

BLUE AND GREEN



DROP PROJECT REPORT



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The blue and green drop project forms part of AfriForum Community Sustainability's
#CleanWater initiative.

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INTRODUCTION

The facts

It is a well-known fact that South Africa is a water-scarce country.¹ Pollution, extreme weather conditions and the dire state of drinking water and sewage infrastructure, together with a growing demand for water, are putting increasing pressure on the supply of clean drinking water.

The mismanagement of the country's water resources has reached a critical point, with residents facing serious health risks and suffering owing to the lack of water. The symptoms of this can be seen everywhere: numerous towns experiencing water shortages for weeks and even months; the daily pollution of rivers with raw sewage flowing freely from manholes, broken pumping stations and malfunctioning sewage waste-water treatment works (SWWTW); and the unfortunate and worrying result of this – the outbreak of cholera in May 2023 in the Free State and Gauteng, which resulted in the death of 47 people.² In addition, the government's failure to act quickly and decisively and large-scale corruption are further challenges thwarting the proper resolution of the crisis.

South Africa is not unique in the water challenges we face, but we will have to think anew about our use and management of water, before the shortage of water forces us to do so. Despite our water scarcity, the average South African water use is 235 litres per capita per day (ℓ/c/d), much higher than the world's average water use of 180 ℓ/c/d.³ In 2018 the Western Cape, and Cape Town in particular, was forced to introduce drastic water restrictions of 50 ℓ/c/d. It is also unacceptable that 46,4% of the drinking water available to municipalities is lost at national level as a result of leaks in the distribution network.⁴ Therefore, we need to find proactive solutions to meet the extraordinary challenges we are facing in regard to the sustainable management of water resources.

AfriForum is playing an increasingly important role in finding these solutions and in enabling communities to protect themselves against poor public service delivery, especially with regard to the provision of water. Several AfriForum branches have already set up emergency water points where clean drinking water is made available from private sources, and municipal boreholes are repaired in times of crisis to

improve water supply. These solutions bring essential short-term relief to places experiencing water shortages, and AfriForum's branches are encouraged to act proactively and develop emergency water plans for their towns.

Furthermore, AfriForum is committed to research on and the pursuit of independent solutions and the privatisation of water systems under the supervision of the state (as custodian of the country's water resources). For example, techniques and methods must be found to use water for multiple purposes. The same 1 litre of water of drinking water quality that is sent to consumers cannot be wasted by using it only once and then simply flushing it away – it must have an appropriate second and third use function.



Figure 1: An emergency water point set up by an AfriForum branch

¹ Centre for Environmental Rights. 2018. *Development, health and well-being depend on water: Why we must secure our water source areas now*. Available at https://cer.org.za/wp-content/uploads/2017/11/CER_Water-Source-Book_WEB-Version.pdf. Accessed on 12 October 2023.

² South African Government News Agency. 2023. Cholera death toll rises to 47 after four new fatalities recorded. 5 July. Available at <https://www.sanews.gov.za/south-africa/cholera-death-toll-rises-47-after-four-new-fatalities-recorded>. Accessed on 12 October 2023.

³ 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/sites/default/files/National-benchmark-2017-09-12-final.pdf>. Accessed on 12 October 2023.

⁴ Department of Water and Sanitation. 2023. *No drop watch report 2023*. Available at <https://ws.dws.gov.za/IRIS/releases/NDWR.pdf>. Accessed on 12 October 2023.

The law

The Constitution of South Africa provides in section 24 for an environment that is not harmful to the health or well-being of people. It seeks to preserve the environment for present and future generations and to prevent pollution or ecological degradation from occurring. It aims to promote environmental conservation and ecologically sustainable development.

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

Pursuant to section 156 and Part B of Schedule 4 of the Constitution, municipalities have the executive authority over and the right to administer water and sanitation services. This right is limited to drinking water distribution and local waste-water and sewage disposal systems.

At national level, the Department of Water and Sanitation (DWS) is responsible for managing and developing water supply and water resources.

AfriForum's blue and green drop project

The health of natural water resources has a major impact on the provision of drinking water that meets the quality standards for safe human consumption.

AfriForum's #CleanWater initiative was born in 2013 from the void left after the DWS stopped publishing national blue and green drop test reports. With the DWS's national blue drop tests, a comprehensive risk analysis of the entire

country's drinking water works is undertaken, while green drop tests are an in-depth audit of all SWWTW. Before the DWS again published a national green drop report and a blue drop progress report (which rated the risk of water supply systems) in 2022 and for the first time since 2012, and more recently published further interim blue and green drop reports in 2023, the DWS had not released official national blue and green drop results for almost a decade.

Without reliable information about the quality of South Africa's drinking and sewage water, AfriForum was forced during this period to launch its own, independent blue and green drop project to monitor the quality of drinking water (blue drop) and treated sewage water (green drop). For this purpose, an annual, nationwide sampling of tests was undertaken to give communities an indication of whether drinking and sewage water meets legal standards and therefore whether there are any health risks. In this way, AfriForum promoted the pursuit of positive change in the management of water infrastructure and resources, as well as holding the officials involved accountable.

Furthermore, the sustained pressure that AfriForum applied to the DWS year after year through the blue and green drop project also contributed to the resumption and publication of the DWS's official national blue and green drop tests. Although the DWS has resumed its national blue and green drop project, AfriForum's annual independent blue and green drop test report remains relevant, because the results of this can be compared with the DWS's official results. AfriForum thereby fulfils an important watchdog function through which further pressure can be applied to the DWS and municipalities to call them to account.



METHODOLOGY

Test kit

The test kit that is used for AfriForum's blue and green drop tests was developed in collaboration with accredited specialist water experts and researchers of the companies iWater Solutions and iLab. It is designed for non-scientific users to perform a basic, indicative determination of water quality. AfriForum strives to improve and refine the tests every year. The test kit used in 2023 contains the following six components, each with a shelf life of up to two years:

- 6-in-1 chemical test strip
- Phosphate test strip
- Nitrate/nitrite test strip
- Metal test strip
- Petrifilm (*E. coli* or coliform count plate)
- Aqua screen

Each test kit also comes with a complete instruction manual to ensure that tests are performed correctly and samples are handled and stored correctly.

This test kit presents an easy way to test for the presence or absence of the following chemical and bacteriological components, indicating whether the water can be safe for human consumption or harmful for the environment:

- Chemical components:
 - Total hardness
 - Total chlorine
 - Free chlorine
 - Bromine
 - Total alkalinity
 - Nitrate
 - Nitrite

- Phosphates
- Metals
- Microbiological components:
 - *E. coli*⁵
 - Fecal coliform bacteria
 - Coliform bacteria



Figure 2: AfriForum's test kit to test water quality

Sample

Community projects such as the blue and green drop project are carried out by AfriForum's network of 161 branches across the country. Participation in the blue and green drop project is voluntary, but as before, all branches nationwide have been requested to take water quality samples from their municipal drinking water as well as the discharge of treated sewage from their local SWWTW. AfriForum's branches informed their local municipalities about the project in advance and requested their permission and cooperation.

⁵ In terms of the SANS 241:2015 *National Standard for Drinking Water*, no *E. coli* in drinking water is allowed.



Figure 3: AfriForum's Marais de Vaal and Lambert de Klerk conducting blue drop tests at Warmbad Primary School

Taking and handling of water samples

To ensure that the correct test protocols are followed when taking and handling water samples, AfriForum's branch representatives were assisted, and where necessary accompanied by AfriForum's coordinators and various other stakeholders, including municipal officials, the media and service providers. Participants had direct access to specialist water experts from iWater Solutions and iLab through a WhatsApp group to provide assistance. Participants were also encouraged to take photos of the various test steps as evidence and in this way increase the project's credibility.

Reporting of test results

AfriForum, in collaboration with iWater Solutions and iLab, developed an online platform on which participants record all the test results. Test results are analysed by the platform

and if the permissible limits of any of the components of safe drinking water or treated sewage respectively have been exceeded (see below), it is automatically marked as "unsafe". After that, the marked test results are manually checked and verified. If verification of a drinking water result confirms that it is "unsafe", branches are advised to take a further water sample for comprehensive laboratory analysis so that appropriate remedial steps can be taken in collaboration with the municipality concerned.

Criteria for safe drinking water and treated sewage

- Drinking water

The criteria against which the safety of drinking water is tested are determined by the SANS 241:2015 National Standard for Drinking Water.

Table 1: Key components for safe drinking water⁶

| TEST | SAFE | UNSAFE |
|----------------------|--------------------------------|------------------------------|
| Petrifilm: E. coli | No blue spots | One or more spots/colonies |
| Petrifilm: Coliforms | Fewer than 2 red spots | More than 2 red spots |
| Aqua Screen | Water remains yellow in colour | Water becomes a black colour |
| Nitrite | Fewer than 1 ppm | More than 1 ppm |
| Nitrate | 10 ppm or less | 20 ppm and more |
| Phosphate | 10 ppm or less | 25 ppm and more |
| pH | Between 6 and 9 | Less than 6 or more than 9 |

Blue drop results that meet the relevant limits for safe human use are indicated in the results as “**Safe**”, but if one or more of the relevant limits are exceeded, they are indicated as “**Unsafe**”.

- Treated sewage

The criteria against which the safety of treated sewage is tested are determined by the “General authorisation for the discharge of waste, or water containing waste, into a water resource” issued under section 39 of the National Water Act (Act 36 of 1998).⁷ Note that the general authorisation is only used as a minimum guideline, because each sewage waste-water treatment works in terms of the National Water Act must have a water use licence in which more specific requirements than the general authorisation may be set.

Table 2: Key components for safe treated sewage⁸

| TEST | POLLUTED |
|-----------------------------|-------------------------------|
| E. coli and total coliforms | 10 or more red and blue spots |
| pH | Less than 6 or more than 9 |
| Phosphate | 25 ppm and above |
| Nitrate | 20 ppm and above |

Green drop results that meet the relevant limits for treated sewage discharged into a water resource are indicated in the results as “**Clean**”, but if one or more of the relevant limits are exceeded, they are indicated as “**Polluted**”.

⁶ i-Lab. S.a. *Watertoetsstel: Basiese toetsstel vir nie-wetenskaplike veldwerkers*. Printed manual. Available at AfriForum.

⁷ Department of Water and Environmental Affairs. 2013. *Revision of general authorisations in terms of Section 39 of the National Water Act, 1998 (Act No. 36 of 1998)*. Available at <https://cer.org.za/wp-content/uploads/2014/02/Revision-of-General-Authorisations-2013.pdf>. Accessed on 12 October 2023.

⁸ i-Lab. S.a. *Watertoetsstel: Basiese toetsstel vir nie-wetenskaplike veldwerkers*. Printed manual. Available at AfriForum.



Figure 4: Testing the discharge from a SWWTW

RESULTS

AfriForum's blue drop results

An overview of the 2023 blue drop results is presented in this section. The complete blue drop results are detailed in Schedule 1.

During August 2023, the quality of municipal drinking water of **193** towns and cities across the country was tested by AfriForum. At national level, **96%** (185 out of 193 tests) of the blue drop tests indicate that municipal drinking water is **safe** for human consumption.

The top performing provinces, each with 100% of tests indicating that municipal drinking water is **safe** for human consumption, are:

- Limpopo (13 tests)
- North West (24 tests)
- Northern Cape (14 tests)
- Eastern Cape (9 tests)
- Western Cape (35 tests)
- Gauteng (24 tests)

In addition, the Northern Cape's results show an improvement over 2022, when the results indicated that Kuruman and Upington's drinking water was unsafe, but the 2023 results show that both towns' drinking water is safe.

The provinces where test results indicated that municipal drinking water is **unsafe** are:

- Mpumalanga, where only 86% of tests (30 out of 35 tests) indicated that drinking water is safe, or 14% of tests (5 out of 35 tests) indicated that municipal drinking water is unsafe. This is a notable weakening compared to the preceding four years of tests, because previously no unsafe results were recorded in Mpumalanga.

The towns where blue drop tests indicated that drinking water is **unsafe** are:

- Amersfoort (Pixley Ka Seme LM)
 - Barberton (Mbombela LM)
 - Breyten (Msukaligwa LM)
 - Morgenzon (Lekwa LM)
 - Sabie (Thaba Chweu LM)
- Free State, where 93% of tests (25 out of 27 tests) indicated that drinking water is safe, or 7% of tests (2 out of 27 tests) indicated that municipal drinking water is unsafe.

The towns where blue drop tests indicated that drinking water is **unsafe** are:

- Koppies (Ngwathe LM)
 - Parys (Ngwathe LM)
- KwaZulu-Natal, where 92% of tests (11 out of 12 tests) indicated that drinking water is safe, or 8% of tests (1 out of 12 tests) indicated that municipal drinking water is unsafe.

The town where blue drop tests indicated that drinking water is **unsafe** is:

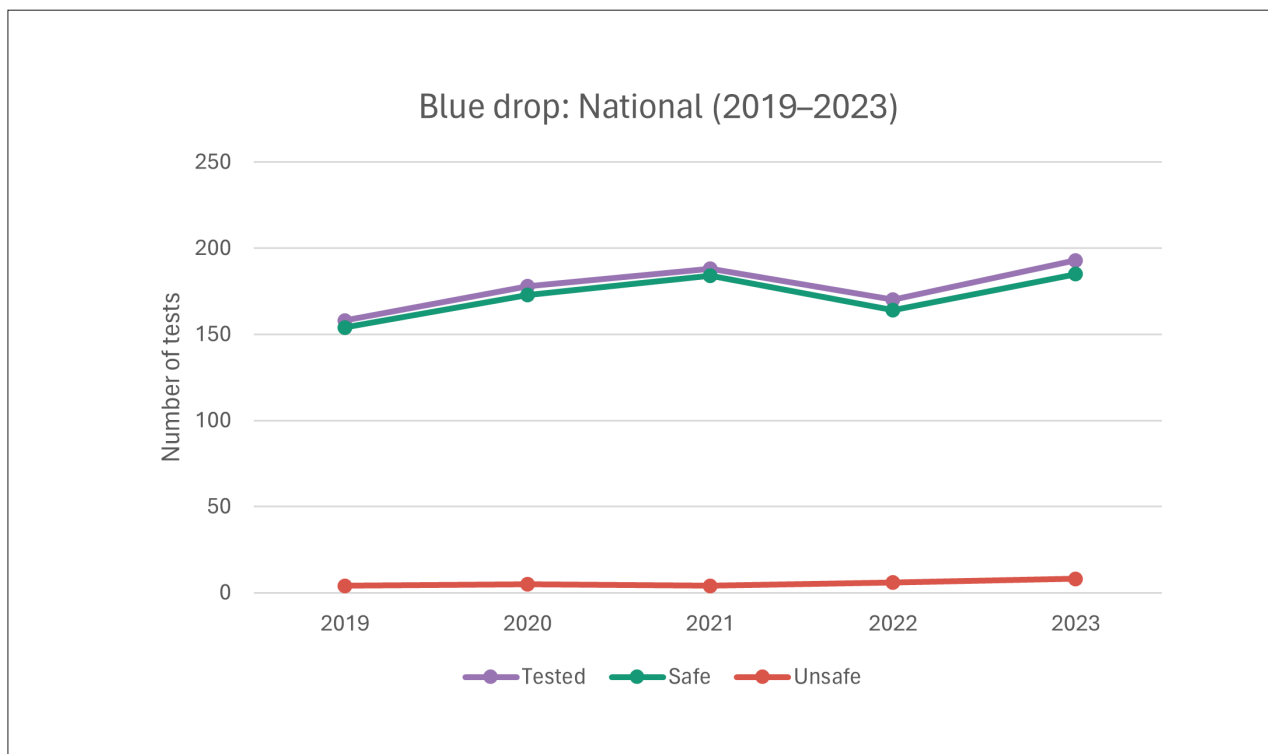
- Vryheid (Abaqulusi LM)

A summary of the results per province is shown in Table 3 and the maps in Figure 5 and Figure 6 below.

Table 3: Blue drop results by province

| PROVINCE | Number of tests | Number safe | Number unsafe | % Safe | % Unsafe |
|-----------------|-----------------|-------------|---------------|------------|-----------|
| Limpopo | 13 | 13 | 0 | 100% | 0% |
| Gauteng | 24 | 24 | 0 | 100% | 0% |
| Mpumalanga | 35 | 30 | 5 | 86% | 14% |
| Free State | 27 | 25 | 2 | 93% | 7% |
| North West | 24 | 24 | 0 | 100% | 0% |
| KwaZulu-Natal | 12 | 11 | 1 | 92% | 8% |
| Northern Cape | 14 | 14 | 0 | 100% | 0% |
| Eastern Cape | 9 | 9 | 0 | 100% | 0% |
| Western Cape | 35 | 35 | 0 | 100% | 0% |
| National | 193 | 185 | 8 | 96% | 4% |

The blue drop results from 2019–2022 are also included in this report so that they can be compared with the 2023 results. Results from previous years (2013–2018) can be made available on request. In Graph 1 the blue drop results of the past five years (2019–2023) are indicated.



Graph 1: Blue drop (drinking water) results for 2019–2023

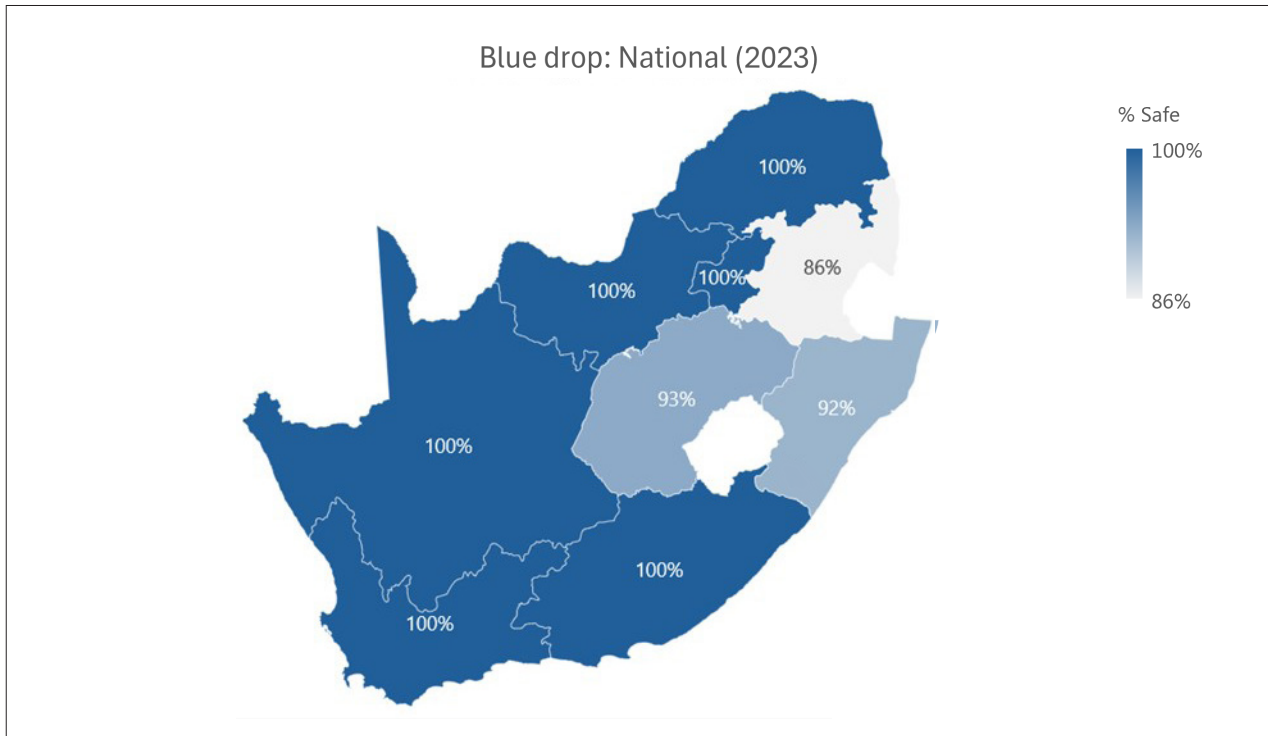


Figure 5: % Blue drop tests per province indicating **safe** drinking water

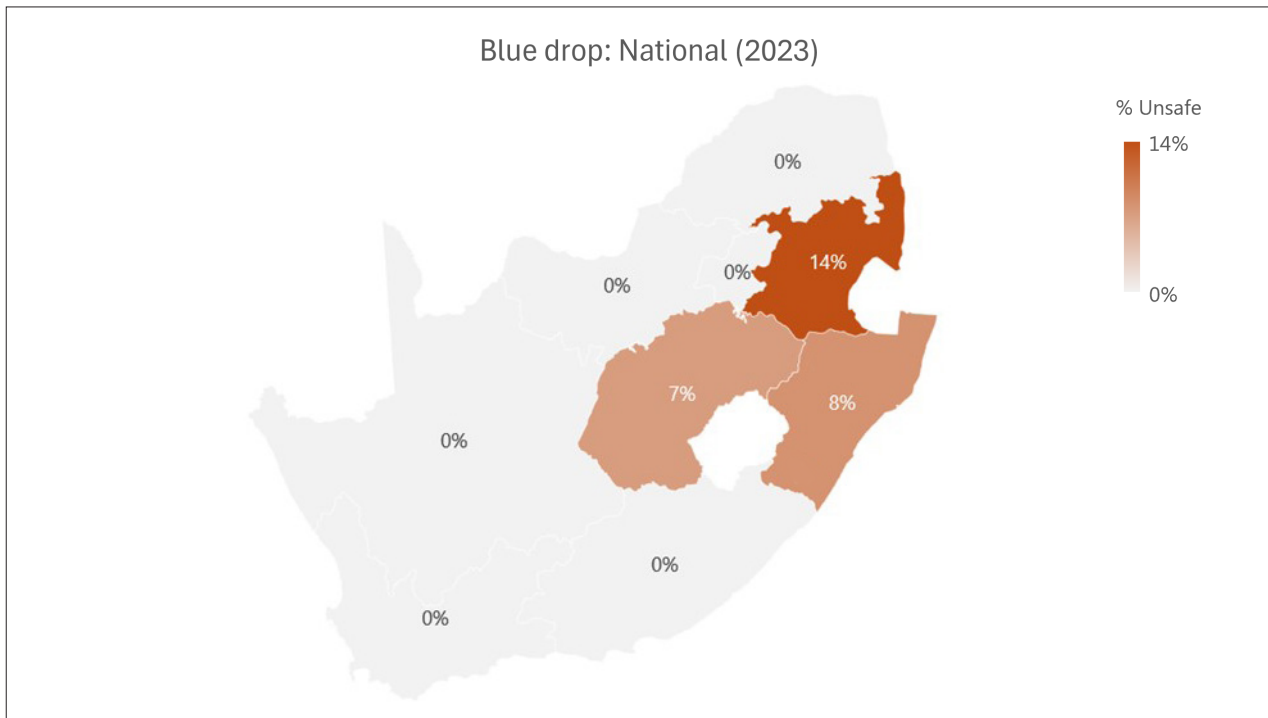


Figure 6: % Blue drop tests per province indicating **unsafe** drinking water

Comparison with DWS's blue drop results

The DWS's interim blue drop report released in June 2023 shows the following results in respect of a sample of 151 water supply systems (WSS) that were assessed:⁹

- The findings reflect an overview of WSS owned and managed by 140 municipalities and 26 water boards and bulk water suppliers.
- An average technical site assessment (TSA) of 69% was achieved, indicating that the infrastructure and process are partially functional and performing on average.
- Out of the 151 WSS, 128 (85%) are in an average, good and excellent condition, while 23 (15%) are in a poor and critical condition.
- The water systems that generally performed the best are in Gauteng, the Western Cape and the Eastern Cape.
- The water systems that are in a critical state are in the Free State, Limpopo, the Northern Cape and North West.
- The cost estimate to repair or refurbish these dysfunctional systems amounts to R1,5 billion, the major part of which must be used by the Free State and KwaZulu-Natal.
- Drinking water quality analyses indicate that 38% and 11% of the systems have an excellent or good microbiological quality, respectively, while 51% of the systems have a poor or bad microbiological water quality status. In terms of chemical quality, 16% and 14% of the systems were of excellent and good water quality, respectively, while the vast majority (71%) failed to

achieve acceptable chemical quality standards.

- 13 WSS did not report any water quality data, or no data was uploaded or available at the time of the audit to enable quality analyses.

It is worth noting that the DWS's blue drop results indicate bigger problems in relation to non-compliance with drinking water quality standards than AfriForum's blue drop results. This can possibly be attributed to the fact that the DWS's analysis was more comprehensive than AfriForum's blue drop tests, which only give an indication of water quality in respect of the most critical components from an acute health point of view.

AfriForum's green drop results

An overview of the 2023 green drop results is presented in this section. The complete green drop results are detailed in Schedule 2.

During August 2023, the quality of the discharge of **140** SWWTW across the country was tested by AfriForum's branches. Attempts were made to undertake green drop tests at a further five SWWTW, but this was unfeasible because:

- access to the Marble Hall, Gansbaai and Hermanus works was refused, although the local authority's permission was requested;
- Bethal's works are inactive and sewage flows through the plant without being treated at all before being discharged into the Blesbokspruit; and
- no treated sewage flows out of Senekal's works.

⁹ Department of Water and Sanitation. 2023. *Blue drop watch report 2023*. Available at <https://ws.dws.gov.za/IRIS/releases/BDWR.pdf>. Accessed on 12 October 2023.



Figure 7: Warmbad's SWWTW during AfriForum's green drop visit for 2023

At national level, the green drop results indicate that only **19%** (26 out of 140) of SWWTW's effluent meet the minimum standards for discharge into a water resource. The vast majority (**81%**, or 114 out of 140) of SWWTW's effluent is not up to standard.

The simple conclusion that can be drawn from this is that these SWWTW do not function properly and the effluent that is discharged into rivers is polluted with bacteria and/or chemicals that pose serious health risks. This is a huge problem because in most cases the polluted water of these rivers has to be reused further downstream to supply towns with drinking water or for agricultural purposes.

The worst performing provinces, where there were **no** green drop tests indicating that treated sewage did meet the standards, are:

- Eastern Cape (6 tests)
- Free State (15 tests)

Even in the Western Cape, which performed best with 48% of green drop tests indicating that treated sewage was up to standard, the majority did not meet the standard. What is worth noting is the huge gap between the Western Cape and the other provinces: the second best result was achieved in KwaZulu-Natal, where only 20% of the results (2 out of 10 tests) indicated that treated sewage met the standard, followed by North West in third place, where treated sewage met the standard in only 17% of cases (4 out of 23 tests).

A summary of the results per province is given in Table 4 and the maps in Figure 8 and Figure 9 below.

Table 4: Green drop results per province

| PROVINCE | Number of tests | Number clean | Number polluted | % Clean | % Polluted |
|-----------------|-----------------|--------------|-----------------|------------|------------|
| Limpopo | 10 | 1 | 9 | 10% | 90% |
| Gauteng | 15 | 1 | 14 | 7% | 93% |
| Mpumalanga | 16 | 1 | 15 | 6% | 94% |
| Free State | 15 | 0 | 15 | 0% | 100% |
| North West | 23 | 4 | 19 | 17% | 83% |
| KwaZulu-Natal | 10 | 2 | 8 | 20% | 80% |
| Northern Cape | 12 | 1 | 11 | 8% | 92% |
| Eastern Cape | 6 | 0 | 6 | 0% | 100% |
| Western Cape | 33 | 16 | 17 | 48% | 52% |
| National | 140 | 26 | 114 | 19% | 81% |

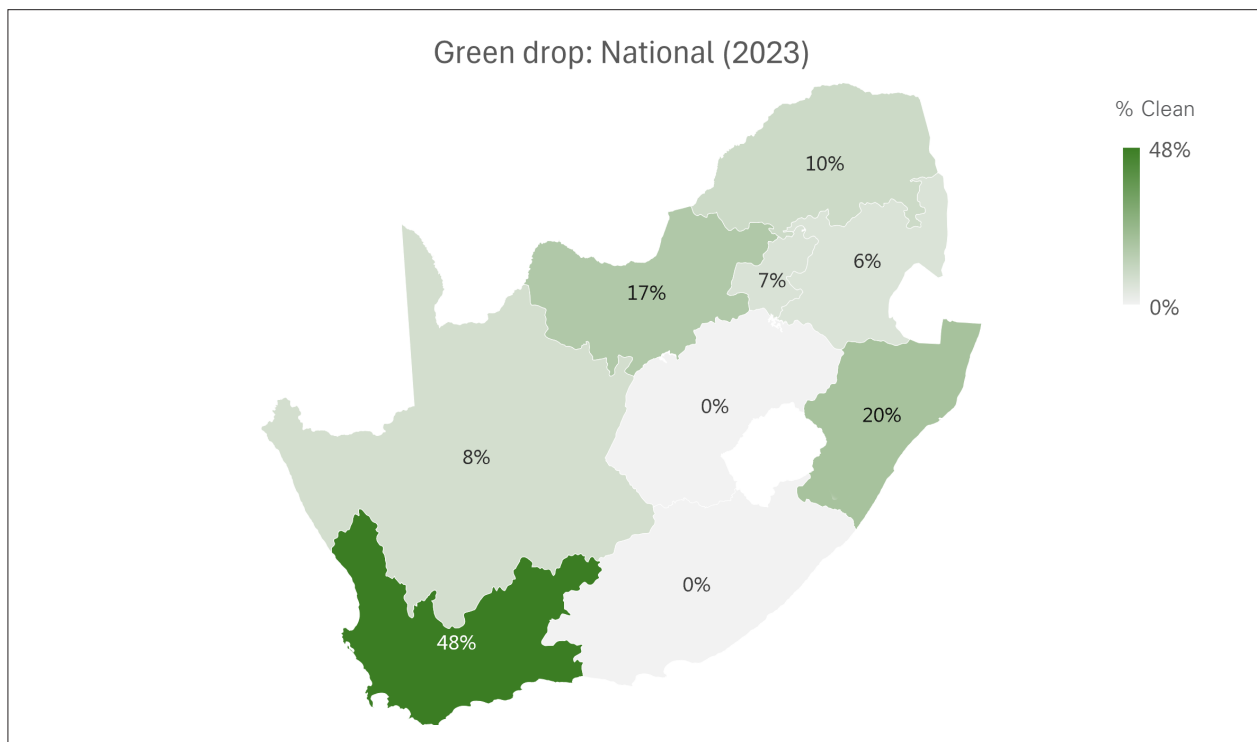


Figure 8: % Green drop tests per province indicating **clean** treated sewage

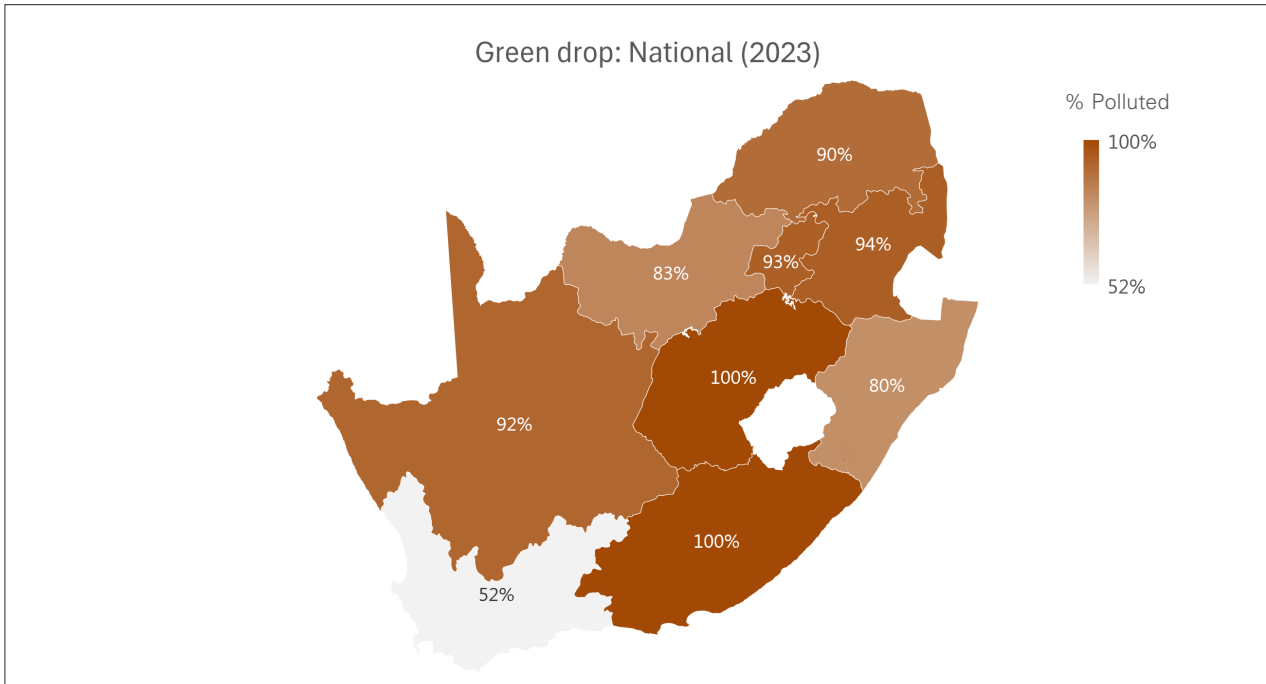
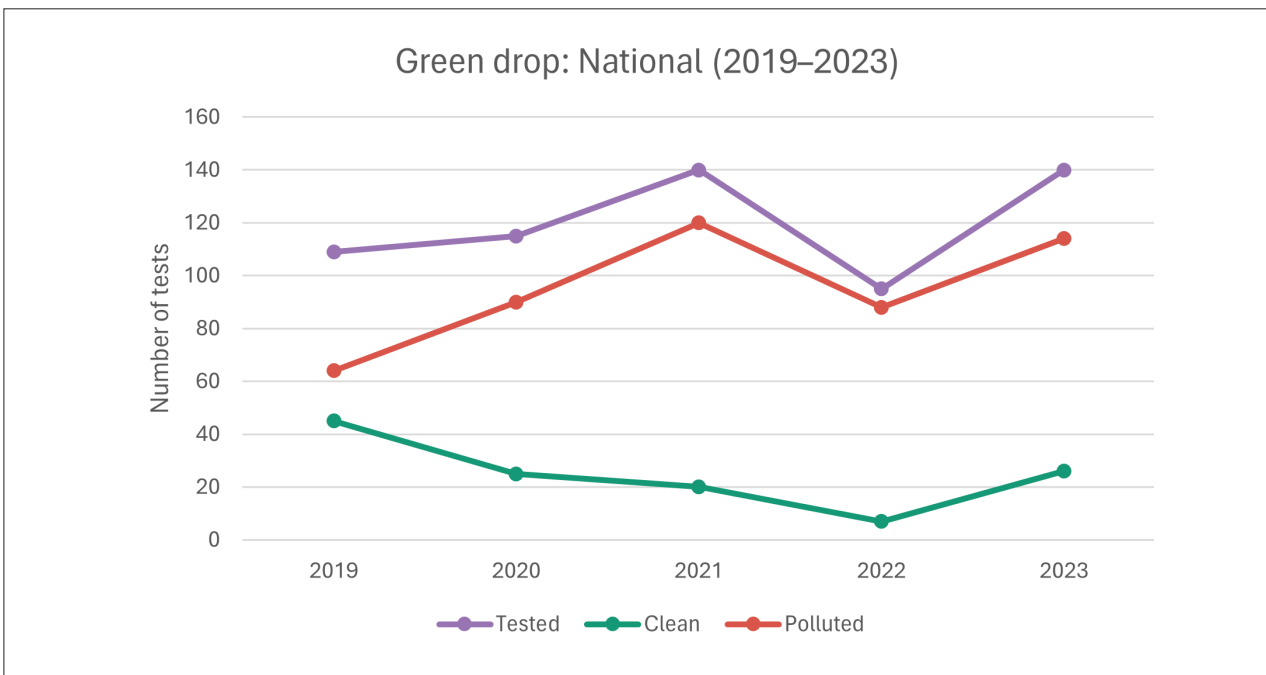


Figure 9: % Green drop tests per province indicating **polluted** treated sewage

The green drop results from 2019–2022 are also included in this report so that they can be compared with the 2023 results. Results from previous years (2013–2018) can be made available on request. In Graph 2 the green drop results of the past five years (2019–2023) are indicated.



Graph 2: Green drop (sewage water) results for 2019–2023

Although it is not clearly visible from Graph 2 above, because significantly fewer green drop tests were carried out in 2022 (95 tests) than in 2021 and 2023 (140 tests each) which skewed the graph, the 2023 results only indicate the third worst performance during the last five years. The percentages of tests that did not meet the standard in the previous years are:

- 2019: 59%
- 2020: 78%

- 2021: 86%
- 2022: 93%
- 2023: 81%

However, it is clear that in the last five years there has been little, if any, improvement in the performance of SWWTW in South Africa and that they are still very poorly run.



COMPARISON WITH DWS'S GREEN DROP RESULTS

The DWS's interim green drop report released in June 2023 shows the following results in respect of a sample of 334 municipal SWWTW (out of a total of 850 works across the country) that were assessed:¹⁰

- All 334 municipal SWWTW, spread across all nine provinces, were declared in critical condition in 2022 and received green drop scores below 31%.
- The worst-performing provinces, with the largest number of works in critical condition, are:
 - Limpopo (78% of works)
 - Northern Cape (76% of works)
 - North West (69% of works)
 - Free State (67% of works)
- The municipalities where these works are located have been placed under regulatory observation in terms of the Water Services Act (Act 108 of 1997).
- The DWS sent non-compliance letters to each of the 334 water service institutions involved. In turn, only 168 of the 334 water service institutions have submitted "corrective action plans" to the DWS. Of these, 43 water service authorities requested support from the DWS and a mere 34 of the 168 "corrective action plans" were implemented at the time of the release of the interim

green drop report. The others are either in the planning phase or have reported no progress.

- Some of the challenges that the DWS has identified that have a negative effect on the improvement of these SWWTW include, among other things, funding restrictions, vandalism and theft, lack of cooperation from municipalities, and ongoing deterioration of infrastructure.

Despite these alarming findings, Senzo Mchunu, Minister of Water and Sanitation, said that he was nevertheless encouraged by the 2022/23 report. This after municipalities had already been warned in 2022 to get their proverbial houses in order and start immediately with maintenance and renovation work. As the report points out, the number of municipalities that did comply with the request a year later is not nearly enough to produce a real improvement. This only further emphasises the government's denial of the seriousness of the crisis and its unwillingness to act decisively to solve it.

AfriForum's 2023 green drop results also reflect this gloomy outlook regarding South Africa's extremely deficient sewage management. Given the DWS's green drop results that each of the 334 SWWTW are in a critical condition, with essential repairs not being done, it is expected that the pollution of water resources with untreated sewage will increase even further in the future, unless urgent and drastic action is taken.

¹⁰ Department of Water and Sanitation. 2023. *Green drop watch report 2023*. Available at <https://ws.dws.gov.za/IRIS/releases/GDWR.pdf>. Accessed on 12 October 2023.

ACTION PLAN

AfriForum has been undertaking its independent blue and green drop project for ten years, since 2013. Therefore, AfriForum has a database of valuable, first-hand data and this makes AfriForum an important player in discussions and research on the state of South Africa's drinking water and sewage water quality.

Through AfriForum's blue and green drop report, the public is equipped with knowledge about their local conditions, which contributes to transparency and an informed and active citizenry. AfriForum's branches are encouraged to launch do-it-yourself projects so that communities themselves can solve problems caused by poor municipal service delivery.

Since the DWS resumed the official, national blue and green drop project in 2022, AfriForum's approach is to fulfil a monitoring and watchdog function.

In this way, AfriForum gains an opportunity to engage in dialogue with the government in different ways:

- During the launch of the project, municipalities are requested to cooperate with AfriForum.
- Municipalities that have not met the relevant drinking and sewage water quality standards will be notified in writing. These municipalities will be requested to submit comprehensive action plans, indicating how and by what date steps will be taken to meet the relevant quality standards.
- At the same time, AfriForum will, as far as possible, draw up action lists to improve water quality and will submit these lists to municipal managers.
- With the introduction of the results contained in this report, AfriForum will make a request to the Minister of Water and Sanitation to call a meeting to –
 - discuss the findings of the report;

- request the minister to disclose which municipalities that have received directives have still not complied with them; and
- request the minister to urgently call to account those municipalities that have been polluting our water sources for years.

To promote compliance, the following is done:

- AfriForum will consider legal action against municipalities that fail to resolve the problems. The possibility even exists that criminal charges may be filed against the administrative officials, and the route of private prosecution may be followed.
- Where municipalities fail to rectify problems in respect of defective SWWTW, these results are handed over to the Green Scorpions for further investigation and possible prosecution.

In 2024, AfriForum's blue and green drop results for 2023 regarding poor drinking and sewage water quality will again be brought to the attention of the municipalities concerned, as before, during the public participation process for integrated development plans (IDP). In this way, AfriForum wants to ensure that municipalities budget sufficiently in the coming financial year to efficiently manage drinking and sewage water infrastructure and services.

AfriForum aims to improve the quality and scope of the blue and green drop project every year. The 2023 report will be used as a standard to build on in 2024.

We trust that government, from national to local level, will cooperate to resolve these important issues in order to ensure a safe, healthy environment for all in South Africa.

SUMMARY

The blue and green drop results for 2023 give AfriForum cause for concern about the overall state of the management of the total water supply chain in South Africa.

The 2023 blue drop results show that while municipal drinking water is mostly safe for human consumption, with 96% of all blue drop tests at the national level being up to standard, the drinking water of eight towns did not meet the standards for safe drinking water. These results are comparable to AfriForum's blue drop results from previous years. Drinking water that does not meet the appropriate standards can be life-threatening, and any weakening in the management of drinking water systems increases the risk of South Africans being exposed to unsafe drinking water.

It is important to note that drinking water samples were only taken in places where AfriForum has branches and that the results only apply in respect of the time at which the sample was taken.

The 2023 green drop results indicate the alarming state of the (mis)management of South Africa's treated sewage wastewater. Compared to AfriForum's green drop results from the previous two years, there was no significant change in the total percentage of treated sewage samples that did not meet the relevant standards. Only 19% of the treated sewage samples met the relevant standards in 2023, which means that the water discharged by SWWTW into rivers received insufficient treatment (if at all) in 81% of cases.

The extent of sewage pollution that occurs across South Africa can be attributed to a lack of efficient infrastructure maintenance and management. A further problem that is increasingly occurring, especially in Gauteng's metro areas, is that existing SWWTW do not have sufficient capacity to treat rising volumes of sewage. As a result, more and more sewage is discharged into rivers without treatment.

South Africa is a water-poor country, that is also facing a period of drought, and the availability of water for human consumption is extremely limited. The pollution of natural water sources with sewage puts further pressure on struggling drinking water systems that must treat this polluted water, at higher costs, to safe standards. This situation is exacerbated by high water losses in drinking water distribution infrastructure even before it reaches end users. That is why AfriForum wants to emphasise that a water crisis is threatening communities across South Africa, which has already become a life-threatening reality in places. This is a serious crisis that should be dealt with at national level by the national government, but which unfortunately is being handled without the necessary seriousness.

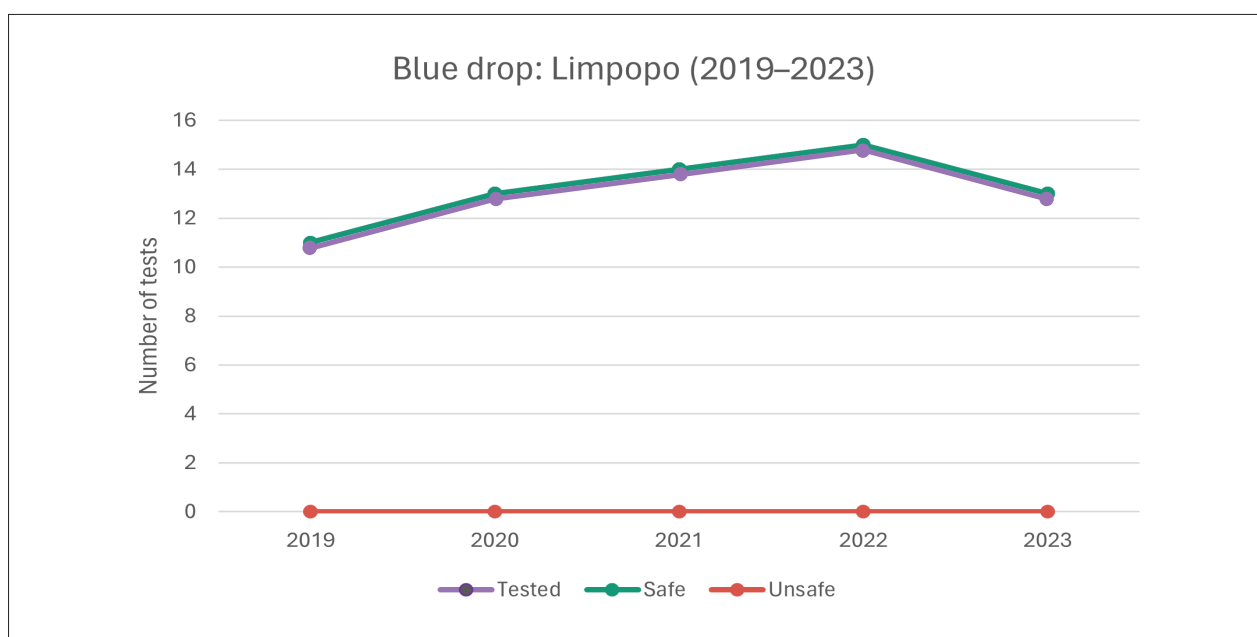
AfriForum will continue unceasingly to protect this vital resource at all costs, by ensuring that action plans are implemented by branches across the country and that all appropriate remedies are used to ensure that urgent attention is given to problems regarding the quality of drinking water and sewage.



SCHEDULE 1: COMPLETE BLUE DROP RESULTS (2019–2023)

Table 5: Blue drop results for Limpopo (2019–2023)

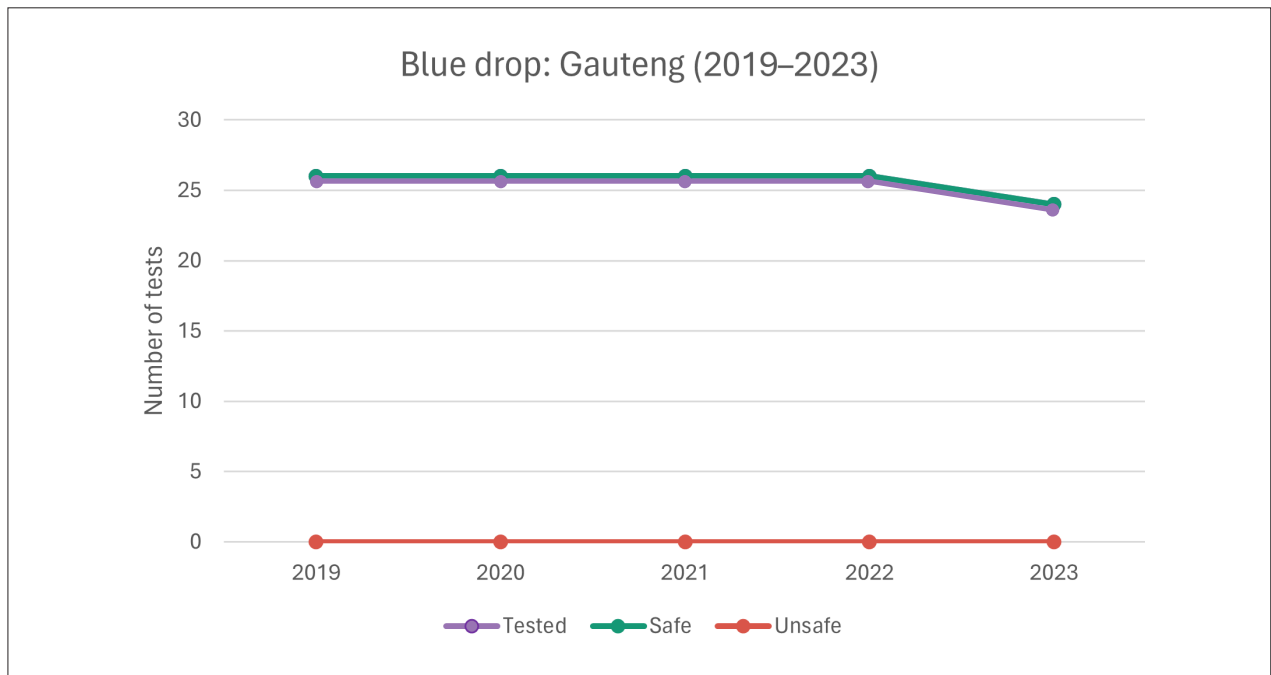
| Town | Municipality | 2019 | 2020 | 2021 | 2022 | 2023 |
|----------------|----------------------------|------|------|------|------|------|
| LIMPOPO | | | | | | |
| Ellisras | Lephalale LM | Safe | Safe | Safe | Safe | Safe |
| Groblersdal | Elias Motsoaledi LM | Safe | Safe | Safe | Safe | Safe |
| Haenertsburg | Greater Tzaneen LM | Safe | Safe | Safe | Safe | |
| Hoedspruit | Maruleng LM | | | | Safe | Safe |
| Marble Hall | Sekhukhune DM | Safe | Safe | Safe | Safe | Safe |
| Musina | Musina LM | | | Safe | Safe | Safe |
| Naboomspruit | Mookgophong – Modimolle LM | Safe | Safe | Safe | Safe | Safe |
| Nylstroom | Mookgophong – Modimolle LM | Safe | Safe | Safe | Safe | Safe |
| Phalaborwa | Ba-Phalaborwa LM | Safe | Safe | Safe | Safe | Safe |
| Pietersburg | Polokwane LM | Safe | Safe | Safe | Safe | Safe |
| Potgietersrus | Mogalakwena LM | | Safe | Safe | Safe | Safe |
| Roedtan | Mookgophong – Modimolle LM | | Safe | Safe | Safe | |
| Thabazimbi | Thabazimbi LM | Safe | Safe | Safe | Safe | Safe |
| Tzaneen | Greater Tzaneen LM | Safe | Safe | Safe | Safe | Safe |
| Warmbad | Bela-Bela LM | Safe | Safe | Safe | Safe | Safe |
| | Tested | 11 | 13 | 14 | 15 | 13 |
| | Safe | 11 | 13 | 14 | 15 | 13 |
| | Unsafe | 0 | 0 | 0 | 0 | 0 |



Graph 3: Blue drop results for Limpopo (2019–2023)

Table 6: Blue drop results for Gauteng (2019–2023)

| Town | Municipality | 2019 | 2020 | 2021 | 2022 | 2023 |
|-----------------|--------------------|------|------|------|------|------|
| GAUTENG | | | | | | |
| Alberton | Ekurhuleni Metro | Safe | Safe | Safe | Safe | Safe |
| Benoni | Ekurhuleni Metro | Safe | Safe | Safe | Safe | Safe |
| Boksburg | Ekurhuleni Metro | Safe | Safe | Safe | Safe | Safe |
| Brakpan | Ekurhuleni Metro | Safe | Safe | Safe | Safe | Safe |
| Bronkhorstspuit | Tshwane Metro | Safe | Safe | Safe | Safe | Safe |
| Centurion | Tshwane Metro | Safe | Safe | Safe | Safe | Safe |
| Cullinan | Tshwane Metro | Safe | Safe | Safe | Safe | Safe |
| Edenvale | Ekurhuleni Metro | Safe | Safe | Safe | Safe | Safe |
| Fochville | Merapong City LM | Safe | Safe | Safe | Safe | Safe |
| Germiston | Ekurhuleni Metro | Safe | Safe | Safe | Safe | Safe |
| Heidelberg | Lesedi LM | Safe | Safe | Safe | Safe | Safe |
| Kempton Park | Ekurhuleni Metro | Safe | Safe | Safe | Safe | Safe |
| Krugersdorp | Mogale City LM | Safe | Safe | Safe | Safe | Safe |
| Lochvaal | Emfuleni LM | Safe | Safe | Safe | Safe | |
| Magaliesburg | Mogale City LM | Safe | Safe | Safe | Safe | |
| Meyerton | Midvaal LM | Safe | Safe | Safe | Safe | Safe |
| Pretoria | Tshwane Metro | Safe | Safe | Safe | Safe | Safe |
| Pretoria North | Tshwane Metro | Safe | Safe | Safe | Safe | Safe |
| Pretoria West | Tshwane Metro | Safe | Safe | Safe | Safe | Safe |
| Randburg | Johannesburg Metro | Safe | Safe | Safe | Safe | Safe |
| Randfontein | Rand West City LM | Safe | Safe | Safe | Safe | Safe |
| Roodepoort | Johannesburg Metro | Safe | Safe | Safe | Safe | Safe |
| Springs | Ekurhuleni Metro | Safe | Safe | Safe | Safe | Safe |
| Vanderbijlpark | Emfuleni LM | Safe | Safe | Safe | Safe | Safe |
| Vereeniging | Emfuleni LM | Safe | Safe | Safe | Safe | Safe |
| Westonaria | Rand West City LM | Safe | Safe | Safe | Safe | Safe |
| | Tested | 26 | 26 | 26 | 26 | 24 |
| | Safe | 26 | 26 | 26 | 26 | 24 |
| | Unsafe | 0 | 0 | 0 | 0 | 0 |

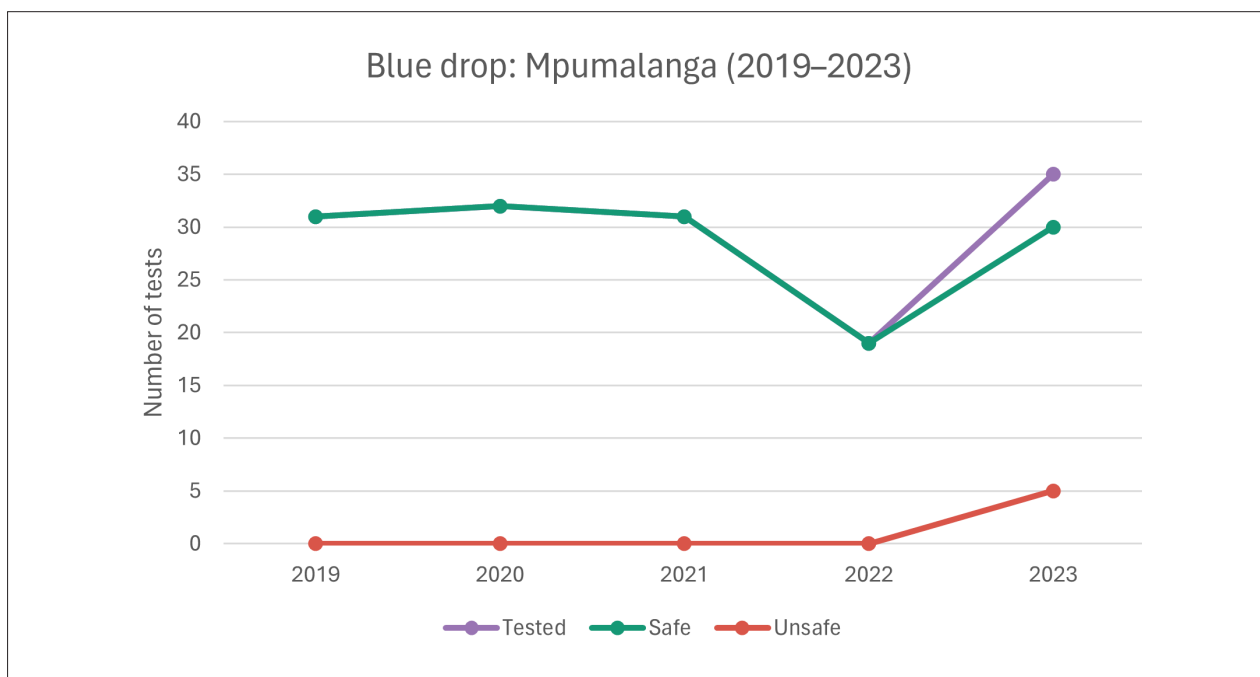


Graph 4: Blue drop results for Gauteng (2019–2023)

Table 7: Blue drop results for Mpumalanga (2019–2023)

| Town | Municipality | 2019 | 2020 | 2021 | 2022 | 2023 |
|-------------------|-------------------------|------|------|------|------|--------|
| MPUMALANGA | | | | | | |
| Amersfoort | Pixley Ka Seme LM | Safe | Safe | Safe | Safe | Unsafe |
| Badplaas | Chief Albert Luthuli LM | Safe | Safe | Safe | | Safe |
| Balfour | Dipaleseng LM | Safe | Safe | Safe | | Safe |
| Barberton | Mbombela LM | Safe | Safe | Safe | | Unsafe |
| Belfast | Emakhazeni LM | Safe | Safe | Safe | | Safe |
| Bethal | Govan Mbeki LM | Safe | Safe | Safe | Safe | Safe |
| Breyten | Msukaligwa LM | Safe | Safe | Safe | | Unsafe |
| Carolina | Chief Albert Luthuli LM | Safe | Safe | Safe | | Safe |
| Charl Cilliers | Govan Mbeki LM | Safe | Safe | Safe | | Safe |
| Chrissiesmeer | Msukaligwa LM | Safe | Safe | Safe | | Safe |
| Delmas | Victor Khanye LM | Safe | Safe | Safe | Safe | Safe |
| Dullstroom | Emakhazeni LM | Safe | Safe | Safe | Safe | Safe |
| Ermelo | Msukaligwa LM | Safe | Safe | Safe | Safe | Safe |
| Evander | Govan Mbeki LM | Safe | Safe | Safe | Safe | Safe |
| Greylingstad | Dipaleseng LM | Safe | Safe | | | Safe |
| Kinross | Govan Mbeki LM | | | | Safe | Safe |
| Kriel | Emalahleni LM | Safe | Safe | | Safe | Safe |
| Leandra | Govan Mbeki LM | Safe | Safe | Safe | | Safe |
| Lydenburg | Thaba Chweu LM | Safe | Safe | Safe | | Safe |
| Machadodorp | Emakhazeni LM | Safe | Safe | Safe | | Safe |
| Malelane | Nkomazi LM | | | Safe | Safe | Safe |
| Middelburg | Steve Tshwete LM | Safe | Safe | Safe | Safe | Safe |
| Morgenon | Lekwa LM | Safe | Safe | Safe | Safe | Unsafe |
| Nelspruit | Lekwa LM | Safe | Safe | Safe | Safe | Safe |
| Ogies | Emalahleni LM | | | | Safe | Safe |
| Piet Retief | Mkhondo LM | Safe | Safe | Safe | Safe | Safe |
| Sabie | Thaba Chweu LM | Safe | Safe | Safe | | Unsafe |
| Secunda | Govan Mbeki LM | Safe | Safe | Safe | Safe | Safe |
| Standerton | Lekwa LM | Safe | Safe | Safe | Safe | Safe |
| Sundra | Victor Khanye LM | Safe | Safe | Safe | | Safe |
| Trichardt | Govan Mbeki LM | | Safe | Safe | Safe | Safe |
| Volksrust | Pixley Ka Seme LM | Safe | Safe | Safe | | Safe |
| Wakkerstroom | Pixley Ka Seme LM | Safe | Safe | Safe | | Safe |

| Town | Municipality | 2019 | 2020 | 2021 | 2022 | 2023 |
|-------------------|---------------|------|------|------|------|------|
| MPUMALANGA | | | | | | |
| White River | Mbombela LM | Safe | Safe | Safe | Safe | Safe |
| Witbank | eMalahleni LM | Safe | Safe | Safe | Safe | Safe |
| | Tested | 31 | 32 | 31 | 19 | 35 |
| | Safe | 31 | 32 | 31 | 19 | 30 |
| | Unsafe | 0 | 0 | 0 | 0 | 5 |

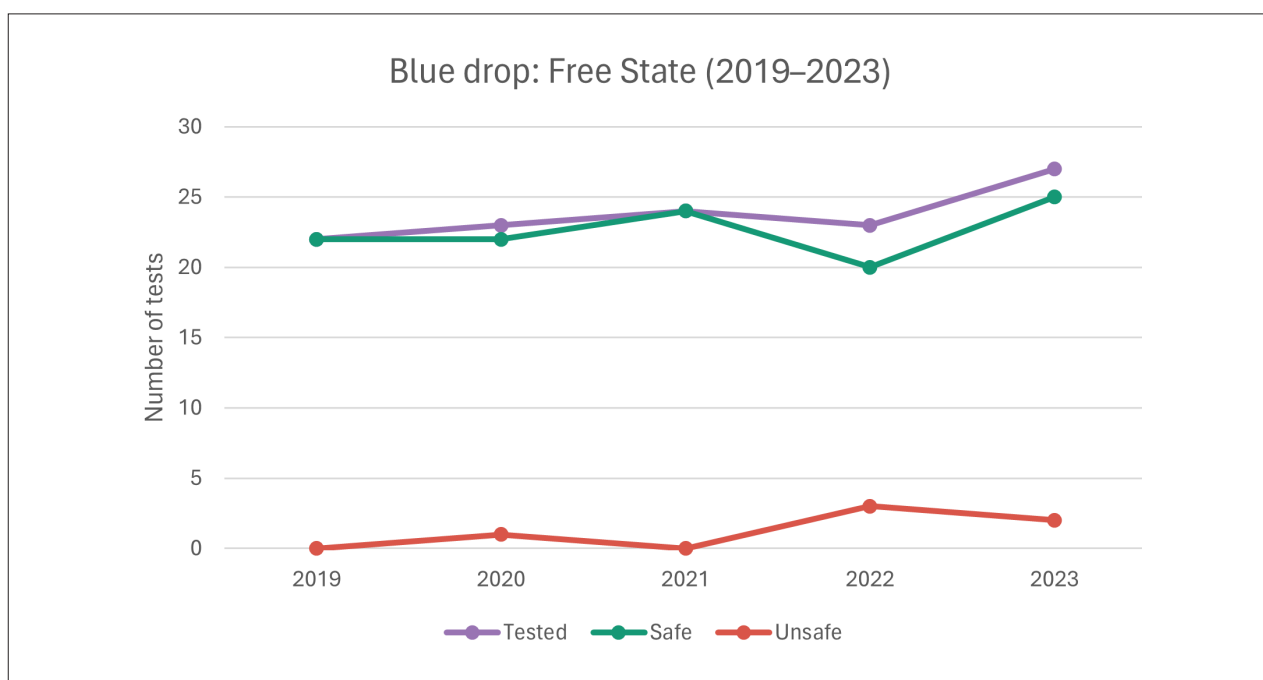


Graph 5: Blue drop results for Mpumalanga (2019–2023)

Table 8: Blue drop results for Free State (2019–2023)

| Town | Municipality | 2019 | 2020 | 2021 | 2022 | 2023 |
|-------------------|---------------------|------|--------|------|--------|--------|
| FREE STATE | | | | | | |
| Allanridge | Matjhabeng LM | Safe | Safe | Safe | Safe | |
| Bethlehem | Dihlabeng LM | Safe | Safe | Safe | Safe | Safe |
| Bloemfontein | Mangaung Metro | Safe | Safe | Safe | Safe | Safe |
| Boshof | Tokoloko LM | | Unsafe | Safe | Safe | Safe |
| Bothaville | Nala LM | Safe | Safe | Safe | Safe | Safe |
| Brandfort | Masilonyana LM | | | | | Safe |
| Bultfontein | Tswelopele LM | | | | | Safe |
| Dealesville | Tokoloko LM | Safe | Safe | Safe | Safe | Safe |
| Deneysville | Metsimaholo LM | | | | | Safe |
| Frankfort | Mafube LM | Safe | Safe | Safe | Safe | Safe |
| Harrismith | Maluti-A-Phofung LM | Safe | Safe | Safe | Safe | Safe |
| Heilbron | Ngwathe LM | Safe | Safe | Safe | Safe | Safe |
| Hennenman | Matjhabeng LM | Safe | Safe | Safe | Safe | Safe |
| Hertzogville | Tokoloko LM | Safe | Safe | Safe | | Safe |
| Koffiefontein | Letsemeng LM | | | | Unsafe | |
| Koppies | Ngwathe LM | Safe | Safe | Safe | | Unsafe |
| Kroonstad | Moqhaka LM | Safe | Safe | Safe | Unsafe | |
| Luckhoff | Letsemeng LM | | | | Safe | |
| Odendaalsrus | Matjhabeng LM | Safe | Safe | Safe | Safe | |
| Parys | Ngwathe LM | Safe | Safe | Safe | Unsafe | Unsafe |
| Petrus Steyn | Nketoana LM | Safe | Safe | Safe | | Safe |
| Reitz | Nketoana LM | Safe | Safe | Safe | Safe | Safe |
| Riebeeckstad | Matjhabeng LM | | | | | |
| Sasolburg | Metsimaholo LM | Safe | Safe | Safe | Safe | Safe |
| Senekal | Setsoto LM | Safe | Safe | Safe | Safe | Safe |
| Steynsrus | Moqhaka LM | | | | Safe | Safe |
| Theunissen | Masilonyana LM | Safe | Safe | Safe | Safe | Safe |
| Ventersburg | Matjhabeng LM | | | | | Safe |
| Viljoenskroon | Moqhaka LM | Safe | Safe | Safe | Safe | Safe |
| Virginia | Matjhabeng LM | | | | | Safe |

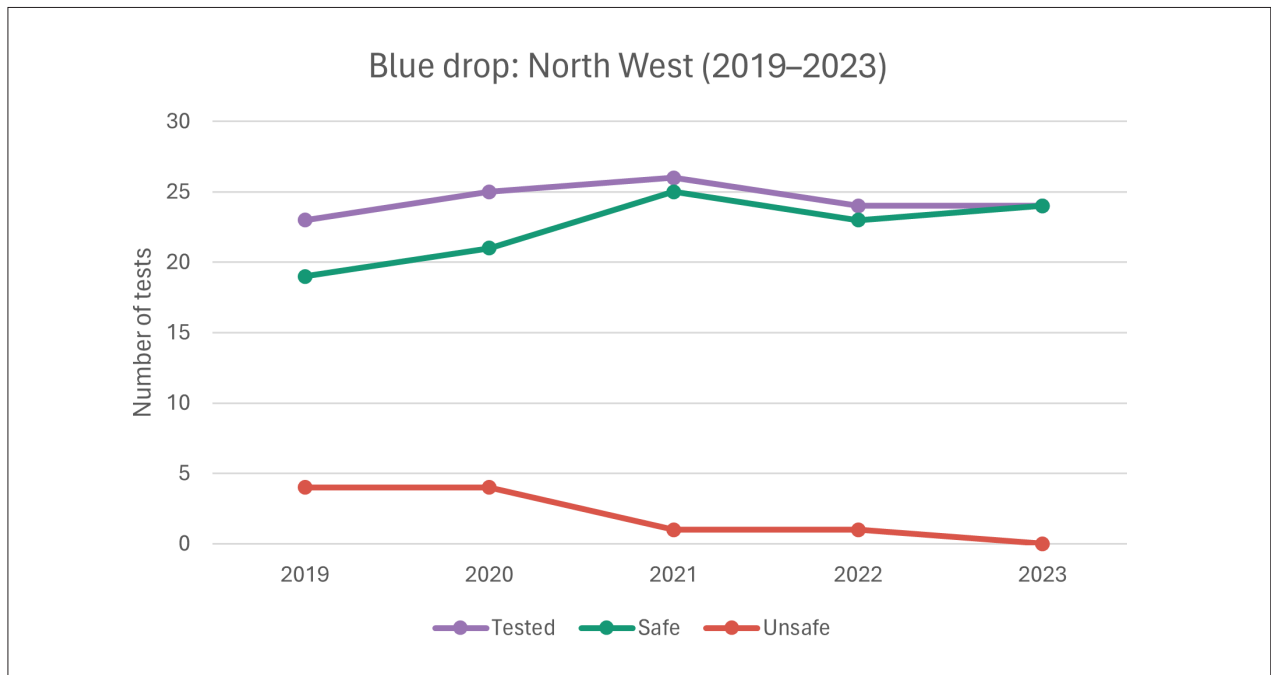
| Town | Municipality | 2019 | 2020 | 2021 | 2022 | 2023 |
|-------------------|----------------|------|------|------|------|------|
| FREE STATE | | | | | | |
| Welkom | Matjhabeng LM | Safe | Safe | Safe | Safe | Safe |
| Winburg | Masilonyana LM | Safe | Safe | Safe | Safe | Safe |
| Zastron | Mohokare LM | | | Safe | | Safe |
| | Tested | 22 | 23 | 24 | 23 | 27 |
| | Safe | 22 | 22 | 24 | 20 | 25 |
| | Unsafe | 0 | 1 | 0 | 3 | 2 |



Graph 6: Blue drop results for Free State (2019–2023)

Table 9: Blue drop results for North West (2019–2023)

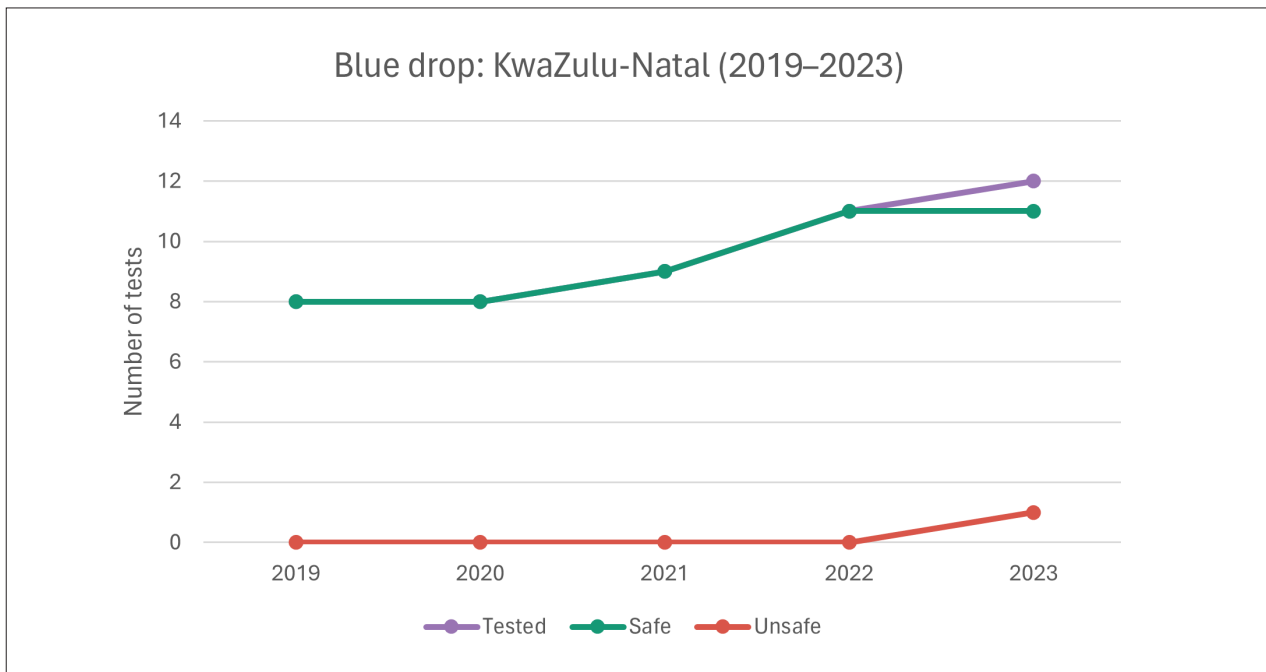
| Town | Municipality | 2019 | 2020 | 2021 | 2022 | 2023 |
|-------------------|----------------------|--------|--------|--------|--------|------|
| NORTH WEST | | | | | | |
| Biesiesvlei | Ditsobotla LM | | Safe | Safe | Safe | Safe |
| Bloemhof | Lekwa-Teemane LM | Safe | Safe | Safe | Safe | Safe |
| Brits | Madibeng LM | Unsafe | Unsafe | Safe | Safe | Safe |
| Christiana | Lekwa-Teemane LM | Safe | Safe | Safe | Safe | Safe |
| Coligny | Ditsobotla LM | Safe | Safe | Safe | Unsafe | |
| Delareyville | Tswaing LM | Unsafe | Unsafe | Safe | Safe | Safe |
| Groot Marico | Ramotshere Moiloa LM | Safe | Safe | Safe | Safe | |
| Hartbeesfontein | City of Matlosana LM | | | Safe | Safe | Safe |
| Hartbeespoort | Madibeng LM | Safe | Safe | Safe | | Safe |
| Klerksdorp | City of Matlosana LM | Safe | Safe | Safe | Safe | Safe |
| Koster | Kgetlengrivier LM | Safe | Safe | Safe | Safe | Safe |
| Lichtenburg | Ditsobotla LM | Safe | Safe | Safe | Safe | Safe |
| Mooinooi | Madibeng LM | Safe | Safe | Safe | Safe | Safe |
| Orkney | City of Matlosana LM | Safe | Safe | Safe | Safe | Safe |
| Ottosdal | Tswaing LM | Safe | Safe | Safe | Safe | Safe |
| Potchefstroom | JB Marks LM | Safe | Safe | Safe | Safe | Safe |
| Rustenburg | Rustenburg LM | Safe | Safe | Safe | Safe | Safe |
| Sannieshof | Tswaing LM | Unsafe | Unsafe | Safe | Safe | Safe |
| Schweizer-Reneke | Mamusa LM | Safe | Safe | Safe | Safe | Safe |
| Stella | Naledi LM | Unsafe | Unsafe | Safe | Safe | Safe |
| Stilfontein | City of Matlosana LM | Safe | Safe | Safe | Safe | Safe |
| Swartruggens | Kgetlengrivier LM | Safe | Safe | Safe | Safe | Safe |
| Ventersdorp | Ventersdorp LM | | Safe | Safe | Safe | Safe |
| Vryburg | Naledi LM | Safe | Safe | Safe | Safe | Safe |
| Wolmaransstad | Maquassi Hills LM | Safe | Safe | Unsafe | Safe | Safe |
| Zeerust | Ramotshere Moiloa LM | Safe | Safe | Safe | | Safe |
| | Tested | 23 | 25 | 26 | 24 | 24 |
| | Safe | 19 | 21 | 25 | 23 | 24 |
| | Unsafe | 4 | 4 | 1 | 1 | 0 |



Graph 7: Blue drop results for North West (2019–2023)

Table 10: Blue drop results for KwaZulu-Natal (2019–2023)

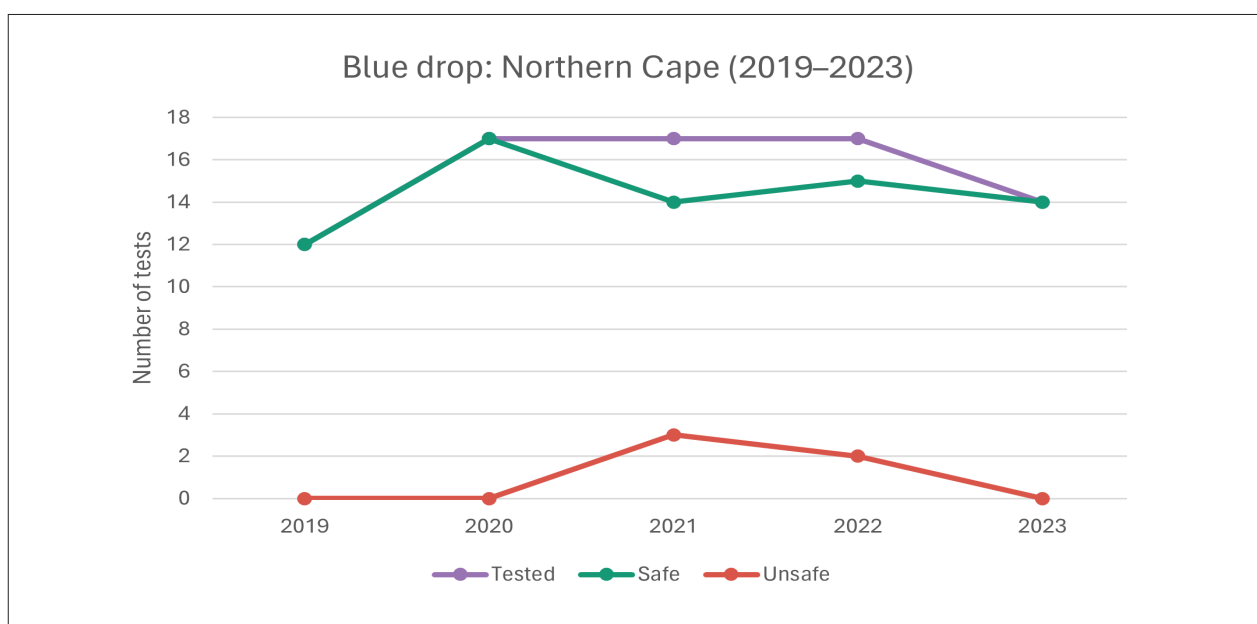
| Town | Municipality | 2019 | 2020 | 2021 | 2022 | 2023 |
|----------------------|---------------------|------|------|------|------|--------|
| KWAZULU-NATAL | | | | | | |
| Amanzimtoti | eThekweni Metro | | | Safe | Safe | Safe |
| Dundee | Endumeni LM | | | | | Safe |
| Durban | eThekweni Metro | | | | | Safe |
| Hluhluwe | Big Five Hlabisa LM | Safe | Safe | Safe | Safe | Safe |
| Margate | Ray Nkonyeni LM | Safe | Safe | Safe | Safe | |
| Newcastle | Newcastle LM | Safe | Safe | Safe | Safe | Safe |
| Nottingham Road | uMgungundlovu DM | | | | Safe | Safe |
| Paulpietersburg | eDumbe LM | Safe | Safe | Safe | Safe | Safe |
| Pinetown | eThekweni Metro | | | | Safe | |
| Pongola | uPongola LM | Safe | Safe | Safe | Safe | Safe |
| Ramsgate | Ray Nkonyeni LM | | | | | Safe |
| Richards Bay | uMhlathuze LM | Safe | Safe | Safe | Safe | Safe |
| Utrecht | eMadlangeni LM | Safe | Safe | Safe | Safe | Safe |
| Vryheid | Abaqulusi LM | Safe | Safe | Safe | Safe | Unsafe |
| | Tested | 8 | 8 | 9 | 11 | 12 |
| | Safe | 8 | 8 | 9 | 11 | 11 |
| | Unsafe | 0 | 0 | 0 | 0 | 1 |



Graph 8: Blue drop results for KwaZulu-Natal (2019–2023)

Table 11: Blue drop results for Northern Cape (2019–2023)

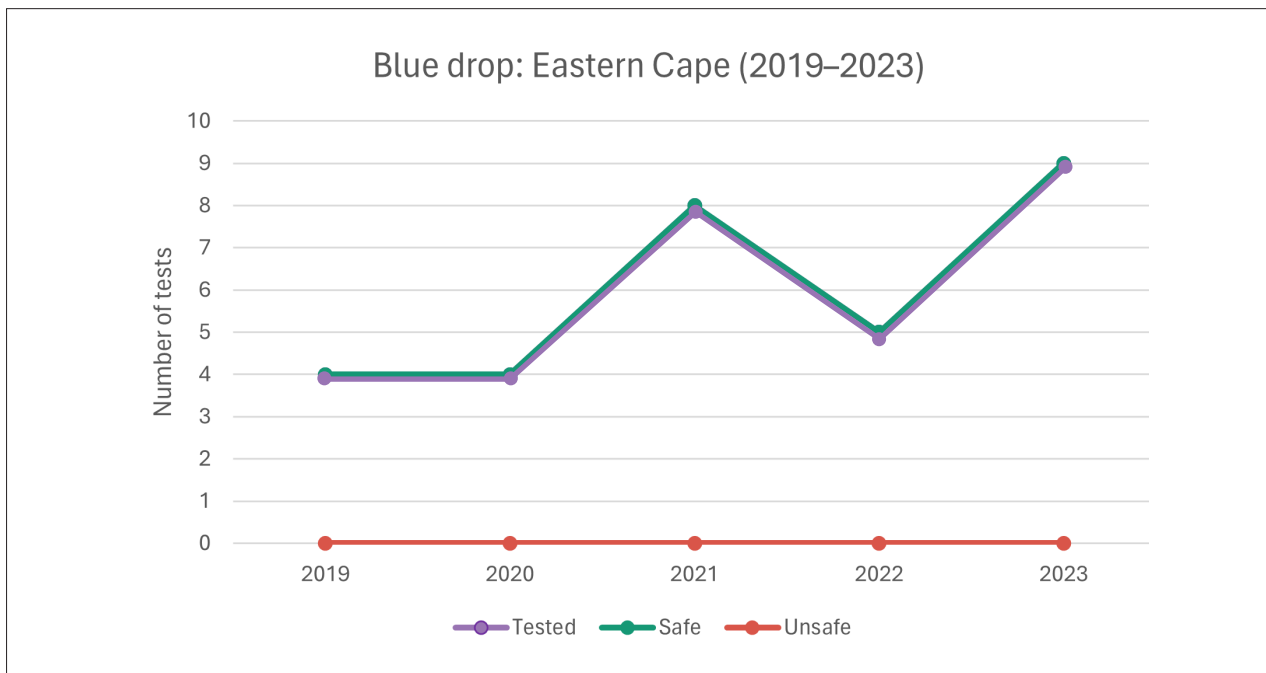
| Town | Municipality | 2019 | 2020 | 2021 | 2022 | 2023 |
|----------------------|-------------------|------|------|--------|--------|------|
| NORTHERN CAPE | | | | | | |
| Barkly West | Dikgatlong LM | | | | | Safe |
| Delportshoop | Dikgatlong LM | | | | Safe | Safe |
| Douglas | Siyancuma LM | Safe | Safe | Safe | Safe | |
| Hartswater | Phokwane LM | | Safe | Unsafe | Safe | |
| Hopetown | Thembelihle LM | Safe | Safe | Safe | Safe | |
| Jan Kempdorp | Phokwane LM | | Safe | Unsafe | Safe | |
| Kakamas | Ka Garib LM | Safe | Safe | Safe | Safe | Safe |
| Kamieskroon | Kamiesberg LM | | Safe | Safe | | Safe |
| Kathu | Gamagara LM | Safe | Safe | Safe | Safe | Safe |
| Keimoes | Ka Garib LM | Safe | Safe | Safe | Safe | Safe |
| Kimberley | Sol Plaatje LM | Safe | Safe | Unsafe | Safe | Safe |
| Kuruman | Ga-Segonyana LM | Safe | Safe | Safe | Unsafe | Safe |
| Orania | Orania Dorpsraad | Safe | Safe | Safe | Safe | |
| Postmasburg | Tsantsabane LM | Safe | Safe | Safe | | Safe |
| Prieska | Siyathemba LM | | Safe | Safe | Safe | Safe |
| Springbok | Nama Khoi LM | Safe | Safe | Safe | Safe | Safe |
| Upington | Khara Hais LM | Safe | Safe | Safe | Unsafe | Safe |
| Vanderkloof | Renosterberg LM | | | | Safe | |
| Warrenton | Magareng LM | Safe | Safe | Safe | Safe | Safe |
| Williston | Karoo Hoogland LM | | Safe | Safe | Safe | Safe |
| | Tested | 12 | 17 | 17 | 17 | 14 |
| | Safe | 12 | 17 | 14 | 15 | 14 |
| | Unsafe | 0 | 0 | 3 | 2 | 0 |



Graph 9: Blue drop results for Northern Cape (2019–2023)

Table 12: Blue drop results for Eastern Cape (2019–2023)

| Town | Municipality | 2019 | 2020 | 2021 | 2022 | 2023 |
|---------------------|----------------------|------|------|------|------|------|
| EASTERN CAPE | | | | | | |
| Aliwal North | Walter Sisulu LM | Safe | Safe | Safe | | Safe |
| East London | Buffalo City Metro | | | | | Safe |
| Cradock | Inxuba Yethemba LM | | | Safe | Safe | Safe |
| Elliot | Sakhisizwe LM | Safe | Safe | Safe | | Safe |
| Graaff-Reinet | Dr Beyers Naudé LM | | | Safe | Safe | Safe |
| Jeffreys Bay | Kouga LM | Safe | Safe | Safe | Safe | Safe |
| Patensie | Kouga LM | | | Safe | Safe | Safe |
| Port Elizabeth | Nelson Mandela Metro | Safe | Safe | Safe | Safe | Safe |
| Uitenhage | Nelson Mandela Metro | | | Safe | | Safe |
| | Tested | 4 | 4 | 8 | 5 | 9 |
| | Safe | 4 | 4 | 8 | 5 | 9 |
| | Unsafe | 0 | 0 | 0 | 0 | 0 |

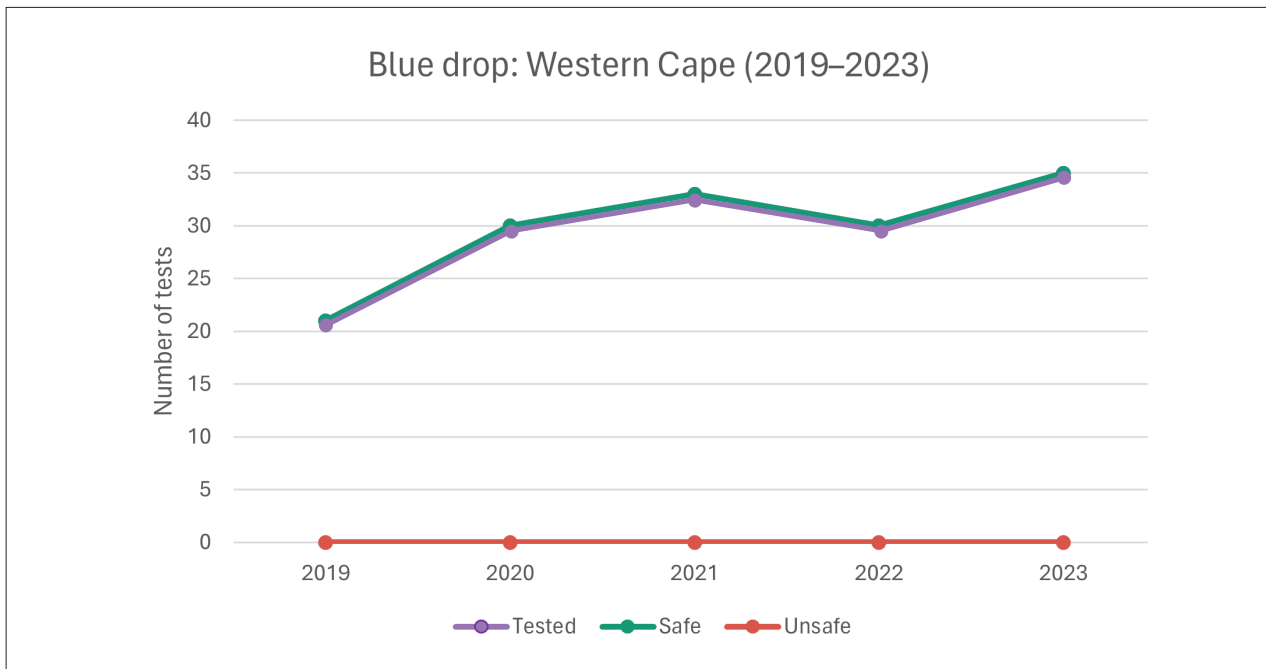


Graph 10: Blue drop results for Eastern Cape (2019–2023)

Table 13: Blue drop results for Western Cape (2019–2023)

| Town | Municipality | 2019 | 2020 | 2021 | 2022 | 2023 |
|---------------------------|------------------|------|------|------|------|------|
| WESTERN CAPE | | | | | | |
| Bitterfontein | Matzikama LM | Safe | Safe | Safe | | Safe |
| Bredasdorp | Cape Agulhas LM | | Safe | Safe | Safe | Safe |
| Cape Town (Bellville) | Cape Town Metro | Safe | Safe | Safe | Safe | Safe |
| Cape Town (Durbanville) | Cape Town Metro | | Safe | Safe | Safe | Safe |
| Cape Town (Gordon's Bay) | Cape Town Metro | | Safe | Safe | Safe | Safe |
| Cape Town (Kraaifontein) | Cape Town Metro | | Safe | Safe | Safe | Safe |
| Cape Town (Somerset West) | Cape Town Metro | | | Safe | Safe | Safe |
| Cape Town (Strand) | Cape Town Metro | | Safe | Safe | Safe | Safe |
| Clanwilliam | Cederberg LM | | | | Safe | Safe |
| Darling | Swartland LM | | Safe | Safe | Safe | Safe |
| De Doorns | Breedevallei LM | | | Safe | Safe | Safe |
| Gansbaai | Overstrand LM | Safe | Safe | Safe | Safe | |
| George | George LM | Safe | Safe | Safe | Safe | Safe |
| Great Brak River | Mossel Bay Metro | | | | Safe | Safe |
| Hartenbos | Mossel Bay Metro | | | | Safe | Safe |
| Heidelberg | Hessequa LM | | | | | Safe |
| Hermanus | Overstrand LM | Safe | Safe | Safe | Safe | |
| Kalbaskraal | Swartland LM | | Safe | Safe | Safe | |
| Klawer | Matzikama LM | Safe | Safe | Safe | | Safe |
| Kleinmond | Overstrand LM | Safe | Safe | Safe | Safe | Safe |
| Langebaan | Saldanha Bay LM | | | Safe | | Safe |
| Little Brak River | Mossel Bay Metro | | | | Safe | Safe |
| Lutzville | Matzikama LM | Safe | Safe | Safe | | Safe |
| Malmesbury | Swartland LM | | Safe | Safe | Safe | Safe |
| Montagu | Langeberg LM | Safe | Safe | Safe | Safe | Safe |
| Moorreesburg | Swartland LM | | | | Safe | |
| Mossel Bay | Mossel Bay Metro | Safe | Safe | Safe | Safe | Safe |
| Nuwerus | Matzikama LM | Safe | Safe | Safe | | Safe |
| Oudtshoorn | Oudtshoorn LM | Safe | Safe | Safe | Safe | Safe |

| Town | Municipality | 2019 | 2020 | 2021 | 2022 | 2023 |
|---------------------|-----------------|------|------|------|------|------|
| WESTERN CAPE | | | | | | |
| Paarl | Drakenstein LM | | | | Safe | Safe |
| Pearly Beach | Overstrand LM | Safe | Safe | Safe | Safe | |
| Robertson | Langeberg LM | Safe | Safe | Safe | Safe | Safe |
| Saldanha | Saldanha Bay LM | | | | | Safe |
| Stellenbosch | Stellenbosch LM | Safe | Safe | Safe | Safe | Safe |
| Stilbaai | Hessequa LM | Safe | Safe | Safe | Safe | Safe |
| Swellendam | Swellendam LM | | | | Safe | Safe |
| Vanrhynsdorp | Matzikama LM | Safe | Safe | Safe | | Safe |
| Velddrif | Bergrivier LM | Safe | Safe | Safe | | Safe |
| Vredendal | Matzikama LM | Safe | Safe | Safe | | Safe |
| Vredendal South | Matzikama LM | Safe | Safe | Safe | | |
| Wellington | Drakenstein LM | Safe | Safe | Safe | | |
| Worcester | Breedevallei LM | | Safe | Safe | Safe | Safe |
| | Tested | 21 | 30 | 33 | 30 | 35 |
| | Safe | 21 | 30 | 33 | 30 | 35 |
| | Unsafe | 0 | 0 | 0 | 0 | 0 |

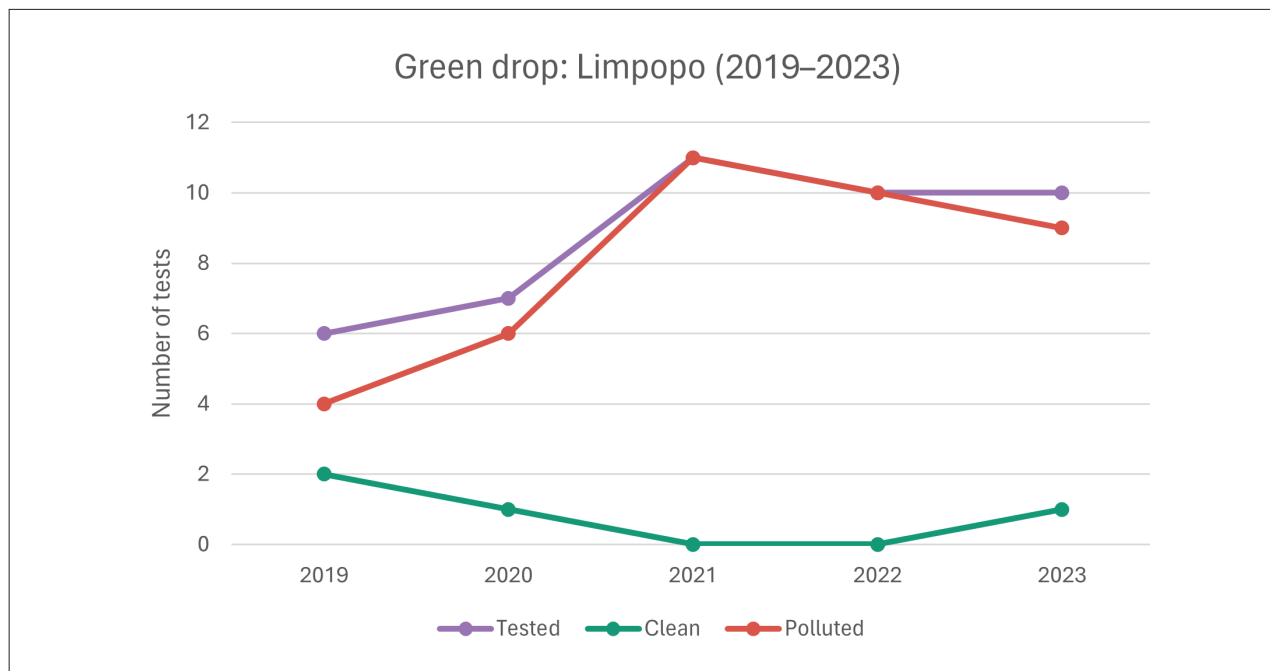


Graph 11: Blue drop results for Western Cape (2019–2023)

SCHEDULE 2: COMPLETE GREEN DROP RESULTS (2019–2023)

Table 14: Green drop results for Limpopo (2019–2023)

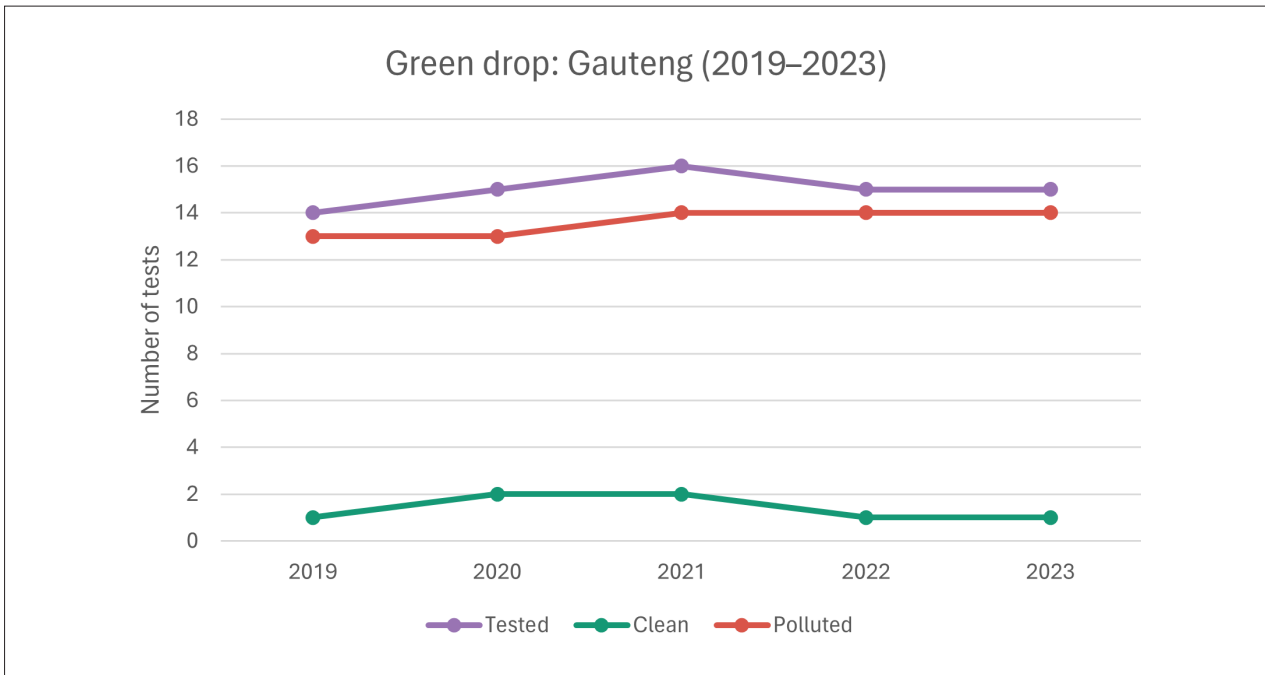
| Town | Municipality | 2019 | 2020 | 2021 | 2022 | 2023 |
|----------------|---------------------|----------|----------|----------|----------|--------------|
| LIMPOPO | | | | | | |
| Ellisras | Lephalale LM | Polluted | Polluted | Polluted | Polluted | Polluted |
| Groblersdal | Elias Motsoaledi LM | | Polluted | Polluted | Polluted | Polluted |
| Marble Hall | Ephraim Mogale LM | | Polluted | Polluted | Polluted | Inexecutable |
| Musina | Musina LM | | | Polluted | Polluted | Polluted |
| Naboomspruit | Mookgophong LM | Polluted | Polluted | Polluted | Polluted | Polluted |
| Nylstroom | Modimolle LM | Polluted | Polluted | Polluted | Polluted | Polluted |
| Phalaborwa | Ba-Phalaborwa LM | | | Polluted | | |
| Pietersburg | Polokwane LM | Polluted | | Polluted | Polluted | Polluted |
| Potgietersrus | Mogalakwena LM | | Polluted | Polluted | Polluted | Polluted |
| Thabazimbi | Thabazimbi LM | | | | | Polluted |
| Tzaneen | Greater Tzaneen LM | Clean | Clean | Polluted | Polluted | Polluted |
| Warmbad | Bela-Bela LM | Clean | | Polluted | Polluted | Clean |
| | Tested | 6 | 7 | 11 | 10 | 10 |
| | Safe | 2 | 1 | 0 | 0 | 1 |
| | Unsafe | 4 | 6 | 11 | 10 | 9 |
| | Inexecutable | 0 | 0 | 0 | 0 | 1 |



Graph 12: Green drop results for Limpopo (2019–2023)

Table 15: Green drop results for Gauteng (2019–2023)

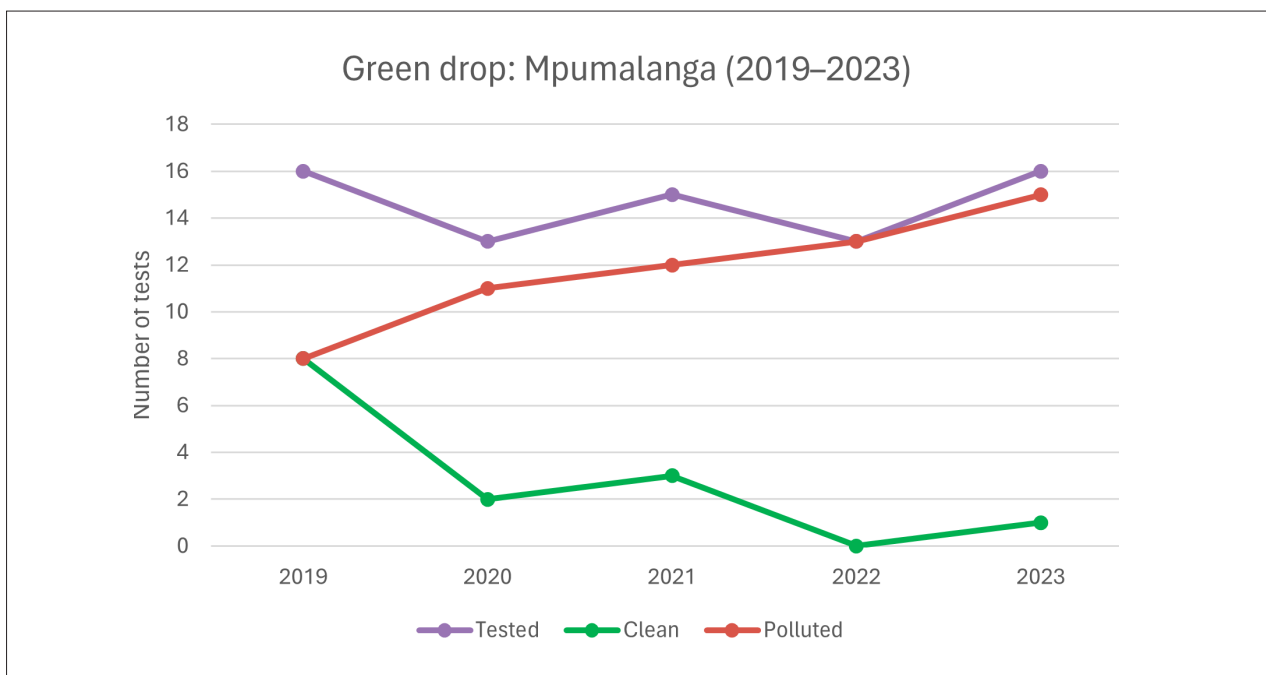
| Town | Municipality | 2019 | 2020 | 2021 | 2022 | 2023 |
|------------------------------|---------------------|----------|----------|----------|----------|----------|
| GAUTENG | | | | | | |
| Apies River (Rooiwal) | Tshwane Metro | Polluted | Polluted | Polluted | Polluted | Polluted |
| Brakpan (Erwat Jan Smuts) | Ekurhuleni Metro | | | | | Polluted |
| Bronkhorstspuit (Godrich) | Tshwane Metro | Polluted | Polluted | Polluted | Polluted | Polluted |
| Centurion West (Sunderland) | Tshwane Metro | Polluted | Polluted | Polluted | Polluted | Polluted |
| Cullinan (Cullinan) | Tshwane Metro | Polluted | Polluted | | | |
| Edenvale | Ekurhuleni Metro | Polluted | | Polluted | | |
| Fochville | Merafong City LM | | | Polluted | Polluted | Polluted |
| Heidelberg (Blesbok Ratanda) | Lesedi LM | Polluted | Polluted | Polluted | Polluted | Polluted |
| Kameeldrift (Baviaanspoort) | Tshwane Metro | Polluted | Polluted | Polluted | Polluted | Polluted |
| Kempton Park | Ekurhuleni Metro | Clean | Polluted | Polluted | Polluted | Polluted |
| Krugersdorp (Percy Steward) | Mogale City LM | | | | Polluted | Polluted |
| Meyerton (Midvaal) | Midvaal LM | Polluted | Clean | Clean | Polluted | |
| Pretoria West (Daspoort) | Tshwane Metro | Polluted | Polluted | Polluted | Clean | Polluted |
| Randfontein (Elandsvlei) | Randfontein LM | | Polluted | Polluted | Polluted | Polluted |
| Springs | Ekurhuleni Metro | Polluted | Clean | Clean | | Clean |
| Vanderbijlpark (Rietspruit) | Emfuleni LM | Polluted | Polluted | Polluted | Polluted | Polluted |
| Vanderbijlpark (Sebokeng) | Emfuleni LM | Polluted | Polluted | Polluted | Polluted | |
| Vereeniging (Leeukuil) | Emfuleni LM | Polluted | Polluted | Polluted | Polluted | Polluted |
| Westonaria | Rand West City LM | | Polluted | Polluted | Polluted | Polluted |
| | Tested | 14 | 15 | 16 | 15 | 15 |
| | Safe | 1 | 2 | 2 | 1 | 1 |
| | Unsafe | 13 | 13 | 14 | 14 | 14 |
| | Inexecutable | 0 | 0 | 0 | 0 | 0 |



Graph 13: Green drop results for Gauteng (2019–2023)

Table 16: Green drop results for Mpumalanga (2019–2023)

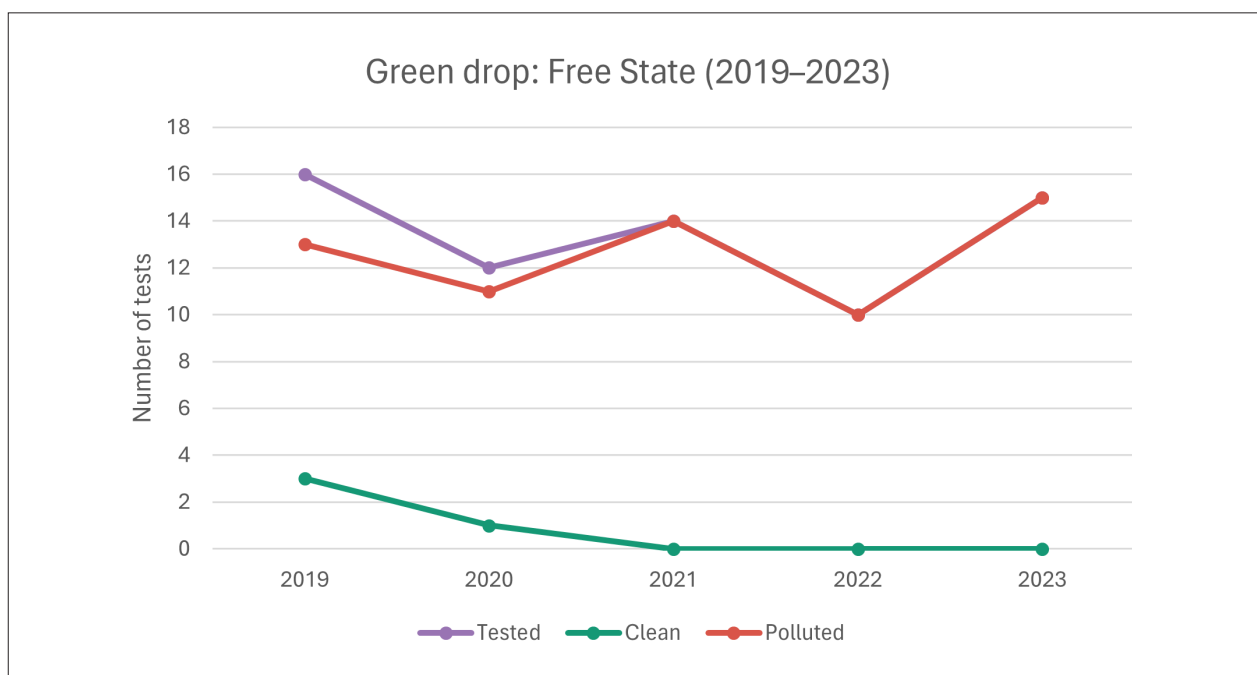
| Town | Municipality | 2019 | 2020 | 2021 | 2022 | 2023 |
|---------------------|------------------|----------|--------------|--------------|--------------|--------------|
| MPUMALANGA | | | | | | |
| Belfast | Emakhazeni LM | Clean | Polluted | Polluted | Polluted | Polluted |
| Bethal | Govan Mbeki LM | Polluted | Inexecutable | Polluted | Inexecutable | Inexecutable |
| Delmas | Victor Khanye LM | Clean | | Polluted | Polluted | Polluted |
| Dullstroom | Emakhazeni LM | Clean | Polluted | Polluted | Polluted | Polluted |
| Ermelo | Msukaligwa LM | Clean | Clean | Clean | Polluted | Polluted |
| Evander | Govan Mbeki LM | Polluted | Polluted | Polluted | Polluted | Polluted |
| Leandra | Govan Mbeki LM | Clean | Polluted | Polluted | | Polluted |
| Lydenburg | Thaba Chweu LM | Polluted | Inexecutable | Inexecutable | Inexecutable | Polluted |
| Machadodorp | Emakhazeni LM | Polluted | Polluted | Polluted | | Polluted |
| Middelburg | Steve Tshwete LM | Clean | Polluted | Polluted | Polluted | Polluted |
| Nelspruit | Mbombela LM | Polluted | Polluted | Polluted | Polluted | Polluted |
| Piet Retief | Mkhondo LM | Clean | Clean | Clean | Polluted | Polluted |
| Secunda (Kinross) | Govan Mbeki LM | Polluted | Polluted | Polluted | Polluted | Polluted |
| Secunda (Trichardt) | Govan Mbeki LM | | Polluted | Clean | Polluted | Clean |
| Standerton | Lekwa LM | Polluted | Polluted | Polluted | Polluted | Polluted |
| White River | Mbombela LM | Clean | | | Polluted | Polluted |
| Witbank | Emalahleni LM | Polluted | Polluted | Polluted | Polluted | Polluted |
| | Tested | 16 | 13 | 15 | 13 | 16 |
| | Safe | 8 | 2 | 3 | 0 | 1 |
| | Unsafe | 8 | 11 | 12 | 13 | 15 |
| | Inexecutable | 0 | 2 | 1 | 2 | 1 |



Graph 14: Green drop results for Mpumalanga (2019–2023)

Table 17: Green drop results for Free State (2019–2023)

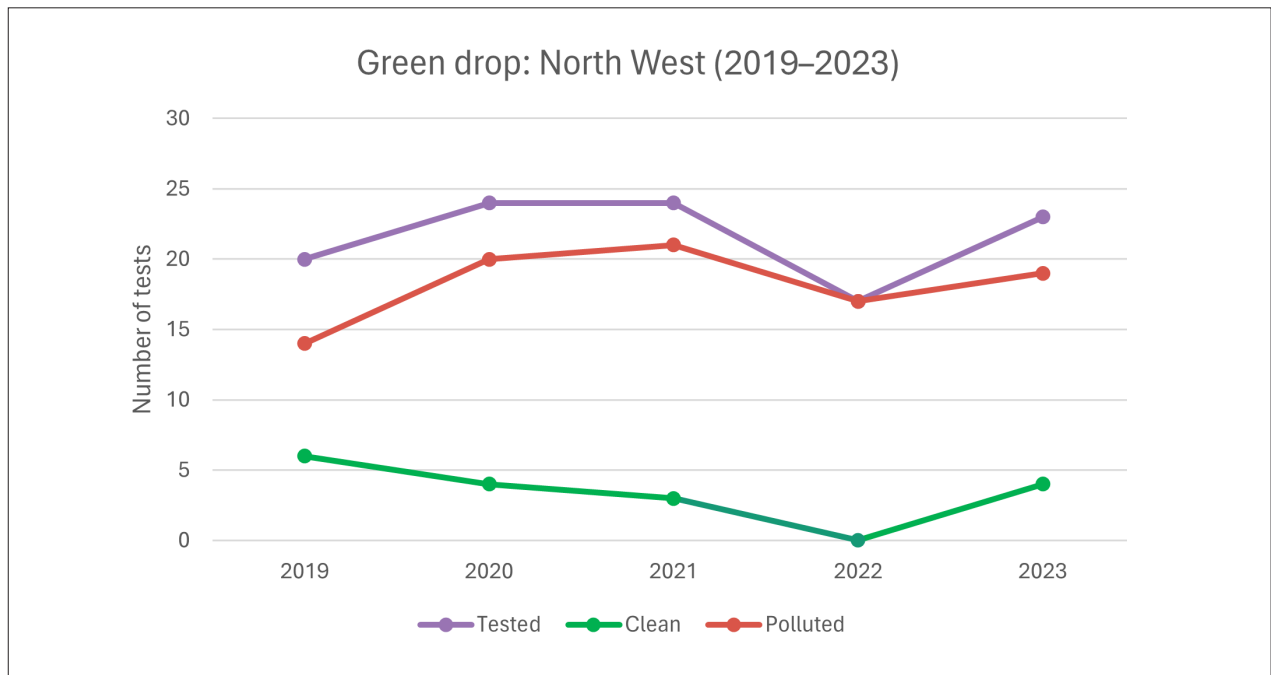
| Town | Municipality | 2019 | 2020 | 2021 | 2022 | 2023 |
|-------------------------------|---------------------|----------|--------------|----------|----------|--------------|
| FREE STATE | | | | | | |
| Bethlehem | Dihlabeng LM | Polluted | Inexecutable | Polluted | | Polluted |
| Bloemfontein (Roodewal) | Mangaung Metro | Polluted | Polluted | Polluted | Polluted | Polluted |
| Bloemfontein (Renosterspruit) | Mangaung Metro | | | | | Polluted |
| Bothaville | Nala LM | Polluted | Polluted | Polluted | Polluted | Polluted |
| Bultfontein | Tswelopele LM | Polluted | Polluted | Polluted | | Polluted |
| Frankfort | Mafube LM | Polluted | Polluted | Polluted | Polluted | Polluted |
| Harrismith | Maluti-A-Phofung LM | Polluted | Inexecutable | Polluted | | Polluted |
| Heilbron | Ngwathe LM | Clean | Polluted | Polluted | Polluted | Polluted |
| Hertzogville | Tokologo LM | Polluted | Polluted | Polluted | | |
| Kroonstad | Moqhaka LM | Polluted | Polluted | Polluted | Polluted | Polluted |
| Parys | Ngwathe LM | Clean | Polluted | Polluted | Polluted | Polluted |
| Reitz | Nketoana LM | Polluted | Polluted | Polluted | Polluted | |
| Sasolburg | Metsimaholo LM | Clean | Clean | Polluted | Polluted | Polluted |
| Senekal | Setsoto LM | Polluted | | | Polluted | Inexecutable |
| Viljoenskroon | Moqhaka LM | Polluted | | | Polluted | Polluted |
| Welkom | Matjhabeng LM | Polluted | Polluted | Polluted | | Polluted |
| Winburg | Masilonyana LM | Polluted | Polluted | Polluted | | Polluted |
| Zastron | Mohokare LM | | | | | Polluted |
| | Tested | 16 | 12 | 14 | 10 | 15 |
| | Safe | 3 | 1 | 0 | 0 | 0 |
| | Unsafe | 13 | 11 | 14 | 10 | 15 |
| | Inexecutable | 0 | 2 | 0 | 0 | 1 |



Graph 15: Green drop results for Free State (2019–2023)

Table 18: Green drop results for North West (2019–2023)

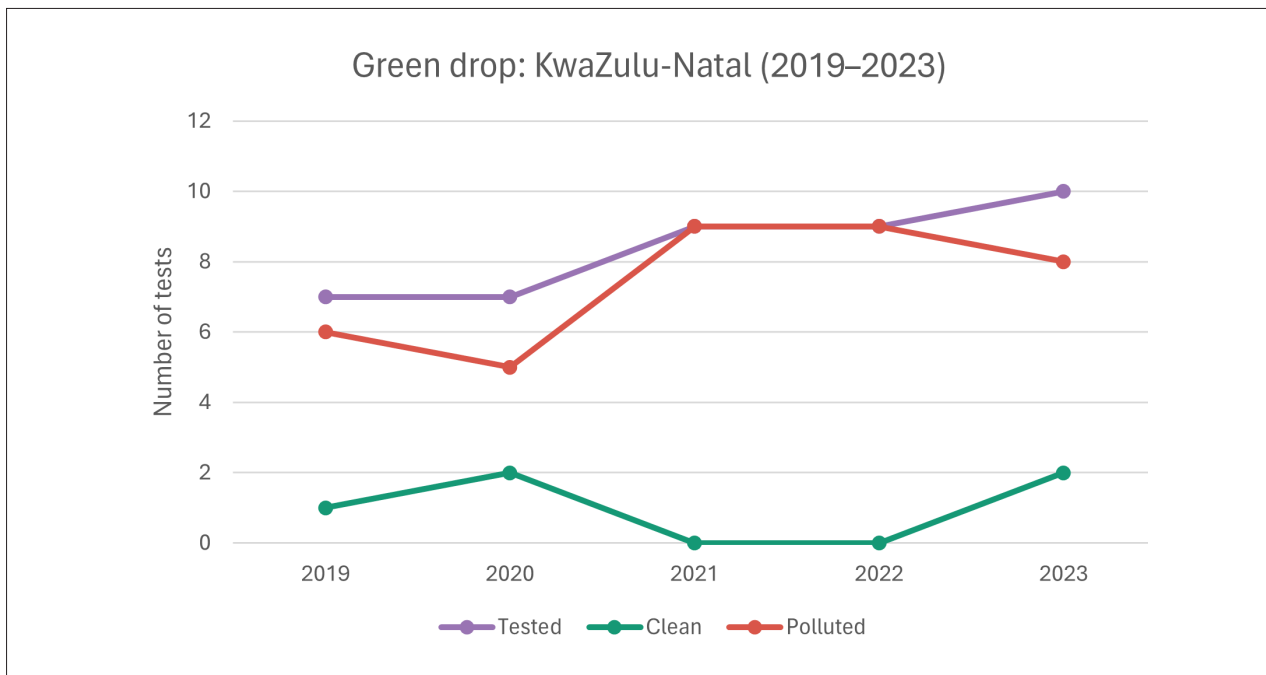
| Town | Municipality | 2019 | 2020 | 2021 | 2022 | 2023 |
|-------------------|----------------------|----------|----------|----------|----------|----------|
| NORTH WEST | | | | | | |
| Biesiesvlei | Ditso botla LM | | Polluted | Polluted | | |
| Bloemhof | Lekwa-Teemane LM | Polluted | Polluted | Polluted | | Polluted |
| Brits | Madibeng LM | Clean | Polluted | Polluted | Polluted | Polluted |
| Buffelspoort | Madibeng LM | Clean | Polluted | | | |
| Christiana | Lekwa-Teemane LM | Polluted | Polluted | Polluted | Polluted | Polluted |
| Coligny | Ditso botla LM | Polluted | Polluted | Polluted | Polluted | |
| Delareyville | Tswaing LM | Clean | Polluted | Polluted | Polluted | Clean |
| Groot Marico | Ramotshere Moiloa LM | Polluted | Polluted | Polluted | Polluted | Polluted |
| Hartbeesfontein | Matlosana LM | | | | Polluted | Polluted |
| Hartbeespoort | Madibeng LM | Clean | Polluted | Polluted | | Clean |
| Klerksdorp | Matlosana City LM | Polluted | Polluted | Polluted | Polluted | Polluted |
| Koster | Kgetlengrivier LM | Polluted | Polluted | Polluted | Polluted | Polluted |
| Lichtenburg | Ditso botla LM | Polluted | Polluted | Polluted | Polluted | Polluted |
| Mahikeng | Mahikeng LM | | Polluted | Polluted | | |
| Mooinooi | Madibeng LM | Polluted | Polluted | Clean | Polluted | Polluted |
| Orkney | Matlosana City LM | | | | | Polluted |
| Ottosdal | Tswaing LM | | | | | Polluted |
| Potchefstroom | Tlokwe LM | Clean | Polluted | Polluted | Polluted | Clean |
| Rustenburg | Rustenburg LM | Polluted | Clean | Polluted | Polluted | Polluted |
| Sannieshof | Tswaing LM | | Clean | Polluted | | Polluted |
| Schweizer-Reneke | Mamusa LM | Polluted | Clean | Polluted | | Polluted |
| Stella | Naledi LM | | Polluted | Polluted | | |
| Stilfontein | Matlosana City LM | Polluted | Polluted | Polluted | Polluted | Polluted |
| Swartruggens | Kgetlengrivier LM | Polluted | | Polluted | Polluted | Polluted |
| Ventersdorp | Ventersdorp LM | | Polluted | Polluted | Polluted | Clean |
| Vryburg | Naledi LM | Polluted | Polluted | Polluted | Polluted | Polluted |
| Wolmaransstad | Maquassi Hills LM | Clean | Clean | Clean | Polluted | Polluted |
| Zeerust | Ramotshere Moiloa LM | Polluted | Polluted | Clean | | Polluted |
| | Tested | 20 | 24 | 24 | 17 | 23 |
| | Safe | 6 | 4 | 3 | 0 | 4 |
| | Unsafe | 14 | 20 | 21 | 17 | 19 |
| | Inexecutable | 0 | 0 | 0 | 0 | 0 |



Graph 16: Green drop results for North West (2019–2023)

Table 19: Green drop results for KwaZulu-Natal (2019–2023)

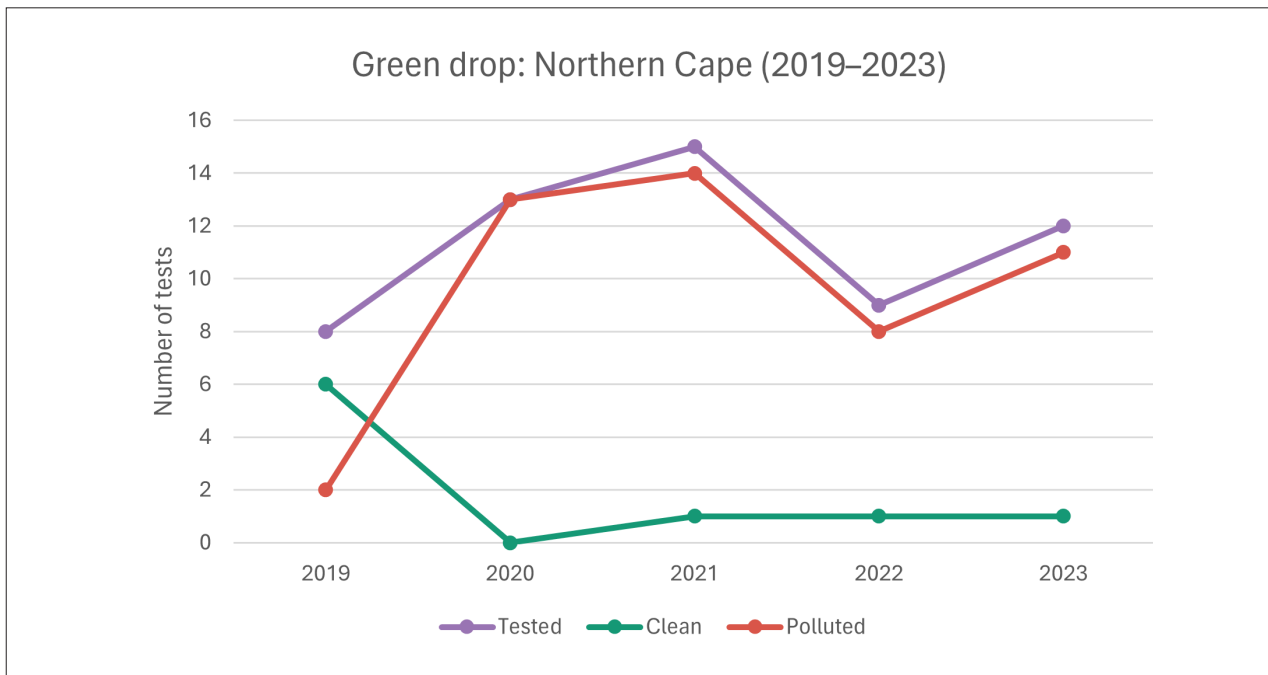
| Town | Municipality | 2019 | 2020 | 2021 | 2022 | 2023 |
|----------------------|----------------------|----------|----------|----------|----------|----------|
| KWAZULU-NATAL | | | | | | |
| Amanzimtoti | eThekweni Metro | | | Polluted | Polluted | Polluted |
| Dundee | Endumeni LM | | | | | Polluted |
| Durban | eThekweni Metro | | | | | Polluted |
| Hluhluwe | The Big 5 Hlabisa LM | | Clean | Polluted | Polluted | Polluted |
| Margate | Ray Nkonyeni LM | Polluted | Polluted | Polluted | Polluted | |
| Newcastle | Newcastle LM | Polluted | Polluted | Polluted | Polluted | |
| Paulpietersburg | eDumbe LM | Polluted | Clean | Polluted | Polluted | Polluted |
| Pongola | uPongola LM | Polluted | Polluted | Polluted | Polluted | Polluted |
| Ramsgate | Ray Nkonyeni LM | | | | | Polluted |
| Richards Bay | uMhlathuze LM | Polluted | | Polluted | Polluted | Clean |
| Utrecht | eMadlangeni LM | Clean | Polluted | Polluted | Polluted | Clean |
| Vryheid | Abaqulusi LM | Polluted | Polluted | Polluted | Polluted | Polluted |
| | Tested | 7 | 7 | 9 | 9 | 10 |
| | Safe | 1 | 2 | 0 | 0 | 2 |
| | Unsafe | 6 | 5 | 9 | 9 | 8 |
| | Inexecutable | 0 | 0 | 0 | 0 | 0 |



Graph 17: Green drop results for KwaZulu-Natal (2019–2023)

Table 20: Green drop results for Northern Cape (2019–2023)

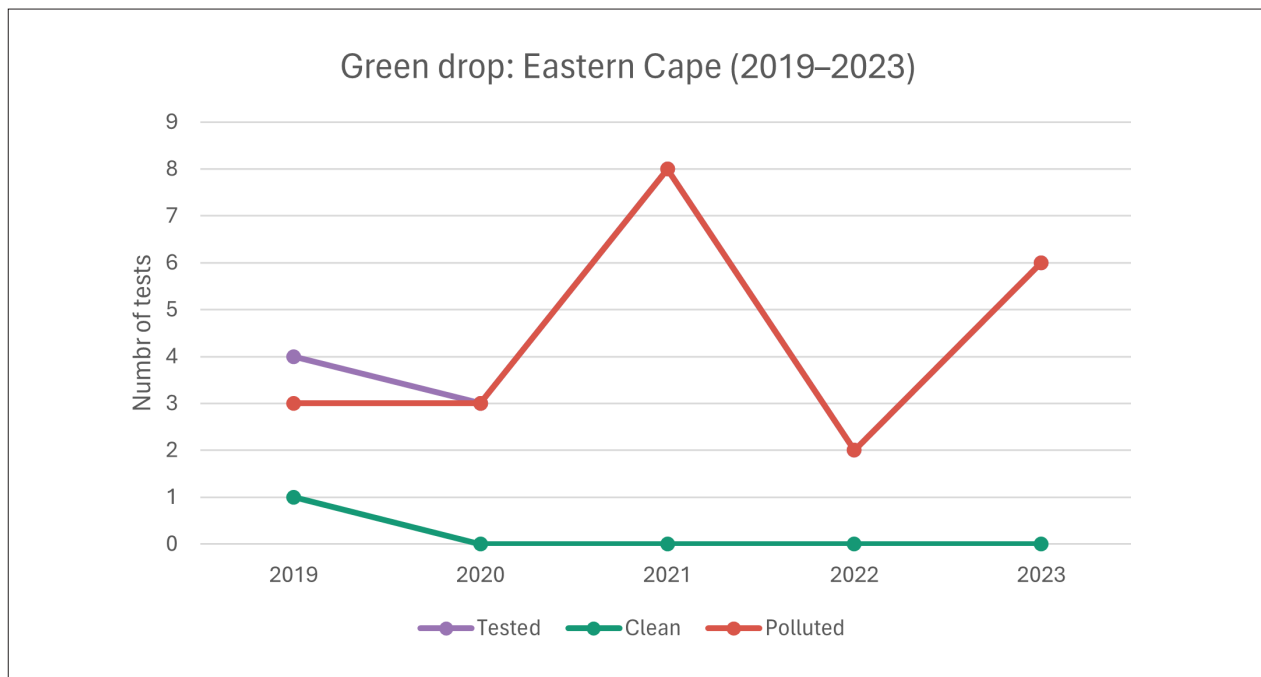
| Town | Municipality | 2019 | 2020 | 2021 | 2022 | 2023 |
|----------------------|-------------------|----------|----------|----------|----------|----------|
| NORTHERN CAPE | | | | | | |
| Carolusberg | Nama Khoi LM | | | | | Polluted |
| Delportshoop | Dikgatlong LM | | | | | |
| Douglas | Siyancuma LM | | Polluted | Polluted | | |
| Hartswater | Phokwane LM | | Polluted | Polluted | Polluted | |
| Hopetown | Thembelihle LM | | | Polluted | | |
| Jan Kempdorp | Phokwane LM | | Polluted | Polluted | Polluted | |
| Kakamas | Kai !Garib LM | | Polluted | | Polluted | Polluted |
| Kamieskroon | Kamiesberg LM | | Polluted | Polluted | | |
| Kathu | Gamagara LM | Clean | Polluted | Polluted | | Clean |
| Keimoes | Kai !Garib LM | | Polluted | Polluted | Polluted | Polluted |
| Kimberley | Sol Plaatje LM | Polluted | Polluted | Polluted | Clean | Polluted |
| Kuruman | Ga-Segonyana LM | Clean | Polluted | Polluted | Polluted | Polluted |
| Okiep | Nama Khoi LM | | | | | Polluted |
| Orania | Thembelihle LM | | | Clean | | |
| Postmasburg | Tsantsabane LM | Clean | | | | |
| Prieska | Siyathemba LM | | Polluted | Polluted | Polluted | Polluted |
| Springbok | Nama Khoi LM | Polluted | | | Polluted | Polluted |
| Steinkopf | Nama Khoi LM | | | | | Polluted |
| Upington | Khara Hais LM | Clean | Polluted | Polluted | Polluted | Polluted |
| Vaalharts | Phokwane LM | Clean | Polluted | Polluted | | |
| Warrenton | Magareng LM | | | Polluted | | Polluted |
| Williston | Karoo Hoogland LM | Clean | Polluted | Polluted | | |
| | Tested | 8 | 13 | 15 | 9 | 12 |
| | Safe | 6 | 0 | 1 | 1 | 1 |
| | Unsafe | 2 | 13 | 14 | 8 | 11 |
| | Inexecutable | 0 | 0 | 0 | 0 | 0 |



Graph 18: Green drop results for Northern Cape (2019–2023)

Table 21: Green drop results for Eastern Cape (2019–2023)

| Town | Municipality | 2019 | 2020 | 2021 | 2022 | 2023 |
|---------------------|----------------------|----------|----------|----------|----------|----------|
| EASTERN CAPE | | | | | | |
| Aliwal North | Walter Sisulu LM | Polluted | Polluted | Polluted | | Polluted |
| East London | Buffalo Bay Metro | | | | | Polluted |
| Cradock | Inxuba Yethemba LM | | | Polluted | Polluted | Polluted |
| Elliot | Sakhisizwe LM | Clean | | Polluted | | |
| Graaff-Reinet | Dr Beyers Naudé LM | | | Polluted | Polluted | Polluted |
| Jeffreys Bay | Kouga LM | Polluted | Polluted | Polluted | | Polluted |
| Patensie | Kouga LM | | | Polluted | | |
| Port Elizabeth | Nelson Mandela Metro | Polluted | Polluted | Polluted | | |
| Uitenhage | Nelson Mandela Metro | | | Polluted | | Polluted |
| | Tested | 4 | 3 | 8 | 2 | 6 |
| | Safe | 1 | 0 | 0 | 0 | 0 |
| | Unsafe | 3 | 3 | 8 | 2 | 6 |
| | Inexecutable | 0 | 0 | 0 | 0 | 0 |

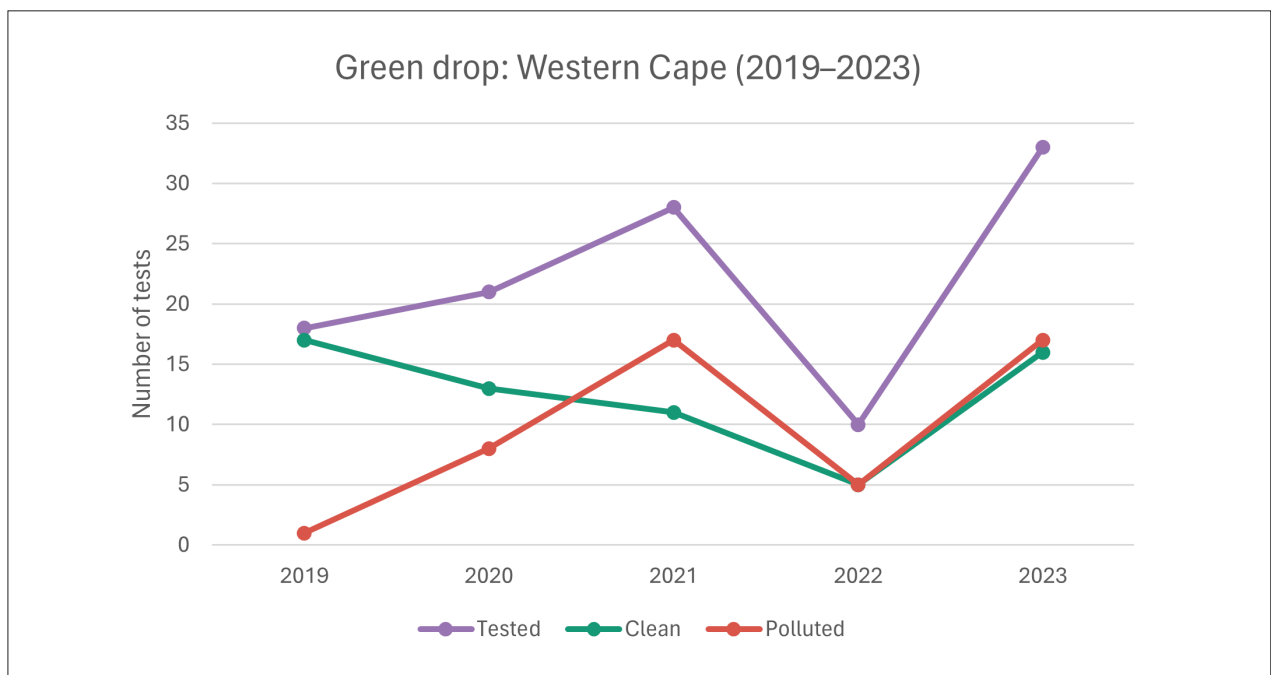


Graph 19: Green drop results for Eastern Cape (2019–2023)

Table 22: Green drop results for Western Cape (2019–2023)

| Town | Municipality | 2019 | 2020 | 2021 | 2022 | 2023 |
|-----------------------------|-----------------|----------|----------|----------|----------|--------------|
| WESTERN CAPE | | | | | | |
| Bitterfontein | Matzikama LM | Clean | Polluted | Polluted | | Clean |
| Bredasdorp | Cape Agulhas LM | | Polluted | Polluted | | Polluted |
| Cape Town (Bellville) | Cape Town Metro | | | Polluted | | Clean |
| Cape Town (Gordon's Bay) | Cape Town Metro | | | | | Clean |
| Cape Town (Kraaifontein) | Cape Town Metro | | | Polluted | | Clean |
| Cape Town (Scottsdene) | Cape Town Metro | Polluted | Polluted | Polluted | | |
| Darling | Swartland LM | Clean | Clean | Clean | | Clean |
| De Doorns | Breedevallei LM | | | Polluted | | Polluted |
| Gansbaai | Overstrand LM | Clean | Clean | Polluted | | Inexecutable |
| George (Outeniqua) | George LM | Clean | Polluted | Polluted | Polluted | Polluted |
| George (Gwaing) | George LM | | | | | Polluted |
| Great Brak | Mossel Bay LM | | | Clean | Clean | Polluted |
| Hartenbos | Mossel Bay LM | | | Clean | Clean | Polluted |
| Hawston | Overstrand LM | Clean | Clean | Clean | | Polluted |
| Heidelberg | Hessequa LM | | | | | Polluted |
| Hermanus | Overstrand LM | Clean | Clean | Clean | | Inexecutable |
| Klawer | Matzikama LM | Clean | Clean | Clean | | Clean |
| Kleinmond | Overstrand LM | Clean | Clean | Clean | | Polluted |
| Langebaan | Saldanha Bay LM | | | Polluted | | Clean |
| Lutzville | Matzikama LM | Clean | Polluted | | | Polluted |
| Malmesbury | Swartland LM | | Clean | Clean | | Clean |
| Montagu | Langeberg LM | Clean | Clean | Polluted | Clean | Clean |
| Mossel Bay (Pinnacle Point) | Mossel Bay LM | | | | Clean | Polluted |
| Nuwerus | Matzikama LM | Clean | | Polluted | | Clean |
| Oudtshoorn | Oudtshoorn LM | Clean | Polluted | Polluted | Clean | Clean |
| Paarl | Drakenstein LM | | | | | Polluted |
| Robertson | Langeberg LM | Clean | | Polluted | Polluted | Polluted |
| Saldanha | Saldanha Bay LM | | | | | Clean |
| Stellenbosch | Stellenbosch LM | Clean | Clean | Clean | Polluted | Polluted |

| Town | Municipality | 2019 | 2020 | 2021 | 2022 | 2023 |
|---------------------|---------------------|-------|----------|----------|----------|----------|
| WESTERN CAPE | | | | | | |
| Stilbaai | Hessequa LM | | Polluted | Polluted | Polluted | Polluted |
| Swellendam | Swellendam LM | | | | Polluted | Polluted |
| Vanrhynsdorp | Matzikama LM | Clean | Clean | Polluted | | Clean |
| Velddrif | Bergrivier LM | | Clean | Polluted | | Clean |
| Vredendal | Matzikama LM | Clean | Clean | Clean | | Clean |
| Wellington | Drakenstein LM | Clean | Polluted | Polluted | | Clean |
| Worcester | Breedevallei LM | | Clean | Clean | | Polluted |
| | Tested | 18 | 21 | 28 | 10 | 33 |
| | Safe | 17 | 13 | 11 | 5 | 16 |
| | Unsafe | 1 | 8 | 17 | 5 | 17 |
| | Inexecutable | 0 | 0 | 0 | 0 | 2 |



Graph 20: Green drop results for Western Cape (2019–2023)



CHEMICAL PARAMETERS (6 IN 1)

| | | | | | | | |
|------------------------------------|-----|-----|-----|-----|-----|-----|-----|
| TOTAL TURBIDITY ppm | 0 | 25 | 50 | 120 | 250 | 430 | |
| TOTAL AMMONIA ppm | 0 | 0.5 | 1 | 3 | 5 | 10 | 20 |
| FREE AMMONIA ppm | 0 | 0.5 | 1 | 3 | 5 | 10 | 20 |
| TOTAL AMMONIUM ppm | 0 | 1 | 2 | 6 | 10 | 20 | 40 |
| TOTAL CALCIUM ppm | 0 | 40 | 80 | 120 | 180 | 240 | 300 |
| pH | 6.0 | 6.4 | 6.8 | 7.2 | 7.6 | 8.0 | 8.4 |

**BLUE AND GREEN DROP
PROJECT REPORT**