

WATER AND WASTE- WATER QUALITY

Water and Wastewater Quality Performance at uMgungundlovu District Municipality in 2023

uMgungundlovu District Municipality is responsible to supply potable water to six local municipalities (LMs) in its designated operational areas. Potable water supplied to these LMs is monitored as per monitoring programme which is reviewed annually and in line with water safety plan. The municipality has also six wastewater treatment works which are operated, maintained and managed by Umngeni-Uthukela Water on behalf of the District Municipality. The final effluent from these wastewater treatment works is also monitored as per the monitoring programme. Together with Umngeni-Uthukela Water, the District Municipality developed wastewater risk abatement plans so as to minimise the risk associated with poor performance of the wastewater treatment works. Both water and wastewater quality results are uploaded on monthly basis on Department of Water and Sanitation websites, which is <https://ws.dws.gov.za/IRIS/mywater.aspx> for community, regulatory authorities and stakeholders to access.

Blue Drop certification

Since the inception of the Blue Drop certification programme, the municipality has been showing an improvement in the management of drinking water quality (Figure 1). The municipality first achieved Blue Drop status in 2012 under Bulk water supply system and retained the Blue Drop status in 2014. The Blue Drop certification programme was revived in 2023 and the municipality achieved Blue Drop status under bulk water supply system with an exceptional score of 97.3% and the municipality was recognised as one of the best performing municipalities in the province. This is an indication of commitment shown by the municipality towards better service delivery.

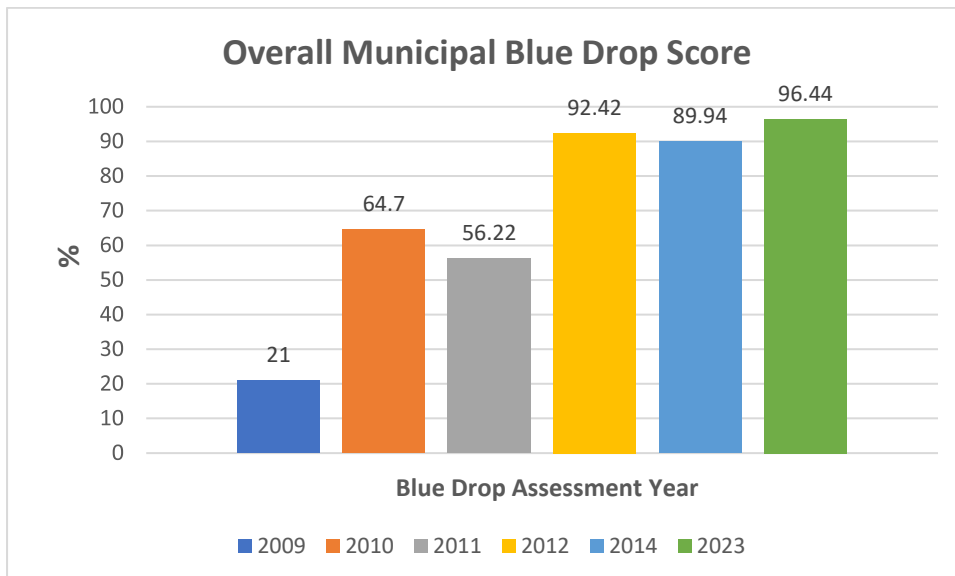


Figure 1: uMgungundlovu District Municipality Overall Blue Drop Score

Green Drop certification

There have been four Green Drop assessments since it was introduced in 2008. Figure 2 below shows that after receiving the unfavourable score of 27% in 2009, best practices for wastewater quality management were put in place which resulted to an improved score in the subsequent assessments. In 2021, the District Municipality was able to achieve Green Drop status for Cool Air Wastewater Treatment Works. The overall Municipality Green Drop Score also increased from 76.10% to 86%.

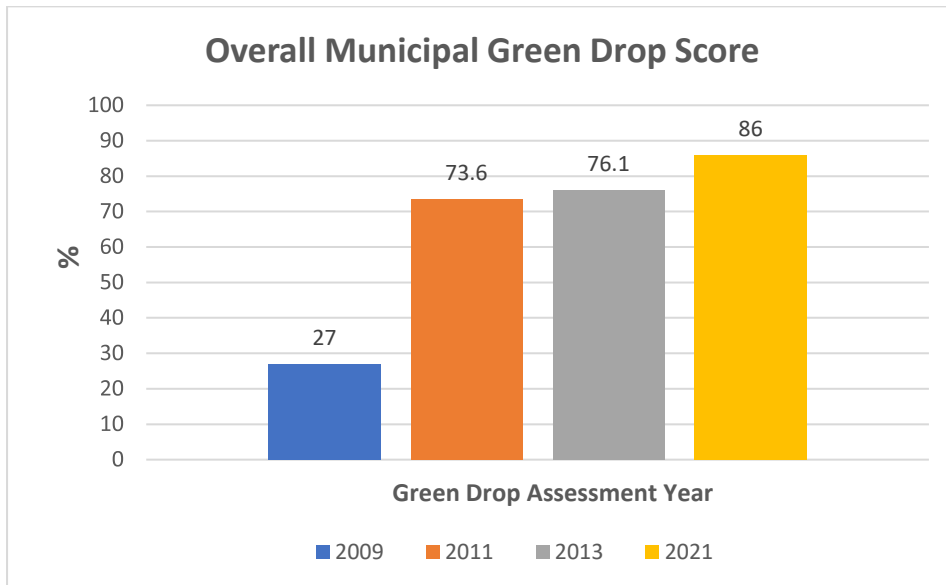


Figure 2: Umgungundlovu District Municipality Overall Green Drop Score

Note: The last Green Drop assessments was conducted in 2021

Water Quality Performance

Potable water quality is required to comply with SANS 241:2015 that requires quality to be evaluated and reported against five categories which are Acute health microbiological, Acute health chemical, Chronic health chemical, Aesthetic and Operational. SANS 241:2015 classify drinking water quality supplied to the population of up to 100 000 as follows:

- Acute health microbiological -: Excellent ($\geq 97\%$), Good ($\geq 95\%$), Unacceptable ($< 95\%$).
- Acute health chemical -: Excellent ($\geq 97\%$), Good ($\geq 95\%$), Unacceptable ($< 95\%$).
- Chronic health chemical -: Excellent ($\geq 95\%$), Good ($\geq 93\%$), Unacceptable ($< 93\%$).
- Aesthetic -: Excellent ($\geq 93\%$), Good ($\geq 90\%$), Unacceptable ($< 90\%$).
- Operational -: Excellent ($\geq 93\%$), Good ($\geq 90\%$), Unacceptable ($< 90\%$).

Table 1: Potable Water Quality Compliance for Water Supply Systems (%)

| UMgungundlovu District municipality | | | | | |
|--|-----------------|--------------|----------------|-----------------------|--------------|
| Supply System | Acute Health | Acute Health | Chronic Health | Aesthetic | Operational |
| | Microbiological | Chemical | Chemical | Chemical - Non Health | Chemical |
| <u>Boreholes (Untreated)</u> | 97.7% | 100% | 98.8% | 100% | 97.5% |
| <u>Gomane Boreholes</u> | 83.5% | 100% | 97.1% | 100% | 98.1% |
| <u>Impendle Spring</u> | 89.7% | 88.2% | 100% | 97.8% | 83% |
| <u>Lidgetton West</u> | 100% | 100% | 100% | 100% | 98.9% |
| <u>Mpofana</u> | 100% | 100% | 100% | 100% | 99.7% |
| <u>Nzinga</u> | 97.6% | 100% | 99.4% | 94.7% | 73% |
| <u>**Rosetta</u> | 100% | - | 100% | 100% | 100% |
| Umgeni Bulk Supply | 98.5% | 100% | 100% | 100% | 98.5% |
| uMgungundlovu District Municipality | 95.8% | 98.3% | 99.4% | 99% | 93.6% |

**Please note that Rosetta plant was decommissioned on 30 June 2023

Acute health microbiological: - Out of eight water supply systems, six of them achieved more than 95% except Impendle spring and Gomane boreholes. Microbiological quality at Impendle spring is affected when there is heavy rain since the reservoir would normally receive high volumes of water resulting to inadequate chlorine contact time as chlorination process takes place in the reservoir. The disinfection process at Gomane boreholes was affected by load shedding and the process is monitored by process controllers closely.

In line with incident management protocol, when failures were detected, corrective majors were put in place to ensure that the problem is resolved. There are also plans for construction of Impendle bulk water supply scheme to improve water supply for Impendle area.

Acute health chemical: - All water supply systems within this category were able to meet good standards for drinking water quality.

Chronic health chemical: - All water supply systems within this category were able to meet good standards for drinking water quality.

Aesthetic compliance:- All water supply systems within this category were able to meet good standards for drinking water quality.

Operational: - Impendle spring and Nzinga were unable to meet good standards for drinking water quality under this category. This was mainly due to turbidity as a result of high rain falls, burst pipes and poor performance of the plant. When water quality was found not to meet operational drinking water quality standards, it was not distributed and process was optimised to meet the required standards.

The overall drinking water quality within uMgungundlovu District Municipality meet good drinking water quality.

Wastewater Quality Performance

In terms of Green Drop System, wastewater quality compliance for the final effluent is classified as follows:

Bad - : <50%
 Poor - : 50% - 69%
 Good - : 70% - 89%
 Excellent - : ≥90%

Table 2: Wastewater Quality Compliance for Water Supply Systems (%)

| uMgungundlovu District Municipality | | | |
|-------------------------------------|-----------------|------------|------------|
| Wastewater Treatment Systems | Microbiological | Chemical | Physical |
| | Compliance | Compliance | Compliance |
| Appelsbosch | 92% | 90% | 98.7% |
| Camperdown | 91.7% | 100% | 100% |
| Cool Air | 96.3% | 96.3% | 98.8% |
| Howick | 80.6% | 85.2% | 92.6% |
| Mooi River | 8% | 100% | 81% |
| Richmond | 91% | 100% | 100% |
| uMgungundlovu District Municipality | 77.9% | 95.3% | 98.0% |

Appelsbosch: - The plant was able to meet the standards for excellent final effluent with regards to all categories for compliance.

Camperdown: - The plant was able to meet the standards for final effluent compliance.

Cool Air: - The plant is performing well and has complied with all categories for excellent final effluent.

Howick: - The plant was able to meet the standard for final effluent for physical compliance. The other categories did not comply due to that the treatment plant has a problem of excessive scum and industrial influent which affects settling of solids in the clarifiers is poor resulting in the carry over. Mpophomeni wastewater treatment works is currently being upgraded and the completion of this wastewater treatment works will reduce the flows going to Howick wastewater treatment works and monitoring of industrial effluent is underway. These will improve the quality of final effluent.

Mooi River: - The plant was able to meet the standard for final effluent for physical compliance. The other categories did not comply due to disinfection process and build-up of suspended solids. The process is monitored closely and plant upgrade plans are underway

Richmond: - The plant was able to meet the standards for excellent final effluent with regards to all categories for compliance.