klawer	Matzikama LM	-	-	-	Clean	Clean
Kleinmond	Overstrand LM	-	Clean	Clean	Clean	Clean

LM – Local Municipality

Ladismith	Kannaland LM	-	-	Clean	Clean	-
Lutzville	Matzikama LM	-	-	Clean	Clean	Clean
Mossel Bay	Mossel Bay LM	Clean	Clean	Clean	Clean	Clean
Nuwerus	Matzikama LM	-	-	-	Clean	-
Oudtshoorn	Oudtshoorn LM	-	-	-	-	Clean
Overstrand	Overstrand LM	-	-	-	-	Clean
Robertson	Langeberg LM	-	-	-	Clean	-
Sandbaai	Overstrand LM	-	-	Clean	Clean	-
Stellenbosch	Stellenbosch LM	-	-	-	-	Clean
Vanrhynsdorp	Matzikama LM	-	-	Clean	Clean	Clean
Vredendal	Matzikama LM	Clean	Clean	Clean	Clean	Clean
Vredendal South	Matzikama LM	-	-	Clean	Clean	Clean
Wellington	Drakenstein LM	-	-	-	-	Clean
Other:						
Stellenbosch Campus (Maties)	Stellenbosch University	-	-	-	Clean	Clean

NORTHERN CAPE

Branch	Municipality	AfriForum blue drop 2013	AfriForum blue drop 2014	AfriForum blue drop 2015	AfriForum blue drop 2016	AfriForum blue drop 2017
Buffels River	Nama Khoi LM	-	-	-	Clean	-
Kathu	Gamagara LM	-	Clean	Clean	Clean	Clean
Kamiesberg	Kamieskroon LM	-	Clean	Clean	Clean	Clean
Kimberley	Sol Plaatje LM	Clean	Clean	Clean	Clean	-
Kuruman	Ga-Segonyana LM	Clean	Clean	Clean	Clean	Clean
Nababeep	Nama Khoi LM	-	-	-	Clean	-
Orania	Orania Town Council	-	-	-	-	Clean
Postmasburg	Tsantsabane LM	-	-	-	Clean	Clean
Springbok	Nama Khoi LM	-	Clean	Clean	Clean	Clean
Upington	Khara Hais LM	-	-	-	-	Clean
Vaalharts	Phokwane LM	-	Clean	Clean	Clean	-

LM – Local Municipality

EASTERN CAPE

Branch	Municipality	AfriForum blue drop 2013	AfriForum blue drop 2014	AfriForum blue drop 2015	AfriForum blue drop 2016	AfriForum blue drop 2017
Barkly East	Senqu LM	-	Clean	Clean	Clean	Clean
Cradock	Inxuba Yethemba LM	-	-	Clean	Clean	Clean
Elliot	Sakhisizwe LM	1 E. coli	Clean	Clean	Clean	Clean
Jeffreys Bay	Kouga LM	Clean	Clean	Clean	Clean	Clean
Molteno	Inkwanca LM	-	-	E. coli	Clean	Clean
Port Elizabeth	Nelson Mandela Metro	Clean	Clean	Clean	Clean	Clean
Tarkastad	Tsolwana LM	-	-	E. coli	Clean	Clean

FREE STATE

Branch	Municipality	AfriForum blue drop 2013	AfriForum blue drop 2014	AfriForum blue drop 2015	AfriForum blue drop 2016	AfriForum blue drop 2017
Allanridge	Matjhabeng LM	-	-	-	Clean	-
Bethlehem	Dihlabeng LM	-	-	-	-	Clean
Bloemfontein	Mangaung Metro	-	Clean	Clean	Clean	Clean
Bothaville	Nala LM	Clean	Clean	Clean	Clean	Clean
Brandfort	Masilonyana LM	-	-	Clean	Clean	Clean
Bultfontein	Tswelopele LM	-	-	-	-	Clean
Dealesville	Tokologo LM	-	Clean	Clean	Clean	Clean
Fichardt Park	Mangaung Metro	-	-	Clean	Clean	Clean
Frankfort	Mafube LM	Clean	Clean	Clean	Clean	Clean
Harrismith	Maluti-A-Phofung LM	-	-	Clean	Clean	Clean
Heilbron	Ngwathe LM	-	-	Clean	Clean	5 faecal coliforms
Hennenman	Matjhabeng LM	-	-	-	Clean	Clean
Hertzogville	Tokologo LM	14 nitrates	4 E. coli & 14 nitrates	Clean	Clean	Clean
Hospital Park	Mangaung Metro	-	-	-	-	Clean
Koppies	Ngwathe LM	-	-	-	-	Clean
Kroonstad	Moqhaka LM	-	-	-	-	Clean

LM – Local Municipality

Langenhoven Park	Mangaung Metro	-	-	Clean	Clean	Clean
Odendaalsrus	Matjhabeng LM	-	-	-	-	Clean
Parys	Ngwathe LM	-	Clean	Clean	Clean	Clean
Petrus Steyn	Nketoana LM	-	Clean	Clean	Clean	Clean
Reitz	Nketoana LM	-	-	Clean	Clean	Clean
Sasolburg	Metsimaholo LM	-	Clean	Clean	Clean	Clean
Theunissen	Masilonyana LM	-	-	Clean	Clean	Clean
Villiers	Mafube LM	-	-	-	-	25 faecal coliforms
Viljoenskroon	Moqhaka LM	-	-	-	Clean	-
Vrede	Phumelela LM	-	-	-	-	Clean
Vredefort	Ngwathe LM	-	-	-	-	Clean
Welkom	Matjhabeng LM	-	-	Clean	Clean	-
Wesselsbron	Nala LM	-	-	-	Clean	-
Wilgehof	Mangaung Metro	-	-	Clean	Clean	Clean
Winburg	Masilonyana LM	-	-	Clean	Clean	Clean
Other:						
Bloemfontein Campus (Kovsies)	University of the Free State	-	-	-	Clean	Clean

MPUMALANGA

Branch	Municipality	AfriForum blue drop 2013	AfriForum blue drop 2014	AfriForum blue drop 2015	AfriForum blue drop 2016	AfriForum blue drop 2017
Balfour	Dipaleseng LM	-	-	-	-	Clean
Belfast	Emakhazeni LM	Clean	Clean	Clean	Faecal coliforms and E. coli	Clean
Bethal	Govan Mbeki LM	-	-	Clean	Clean	Clean
Charl Cilliers	Govan Mbeki LM	-	-	-	-	Clean
Delmas	Victor Khanye LM	-	-	Clean	Clean	Clean
Dullstroom	Emakhazeni LM	-	-	Clean	Clean	Clean
Ermelo	Msukaligwa LM	Clean	Clean	Clean	Clean	Clean
Greylingstad	Dipaleseng LM	-	-	-	-	Clean
Kriel	Emalahleni LM	-	-	-	-	Clean

LM – Local Municipality

Lydenburg	Thaba Chweu LM	Clean	Clean	Clean	High concentration of faecal coliforms	Clean
Machadodorp	Emakhazeni LM	5 cadmium	Clean	Clean	Clean	Clean
Middelburg	Steve Tshwete LM	Clean	Clean	Clean	Clean	Clean
Morgenzon	Lekwa LM	-	-	-	-	Clean
Piet Retief	Mkhondo LM	-	Clean	Clean	Faecal coliforms and E. coli	Clean
Secunda	Govan Mbeki	-	-	-	Clean	Clean
Standerton	Lekwa IM	-	Colour exceeds limitations, but water not unhealthy	Clean	Clean	Clean
Witbank	Masilonyana LM	-	11 total organic carbon	Clean	Faecal coliforms and E. coli	Clean
White River	Mbombela LM	-	-	-	Clean	Clean
Other:						
Letaba Gate KNP	Kruger National Park	-	-	-	Clean	Clean
Olifants Gate KNP	Kruger National Park	-	-	-	Clean	Clean

NORTH WEST

Branch	Municipality	AfriForum blue drop 2013	AfriForum blue drop 2014	AfriForum blue drop 2015	AfriForum blue drop 2016	AfriForum blue drop 2017
Bloemhof	Lekwa-Teemane LM	-	68 faecal coliforms	Clean	Clean	Clean
Brits	Madibeng LM	-	-	-	Clean	Clean
Christiana	Lekwa-Teemane LM	-	Clean	Clean	Clean	Clean
Coligny	Ditsobotla LM	-	4 E. coli	E. coli	Clean	Clean
Delareyville	Tswaing LM	-	-	-	Clean	Clean
Hartbeesfontein	City Matlosana LM	-	-	-	Clean	Clean
Hartbeespoort	Madibeng LM	Clean	Clean	Clean	Clean	Clean
Jouberton	City Matlosana LM	-	-	-	Clean	-
Klerksdorp	City Matlosana LM	-	Clean	Clean	Clean	Clean
Koster	Kgetleng Rivier LM	-	-	-	-	Clean
Leeudoringstad	Maquassi Hills LM	-	-	-	Clean	Clean
Lichtenburg	Ditsobotla LM	-	Clean	Clean	Clean	Clean
Makwassie	Maquassi Hills LM	-	-	-	Clean	Clean

LM – Local Municipality

Mooinooi	Madibeng LM	-	-	-	Clean	Clean
Orkney	City Matlosana LM	-	-	-	Clean	Clean
Ottosdal	Tswaing LM	-	-	-	Clean	Clean
Potchefstroom	Tlokwe LM	-	Clean	Clean	Clean	Clean
Rustenburg	Rustenburg LM	-	Clean	Clean	Clean	Clean
Sannieshof	Tswaing LM	-	-	-	-	Clean
Schweizer-Reneke	Mamusa LM	-	-	Clean	Nitrates above per-missible levels	Clean
Stella	Naledi LM	-	140 E. coli & 18 ni-trates	50 nitrates	Nitrates above per-missible levels	Clean
Stilfontein	City Matlosana LM	-	-	-	Clean	Clean
Swartruggens	Kgetlengrivier LM	-	-	-	-	Clean
Ventersdorp	Ventersdorp LM	-	Clean	Clean	Clean	Clean
Vryburg	Naledi LM	-	4 E. coli	Clean	Clean	Clean
Wolmaransstad	Maquassi Hills LM	-	-	Clean	Clean	Clean
Zeerust	Ramotshere Moiloa LM	-	-	-	Clean	Clean
Other:						
Buffelspoort	Madibeng LM	-	-	-	-	Clean
Potchefstroom Campus	North West University	-	-	-	Clean	Clean

LIMPOPO						
Branch	Municipality	AfriForum blue drop 2013	AfriForum blue drop 2014	AfriForum blue drop 2015	AfriForum blue drop 2016	AfriForum blue drop 2017
Ellisras	Lephalale LM	-	-	-	Clean	8 units E. coli per 100 ml
Groblersdal	Elias Motsoaledi LM	-	-	-	Clean	Clean
Haenertsburg	Greater Tzaneen LM	-	-	-	-	Clean
Leeupoort	Thabazimbi LM	-	-	-	Clean	-
Louis Trichardt	Makhado LM	-	-	-	Clean	Clean
Marble Hall	Sekhukhune DM	Clean	Clean	Clean	Clean	Clean

LM – Local Municipality

Na-boomspruit	Mookgophong LM	Clean	Clean	Clean	Clean	Clean
Nylstroom	Modimolle LM	-	-	-	Clean	Clean
Phalaborwa	Ba-Phalaborwa LM	-	Clean	Clean	Clean	Clean
Pietersburg	Polokwane LM	Clean	4 units E. coli per 100 ml	Clean	Clean	Clean
Tzaneen	Greater Tzaneen LM	Clean	Clean	Clean	Clean	Clean
Vaalwater	Modimolle LM	-	-	-	Clean	Clean
Warm Baths	Bela-Bela LM	Clean	Clean	Clean	Clean	Clean

KWAZULU-NATAL

Branch	Municipality	AfriForum blue drop 2013	AfriForum blue drop 2014	AfriForum blue drop 2015	AfriForum blue drop 2016	AfriForum blue drop 2017
Hluhluwe	The Big 5 False Bay LM	-	-	-	-	
Ixopo	Ubuhlebezwe LM	-	-	-	-	Clean
Margate	Hibiskuskus LM	Clean	Clean	Clean	Clean	Clean
Newcastle	Newcastle LM	-	-	Clean	Clean	Clean
Paulpietersburg	eDumbe LM	-	Clean	Clean	Water in tanks is clean	Clean
Pongola	uPongola LM	-	Clean	Clean	Clean	Clean
Utrecht	eMadlangeni LM	-	Clean	Clean	Clean	Clean
Underburg	Kwa Sani LM	-	-	-	-	Clean
Vryheid	Abaqulusi LM	-	Clean	E. coli	Clean	Clean

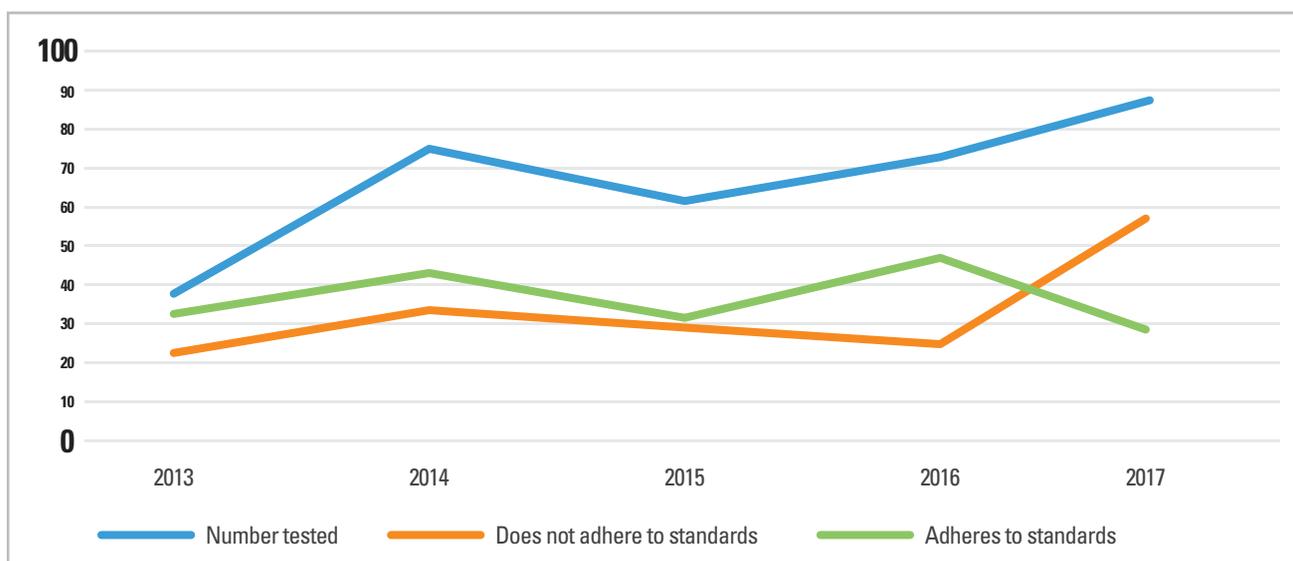
LM – Local Municipality

GREEN DROP

AfriForum tested the sewage systems of 88 towns in May and June 2017, of which 59 did not adhere to set quality standards, compared to 26 out of 72 sewage systems in 2016. It is therefore clear that the management of sewage treatment plants (STPs) is drastically deteriorating in South Africa.

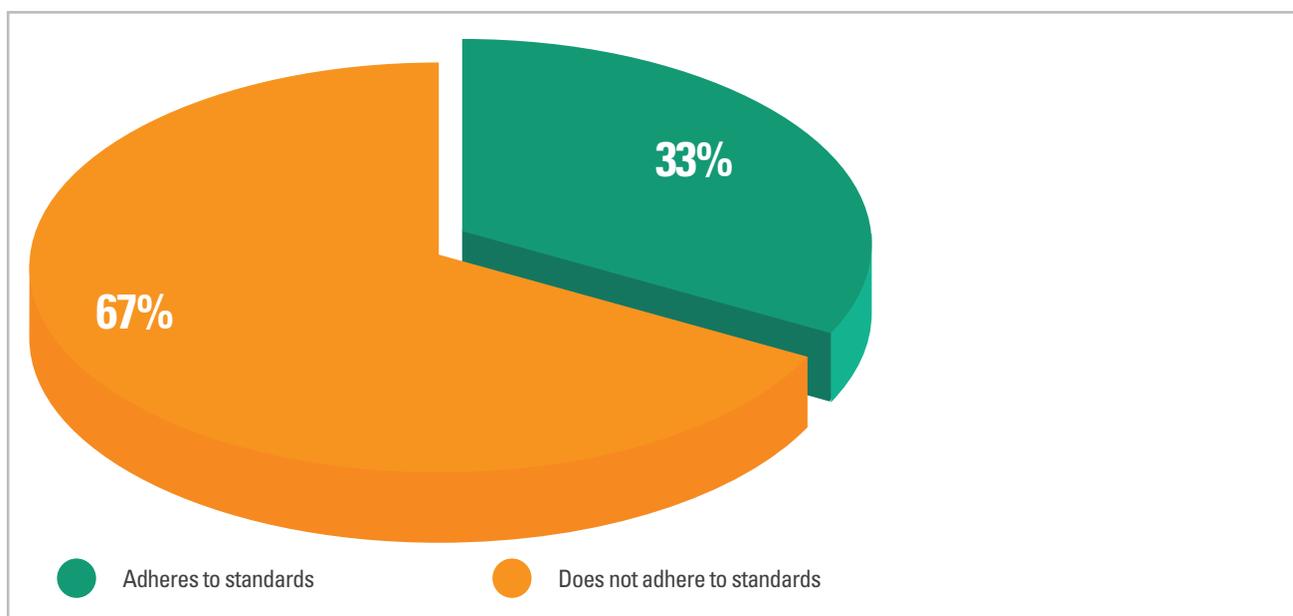
The results of towns' sewage that was tested in 2013-2016 are also contained in this report to provide a comparison with 2017's results.

The graph below shows the green drop results from 2013 until 2017.

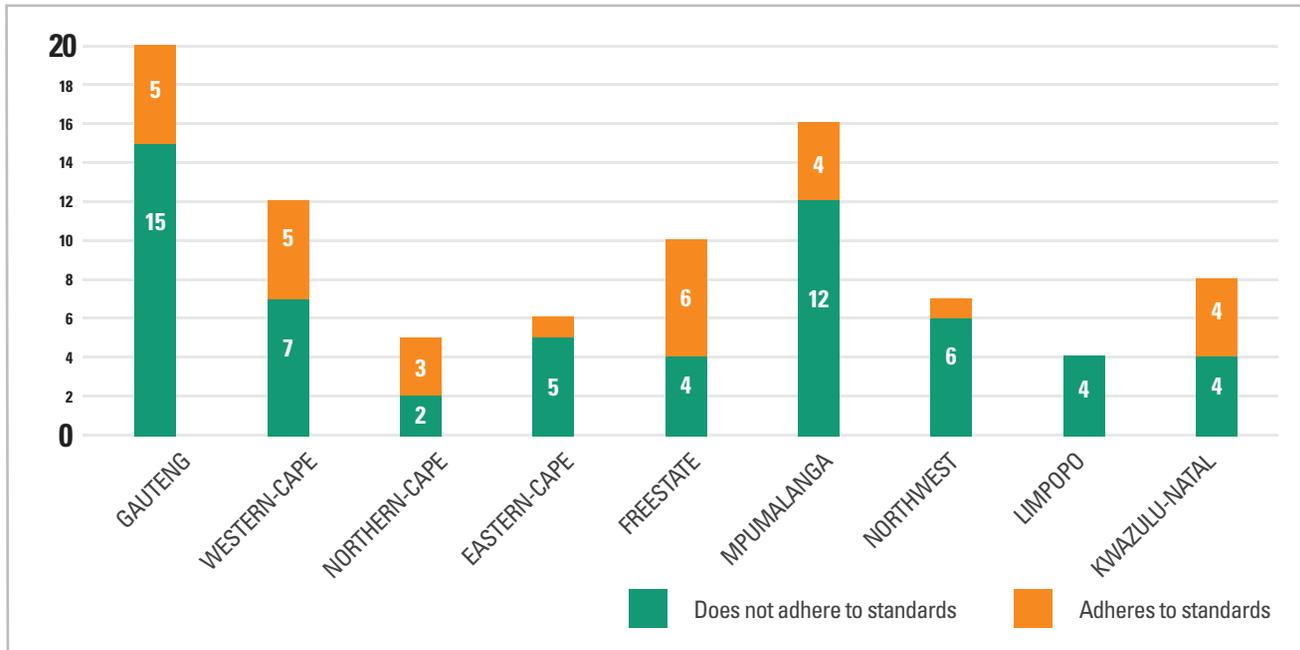


Green drop (sewage) results 2013 – 2017

The graph below indicates the percentage of sewage treatment plants that passed in 2017.



Graph 3: Number of sewage treatment plants that do not adhere to sewage standards



Graph 4: Green drop (sewage) results per province



The AfriForum branch in Mossel Bay tests sewage (green drop) at a local sewage plant.

There are 59 STPs that currently do not adhere to South Africa’s national water quality standards. These standards determine that there may not be more than 1 000 units E. coli per 100 ml water in treated sewage. These 59 STPs are indicated in red in the table.

The next table indicate the area where the samples were taken, as well as the results for each STP (the figures indicate the units E. coli per 100 ml water):

GAUTENG NORTH						
Branch	Municipality	AfriForum green drop 2013	AfriForum green drop 2014	AfriForum green drop 2015	AfriForum green drop 2016	AfriForum green drop 2017
Apies River	Tshwane Metro	77 000	85 000	Clean	2 000	15 000
Bronkhorstspuit	Tshwane Metro	-	-	-	-	2 000
Centurion	Tshwane Metro	Clean	Clean	10 000	100 000	5 500
Cullinan	Tshwane Metro	-	Clean	Clean	Clean	2 400
Meyerspark	Tshwane Metro	-	2 400	11 000	10 000	Clean
Moot	Tshwane Metro	-	-	-	Clean	14 000
Pretoria East	Tshwane Metro	-	-	-	High concentrations of faecal coliforms	Clean
Pretoria West	Tshwane Metro	-	-	-	12 000	15 000
Rayton	Tshwane Metro	-	-	Clean	Clean	2 400
Moot West	Tshwane Metro	-	-	-	-	7 000
Zambesi	Tshwane Metro	-	-	-	2 000	8 000

GAUTENG SOUTH						
Branch	Municipality	AfriForum green drop 2013	AfriForum green drop 2014	AfriForum green drop 2015	AfriForum green drop 2016	AfriForum green drop 2017
Alberton	Ekurhuleni Metro	-	-	-	3 900	Clean
Brakpan	Ekurhuleni Metro	-	-	-	-	>2 500
Heidelberg	Lesedi LM	-	Clean	Clean	-	>3 000
Kempton Park	Ekurhuleni Metro	-	Clean	Clean	-	-
Nigel	Ekurhuleni Metro	-	Clean	Clean	High concentrations of faecal coliforms	>3 000
Randfontein	Rand Wes LM	-	-	-	-	>4 000

LM – Local Municipality

Springs	Ekurhuleni Metro	-	Clean	Clean	2 000	>2 000
Vanderbijlpark	Emfuleni LM	-	Clean	Clean	Clean	>1 000
Vereeniging	Emfuleni LM	-	Clean	Clean	Clean	Clean
Westonaria	Rand West LM	-	-	Clean	2 500	Clean

WESTERN CAPE

Branch	Municipality	AfriForum green drop 2013	AfriForum green drop 2014	AfriForum green drop 2015	AfriForum green drop 2016	AfriForum green drop 2017
George	George LM	-	-	-	Clean	Clean
Hermanus	Overstrand LM	-	3 600	Clean	Clean	-
Cape Town North	Cape Town Metro	-	-	-	Clean	Clean
Cape Town North (Swart River)	Cape Town Metro	-	-	-	-	50 000
Klawer	Matzikama LM	-	-	2 000	Clean	>1 500
Kleinmond	Overstrand LM	-	Clean	Clean	Clean	Clean
Ladismith	Kannaland LM	-	-	-	Clean	-
Lutzville	Matzikama LM	-	-	1 500	Clean	>2 000
Mossel Bay	Mossel Bay LM	-	-	-	Clean	>2 400
Nuwerus	Matzikama LM	-	-	-	Clean	-
Oudtshoorn	Oudtshoorn LM	-	Clean	100 000	-	Clean
Overstrand	Overstrand LM	--	-	-	-	>3 000
Robertson	Langeberg LM	-	-	-	Clean	-
Vanrhynsdorp	Matzikama LM	-	-	1 500	Clean	>1 500
Vredendal	Matzikama LM	Clean	Clean	8 000	Clean	Clean
Vredendal South	Matzikama LM	-	-	2 000	Clean	>1 500

NORTHERN CAPE

Branch	Municipality	AfriForum green drop 2013	AfriForum green drop 2014	AfriForum green drop 2015	AfriForum green drop 2016	AfriForum green drop 2017
Daniëlskuil	Kgatelopele LM	-	Clean	Clean	-	-
Kathu	Gamagara LM	-	17 000	Clean	-	Clean
Kimberley	Sol Plaatje LM	1 600	Rejected	1 500	Clean	-

LM – Local Municipality

Kamiesberg	Kamiesberg LM	-	-	-	Clean	-
Kuruman	Ga-Segonyana LM	-	Rejected	Clean	-	Clean
Nababeep	Nama Khoi LM	-	-	-	Clean	-
Postmasburg	Tsantsabane LM	-	-	-	-	>10 000
Springbok	Nama Khoi LM	-	1 250	Clean	Clean	>1 500
Upington	Khara Hais LM	-	-	-	-	Clean
Vaalharts	Phokwane LM	-	Clean	Clean	Clean	-
Williston	Karoo Hoogland LM	-	Clean	Clean	-	-

EASTERN CAPE						
Branch	Municipality	AfriForum green drop 2013	AfriForum green drop 2014	AfriForum green drop 2015	AfriForum green drop 2016	AfriForum green drop 2017
Barkly East	Senqu LM	-	-	2 000	Clean	Clean
Cradock	Inxuba Yethemba LM	-	-	-	2 000	>1 000
Elliot	Sakhisizwe LM	36 000	Rejected	4 000	-	-
Jeffreys Bay	Kouga LM	34 000	-	Clean	Clean	High phosphates >30 000
Langkloof (Joubertina)	Kou-Kamma LM	Clean	11 500	>2 400	-	-
Molteno	Inkwanca LM	-	-	-	Clean	>30 000
Port Elizabeth	Nelson Mandela Metro	Clean	Clean	Clean	-	>30 000
Tarkastad	Tsolwana LM	-	-	-	-	High phosphate count

LM – Local Municipality

FREE STATE						
Branch	Municipality	AfriForum green drop 2013	AfriForum green drop 2014	AfriForum green drop 2015	AfriForum green drop 2016	AfriForum green drop 2017
Bethlehem	Dihlabeng LM	-	-	-	-	Clean
Bloemfontein	Mangaung Metro	-	-	-	Clean	Clean
Frankfort	Mafube LM	-	-	-	-	>2 500
Harrismith	Maluti-A-Phofung LM	-	-	-	-	Clean
Kroonstad	Moqhaka LM	Clean	-	1 000 000	-	-
Petrus Steyn	Nketoana LM	-	14 000	1 000 000	-	>3 000
Reitz	Nketoana LM	-	-	2 500	-	>2 500
Sasolburg	Metsimaholo LM	-	-	-	-	Clean
Theunissen	Masilonyana LM	-	-	25 000	-	-
Villiers	Mafube LM	-	-	-	-	>3 000
Vrede	Phumelela LM	-	-	-	-	Clean
Winburg	Masilonyana LM	-	Clean	10 000	Clean	Clean

MPUMALANGA						
Branch	Municipality	AfriForum green drop 2013	AfriForum green drop 2014	AfriForum green drop 2015	AfriForum green drop 2016	AfriForum green drop 2017
Balfour	Dipaleseng LM	-	-	-	-	>2 500
Belfast	Emakhazeni LM	19 000	690 000	5 200	>2 400	>5 000
Bethal	Govan Mbeki LM	-	-	450 000	100 000	50 000
Charl Cilliers	Govan Mbeki LM	-	-	-	-	Clean
Delmas	Victor Khanye LM	-	-	Clean	1 500	High phosphates
Dullstroom	Emakhazeni LM	-	-	2 000	Clean	-
Ermelo	Msukaligwa LM	Clean	310 000	590 000	-	1 500
Greylingstad	Dipaleseng LM	-	-	-	-	Clean
Kriel	Emalahleni LM	-	-	-	-	>1 500
Lydenburg	Thaba Chweu LM	1 000 000	-	73 400	>1 000	1 500
Machadodorp	Emakhazeni LM	-	-	-	Clean	-
Middelburg	Steve Tshwete LM	-	-	-	Clean	1 500
Morgenon	Lekwa LM	-	-	-	-	>1 500

LM – Local Municipality

Piet Retief	Mkhondo LM	-	-	-	>1 000	>1 000
Secunda	Govan Mbeki LM	-	-	-	2 000	Clean
Standerton	Lekwa LM	-	-	100 000	50 000	30 000
Witbank	Emalahleni LM	-	-	-	4 000	High phosphates
White River	Mbombela LM	-	-	-	Clean	Clean

NORTH WEST						
Branch	Municipality	AfriForum green drop 2013	AfriForum green drop 2014	AfriForum green drop 2015	AfriForum green drop 2016	AfriForum green drop 2017
Bloemhof	Lekwa-Teemane LM	-	-	-	Clean	-
Christiana	Lekwa-Teemane LM	-	-	3 500	Clean	Clean
Delareyville	Tswaing LM	-	-	-	Clean	-
Hartbeespoort	Madibang LM	-	-	-	Clean	>3 000
Klerksdorp	City of Matlosana LM	-	>40 000	>1 000	Clean	High phosphate count
Lichtenburg	Ditsobotla LM	120 000	59 000	>2 000	Clean	-
Moinooi	Madibeng LM	-	-	-	Clean	-
Orkney	City of Matlosana LM	-	-	-	Clean	-
Ottosdal	Tswaing LM	-	-	-	-	High phosphate count
Potchefstroom	Tlokwe LM	Clean	Clean	Clean	-	High phosphate count >2 000
Rustenburg	Rustenburg LM	-	Clean	>1 000	Clean	-
Schweizer- Reneke	Mamusa LM	-	-	-	-	High phosphate count
Stella	Naledi LM	-	>100 000	>1 000	>2 000	-
Stilfontein	City of Matlosana LM	-	-	-	Clean	-
Vryburg	Naledi LM	>10 000	Clean	Clean	Clean	High phosphate count
Wolmaransstad	City of Matlosana LM	-	-	-	>1 000	-
Zeerust	Ramotshere Moiloa LM	-	-	-	Clean	-

LM – Local Municipality

LIMPOPO						
Branch	Municipality	AfriForum green drop 2013	AfriForum green drop 2014	AfriForum green drop 2015	AfriForum green drop 2016	AfriForum green drop 2017
Ellisras	Lephalale LM	-	-	-	-	High phosphate count >15 000
Groblersdal	Elias Motsoaledi LM	-	-	-	>1 000	-
Leeupoort	Thabazimbi LM	-	-	Clean	-	-
Marble Hall	Ephraim Mogale LM	17 000	Clean	Clean	-	-
Naboomspruit	Mookgophong LM	1 000 000	1 000 000	Clean	-	>2 500
Nylstroom	Modimolle LM	-	-	-	>1 000	>1 000
Phalaborwa	Ba-Phalaborwa LM	110 000	1 300	Clean	3 700	4 000
Pietersburg	Polokwane LM	-	110 000	Clean	-	-
Potgietersrus	Mogalakwena LM	1 200	92 000	Clean	-	-
Tzaneen	Groter Tzaneen LM	Clean	-	Clean	Clean	-
Warm Baths	Bela-Bela LM	1 000 000	-	Clean	-	-

KWAZULU-NATAL						
Branch	Municipality	AfriForum green drop 2013	AfriForum green drop 2014	AfriForum green drop 2015	AfriForum green drop 2016	AfriForum green drop 2017
Hluhluwe	The Big 5 False Bay LM	-	-	-	-	Clean
Ixopo	Ubuhlebezwe LM	-	-	-	-	Clean
Margate	Hibiskuskus LM	-	-	-	>1 100	>1 100
Newcastle	Newcastle	-	-	10 000	>2 000	>1 500
Pongola	uPongola LM	-	-	-	>1 200	>4 200
Utrecht	eMadlangeni LM	-	-	-	Clean	Clean
Underburg	Kwa Sani LM	-	-	-	-	Clean
Vryheid	Abaqulusi LM	-	Clean	Clean	-	>2 000

LM – Local Municipality

ACTION PLAN

The 2017 report raises many issues at municipalities across the country that are responsible for water quality.

AfriForum highlighted poor drinking water and sewage issues in 2016 during the municipalities' public participation process for integrated development plans. AfriForum branches also composed action lists which they submitted to municipal managers to address water quality. AfriForum wants to ensure in this manner that municipalities budget sufficiently in the coming financial year to address the needs of the community in terms of drinking water and sewage.

The 2017 report will serve as ground study against which the same infrastructures will be measured in 2018 in all AfriForum branches.

The process of ensuring adherence include the following:

1. A comprehensive performance record or paper trail is established to keep record of the water quality of towns.
2. Non-adherence is addressed in letters that demand a comprehensive action plan from the government responsible. The relevant municipality must indicate how and at which date it will meet all requirements that it does not adhere to.

3. Failure to resolve these issues will result in legal action against municipalities. The possibility exists that the administrative officer may be criminally charged or a private prosecution process be followed.
4. AfriForum is also obliged to assist its members by providing short-term water purification products.
5. This report is also submitted to the Green Scorpions for further investigation of sewage plants that do not adhere to requirements.
6. The 2017 report – which contains the blue and green information for five years – will also be submitted to the Minister to discuss and implement strategies to address these issues.

AfriForum believes that municipalities will work together to resolve these important issues and ensure a safer, healthier environment for everyone in South Africa.

RUBICON MICRO

Rubicon Micro is a water disinfectant that was developed after many years of research as replacement for chlorine and other conventional chemicals to restore polluted water to drinking water quality.



The product comprises a variety of persulphate salts, food-quality amino acids, monosodium glutamate as well as a coagulate/flocculate mixture that is completely safe for human use. Scientific tests by the most renowned

international research institutions confirm the effectiveness of the product in destroying bacteria, viruses, fungi and the most common pathogens that especially cause enteric fever, cholera and E.coli related diseases.

Rubicon Micro's prolonged disinfectant properties ensure that an extended purification process occurs even after the products administration, without leaving behind a taste or smell. The product is highly water-soluble. The coagulate and flocculate mixture ensures that all colloidal solutions, which are normally cloudy of colour, disappear after 45 minutes, leaving behind clear water – this period is of course subject to the level of pollution.

The chemical reactions of many conventional products which are mixed into polluted water create extremely harmful by-products, of which carcinogenic (cancer-causing) substances pose the greatest risk – as respected researchers over

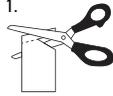
the world have already proven. The two most common carcinogenic agents that are caused especially by chlorinated water are known as trihalomethane and halo acetic acid, while other harmful side-effects may have catastrophic consequences. Rubicon Micro does not form any by-products and breaks down primarily into oxygen and water.

Rubicon Micro was developed as an environmentally-friendly, free-flowing salt with no toxic symptoms, as medic-scientific tests by the Biosafety Research Centre (BSRC) in Japan as a government-supported laboratory confirmed. The product was also approved by the South African Department of Health for human use, with acknowledgement from the Department of Water and Sanitation and tests by the CSIR, Tshwane University of Technology and various foreign research institutions, while the approval by the World Health Organization is awaited. The product also qualifies for the prestigious Design for the Environment Award by the USA Environmental Protection Agency.



The product is currently available in sealed sachets of 3,5 g each, has a shelf life of approximately three years and can purify between 20 and 25 litres of highly-polluted water to ensure aesthetically clean drinking water. The treatment method is simple: one 3,5 g sachet is dissolved in a 20 to 25 litre container of infected water. The solution is then stirred

for 30 seconds, after which the water will be safe to drink after 20 minutes.

Instruksies/Instructions:	
<p>1.  Maak die pakkie oop. Open sachet.</p>	<p>2.  Gooi die poeier in 'n 20 tot 25 liter-waterhouer vol water. Pour contents into a 20–25 litre water container filled with water.</p>
<p>3.  Roer vir 30 sekondes en laat staan vir 20 minute. Stir well for 30 seconds and leave for 20 minutes.</p>	<p>4.  Die water is nou veilig om te drink. The water is now safe to drink.</p>

The fact that the product can be used for various forms of polluted water makes it the most effective way of combatting the prevailing epidemic. A lack of safe drinking water remains the most significant hurdle in combatting the epidemic; in fact, at the Third World Forum on Water in Kyoto, Japan, pathogens from human waste were described as the greatest public health threat. Besides these, socio-economic problems such as poverty, a lack of infrastructure and famine exacerbate the situation.

The failure to provide clean drinking water should be managed conscientiously and consistently. It is also obvious that the ideal water purification product should not only destroy bacteria, pathogens and viruses, but should also not create side-effects that are harmful to humans.

And that is exactly what Rubicon Micro offers: effective anti-bacterial, anti-viral and anti-pathogenic properties without any side-effects.

CONCLUSIONS

Any deterioration of drinking water quality can be fatal. This risk is especially exacerbated by the serious drought that has South Africa in its grip, with little water available for human use.

AfriForum has reason to be worried about the management of the complete water supply chain, but more so in terms of South Africa's treated sewage. The results of the 2017 survey show an improvement in the quality of South African drinking water; however, there is a very significant deterioration in the treatment of sewage treatment. This deterioration is indicative of an invisible crisis that threatens South African communities, just as the current pollution of South Africa's water resources is indicative of a serious crisis on national level that should be addressed by National Government.

AfriForum will position itself across South Africa and use all relevant resources to ensure that water quality issues are addressed immediately and that this valuable resource is protected. Letters to non-compliance were delivered to municipalities and demanded immediate action to prevent people's lives from being harmed and ensure that water is managed sustainably. Where the minimum standards for drinking water have not been adhered to, AfriForum will address these municipalities by way of remedies available to the organisation and which may include legal processes.

The 2017 survey will be used to monitor the same infrastructure and many more in future.

Note from author – it is of the utmost importance that we test our drinking water quality regularly and continuously. We have to protect this critical resource and prevent a repetition of the sad events in Bloemhof in 2014.

