AfriForum

BLUE AND GREEN DROP PROJECT

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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.

A WORD OF THANKS

It is a privilege to work with people who share a passion for their people, the community and the environment in which they live. Thank you to AfriForum personnel and all the AfriForum branches across South Africa who made this project possible.

A special word of thanks to every member of AfriForum for your ongoing participation in this country-wide project and for sharing the vision of sustainable development and responsible water management in South Africa. We are also very grateful for your participation during the lockdown with all its challenges and every sacrifice that went with that.

Thank you also to those municipalities who took the lead in South Africa, performed their duties in irreproachable ways by complying with appropriate legislation and regulations for the management of water and ensuring that water is managed responsibly. These municipalities should be applauded because they protect their communities and the environment against pollution and health hazards.

Part of Bothaville's wastewater treatment works during AfriForum's blue and green drop project for 2021.

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INTRODUCTION

South Africa is classified as a water scarce country, and this is why we must find solutions to address the extraordinary challenges and manage our freshwater resources sustainably. The country is experiencing increasing pressure on the demand for and supply of clean drinking water. Growing pressure on existing infrastructure for drinking water and sewage is contributing to the country's threatening crisis in this regard. Moreover, the country's water resources are not being upgraded, such as building new and larger dams. Another major challenge is the large-scale corruption that hinders the proper management of water resources.

AfriForum enables communities to protect themselves against poor service delivery by the state, particularly in terms of water provision. Several AfriForum branches have already established emergency water points where clean drinking water is made available at private sources or repaired municipal boreholes during crisis situations to improve water supply.

AfriForum remains committed to research on and striving to reach independent solutions and privatisation of water systems under the management of the state (as custodian of the country's water resources). For this organisation it is an increasingly important function to find solutions to the demand for water.

AfriForum launched the #CleanWater initiative already in February 2013. This yearly report is compiled with the aim of providing the public with reliable information about the quality of South Africa's drinking water and sewage. The project is aimed at positive changes in the management of drinking water and treated sewage across South Africa, and also at holding the specific officials accountable.

AfriForum year by year requests that the Department of Water and Sanitation (DWS) launch the project to perform blue and green drop tests again and to publish the report. AfriForum can boast that through continued pressure the DWS in July 2021 announced that the project will be launched again and will end in 2022. It is indeed important that AfriForum still perform this duty and act as a watchdog over the project. The biggest question being asked is, will the municipalities that pollute the country's water resources year by year be called to account.

South Africa is not unique in the water challenges that we are faced with. The water shortage forces us as consumers to think anew about water and how we are consuming it. The Western Cape specifically was forced to think deeply with water restrictions of 50 litres per capita per day (ℓ/c/d) in 2018. The global average water consumption is 180 ℓ/c/d, compared with South Africa's average of 235 ℓ/c/d, according to the Department of Water and Sanitation (DWS).[1] We are witnessing water shortages across South Africa since 2018. AfriForum's emergency waterpoint project is very important and it is critically important that towns and branches act proactively and put emergency water plans in place.

South Africa will have to change its ways with regard to water utilisation. Research must be conducted to find techniques and methods to use water for multiple purposes. This means that the same litre of potable water that is made available to consumers should not be used once only and then flushed away – it should have an appropriate second and third function.

Community members collecting water at one of Cape Town's springs near Table Mountain (2018).

Sias Woite taking a water sample at Ventersdorp wastewater treatment works' outlet.

[1] Department of Water and Sanitation. 2017. *Benchmarking of water loss, water use efficiency and nonrevenue water in South African municipalities (2004/05 to 2015/16)*. Available at https://africacheck.org/wp-content/uploads/2018/04/National-benchmark-2017-09-12-final.pdf. Pp. iii – iv.

THE FACTS

Section 24 of the South African Constitution provides for an environment that is not harmful to the health or well-being of people. It aims to conserve the environment for present and future generations and to prevent pollution or ecological degradation. It is also aimed at enhancing environmental conservation and ensuring ecologically sustainable development.

Section 27(1)(b) stipulates that everyone has the right to have access to sufficient water and that this right must be enhanced progressively.

In terms of Section 156 and Part B of Schedule 4 of the Constitution, municipalities have executive authority over and the right to administer water and sanitation services. This right is limited to potable water supply systems and local wastewater and sewage disposal systems. The DWS is responsible for managing and developing water provision and water resources.

The DWS released its last official Blue and Green Drop Report in 2012. AfriForum therefore decided to monitor the quality of drinking water and treated sewage in South Africa themselves.

THE PROJECT

AfriForum recognises the importance of water quality for human consumption and the role that it plays in the ecosystem. This is why the #CleanWater initiative was launched in 2013 to annually test drinking water and sewage.

AfriForum again succeeded this year in enabling more than 140 branches across South Africa to test their municipal drinking water and sewage as part of the 2021 blue and green drop project. Drinking water (blue drop) and treated sewage (green drop) were tested from May to August this year so that communities could determine if there are any health risks and whether their drinking water and sewage comply with legal standards. They were accompanied by AfriForum's coordinators and several other interested parties, including municipal officials, the media and service providers. Participants were encouraged to take pictures as proof, enhancing the credibility of the project in this way.

AfriForum believes in improving and fine-tuning the tests every year. The improved testing kit that we used in 2021 was developed in cooperation with researchers from the company iWater Solutions and iLab and tests for the following pathogens and minerals in an easy, effective way:

- *Escherichia coli (E. coli)*[2]
- Faecal coliform bacteria
- Nitrates
- Nitrites
- Phosphates
- Fluorides
- Total hardness
- Free chlorine
- Iron
- Copper
- Lead
- Total alkalinity
- pH
- Ammonia chloride
- Bromide
- Carbonate
- Cyanuric acid

The test kit now comprises only four tests. It tests more accurately and can detect various additional substances. The new improved test case also has a shelf life of up to two years. The more detailed instruction brochure will ensure the correct storage of the agar.

AfriForum in collaboration with iWater Solutions and iLab developed a dashboard where all tests are read in and processed and can then also request advice from specialists.

AfriForum's test kit for testing water quality

[2] In terms of *SANS: 241 National Standards*, there should be no *E. coli* in drinking water.

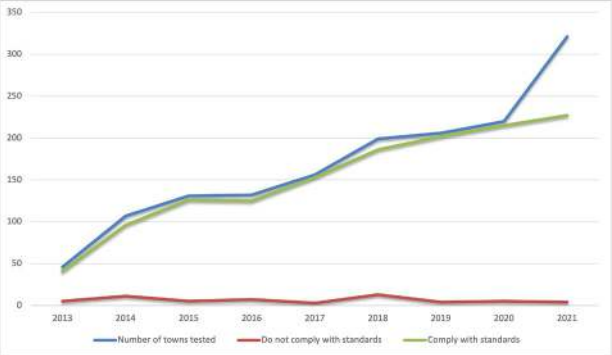
BLUE DROP RESULTS

AfriForum tested the quality of drinking water in 231 towns between May and August 2021. The watchdog function that organisations like AfriForum performs helped to ensure that the drinking water of most municipalities passed this year's test. It is therefore evident that the pressure that AfriForum applies every year to municipalities are bearing fruit.

The drinking water of four towns from three different municipalities did not meet the quality standards for drinking water:

- Hartswater and Jan Kempdorp – Phokwane Local Municipality (*E. coli* and faecal coliform were picked up)
- Kimberley – Sol Plaatje Local Municipality (*E. coli* and faecal coliform were picked up)
- Wolmaransstad – Maquassi Hills Local Municipality (high nitrate levels)

The blue drop results since 2013 are indicated in graph 1.



Graph 1: Blue drop (drinking water) results for 2013-2021

The results of drinking water quality tests conducted from 2013 to 2020 are also contained in this report with a view to comparing these with the 2021 results.

AfriForum immediately warned affected communities to not drink tap water. The municipalities were put on terms to immediately address the unsafe water quality. Follow-up samples taken at least seven days after the initial tests indicated that the water is now fit for human consumption. The only town that is still unchanged is Kimberley. AfriForum held several meetings with Sol Plaatje's municipal manager and team to assist the municipality, but it fell on deaf ears.

AfriForum's Henry Peens of the Klerksdorp branch takes water samples for blue drop purposes.

One of the tests that AfriForum employs comprises a test strip that indicates various pathogens and minerals in water.

In table 1 the towns and cities are listed in which water samples were taken, as well as the municipalities in which these towns and cities are situated.

Table 1: Blue drop results 2013–2021

GAUTENG										
Place	**Municipality**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
Alberton (Randhart)	Ekurhuleni Metro	-	-	-	Clean	Clean	Clean	Clean	Clean	Clean
Apies River	Tshwane Metro	Clean	Clean	Clean	Clean	Clean	Clean	Clean	Clean	Clean
Bedfordview	Ekurhuleni Metro	-	-	-	-	Clean	Clean	Clean	Clean	Clean
Benoni	Ekurhuleni Metro	-	-	-	Clean	Clean	Clean	Clean	Clean	Clean
Boksburg	Ekurhuleni Metro	-	-	-	-	Clean	Clean	Clean	Clean	Clean
Brakpan	Ekurhuleni Metro	-	-	-	-	Clean	Clean	Clean	Clean	Clean
Bronkhorstspruit	Tshwane Metro	-	-	-	-	Clean	Clean	Clean	Clean	Clean
Centurion (central)	Tshwane Metro	-	Clean	Clean	Clean	Clean	Clean	Clean	Clean	Clean
Centurion (south)	Tshwane Metro	-	-	-	-	-	Clean	Clean	Clean	Clean
Centurion (west)	Tshwane Metro	-	-	-	-	-	Clean	Clean	Clean	Clean
Cullinan	Tshwane Metro	-	Clean	Clean	Clean	Clean	Clean	Clean	Clean	Clean
Edenvale	Ekurhuleni Metro	-	-	-	-	Clean	Clean	Clean	Clean	Clean
Elsburg	Ekurhuleni Metro	-	-	-	-	-	Clean	Clean	Clean	Clean
Florida	Johannesburg Metro	-	-	-	-	-	-	Clean	Clean	Clean
Fochville	Merafong City LM	-	-	-	-	-	-	Clean	Clean	Clean
Germiston	Ekurhuleni Metro	-	-	-	-	-	Clean	Clean	Clean	Clean
Heidelberg	Lesedi LM	-	Clean	Clean	Clean	Clean	Clean	Clean	Clean	Clean
Hennops River Valley	Tshwane Metro	-	-	-	Clean	Clean	Clean	Clean	Clean	Clean
Kameeldrift	Tshwane Metro	-	-	-	-	Clean	Clean	Clean	Clean	Clean
Kempton Park	Ekurhuleni Metro	-	Clean	Clean	Clean	Clean	Clean	Clean	Clean	Clean
Krugersdorp	Mogale City LM	-	-	-	-	-	Clean	Clean	Clean	Clean
Lochvaal	Emfuleni LM	-	Clean	Clean	Clean	-	-	Clean	Clean	Clean
Magaliesburg	Mogale City LM	-	Clean	-	-	-	Clean	Clean	Clean	Clean
Meyers Park	Tshwane Metro	-	Clean	Clean	Clean	Clean	Clean	Clean	Clean	Clean

Place	Municipality	2013	2014	2015	2016	2017	2018	2019	2020	2021
Meyerton	Midvaal LM	-	-	-	-	Clean	Clean	Clean	Clean	Clean
Moot	Tshwane Metro	-	-	-	Clean	Clean	Clean	Clean	Clean	Clean
Nigel	Ekurhuleni Metro	-	Clean	Clean	Clean	Clean	Clean	Clean	Clean	Clean
Pretoria North	Tshwane Metro	-	-	-	-	-	Clean	Clean	Clean	Clean
Pretoria East (Garsfontein)	Tshwane Metro	-	-	-	Clean	Clean	Clean	Clean	Clean	Clean
Pretoria East (Moreleta Park)	Tshwane Metro	-	-	-	-	Clean	Clean	Clean	Clean	Clean
Pretoria East (Waterkloof)	Tshwane Metro	-	-	-	-	Clean	Clean	Clean	Clean	Clean
Pretoria West	Tshwane Metro	-	-	-	High phenol and chromium concen-trations	Clean	Clean	Clean	Clean	Clean
Primrose	Ekurhuleni Metro	-	-	-	-	-	Clean	Clean	Clean	Clean
Randburg	Johannesburg Metro	-	Clean	Clean	Clean	Clean	-	Clean	Clean	Clean
Randfontein	Rand West City LM	-	-	-	-	-	-	Clean	Clean	Clean
Rayton	Tshwane Metro	-	Clean	Clean	Clean	Clean	Clean	Clean	Clean	Clean
Roodepoort	Johannesburg Metro	-	-	-	-	-	Clean	Clean	Clean	Clean
Springs	Ekurhuleni Metro	-	Clean	Clean	Clean	Clean	Clean	Clean	Clean	Clean
Tedstoneville	Ekurhuleni Metro	-	-	-	-	-	-	Clean	Clean	Clean
Vanderbijlpark	Emfuleni LM	-	Clean	Clean	Clean	Clean	Clean	Clean	Clean	Clean
Vanderbijlpark South	Emfuleni LM	-	-	-	Clean	Clean	Clean	Clean	Clean	Clean
Vanderbijlpark West	Emfuleni LM	-	-	Clean	Clean	Clean	Clean	Clean	Clean	Clean
Vereeniging	Emfuleni LM	-	Clean	Clean	Clean	Clean	Clean	Clean	Clean	Clean
Waverley	Tshwane Metro	-	-	-	-	-	Clean	Clean	Clean	Clean
West Moot	Tshwane Metro	-	-	-	Clean	Clean	Clean	Clean	Clean	Clean
Westonaria	Rand West City LM	-	Clean	Clean	Clean	Clean	Clean	Clean	Clean	Clean
Zambezi	Tshwane Metro	-	Clean	Clean	Clean	Clean	Clean	Clean	Clean	Clean
Other										
Tuks campus	University of Pretoria	-	-	-	Clean	Clean	Clean	Clean	Clean	Clean

WESTERN CAPE

Place	Municipality	2013	2014	2015	2016	2017	2018	2019	2020	2021
Bitterfontein	Matzikama LM	-	-	-	Clean	-	-	Clean	Clean	Clean
Bredasdorp	Cape Agulhas LM	-	-	-	-	-	-	-	Clean	Clean
Cape Town (Bellville)	Cape Town Metro	-	-	Clean	Clean	Clean	Clean	Clean	Clean	Clean
Cape Town (Durbanville)	Cape Town Metro	-	-	-	-	-	-	-	Clean	Clean
Cape Town (Gordons Bay)	Cape Town Metro	-	-	-	-	-	-	-	Clean	Clean
Cape Town (Helderberg)	Cape Town Metro	-	-	-	-	-	-	-	-	Clean
Cape Town (Kraaifontein)	Cape Town Metro	-	-	-	-	-	-	-	Clean	Clean
Cape Town (Somerset West)	Cape Town Metro	-	-	-	-	-	-	-	-	Clean
Cape Town (Strand)	Cape Town Metro	-	-	-	-	-	-	-	Clean	Clean
Citrusdal	Cederberg LM	-	Clean	Clean	Clean	-	Clean	-	-	-
Clanwilliam	Cederberg LM	-	-	-	-	-	Clean	-	-	-
Darling	Swartland LM	-	-	-	-	-	-	-	Clean	Clean
De Doorns	Breedevallei LM	-	-	-	-	-	-	-	-	Clean
Gansbaai	Overstrand LM	-	-	-	-	-	Clean	Clean	Clean	Clean
George	George LM	-	Clean	Clean	Clean	Clean	Clean	Clean	Clean	Clean
Hermanus (Sandbaai)	Overstrand LM	-	Clean	Clean	Clean	-	Clean	Clean	Clean	Clean
Hessequa (Stilbaai)	Hessequa LM	-	-	-	Clean	Clean	Clean	Clean	Clean	Clean
Kalbaskraal	Swartland LM	-	-	-	-	-	-	-	Clean	Clean
Klawer	Matzikama LM	-	-	-	Clean	Clean	Clean	Clean	Clean	Clean
Kleinmond	Overstrand LM	-	Clean	Clean	Clean	Clean	Clean	Clean	Clean	Clean
Ladismith	Kannaland LM	-	-	Clean	Clean	-	Clean	-	-	Clean
Langebaan	Saldanha Bay LM	-	-	-	-	-	-	-	-	Clean
Lutzville	Matzikama LM	-	-	Clean	Clean	Clean	-	Clean	Clean	Clean
Malmesbury	Swartland LM	-	-	-	-	-	-	-	Clean	Clean
Montagu	Langeberg LM	-	-	-	-	-	Clean	Clean	Clean	Clean
Mossel Bay	Mossel Bay LM	Clean	Clean	Clean	Clean	Clean	Phos-phates >25 ppm[3]	Clean	Clean	Clean

[3] ppm: parts per million

Place	Municipality	2013	2014	2015	2016	2017	2018	2019	2020	2021
Nuwerus	Matzikama LM	-	-	-	Clean	-	-	Clean	Clean	Clean
Oudtshoorn	Oudtshoorn LM	-	-	-	-	Clean	Clean	Clean	Clean	Clean
Pearly Beach	Overstrand LM	-	-	-	-	-	Clean	Clean	Clean	Clean
Robertson	Langeberg LM	-	-	-	Clean	-	Clean	Clean	Clean	Clean
Stellenbosch	Stellenbosch LM	-	-	-	-	Clean	Clean	Clean	Clean	Clean
Vanrhynsdorp	Matzikama LM	-	-	Clean	Clean	Clean	-	Clean	Clean	Clean
Velddrif	Bergrivier LM	-	-	-	-	-	Clean	Clean	Clean	Clean
Vredendal	Matzikama LM	Clean	Clean	Clean	Clean	Clean	Clean	Clean	Clean	Clean
Vredendal South	Matzikama LM	-	-	Clean	Clean	Clean	Clean	Clean	Clean	Clean
Wellington	Drakenstein LM	-	-	-	-	Clean	Clean	Clean	Clean	Clean
Worcester	Breede Valley LM	-	-	-	-	-	-	-	Clean	Clean
Other										
Stellenbosch campus (Maties)		-	-	-	Clean	Clean	Clean	Clean	Clean	Clean

NORTHERN CAPE

Place	Municipality	2013	2014	2015	2016	2017	2018	2019	2020	2021
Buffelsrivier	Nama Khoi LM	-	-	-	Clean	-	-	-	-	-
Douglas	Siyancuma LM	-	-	-	-	-	Clean	Clean	Clean	Clean
Hartswater	Phokwane LM	-	-	-	-	-	-	-	Clean	Dirty (*E. coli* and faecal coliform picked up)
Hopetown	Thembelihle LM	-	-	-	-	-	Clean	Clean	Clean	Clean
Jan Kempdorp	Phokwane LM	-	-	-	-	-	-	-	Clean	Dirty (*E. coli* and faecal coliform picked up)
Kakamas	Ka Garib LM	-	-	-	-	-	Clean	Clean	Clean	Clean
Kamieskroon	Kamiesberg LM	-	Clean	Clean	Clean	Clean	-	-	Clean	Clean
Kathu	Gamagara LM	-	Clean	Clean	Clean	Clean	Clean	Clean	Clean	Clean

Place	Municipality	2013	2014	2015	2016	2017	2018	2019	2020	2021
Keimoes	Ka Garib LM	-	-	-	-	-	Clean	Clean	Clean	Clean
Kimberley	Sol Plaatje LM	Clean	Clean	Clean	Clean	-	Clean	Clean	Clean	*E. coli* and faecal coliform picked up
Kuruman	Ga-Segonyana LM	Clean	Clean	Clean	Clean	Clean	Clean	Clean	Clean	Clean
Nababeep	Nama Khoi LM	-	-	-	Clean	-	-	-	-	-
Orania	Orania Dorpsraad	-	-	-	-	Clean	-	Clean	Clean	Clean
Postmasburg	Tsantsabane LM	-	-	-	Clean	Clean	Clean	Clean	Clean	Clean
Prieska	Siyathemba LM	-	-	-	-	-	-	-	Clean	Clean
Springbok	Nama Khoi LM	-	Clean	Clean	Clean	Clean	Clean	Clean	Clean	Clean
Upington	Khara Hais LM	-	-	-	-	Clean	Clean	Clean	Clean	Clean
Vaalharts	Phokwane LM	-	Clean	Clean	Clean	-	Clean	Clean	Clean	Clean
Warrenton	Magareng LM	-	-	-	-	-	Clean	Clean	Clean	Clean
Williston	Karoo Hoogland LM	-	-	-	-	-	Clean	-	Clean	Clean

EASTERN CAPE

Place	Municipality	2013	2014	2015	2016	2017	2018	2019	2020	2021
Aliwal North	Walter Sisulu LM	-	-	-	-	-	Phos-phates >25 ppm	Clean	Clean	Clean
Barkly East	Senqu LM	-	Clean	Clean	Clean	Clean	-	-	-	-
Burgersdorp	Walter Sisulu LM	-	-	-	-	-	Clean	Clean	-	-
Cradock	Inxuba Yethemba LM	-	-	Clean	Clean	Clean	Clean	-	-	Clean
Elliot	Sakhisizwe LM	*E. coli*	Clean	Clean	Clean	Clean	-	Clean	Clean	Clean
Graaff-Reinet	Dr Beyers Naudé LM	-	-	-	-	-	-	-	-	Clean
Jeffreys Bay	Kouga LM	Clean	Clean	Clean	Clean	Clean	-	Clean	Clean	Clean
Middelburg	Inxuba Yethemba LM	-	-	-	-	-	Clean	-	-	-
Molteno	Inkwanca LM	-	-	*E. coli*	Clean	Clean	Clean	-	-	-
East London	Buffalo City Metro	-	-	-	-	-	Clean	-	-	-

Place	Municipality	2013	2014	2015	2016	2017	2018	2019	2020	2021
Patensie	Kouga LM	-	-	-	-	-	-	-	-	Clean
Port Elizabeth	Nelson Mandela Metro	Clean	Clean	Clean	Clean	Clean	-	Clean	Clean	Clean
Queenstown	Lukhanji LM	-	-	-	-	-	Faecal coliform bacteria >3 000	-	-	-
Sterkstroom	Enoch Mgijima LM	-	-	-	-	-	Clean	-	-	-
Steynsburg	Gariep LM	-	-	-	-	-	Clean	-	-	-
Stutterheim	Amahlathi LM	-	-	-	-	-	Clean	-	-	-
Tarkastad	Tsolwana LM	-	-	*E. coli*	Clean	Clean	Clean	-	-	-
Uitenhage	Nelson Mandela Metro	-	-	-	-	-	-	-	-	Clean

FREE STATE

Place	Municipality	2013	2014	2015	2016	2017	2018	2019	2020	2021
Allanridge	Matjhabeng LM	-	-	-	Clean	-	Clean	Clean	Clean	Clean
Bethlehem	Dihlabeng LM	-	-	-	-	Clean	Clean	Clean	Clean	Clean
Bloemfontein Central	Mangaung Metro	-	Clean	Clean	Clean	Clean	Clean	Clean	Clean	Clean
Bloemfontein (Fichardt Park)	Mangaung Metro	-	Clean	Clean	Clean	Clean	Clean	Clean	Clean	Clean
Bloemfontein (Hospital Park)	Mangaung Metro	-	-	-	Clean	Clean	Clean	Clean	Clean	Clean
Bloemfontein (Langenhoven Park)	Mangaung Metro	-	-	Clean	Clean	Clean	Clean	Clean	Clean	Clean
Bloemfontein (Pellissier)	Mangaung Metro	-	Clean	Clean	Clean	Clean	Clean	Clean	Clean	Clean
Bloemfontein (Rayton-Heuwelsig)	Mangaung Metro	-	Clean	Clean	Clean	Clean	Clean	Clean	Clean	Clean
Bloemfontein (Uitsig)	Mangaung Metro	-	Clean	Clean	Clean	Clean	Clean	Clean	Clean	Clean
Bloemfontein (Wilgehof)	Mangaung Metro	-	Clean	Clean	Clean	Clean	Clean	Clean	Clean	Clean
Boshof	Tokologo LM	-	-	-	-	-	Clean	-	Faecal coliform bacteria (in borehole water)	Clean
Bothaville	Nala LM	Clean	Clean	Clean	Clean	Clean	Phos-phates >25 ppm	Clean	Clean	Clean
Brandfort	Masilonyana LM	-	-	Clean	Clean	Clean	No water available	-	-	-
Bultfontein	Tswelopele LM	-	-	-	-	Clean	Clean	Clean	Clean	Clean

Place	Municipality	2013	2014	2015	2016	2017	2018	2019	2020	2021
Dealesville	Tokologo LM	-	Clean	Clean	Clean	Clean	-	Clean	Clean	Clean
Frankfort	Mafube LM	Clean	Clean	Clean	Clean	Clean	Clean	Clean	Clean	Clean
Harrismith	Maluti-A-Phofung LM	-	-	Clean	Clean	Clean	Clean	Clean	Clean	Clean
Heilbron	Ngwathe LM	-	-	Clean	Clean	5 faecal coliform bacteria	Clean	Clean	Clean	Clean
Hennenman	Matjhabeng LM	-	-	-	Clean	Clean	Clean	Clean	Clean	Clean
Hertzogville	Tokologo LM	14 nitrates	4 *E. coli* and 14 nitrates	Clean	Clean	Clean	*E. coli* >1 000 cfu[4]	Clean	Clean	Clean
Koppies	Ngwathe LM	-	-	-	-	Clean	Clean	Clean	Clean	Clean
Kroonstad	Moqhaka LM	-	-	-	-	Clean	Clean	Clean	Clean	Clean
Odendaalsrus	Matjhabeng LM	-	-	-	-	Clean	-	Clean	Clean	Clean
Parys	Ngwathe LM	-	Clean	Clean	Clean	Clean	Clean	Clean	Clean	Clean
Petrus Steyn	Nketoana LM	-	Clean	Clean	Clean	Clean	-	Clean	Clean	Clean
Reitz	Nketoana LM	-	-	Clean	Clean	Clean	-	Clean	Clean	Clean
Sasolburg	Metsimaholo LM	-	Clean	Clean	Clean	Clean	Clean	Clean	Clean	Clean
Senekal	Setsoto LM	-	-	-	-	-	Clean	Clean	Clean	Clean
Theunissen	Masilonyana LM	-	-	Clean	Clean	Clean	Clean	Clean	Clean	Clean
Viljoenskroon	Moqhaka LM	-	-	-	Clean	-	Clean	Clean	Clean	Clean
Villiers	Mafube LM	-	-	-	-	25 faecal coliform bacteria	Clean	-	-	-
Vrede	Phumelela LM	-	-	-	-	Clean	-	-	-	-
Vredefort	Ngwathe LM	-	-	-	-	Clean	Clean	Clean	-	-
Welkom	Matjhabeng LM	-	-	Clean	Clean	-	Clean	Clean	Clean	Clean
Wesselsbron	Nala LM	-	-	-	Clean	-	Clean	-	-	-
Winburg	Masilonyana LM	-	-	Clean	Clean	Clean	Clean	Clean	Clean	Clean
Zastron	Mohokare LM	-	-	-	-	-	-	-	-	Clean
Other										
Bloemfontein campus (Kovsies)	University of the Free State	-	-	-	Clean	Clean	Clean	Clean	Clean	Clean

[4] cfu: coliform units

MPUMALANGA										
Place	**Municipality**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
Amersfoort	Pixley Ka Seme LM	-	-	-	-	-	Clean	Clean	Clean	Clean
Badplaas	Chief Albert Luthuli LM	-	-	-	-	-	-	Clean	Clean	Clean
Balfour	Dipaleseng LM	-	-	-	-	Clean	Clean	Clean	Clean	Clean
Barberton	Mbombela LM	-	-	-	-	-	Clean	Clean	Clean	Clean
Belfast	Emakhazeni LM	Clean	Clean	Clean	Faecal coliform bacteria and *E. coli*	Clean	Clean	Clean	Clean	Clean
Bethal	Govan Mbeki LM	-	-	Clean	Clean	Clean	Clean	Clean	Clean	Clean
Breyten	Msukaligwa LM	-	-	-	-	-	Clean	Clean	Clean	Clean
Carolina	Chief Albert Luthuli LM	-	-	-	-	-	-	Clean	Clean	Clean
Charl Cilliers	Govan Mbeki LM	-	-	-	-	Clean	Clean	Clean	Clean	Clean
Chrissiesmeer	Msukaligwa LM	-	-	-	-	-	Clean	Clean	Clean	Clean
Delmas	Victor Khanye LM	-	-	Clean	Clean	Clean	Clean	Clean	Clean	Clean
Dullstroom	Emakhazeni LM	-	-	Clean	Clean	Clean	Clean	Clean	Clean	Clean
Eloff	Victor Khanye PM	-	-	-	-	-	-	-	-	Clean
Ermelo	Msukaligwa LM	Clean	Clean	Clean	Clean	Clean	Clean	Clean	Clean	Clean
Evander	Govan Mbeki LM	-	-	-	-	-	Clean	Clean	Clean	Clean
Greylingstad	Dipaleseng LM	-	-	-	-	Clean	-	Clean	Clean	-
Hendrina	Steve Tshwete LM	-	-	-	-	-	-	Clean	Clean	-
Kaapsehoop	Mbombela LM	-	-	-	-	-	-	-	Clean	Clean
Kriel	Emalahleni LM	-	-	-	-	Clean	Clean	Clean	Clean	-
Leandra	Govan Mbeki LM	-	-	-	-	Clean	Clean	Clean	Clean	Clean
Lydenburg	Thaba Chweu LM	Clean	Clean	Clean	High concen-tration of faecal coliform bacteria	Clean	Clean	Clean	Clean	Clean
Machadodorp	Emakhazeni LM	5 cadmium	Clean	Clean	Clean	Clean	Clean	Clean	Clean	Clean
Malelane	Nkomazi LM	-	-	-	-	-	-	-	-	Clean
Middelburg	Steve Tshwete LM	Clean	Clean	Clean	Clean	Clean	Clean	Clean	Clean	Clean

Place	Municipality	2013	2014	2015	2016	2017	2018	2019	2020	2021
Morgenzon	Lekwa LM	-	-	-	-	Clean	Clean	Clean	Clean	Clean
Nelspruit	Lekwa LM	-	-	-	-	Clean	Clean	Clean	Clean	Clean
Ogies	Emalahleni LM	-	-	-	-	-	Clean	-	-	-
Piet Retief	Mkhondo LM	-	Clean	Clean	Faecal coliform bacteria and *E. coli*	Clean	Clean	Clean	Clean	Clean
Sabie	Thaba Chweu LM	-	-	-	-	-	-	Clean	Clean	Clean
Secunda	Govan Mbeki LM	-	-	-	Clean	Clean	Clean	Clean	Clean	Clean
Standerton	Lekwa LM	-	Colour exceeds limits, but water not unsafe	Clean	Clean	Clean	Clean	Clean	Clean	Clean
Stoffberg	Emalahleni LM	-	-	-	-	-	Clean	-	-	-
Sundra	Victor Khanye LM	-	-	-	-	-	Clean	Clean	Clean	Clean
Trichardt	Govan Mbeki LM	-	-	-	-	-	Clean	-	Clean	Clean
Volksrust	Pixley Ka Seme LM	-	-	-	-	-	Clean	Clean	Clean	Clean
Wakkerstroom	Pixley Ka Seme LM	-	-	-	-	-	Clean	Clean	Clean	Clean
White River	Mbombela LM	-	-	-	Clean	Clean	Clean	Clean	Clean	Clean
Witbank	eMalahleni LM	-	11 total organic carbon	Clean	Faecal coliform bacteria and *E. coli*	Clean	Clean	Clean	Clean	Clean

NORTH WEST

Place	Municipality	2013	2014	2015	2016	2017	2018	2019	2020	2021
Biesiesvlei	Ditsobotla LM	-	-	-	-	-	-	-	Clean	Clean
Bloemhof	Lekwa-Teemane LM	-	68 faecal coliform bacteria	Clean	Clean	Clean	Clean	Clean	Clean	Clean
Brits	Madibeng LM	-	-	-	Clean	Clean	Clean	Phos-phates >50 ppm	Lead and nitrates	Clean
Christiana	Lekwa-Teemane LM	-	Clean	Clean	Clean	Clean	Clean	Clean	Clean	Clean
Coligny	Ditsobotla LM	-	4 *E. coli*	*E. coli*	Clean	Clean	Clean	Clean	Clean	Clean
Delareyville	Tswaing LM	-	-	-	Clean	Clean	Phos-phates >100 ppm	Nitrates >25 ppm; phos-phates >25 ppm	Nitrates	Clean

Place	Municipality	2013	2014	2015	2016	2017	2018	2019	2020	2021
Groot-Marico	Ramotshere Moiloa LM	-	-	-	-	-	Clean	Clean	Clean	Clean
Hartbeesfontein	Matlosana City LM	-	-	-	Clean	Clean	-	-	-	Clean
Hartbeespoort	Madibeng LM	Clean	Clean	Clean	Clean	Clean	Clean	Clean	Clean	Clean
Jouberton	Matlosana City LM	-	-	-	Clean	-	-	-	-	-
Klerksdorp	Matlosana City LM	-	Clean	Clean	Clean	Clean	Clean	Clean	Clean	Clean
Koster	Kgetlengrivier LM	-	-	-	-	Clean	Clean	Clean	Clean	Clean
Leeudoringstad	Maquassi Hills	-	-	-	Clean	Clean	Clean	Clean	Clean	Clean
Lichtenburg	Ditsobotla LM	-	Clean	Clean	Clean	Clean	-	Clean	Clean	Clean
Mahikeng	Mahikeng LM	-	-	-	-	-	Clean	Clean	Clean	Clean
Makwassie	Maquassi Hills LM	-	-	-	Clean	Clean	Clean	Clean	Clean	Clean
Mooinooi	Madibeng LM	-	-	-	Clean	Clean	Clean	Clean	Clean	Clean
Orkney	Matlosana City LM	-	-	-	Clean	Clean	Clean	Clean	Clean	Clean
Ottosdal	Tswaing LM	-	-	-	Clean	Clean	Phos-phates >25 ppm	Clean	Clean	Clean
Potchefstroom	Tlokwe LM	-	Clean	Clean	Clean	Clean	Clean	Clean	Clean	Clean
Rustenburg	Rustenburg LM	-	Clean	Clean	Clean	Clean	Clean	Clean	Clean	Clean
Sannieshof	Tswaing LM	-	-	-	-	Clean	Nitrates >10 ppm; phos-phates >100 ppm	Phos-phates >25 ppm	Phos-phates and faecal coliform bacteria	Clean
Schweizer- Reneke	Mamusa LM	-	-	Clean	Nitrates above permis-sible levels	Clean	Phos-phates >25 ppm	Clean	Clean	Clean
Stella	Naledi LM	-	140 *E. coli* and 18 nitrate	50 nitrates	Nitrates above permis-sible levels	Clean	Faecal coliform bacteria >3 000 cfu; phos-phates >25 ppm	Nitrates >100 ppm;	Nitrates	Clean
Stilfontein	Matlosana City LM	-	-	-	Clean	Clean	Clean	Clean	Clean	Clean
Swartruggens	Kgetlengrivier LM	-	-	-	-	Clean	Faecal coliform bacteria 3 cfu; *E. coli* 3 cfu	Clean	Clean	Clean

Place	Municipality	2013	2014	2015	2016	2017	2018	2019	2020	2021
Ventersdorp	Ventersdorp LM	-	Clean	Clean	Clean	Clean	Clean	-	Clean	Clean
Vryburg	Naledi LM	-	4 *E. coli*	Clean	Clean	Clean	Faecal coliform bacteria >3 000 cfu	Clean	Clean	Clean
Wolmaransstad	Maquassi Hills LM	-	-	Clean	Clean	Clean	Clean	Clean	Clean	Nitrate is high
Zeerust	Ramotshere Moiloa LM	-	-	-	Clean	Clean	Clean	Clean	Clean	Clean
Other										
Buffelspoort	Madibeng LM	-	-	-	-	Clean	-	Clean	Clean	Clean
Potchefstroom campus (Pukke)	North-West University	-	-	-	Clean	Clean	Clean	Clean	Clean	Clean

LIMPOPO

Place	Municipality	2013	2014	2015	2016	2017	2018	2019	2020	2021
Die Oog Retirement Estate (retirement town)	Mookgophong – Modimolle LM	-	-	-		-	-			Clean
Ellisras	Lephalale LM	-	-	-	Clean	8 units *E. coli* per 100 ml	*E. coli* >2 cfu; Faecal coliform bacteria >2 cfu	Clean	Clean	Clean
Groblersdal	Elias Motsoaledi LM	-	-	-	Clean	Clean	Clean	Clean	Clean	Clean
Haenertsburg	Greater Tzaneen LM	-	-	-	-	Clean	Clean	Clean	Clean	Clean
Leeupoort	Thabazimbi LM	-	-	Clean	Clean	-	-	Clean	Clean	Clean
Louis Trichardt	Makhado LM	-	-	-	Clean	Clean	Clean	Clean	-	-
Marble Hall	Sekhukhune DM	Clean	Clean	Clean	Clean	Clean	Clean	Clean	Clean	Clean
Musina	Musina LM	-	-	-		-	-			Clean
Naboomspruit	Mookgophong PM	Clean	Clean	Clean	Clean	Clean	Clean	Clean	Clean	Clean
Nylstroom	Lim368 LM	-	-	-	Clean	Clean	Clean	Clean	Clean	Clean
Phalaborwa	Ba-Phalaborwa LM	-	Clean	Clean	Clean	Clean	Clean	Clean	Clean	Clean
Pietersburg	Polokwane LM	Clean	4 units *E. coli* per 100 ml	Clean	Clean	Clean	Clean	Clean	Clean	Clean
Potgietersrus	Mokopane LM	-	-	-	-	-	-	-	Clean	Clean

Place	Municipality	2013	2014	2015	2016	2017	2018	2019	2020	2021
Roedtan	Mookgophong LM	-	-	-	-	-	-	-	Clean	Clean
Rooiberg	Thabazimbi LM	-	-	-	-	-	-	Clean	Clean	Clean
Thabazimbi	Thabazimbi LM	-	-	-	-	-	-	Clean	Clean	Clean
Tzaneen	Greater Tzaneen LM	Clean	Clean	Clean	Clean	Clean	Clean	Clean	Clean	Clean
Vaalwater	Lim368 LM	-	-	-	Clean	Clean	Clean	Clean	-	-
Warmbaths	Bela-Bela LM	Clean	Clean	Clean	Clean	Clean	Clean	Clean	Clean	Clean
Other										
Elephants Camp	Kruger National Park	-	-	-	Clean	Clean	-	Clean	-	-
Letaba Camp	Kruger National Park	-	-	-	Clean	Clean	Clean	Clean	-	-

KWAZULU-NATAL

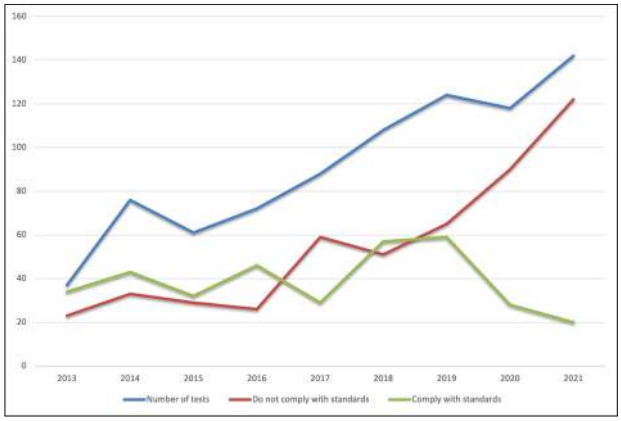
Place	Municipality	2013	2014	2015	2016	2017	2018	2019	2020	2021
Amanzimtoti	Ethekwini Metro	-	-	-	-	-	-	-	-	Clean
Hluhluwe	The Big 5 False Bay LM	-	-	-	-	Clean	Clean	Clean	Clean	Clean
Ixopo	Ubuhlebezwe LM	-	-	-	-	Clean	-	-	-	-
Margate	Hibiscus Coast LM	Clean	Clean	Clean	Clean	Clean	Clean	Clean	Clean	Clean
Newcastle	Newcastle LM	-	-	Clean	Clean	Clean	Clean	Clean	Clean	Clean
Paulpietersburg	eDumbe LM	-	Clean	Clean	Clean	Clean	Clean	Clean	Clean	Clean
Pongola	uPongola LM	-	Clean	Clean	Clean	Clean	Clean	Clean	Clean	Clean
Richards Bay	uMhlathuze LM	-	-	-	-	-	Clean	Clean	Clean	Clean
Underberg	Kwa Sani LM	-	-	-	-	Clean	-	-	-	-
Utrecht	eMadlangeni LM	-	Clean	Clean	Clean	Clean	Clean	Clean	Clean	Clean
Vryheid	Abaqulusi LM	-	Clean	*E. coli*	Clean	Clean	Clean	Clean	Clean	Clean

GREEN DROP RESULTS

AfriForum tested the wastewater treatment works (WWTWs) of 142 towns from May to August 2021 of which 122 did not comply with minimum quality standards, compared to 90 out of 118 WWTWs in 2020. AfriForum was refused entry to certain plants, and in some cases the plants were completely inactive and sewage was running through the plant or in other cases the sewage never reached the plant.

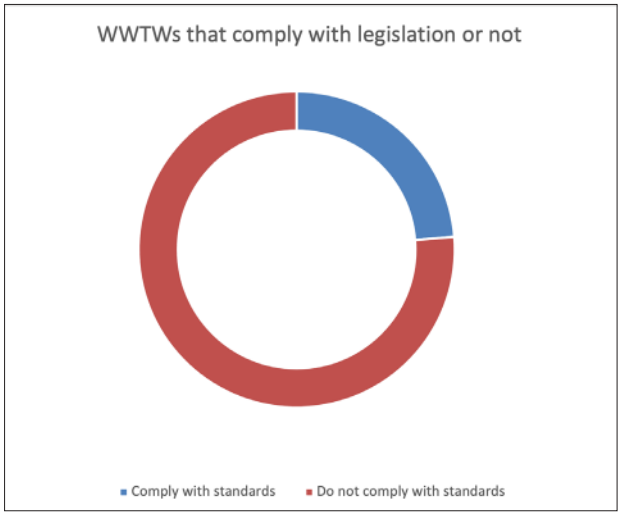
The results of towns' sewage tested in 2013–2020 are included in this report for comparison with the 2021 results.

The green drop results for 2013–2021 are shown in graph 2. It is evident that WWTWs in South Africa are managed poorly and deteriorating fast.



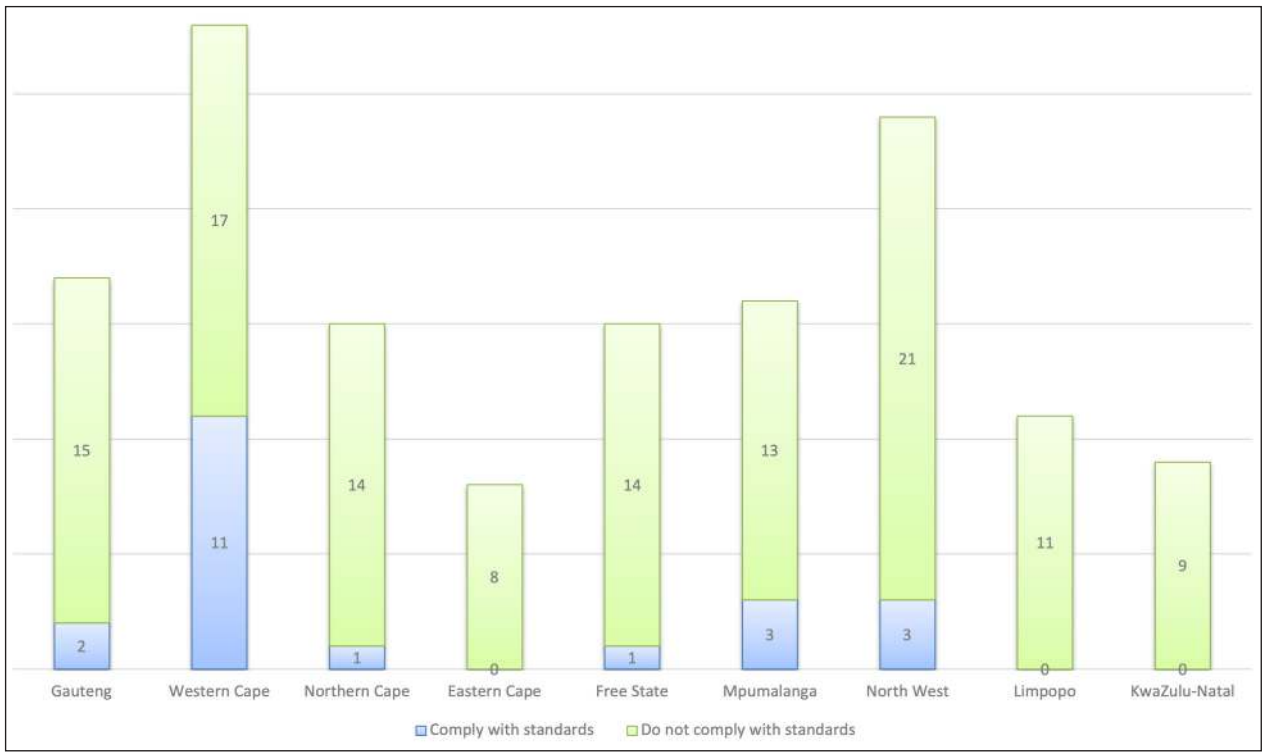
Graph 2: Green drop (sewage) results for 2013–2021

The percentage of WWTWs that complied with standards in 2021 are shown in graph 3, while the same information is presented in graph 4, but per province.



Graph 3: Number of WWTWs that comply or do not comply with sewage requirements

There are currently 122 WWTWs that did not comply with South African national water quality standards when AfriForum's project was executed. These standards determine that no more than 1 000 units of E. coli may be present per 100 ml of treated sewage. These 122 WWTWs are indicated in red below.



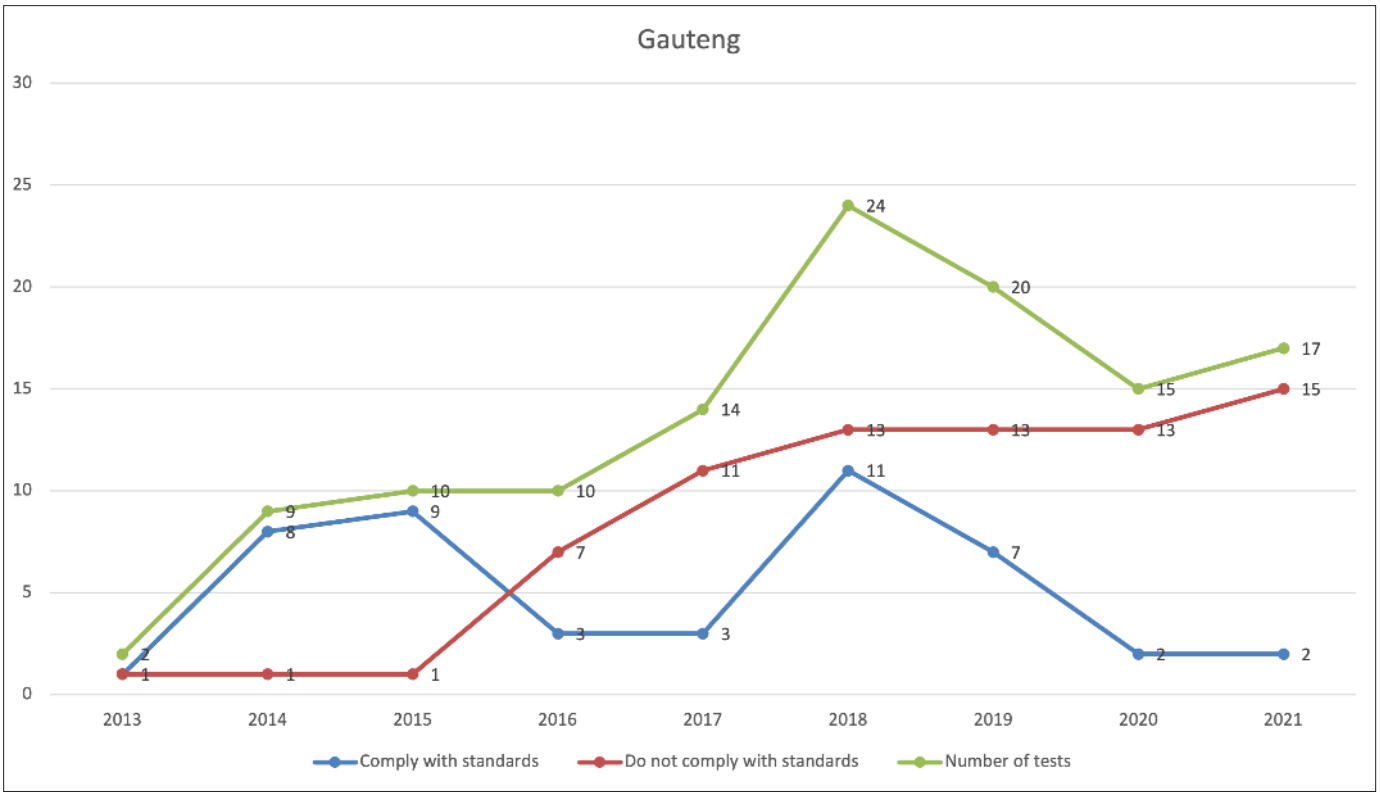
Graph 4: Green drop (sewage) results per province

Table 2: Green drop results for Gauteng (2013–2021)

GAUTENG										
Place	**Municipality**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
Alberton (ERWAT Dekema)	Ekurhuleni Metro	-	-	-	3 900	Clean	Clean	Clean	-	-
Apies River (Rooiwal)	Tshwane Metro	77 000	85 000	Clean	2 000	15 000	>100 000	>100 000	>10 000	>10 000
Benoni	Ekurhuleni Metro	-	-	-	-	-	Clean	Clean	-	-
Brakpan	Ekurhuleni Metro	-	-	-	-	>2 500	Clean	Clean	-	-
Bronkhorstspruit (Godrich)	Tshwane Metro	-	-	-	-	2 000	>100 000	>100 000	>10 000	>1 000
Centurion West (Suiderland)	Tshwane Metro	Clean	Clean	10 000	100 000	5 500	>100 000	>100 000	>10 000	>1 000
Cullinan (Cullinan)	Tshwane Metro	-	Clean	Clean	Clean	2 400	>10 000	>10 000	>10 000	-
Edenvale	Ekurhuleni Metro	-	-	-	-	-	>10 000	>10 000	-	>1 000
Elsburg	Ekurhuleni Metro	-	-	-	-	-	Clean	Clean	-	-
Fochville	Merafong City LM	-	-	-	-	-	-	-	-	>10 000
Germiston	Ekurhuleni Metro	-	-	-	-	-	Clean	Clean	-	-
Heidelberg	Lesedi LM	-	Clean	Clean	-	>3 000	Clean	>1 000	>1 000	>10 000
Kameeldrift (Baviaanspoort)	Tshwane Metro	-	-	-	-	-	>10 000	>100 000	>10 000	>1 000
Kempton Park	Ekurhuleni Metro	-	Clean	Clean	-	-	-	Clean	>1 000	>1 000
Magaliesburg	Mogale City LM	-	-	-	-	-	Clean	-	Access refused	-
Midvaal	Midvaal LM	-	-	-	-	-	-	>15 000	Clean	Clean
Nigel	Ekurhuleni Metro	-	Clean	Clean	High concentration faecal coliform bacteria	>3 000	-	-	-	-
Pretoria West (Daspoort)	Tshwane Metro	-	-	-	12 000	15 000	>10 000	>10 000	>10 000	>1 000
Primrose	Ekurhuleni Metro	-	-	-	-	-	Clean	Clean	-	-
Randfontein	Randfontein LM	-	-	-	-	>4 000	*E. coli* >4 000	-	>1 000	>10 000
Roodepoort	Rand West DM	-	-	-	-	-	Clean	-	Access refused	-
Springs	Ekurhuleni Metro	-	Clean	Clean	2 000	>2 000	*E. coli* >5 000	>5 000	Clean	Clean
Vanderbijlpark (Leeukuil)	Emfuleni LM	-	Clean	Clean	Clean	>1 000	>100 000[5]	>10 000	>1 000	>10 000
Vanderbijlpark (Rietspruit)	Emfuleni LM	-	-	-	-	-	>100 000	>50 000	>1 000	>10 000

[5] When AfriForum performed its tests, the Emfuleni Local Municipality's Leeukuil WWTW only received an estimated 40% of the plant's inflow water and sewage due to blocked pipes in the plant's infrastructure in the greater Tshepiso residential area in Vanderbijlpark.

Place	Municipality	2013	2014	2015	2016	2017	2018	2019	2020	2021
Vanderbijlpark (Sebokeng)	Emfuleni LM	-	-	-	-	-	>100 000	>50 000	>10 000	>10 000
Vereeniging	Emfuleni LM	-	Clean	Clean	Clean	Clean	>1 000	-	-	>1 000
Westonaria	Rand West City LM	-	-	Clean	2 500	Clean	Clean	-	>10 000	>10 000

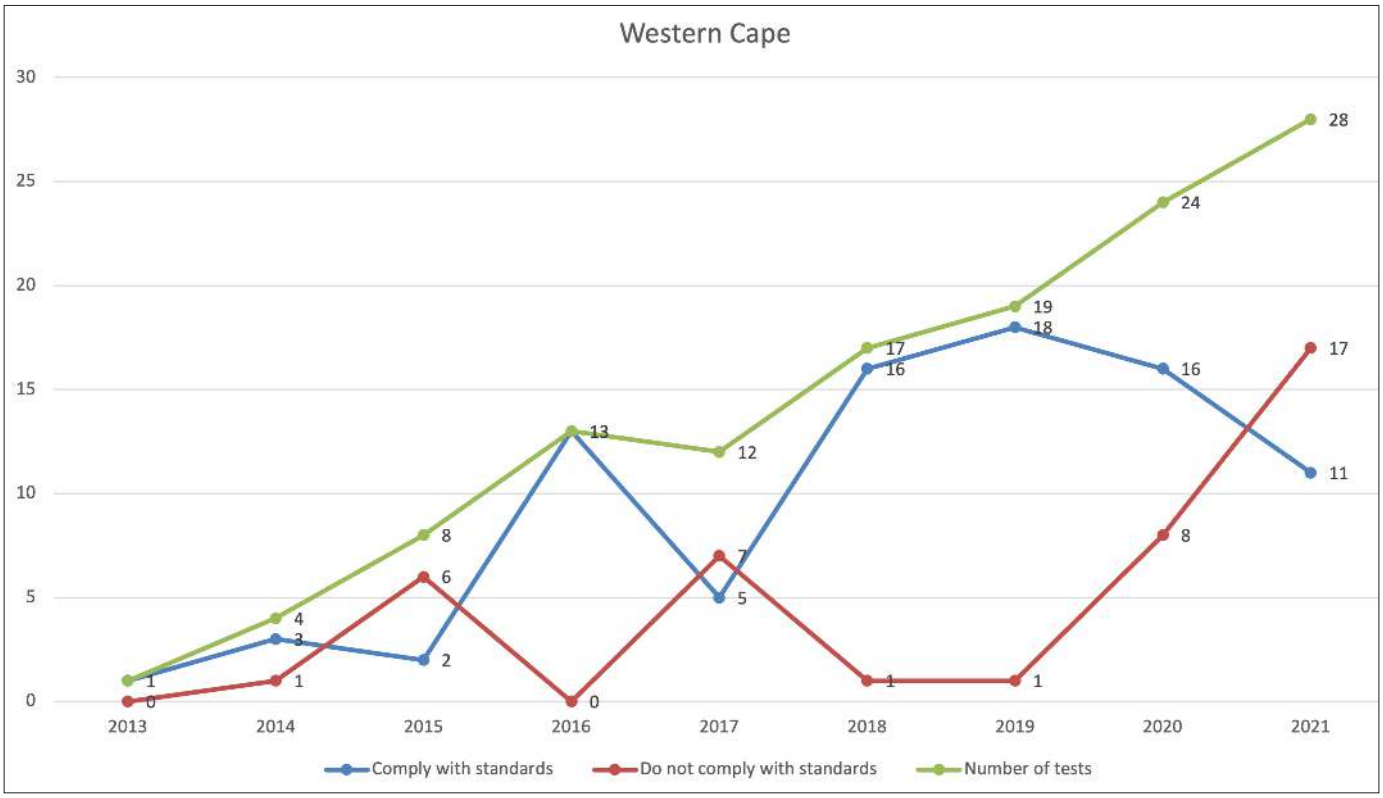


Graph 5: Green drop results for Gauteng

Table 3: Green drop results for the Western Cape (2013–2021)

WESTERN CAPE										
Place	**Municipality**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
Bitterfontein	Matzikama LM	-	-	-	-	-	-	Clean	>1 000	>10 000
Bredasdorp	Cape Agulas LM	-	-	-	-	-	-	-	>1 000	>1 000
Cape Town (Bellville)	Cape Town Metro	-	-	-	-	-	-	-	-	>1 000
Cape Town (Kraaifontein)	Cape Town Metro	-	-	-	-	-	-	-	-	>10 000
Cape Town (Scottsdene)	Cape Town Metro	-	-	-	Clean	Clean	>1 000	>1 000	>1 000	>1 000
Citrusdal	Cederberg PM	-	-	-	-	-	Clean	-	-	-
Clanwilliam	Cederberg LM	-	-	-	-	-	Clean	-	-	-
Darling	Swartland LM	-	-	-	-	-	-	Clean	Clean	Clean
De Doorns	Breedevallei PM	-	-	-	-	-	-	-	-	>1 000
Gansbaai	Overstrand LM	-	-	-	-	>3 000	-	Clean	Clean	>1 000
George	George LM	-	-	-	Clean	Clean	Clean	Clean	>1 000	>1 000
Groot Brak	Mossel Bay LM	-	-	-	-	-	-	-	-	Clean
Hartenbos	Mossel Bay LM	-	-	-	-	-	-	-	-	Clean
Hawston	Overstrand LM	-	-	-	-	-	-	Clean	Clean	Clean
Hermanus	Overstrand LM	-	3 600	Clean	Clean	-	-	Clean	Clean	Clean
Klawer	Matzikama LM	-	-	2 000	Clean	>1 500	Clean	Clean	Clean	Clean
Kleinmond	Overstrand LM	-	Clean	Clean	Clean	Clean	-	Clean	Clean	Clean
Ladismith	Kannaland LM	-	-	-	Clean	-	Clean	-	-	-
Langebaan	Saldanha Bay	-	-	-	-	-	-	-	-	>1 000
Lutzville	Matzikama LM	-	-	1 500	Clean	>2 000	-	Clean	>1 000	-
Malmesbury	Swartland LM	-	-	-	-	-	-	-	Clean	Clean
Montagu	Langeberg LM	-	-	-	-	-	Clean	-	-	-
Mossel Bay	Mossel Bay LM	-	-	-	Clean	>2 400	Clean	Clean	Clean	>1 000
Nuwerus	Matzikama LM	-	-	-	Clean	-	-	Clean	-	>10 000
Oudtshoorn	Oudtshoorn LM	-	Clean	100 000	-	Clean	Clean	Clean	>1 000	>1 000
Robertson	Langeberg LM	-	-	-	Clean	-	Clean	Clean	-	>1 000

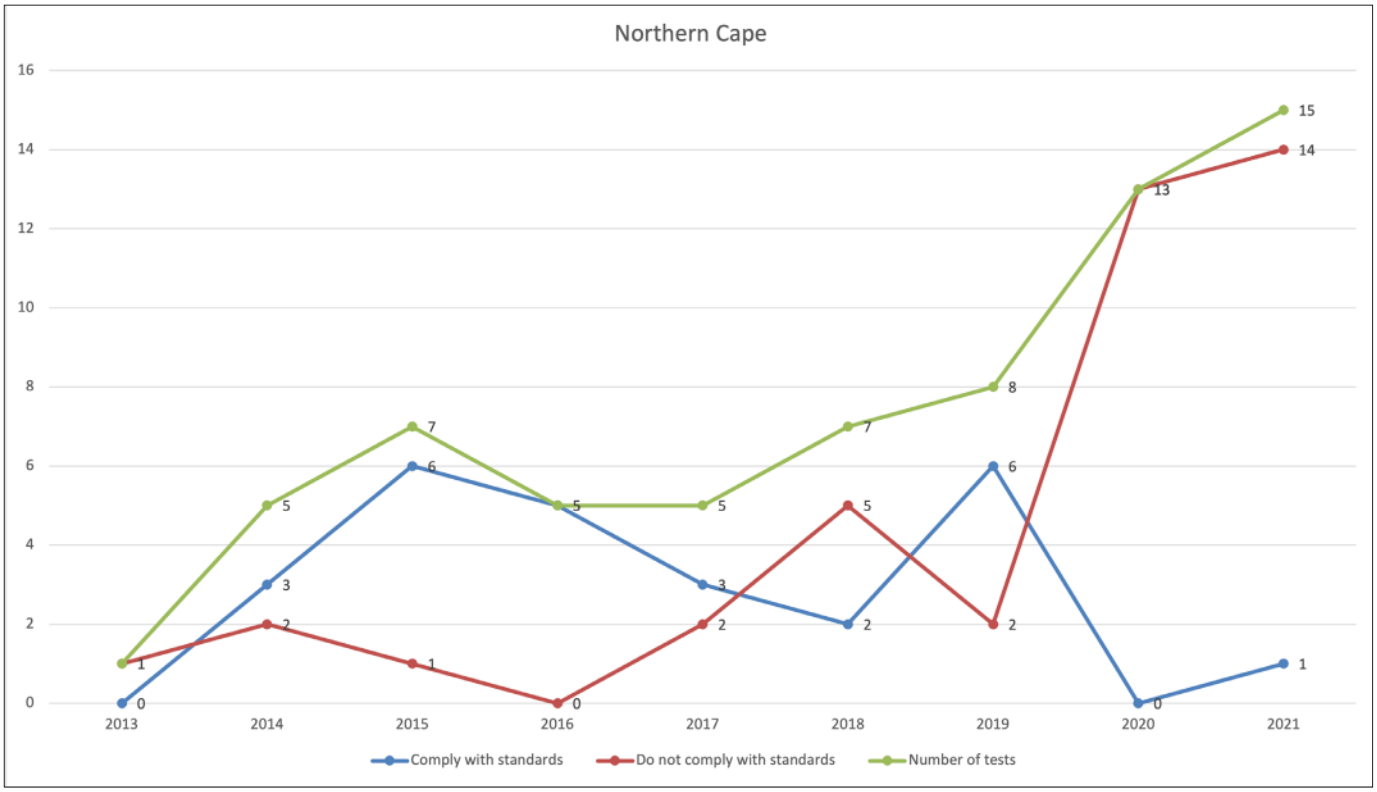
Place	Municipality	2013	2014	2015	2016	2017	2018	2019	2020	2021
Stellenbosch	Stellenbosch LM	-	-	-	-	-	Clean	Clean	Clean	Clean
Stilbaai	Hessequa LM	-	-	-	-	-	Clean	-	>1 000	>1 000
Vanrhynsdorp	Matzikama LM	-	-	1 500	Clean	>1 500	-	Clean	Clean	>1 000
Velddrif	Bergrivier LM	-	-	-	-	-	Clean	-	Clean	>1 000
Vredendal	Matzikama LM	Clean	Clean	8 000	Clean	Clean	Clean	Clean	Clean	Clean
Vredendal South	Matzikama LM	-	-	2 000	Clean	>1 500	Clean	Clean	-	-
Wellington	Drakenstein LM	-	-	-	-	-	Clean	Clean	>1 000	>1 000
Worcester	Breede Valley LM	-	-	-	-	-	-	-	Clean	Clean



Graph 6: Green drop results for the Western Cape

Table 4: Green drop results for the Northern Cape (2013–2021)

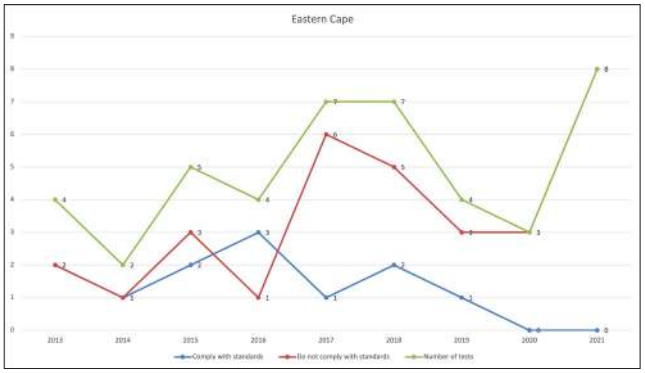
NORTHERN CAPE										
Place	**Municipality**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
Daniëlskuil	Kgatelopele LM	-	Clean	Clean	-	-	-	-	-	-
Douglas	Siyancuma LM	-	-	-	-	-	-	-	>10 000	>1 000
Hartswater	Phokwane LM	-	-	-	-	-	-	-	>10 000	>10 000
Hopetown	Thembelihle PM	-	-	-	-	-	-	-	-	>1 000
Jan Kempdorp	Phokwane LM	-	-	-	-	-	-	-	>10 000	>10 000
Kakamas	Kai !Garib LM	-	-		-	-	-	-	>10 000	-
Kamieskroon	Kamiesberg LM	-	-	-	Clean	-	-	-	>10 000	>1 000
Kathu	Gamagara LM	-	17 000	Clean	-	Clean	Clean	Clean	>10 000	>10 000
Keimoes	Kai !Garib LM	-	-	-	-	-	-	-	>10 000	>10 000
Kimberley	Sol Plaatje LM	1 600	Rejected	1 500	Clean	-	-~	>1 000	>10 000	>10 000
Kuruman	Ga-Segonyana LM	-	Rejected	Clean	-	Clean	>1 000	Clean	>10 000	>10 000
Nababeep	Nama Khoi LM	-	-	-	Clean	-	-	-	-	-
Orania		-	-	-	-	-	-	-	-	Clean
Postmasburg	Tsantsabane LM	-	-	-	-	>10 000	>1 000	Clean	-	-
Prieska	Siyathemba LM	-	-	-	-	-	-	-	>1 000	>1 000
Springbok	Nama Khoi LM	-	1 250	Clean	Clean	>1 500	>1 000	>1 000	-	
Upington	Khara Hais LM	-	-	-	-	Clean	>2 000	Clean	>10 000	>10 000
Vaalharts	Phokwane LM	-	Clean	Clean	Clean	-	>1 000	Clean	>1 000	>1 000
Warrenton	Magareng LM	-	-	-	-	-	-	-	-	>10 000
Williston	Karoo Hoogland LM	-	Clean	Clean	-	-	Clean	Clean	>10 000	>1 000



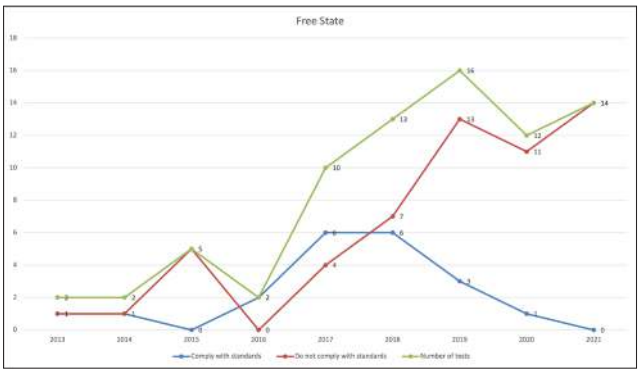
Graph 7: Green drop results for the Northern Cape

Table 5: Green drop results for the Eastern Cape (2013–2021)

EASTERN CAPE										
Place	**Municipality**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
Aliwal North	Walter Sisulu LM	-	-	-	-	-	*E. coli* >50 000	>1 000	>1 000	>1 000
Barkly East	Senqu LM	-	-	2 000	Clean	Clean	-	-	-	-
Burgersdorp	Walter Sisulu LM	-	-	-	-	-	Clean	-	-	-
Cradock	Inxuba Yethemba LM	-	-	-	2 000	>1 000	Faecal coliform bacteria >1 500	-	-	>1 000
Elliot	Sakhisizwe LM	36 000	Rejected	4 000	-	-	Clean	Clean	-	>1 000
Graaff-Reinet	Dr Beyers Naudé LM	-	-	-	-	-	-	-	-	>1 000
Jeffreys Bay	Kouga LM	34 000	-	Clean	Clean	High phosphate content >30 000	*E. coli* >1 000	>1 000	>1 000	>1 000
Langkloof (Joubertina)	Kou-Kamma LM	Clean	11 500	>2 400	-	-	-	-	-	-
Molteno	Inkwanca LM	-	-	-	Clean	>30 000	Faecal coliform bacteria >1 500	-	-	-
Patensie	Kouga PM	-	-	-	-	-	-	-	-	>1 000
Port Elizabeth	Nelson Mandela Metro	Clean	Clean	Clean	-	>30 000	-	>1 000	>1 000	>1 000
Queenstown	Lukhanji LM	-	-	-	-	-	Faecal coliform bacteria >3 000	-	-	-
Tarkastad	Tsolwana LM	-	-	-	-	High phosphate content	-	-	-	
Uitenhage	Nelson Mandela Metro									>1 000



Graph 8: Green drop results for the Eastern Cape



Graph 9: Green drop results for the Free State

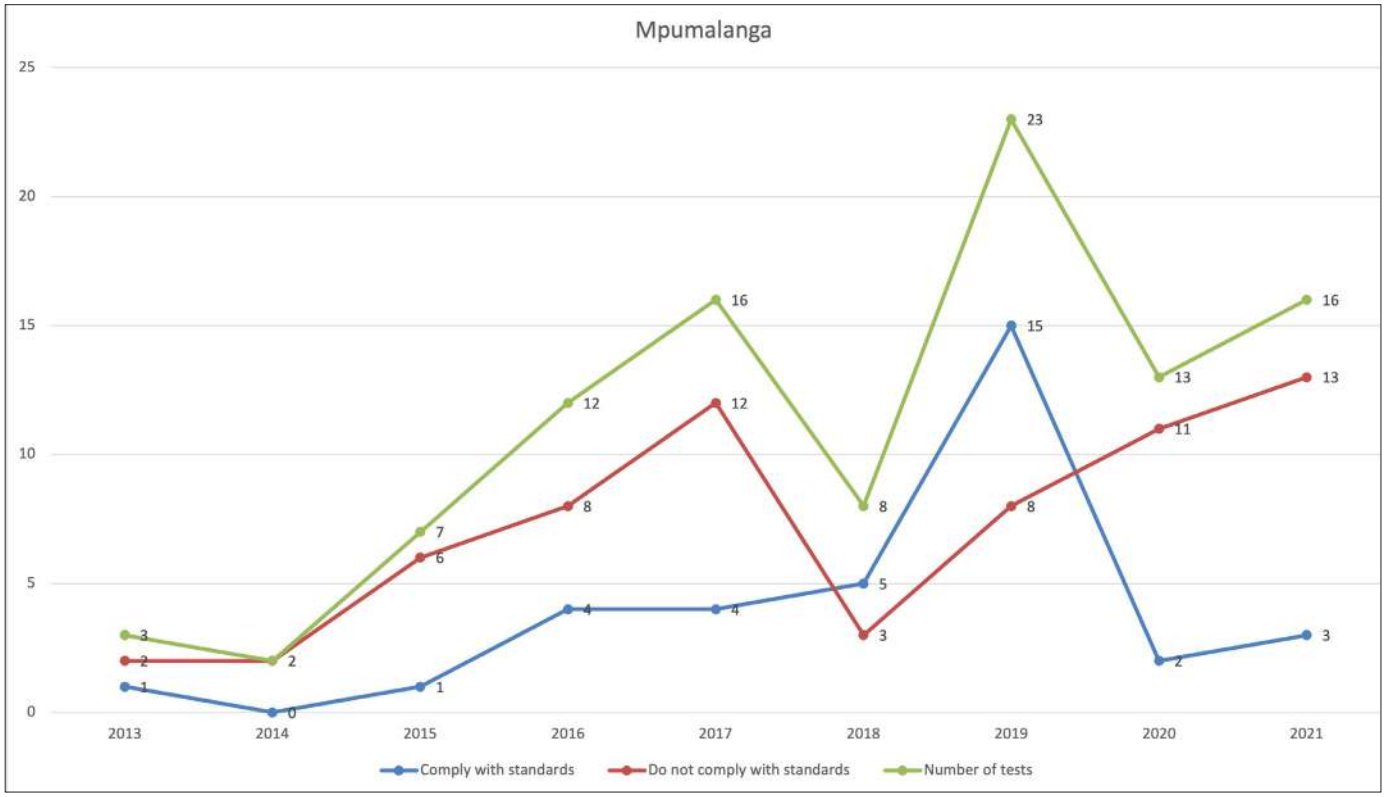
Table 6: Green drop results for the Free State (2013–2021)

FREE STATE										
Place	**Municipality**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
Bethlehem	Dihlabeng LM	-	-	-	-	Clean	Faecal coliform bacteria >1 000	>10 000	Closed due to upgrading	>10 000
Bloemfontein	Mangaung Metro	-	-	-	Clean	Clean	-	>1 000	>10 000	>10 000
Bothaville	Nala LM	-	-	-	-	-	*E. coli* >1 500	>1 000	>1 000	>10 000
Bultfontein		-	-	-	-	-	-	>10 000	>10 000	>1 000
Frankfort	Mafube LM	-	-	-	-	>2 500	Clean	> 5 000	>10 000	>10 000
Harrismith	Maluti-A-Phofung LM	-	-	-	-	Clean	-	> 2 000	Out of order	>10 000
Heilbron	Ngwathe LM	-	-	-	-	-	Clean	Clean	>1 000	>10 000
Hertzogville	Tokologo LM	-	-	-	-	-	*E. coli* >1 000 cfu	>10 000	>1000	>1 000
Kroonstad	Moqhaka LM	Clean	-	1 000 000	-	-	Faecal coliform bacteria >1 000	>2 000	>1 000	>10 000
Parys	Ngwathe LM	-	-	-	-	-	*E. coli* >20 000; 20 000 faecal coliform bacteria	Clean	>10 000	>10 000
Petrus Steyn	Nketoana LM	-	14 000	1 000 000	-	>3 000	-	-	-	-
Reitz	Nketoana LM	-	-	2 500	-	>2 500	-	>2 000	>10 000	>1 000
Sasolburg	Metsimaholo LM	-	-	-	-	Clean	Clean	Clean	Clean	>1 000
Senekal	Setsoto LM	-	-	-	-	-	-	>4 000	-	-
Theunissen	Masilonyana LM	-	-	25 000	-	-	Clean	-	-	-
Viljoenskroon	Moqhaka LM	-	-	-	-	-	Clean	>1 000	-	-
Villiers	Mafube LM	-	-	-	-	>3 000	Clean	-	-	-
Vrede	Phumelela LM	-	-	-	-	Clean	-	-	-	-
Welkom	Matjhabeng LM	-	-	-	-	-	*E. coli* >1 000	> 10 000	>10 000	>10 000
Winburg	Masilonyana LM	2 000	Clean	10 000	Clean	Clean	Faecal coliform bacteria >1 000	> 4 000	>1000	>10 000

Table 7: Green drop results for Mpumalanga (2013–2021)

MPUMALANGA										
Place	**Municipality**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
Amersfoort	Pixley ka Seme LM	-	-	-	-	-	-	Clean	-	-
Balfour	Dipaleseng LM	-	-	-	-	>2 500	-	Clean	-	-
Belfast	Emakhazeni LM	19 000	690 000	5 200	>2 400	>5 000	Clean	Clean	>1 000	>1 000
Bethal	Govan Mbeki LM	-	-	450 000	100 000	50 000	*E. coli* >1 000	>1 000	Unable to test (water does not flow through plant)	>1 000
Charl Cilliers	Govan Mbeki LM	-	-	-	-	Clean	-	Clean	-	-
Delmas	Victor Khanye LM	-	-	Clean	1 500	High phos-phate content	-	Clean	-	>1 000
Dullstroom	Emakhazeni LM	-	-	2 000	Clean	-	Clean	Clean	>1000	>10 000
Ermelo	Msukaligwa LM	Clean	310 000	590 000	-	1 500	-	Clean	Clean	Clean
Evander	Govan Mbeki LM	-	-	-	-	-	-	>1 000	>10 000	>10 000
Greylingstad	Dipaleseng LM	-	-	-	-	Clean	-	Clean	-	-
Kriel	Emalahleni LM	-	-	-	-	>1 500	-	-	-	-
Leandra	Govan Mbeki LM	-	-	-	-	-	-	Clean	>10 000	>10 000
Lydenburg	Thaba Chweu LM	1 000 000	-	73 400	>1 000	1 500	Clean	>1 000	Unable to test (water does not flow through plant)	Unable to test (water does not flow through plant)
Machadodorp	Emakhazeni LM	-	-	-	Clean	-	Clean	Phos-phates >10	>1 000	>1 000
Middelburg	Steve Tshwete LM	-	-	-	Clean	1 500	Phos-phates >25	Clean	>10 000	>1 000
Morgenzon	Lekwa LM	-	-	-	-	>1 500	-	Clean	-	-
Nelspruit	Mbombela LM	-	-	-	-	-	-	Nitrates >25	>1 000	>1 000
Piet Retief	Mkhondo LM	-	-	-	>1 000	>1 000	-	Clean	Clean	Clean
Secunda (Kinross)	Govan Mbeki LM	-	-	-	2 000	Clean	Clean	>1 000	>10 000	>10 000
Secunda (Trichardt)	Govan Mbeki LM	-	-	-	-	-	-	-	>1 000	Clean

Place	Municipality	2013	2014	2015	2016	2017	2018	2019	2020	2021
Standerton	Lekwa LM	-	-	100 000	50 000	30 000	*E. coli* >1 000	>10 000	>10 000	>10 000
Volksrust	Pixley ka Seme LM	-	-	-	-	-	-	Clean	-	-
Wakkerstroom	Pixley ka Seme LM	-	-	-	-	-	-	Clean	-	-
White River	Mbombela LM	-	-	-	Clean	Clean	-	Clean	-	-
Witbank	eMalahleni LM	-	-	-	4 000	High phos-phate content	-	>5 000	>10 000	>10 000

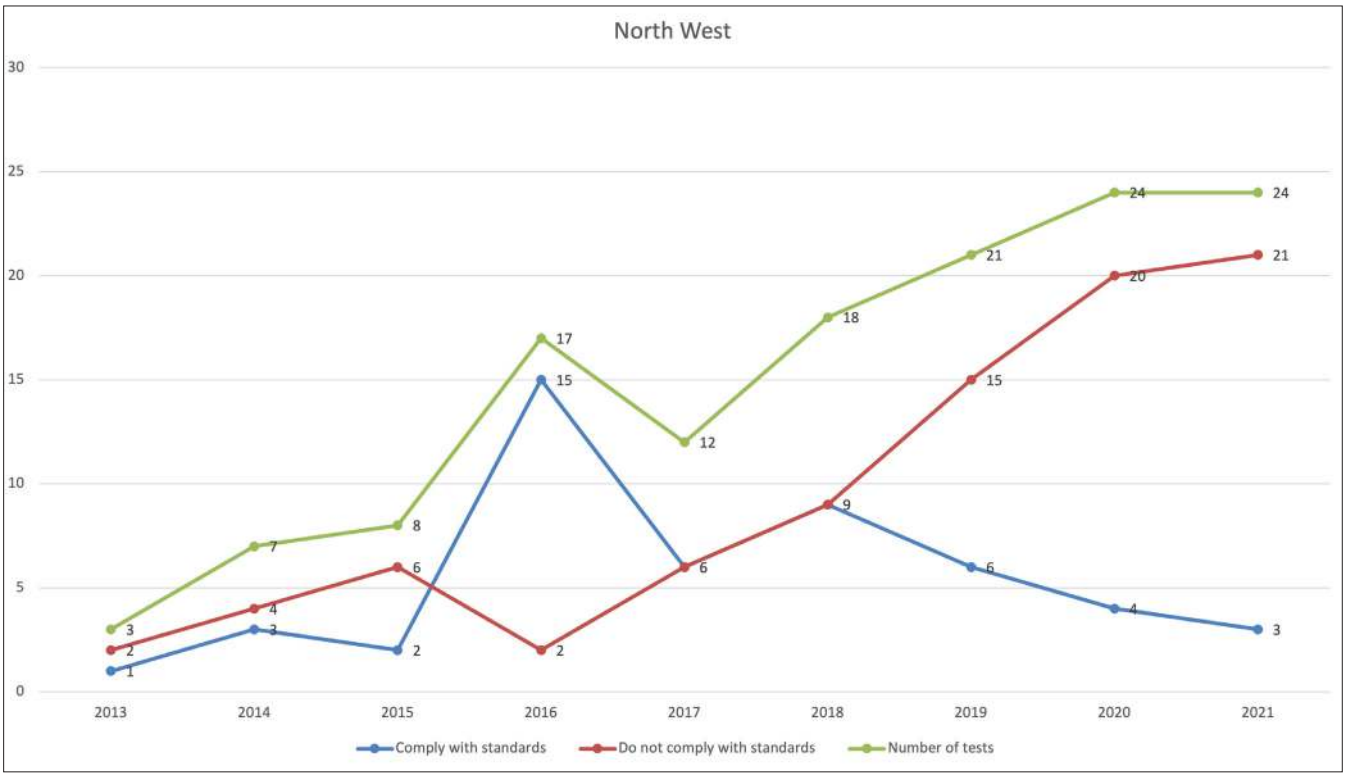


Graph 10: Green drop results for Mpumalanga

Table 8: Green drop results for North West (2013–2021)

NORTH WEST										
Place	**Municipality**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
Biesiesvlei	Ditsobotla LM	-	-	-	-	-	-	-	>10 000	>10 000
Bloemhof	Lekwa-Teemane LM	-	-	-	Clean	-	*E. coli* >1 000; 1 000 faecal coliform bacteria	>1 000	>1 000	>1 000
Brits	Madibeng LM	-	-	-	Clean	Clean	Clean	Clean	>1 000	>1 000
Buffelspoort	Madibeng LM	-	-	-	-	-	-	Clean	>10 000	-
Christiana	Lekwa-Teemane LM	-	-	3 500	Clean	Clean	*E. coli* >1 000; 1 000 faecal coliform bacteria	>10 000	>1 000	>1 000
Coligny	Ditsobotla LM	-	4 *E. coli*	E. coli	Clean	Clean	Clean	>100 000	>10 000	>10 000
Delareyville	Tswaing LM	-	-	-	Clean	-	-	Clean	>1 000	>1 000
Groot-Marico	Ramotshere Moiloa LM	-	-	-	-	-	-	>1 000	>1 000	>1 000
Hartbeespoort	Madibang LM	-	-	-	Clean	>3 000	*E. coli* >10 000	Clean	>1 000	>1 000
Klerksdorp	Matlosana City LM	-	>40 000	>1 000	Clean	High phos-phate content	Clean	>1 000	>1 000	>1 000
Koster	Kgetlengrivier LM	-	-	-	-	Clean	*E. coli* >5 000	>1 000	>1 000	>1 000
Lichtenburg	Ditsobotla LM	120 000	59 000	>2 000	Clean	-	-	>50 000	>1 000	>10 000
Mahikeng	Mahikeng LM	-	-	-	-	-	-	-	>10 000	>10 000
Makwassie	Maquassi Hills LM	-	-	-	Clean	Clean	Clean	-	-	-
Mooinooi	Madibeng LM	-	-	-	Clean	-	Clean	>5 000	>1 000	Clean
Orkney	Matlosana City LM	-	-	-	Clean	-	-	-	Accessed refused	-
Ottosdal	Tswaing LM	-	-	-	-	High phos-phate content	*E. coli* >1 000; 1 000 faecal coliform bacteria	> 10 000	-	-
Potchefstroom	Tlokwe LM	Clean	Clean	Clean	-	High phos-phate content >2 000	Clean	Clean	>10 000	>1 000
Rustenburg	Rustenburg LM	-	Clean	>1 000	Clean	-	*E. coli* >4 000	>5 000	Clean	>10 000

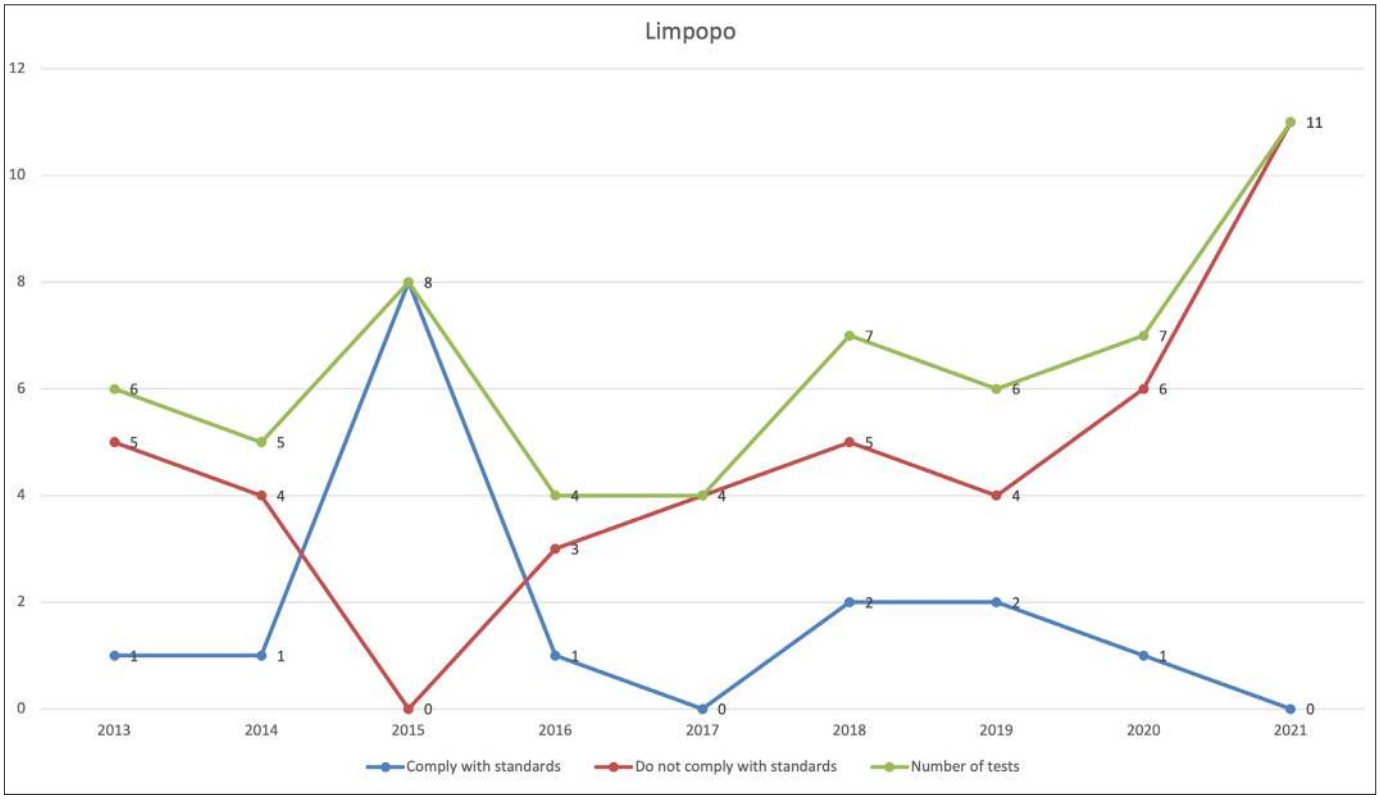
Place	Municipality	2013	2014	2015	2016	2017	2018	2019	2020	2021
Sannieshof	Tswaing LM	-	-	-	-	-	*E. coli* >1 000; 1 000 faecal coliform bacteria	-	Clean	>1 000
Schweizer-Reneke	Mamusa LM	-	-	-	-	High phos-phate content	-	>10 000	Clean	>1 000
Stella	Naledi LM	-	>100 000	>1 000	>2 000	-	*E. coli* >1 000	-	>1 000	>1 000
Stilfontein	Matlosana City LM	-	-	-	Clean	-	Clean	>1 000	>1 000	>1 000
Swartruggens	Kgetlengrivier LM	-	-	-	-	Clean	Clean	>1 000	-	>1 000
Ventersdorp	Ventersdorp LM	-	-	-	-	-	-	-	>1 000	>1 000
Vryburg	Naledi LM	>10 000	Clean	Clean	Clean	High phos-phate content	*E. coli* >1 000; Faecal coliform bacteria >1 000	>1 000	>10 000	>10 000
Wolmaransstad	Maquassi Hills	-	-	-	>1 000	-	Clean	Clean	Clean	Clean
Zeerust	Ramotshere Moiloa LM	-	-	-	Clean	-	-	>10 000	>1 000	Clean



Graph 11: Green drop results for the North West

Table 9: Green drop results for Limpopo (2013–2021)

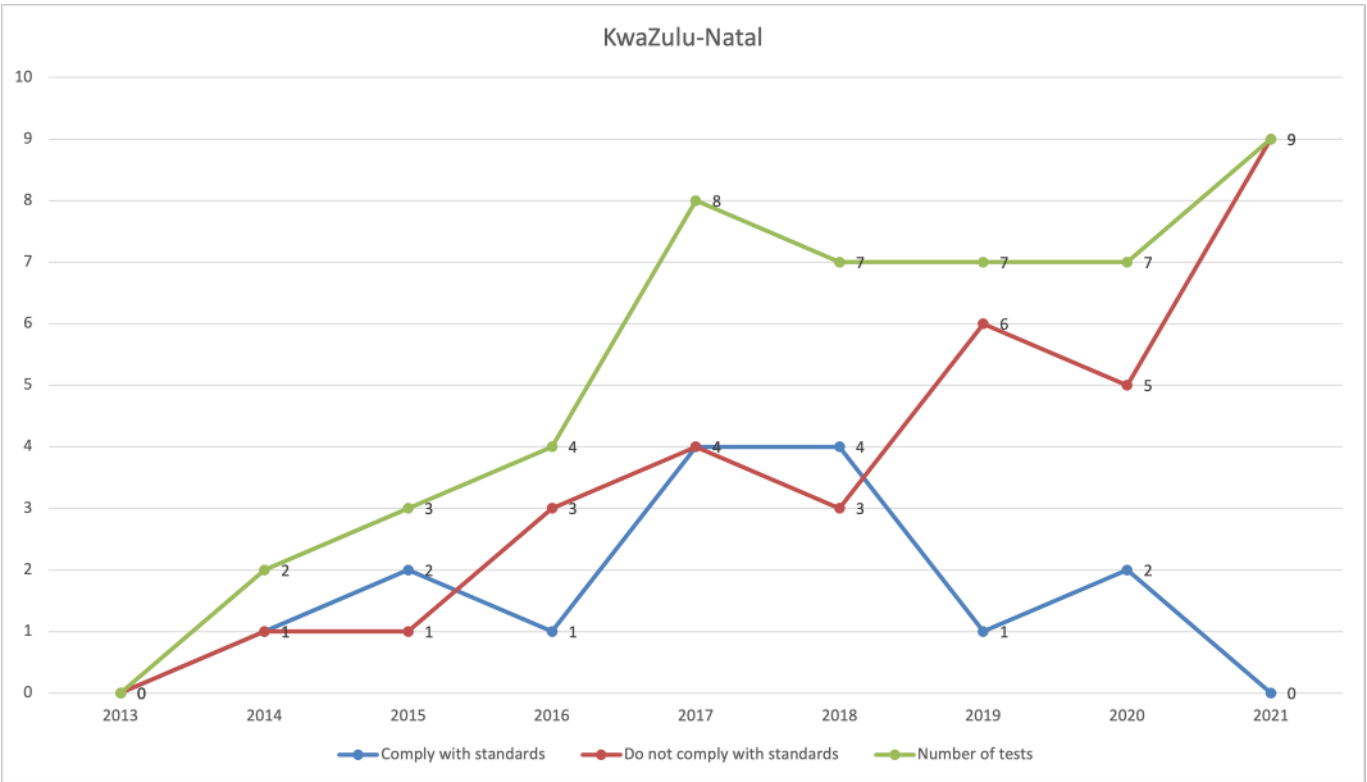
LIMPOPO										
Place	**Municipality**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
Ellisras	Lephalale LM	-	-	-	-	High phos-phate content >15 000	*E. coli* >100 000; faecal coliform bacteria >100 000	>1 000	>1 000	>1 000
Groblersdal	Elias Motsoaledi LM	-	-	-	>1 000	-	-	-	>1 000	>10 000
Leeupoort	Thabazimbi LM	-	-	Clean	-	-	-	-	-	-
Marble Hall	Ephraim Mogale LM	17 000	Clean	Clean	-	-	-	-	>1 000	>1 000
Musina	Musina LM	-	-	-	-	-	-	-	-	>1 000
Naboomspruit	Mookgophong LM	1 000 000	1 000 000	Clean	-	>2 500	*E. coli* >100 000; faecal coliform bacteria >100 000	>1 000	>10 000	>1 000
Nylstroom	Modimolle LM	-	-	-	>1 000	>1 000	*E. coli* >100 000; faecal coliform bacteria >100 000	>1 000	>1 000	>1 000
Phalaborwa	Ba-Phalaborwa LM	110 000	1 300	Clean	3 700	4 000	*E. coli* >100 000; faecal coliform bacteria >100 000	-	-	>1 000
Pietersburg	Polokwane LM	-	110 000	Clean	-	-	*E. coli* >100 000; faecal coliform bacteria >100 000	>1 000	-	>1 000
Potgietersrus	Mogalakwena LM	1 200	92 000	Clean	-	-	-	-	>10 000	>1 000
Tzaneen	Greater Tzaneen LM	Clean	-	Clean	Clean	-	Clean	Clean	Clean	> 1 000
Warmbaths	Bela-Bela LM	1 000 000	-	Clean	-	-	Clean	Clean	-	>10 000



Graph 12: Green drop results for Limpopo

Table 10: Green drop results for KwaZulu-Natal (2013–2021)

KWAZULU-NATAL										
Place	**Municipality**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
Amanzimtoti	eThekwini Metro	-	-	-	-	-	-	-	-	>10 000
Hluhluwe	The Big 5 False Bay LM	-	-	-	-	Clean	-	-	Clean	>1 000
Ixopo	Ubuhlebezwe LM	-	-	-	-	Clean	-	-	-	-
Margate	Hibiscus Coast LM	-	-	-	>1 100	>1 100	*E. coli* >1 000	>1 000	>1 000	>10 000
Newcastle	Newcastle LM	-	-	10 000	>2 000	>1 500	*E. coli* >1 000	>1 000	>1 000	>10 000
Paulpietersburg	eDumbe LM	-	Clean	Clean	Water in tanks is clean	Clean	Clean	>1 000	Clean	>1 000
Pongola	uPongola LM	-	-	-	>1 200	>4 200	Clean	>2 000	>1 000	>1 000
Richards Bay	uMhlathuze LM	-	-	-	-	-	Clean	>1 000	-	>10 000
Underberg	Kwa Sani LM	-	-	-	-	Clean	-	-	-	-
Utrecht	eMadlangeni LM	-	-	-	-	-	Clean	Clean	>1 000	>1 000
Vryheid	Abaqulusi LM	-	Clean	Clean	-	>2 000	*E. coli* >1 000	>5 000	>10 000	>10 000



Graph 13: Green drop results for KwaZulu-Natal

The national green drop results show a significant deterioration from 76% to 86% (i.e. 10 percentage points) for 2021, which is quite alarming and must be corrected. An active intervention must therefore take place. An analysis of the results per province is even more worrying. Every province is polluting the environment more than the previous year.

Most rivers in South Africa are being polluted daily, mostly with raw sewage that flows unhindered from manholes, canals and pumping stations. This is also a major problem because the water in these rivers is in most cases used to provide towns with water, as well as for agricultural purposes.

ACTION PLAN

Due to the fact that the Department of Water and Sanitation has now resumed the national Blue and Green Drop Project that was suspended in 2013, AfriForum's approach is to perform a monitoring and watchdog function. During the launch, AfriForum sent various requests to the Department that the municipalities that have been polluting water resources for years be held accountable. AfriForum will therefore request that a meeting be arranged with the new Minister of Water and Sanitation to discuss the findings of the report as well as to participate in the Department's Blue and Green Drop Project where possible.

In 2020, AfriForum's branches brought the poor quality of drinking water and sewage to respective municipalities' attention during the public participation process for integrated development plans. AfriForum branches also compiled action lists and submitted these lists to municipal managers to improve water quality. In this way, AfriForum wants to ensure that municipalities budget adequately in the coming financial year in order to manage drinking water and sewage infrastructure and services effectively.

The 2021 report will be used as a standard against which to measure the same infrastructure in 2022 in those towns and cities in which AfriForum has branches.

To ensure compliance, the following is done:

1. AfriForum keeps a comprehensive performance record or paper trail to keep record of the water quality of towns.
2. Municipalities of which the water quality does not comply with set standards are informed of this in writing, and comprehensive action plans are demanded from these municipalities. The affected municipalities must indicate how and by what date their water quality will comply with all requirements.
3. AfriForum will consider legal action against municipalities that fail to solve the issues. The possibility exists of criminal charges being brought against the administrative officials and that the route of private prosecution is followed.
4. These results are used where municipalities fail to rectify the problems and it is then handed over to the Green Scorpions for further investigation of wastewater treatment works that do not comply with the requirements.
5. The 2021 report – which comprises nine years' blue and green drop information – will be submitted to the Minister of Water and Sanitation so that AfriForum can discuss and implement strategies with the Minister to address these problems and put it into execution.
6. AfriForum branches will also launch self-help projects to enable communities to solve problems caused by municipalities themselves.

AfriForum believes and trusts that municipalities will cooperate to solve these important issues and to ensure a safe, healthy environment for all in South Africa.

CONCLUSION

Any deterioration in the quality of drinking water could be life-threatening. This risk is exacerbated because South Africa is still recovering from a serious drought, with a scarcity of water for human consumption, given the high water losses through the water reticulation infrastructure. It stands to reason that agriculture and industry should receive most of the country's available water for cultivation and production.

AfriForum is concerned about the management of the entire water supply chain, but even more so about the management of South Africa's treated sewage. The results of the 2021 survey indicate that there has indeed been an improvement in the quality of drinking water in South Africa. The drinking water of four towns show an improvement compared to last year's report, but it still is a matter of grave concern that some towns are not provided with clean drinking water.

Considering the vast number of sewage pollution complaints from across the country, the green drop results also reflect a significant deterioration at the WWTWs tested by AfriForum and of which historic records are kept. The country faces very high levels of sewage pollution as a result of poor infrastructure maintenance and incompetent management. This points to a crisis that is threatening communities across South Africa, but has now become life-threatening, for example the Vaal River crisis, as well as the whole of Gauteng and also in the Free State. South Africa's water resources are experiencing a serious crisis that must be addressed at a national level by the national government.

AfriForum makes various attempts to hold municipalities that are managed poorly accountable like in the case of Naboomspruit and Frankfort where AfriForum obtained a court order during the year against these municipalities respectively for the poor management of the plants.

Another problem that increasingly comes to light – especially in Gauteng's major metro areas – is that existing WWTWs are unable to cope with the growing quantities of sewage. This means that more and more plants are starting to pollute rivers because it does not have the capacity to treat the volume of sewage coming in.

The case in Naboomspruit however progressed further where AfriForum signed an agreement with the Municipality to assist the Municipality with advice on how to solve the problem.

AfriForum's affiliate Pionier services company also successfully managed two water plants and one WWTW of the Kgetlengrivier Local Municipality for roughly three months by way of a court order that was won by Kgetlengrivier Concerned Citizens, and Pionier services company was appointed to manage the plant on behalf of the forum. The above cases demonstrate that saving and protecting the future of the water resources lies in the hands of local communities and not only in those of the municipality.

AfriForum branches from across South Africa will use all appropriate remedies to ensure that issues of water quality are addressed immediately to protect this valuable resource at all costs. Letters on non-compliance are directed to municipalities, requiring immediate action not only to prevent people's lives from being endangered, but also to ensure sustainable water management. Where the minimum standards for drinking water are not maintained, AfriForum will use available remedies, including possible legal action, to compel municipalities to do so.

The 2021 survey will be used for monitoring the same infrastructure as well as others in the future.

Note from the author: It is of the utmost importance to test the quality of our drinking water and sewage on a permanent and continuous basis. We have to protect this critical resource.

BLUE AND GREEN DROP PROJECT