

Achieve **Blue Drop Status**

FACTSHEET:

The Blue Drop: Highlights and Trends from 2009 to 2014



**All things are from water and all things are
resolved into water...**

Thales, 1879

**The history of water will be measured not by
its quantity but its quality...**

Institute for Water Quality Management, 1970's



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1 About the Blue Drop

The Department of Water and Sanitation implemented the Blue Drop programme to encourage continuous progress and to acknowledge excellence in drinking water services management in South Africa. 2015 is the 7th anniversary of the programme. This FACT-SHEET documents the Blue Drop story.

2 In the beginning

In 2008, government realised that the public and business were not aware of the quality of drinking water within their municipal supply areas. Also, reports of poor water quality and sporadic outbreak of water quality related disease were indicative that some municipalities were not managing, maintaining and operating their drinking water purification systems in compliance with legislation. As a result, increasingly negative reports were published regarding the safety of tap water and health epidemics related to drinking water quality.

In short, inefficient management of drinking water services became a prime risk to human health.

The underlying reasons were numerous: a lack in managerial and technical skills in municipalities, aging and dilapidated infrastructure, rapid housing developments which were not aligned to infrastructure plans and budgets, and poor understanding of the complexities of drinking water purification.

The Department of Water and Sanitation responded by developing a set of criteria that would, collectively, assess and measure an organisation's ability to render an acceptable service to its community and to identify those organisations that deliver an excellent service. This set of criteria is called the **Blue Drop Certification** programme. Each year, a small team of water experts travel around South Africa to conduct an audit and give a score to each water supply system within a municipality. The audit includes the physical inspection of raw water pump stations and purification facilities. The audit results serve as a trigger to redirect the necessary regulatory - and support interventions to remedy non-compliance in municipalities with a Blue Drop score of less than 30%.

As a result of the integrity and scientific basis of the process, the Blue Drop has become a flagship initiative of the Department of Water and Sanitation and a benchmark for good practice and excellence in drinking water services management.



Objective of the Blue Drop Certification programme:

- To encourage and acknowledge continuous improvement and performance excellence in drinking water services management in South Africa through the use of incentive, risk and benchmarking
- To provide the South African public with credible and transparent results on the status of their drinking water quality and the water services institutions that supply their water.

3 — A framework for understanding Blue Drop

Blue Drop

• The Blue Drop creates a baseline for continuous improvement. Water managers and their teams can set clear goals and work towards these goals.

Blue Drop Definitions as per the 2014 International Standards for Asset Management (ISO 55000):

Audit = 'systematic, independent and documented process for obtaining audit evidence and evaluating it objectively to determine the extent to which the audit criteria are fulfilled'

Performance = 'a measurable result'

Competence = 'ability to apply knowledge and skills to achieve intended results'

Continual improvement = 'recurring to enhance performance'

Capability = 'measure of capacity and the ability of an entity (organisation, system, person) to achieve its objectives'

Excellence = 'the quality of being outstanding or extremely good.'

4 — Highlights of the Blue Drop



The Blue Drop system contains a wealth of extremely good data, which is one of the reasons why so many other programmes and stakeholders value and use the Blue Drop information. The Blue Drop Reports contain technical and management data, results of physical inspections of purification plants, as well as regulatory impressions and findings. Most municipalities use this information to inform their Water Services Development Plan (WSDP), Integrated Development Plan (IDP), Skills Development Plans, as well as operational and capital budgets.

The **Blue Drop FACTSHEET** captures the highlights along this inspiring journey to supply world class drinking water to the end user and pays tribute to the world class people who make it happen.

5 South African drinking water supply infrastructure

The South African consumer receives drinking water of high quality as prescribed by the preliminary results of the South African National Standards (SANS 241:2015). The Blue Drop audits of 2014 indicated that approximately 1085 (audited & estimated) water supply systems are owned and operated by 152 municipalities across nine provinces. This figure includes a number of borehole supply systems, as well as systems not audited by the Department of Water and Sanitation. In addition, the Department of Public Works owns and operates 71 systems across nine provinces. The total design capacity of all (audited) municipal purification plants is 16 322 Ml/day, and produce a total volume of 12 282 Ml/day drinking water. The pipe network that provides the water to the consumer is approximately 3 422 374 km and operate at an average pressure of 5-6 meter of head or 50-60 kPa. The number of people who are served via these purification systems is 46 295 337, at an efficiency of 265 litres per capita per day (Blue Drop audited data, 2014).

**Water supply system = A system which includes the abstraction from the water sources, purification of the raw water, and provision of water through the supply network to the consumer.*

6 Blue Drop drives continuous improved performance

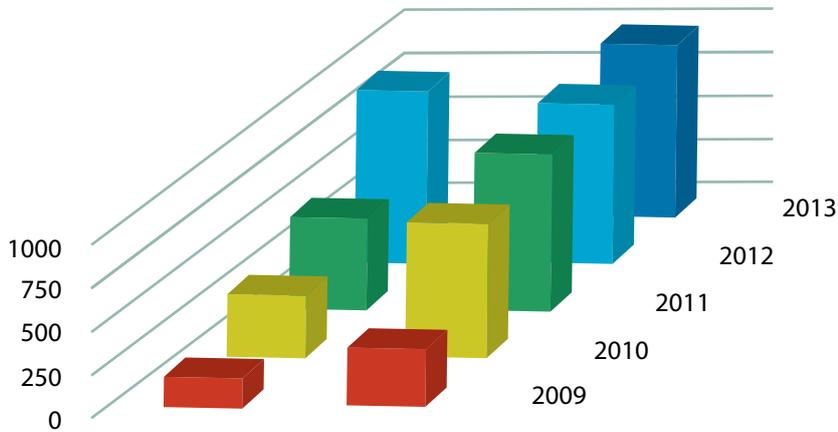
Awareness is the first step to change behaviour. At the onset of the Blue Drop programme in 2009, several municipalities did not monitor water quality, did not measure flows, and had limited understanding of the technology used to purify the raw water which was abstracted from the resource. Since the first assessments, Blue Drop involvement increased steadily each year. In 2009, 107 municipalities participated in the first Blue Drop audit, with this number increasing steadily to 152 municipalities in 2010. The total number of systems assessed also increased from 1009 in 2012 to approximately 1085 in 2014 (Blue Drop System).

When looking at the results, we see that municipal systems performance in drinking water services management improved gradually over time. In this regard, municipal systems with a Blue Drop score of 50% or higher have increased since 2009.

Blue Drop

- The Blue Drop has infused the sector with positive energy. Since the Blue Drop rewards continued improvement and achievement; it acts as an incentive to improve and achieve excellence.
- The Blue Drop is not only an incentive for drinking water management; it is an incentive for the municipality as a whole: "Our municipality has won a Blue Drop!". Blue Drop awards instil a sense of achievement, not only in the water team, but the municipality as a whole, including the politicians and citizens..."

Improvement in Blue Drop outputs 2009 - 2013



Number of municipal systems with Blue Drop scores of 50% and higher

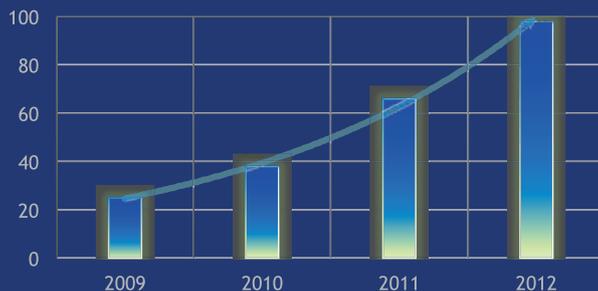
Number of municipal systems participating in the Blue Drop audit

7 Blue Drop Awards increased steadily

For the first time, the excellent work and years of dedication of individuals are noticed and acknowledged at a national level.

Whilst the CONTINUOUS PROGRESS in performance is of utmost importance and a key driver behind Blue Drop, it is the acknowledgement of EXCELLENCE that makes one realise **'this is a game changer of note'**. The chart shows that more and more municipal systems scores 95% or higher. This is no easy feat, as the Blue Drop criteria become more stringent each year! Yet, the majority of municipalities respond positively to the Blue Drop challenge and show up for their audits every year. This translates to a dynamic partnership whereby the bar is raised each year, and municipalities respond proactively to the increased expectations by the consumer.

Number of systems with Blue Drop score >95% (Blue Drop Certificates)



8 Performance improved with up to 71%

While we generally hold a perception that expertise is exclusively located in the bigger cities, the Blue Drop results confirm that most prominent progress is observed in small- and rural towns across South Africa. The table below list some of the top Blue Drop scores since 2009.

Province	Municipality Name	Blue Drop 2009	Blue Drop 2010	Blue Drop 2011	Blue Drop 2012	Log Position in RSA
WC	Saldanha Bay Local Municipality	58	81	87%	95%	19
GP	Westonaria Local Municipality	70%	88	84%	95%	23
FS	Matjabeng Local Municipality	NA	NA	80%	95%	25
KZN	uMzinyathi Local Municipality	80	66	70%	93%	26
LP	Lephalale Local Municipality	15%	34%	82%	93%	29
FS	Tswelopele Local Municipality	NA	50	55%	92%	33
KZN	Umgungunglovu Local Municipality	21	65	56%	92%	34
FS	Metsimaholo Local Municipality	NA	NA	49%	90%	40
MP	Mbombela Local Municipality	84	81	74%	88%	44
WC	Cape Agulhas Local Municipality	NA	79	73%	87%	45
NC	Hantam Local Municipality	NA	69%	75%	82%	54
WC	Cederberg Local Municipality	59	60	51%	80%	55
MP	Victor Khanye Local Municipality	NA	NA	18%	80%	56
LP	Mopani Local Municipality	NA	74%	63%	79%	58
MP	Thembisile Local Municipality	NA	37%	27%	78%	59
KZN	uMkhanyakude Local Municipality	NA	22	32%	78%	60

Excellent teams don't believe in excellence - only in constant improvement and constant change."

Tom Peters

9 Better performance monitoring

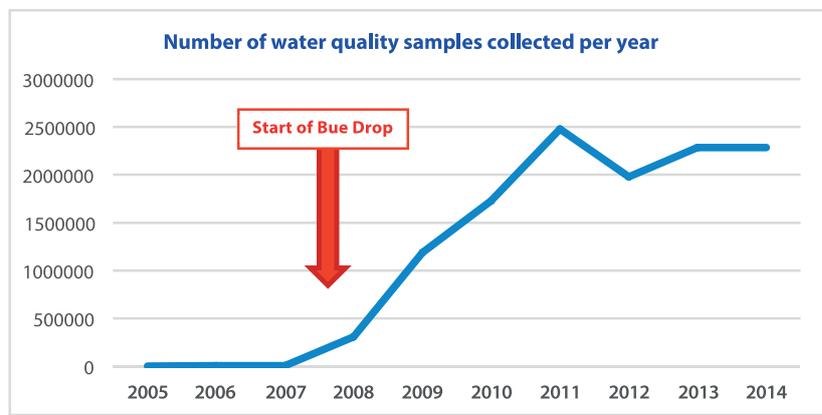
The Blue Drop programme requires municipalities to take stock of their infrastructure and its capacity and capability to perform at an expected standard.

In 2009, more than 80% of municipalities were unaware of their design capacity, plant layout, and per capital use of water. In 2013, more than 90% of municipalities could show their design detail, drawings and an intrinsic knowledge of their systems in hand, as well as making informed decisions.

- The Blue Drop puts peer pressure on municipalities to perform. "If a neighbouring municipality can achieve Blue Drop status, we must up our performance and aim to achieve even better."

The saying goes: 'to measure is to know'. Water sampling and analysis is the key to knowing that our drinking water quality complies with the strict standards set by the South African National Bureau for Standards. In this regard, almost 2 500 000 water samples are collected and analysed per year. The Blue Drop not only ensures that municipalities can at any time report their drinking water quality, but also that the required management processes are in place if the water quality deviates from the desired quality.

The first ever Blue Drop Report in 2009 indicated that the national microbiological compliance for South African tap water was measured at 93.3% against the National Standard (SANS 241). This compliance increased to 97.3% in 2012 and greater than 97.0% in 2014.



"Quality is never an accident. It is always the result of intelligent effort!"
John Ruskin

The overall national drinking water compliance is recorded at 98.9%, which is based upon microbiological, chemical, physical and organoleptic water qualities. This statistic serves to confirm the proud assertions by South Africans that international visitors can drink our water straight from the tap!

10

Blue Drop as catalyst to refocus on water quantity

- The Blue Drop drew long overdue attention to the losses of billions of litres of water from water supply networks. This resulted in the birth of the No Drop Certification programme.

Whilst the Blue Drop deals with drinking water services management, it nevertheless drew long overdue attention to the large quantities of clean drinking water and revenue that is being lost as a result of water losses across pipes, pumps, meters and human error. As a result, a dedicated incentive programme has been established in 2014 to quantify these losses and work towards achievement of national water loss targets. A special word of welcome to the NO DROP, the latest addition to the Drop Family – South

Africa will be thankful for every drop saved. Municipalities are today fully aware of the negative impact of water losses, which is placing a prominent focus on Water Conservation and Demand Management. The sector realises that, if No Drop does for 'water saving' what Blue Drop did for 'safe drinking water', then the consumer may not have to pay excessively for water in future, farmers can produce more food, and industries can expand and employ more people because they will have a secure water supply.



11 Gains in risk abatement

If there is one word that draws the attention of the Chief Finance Officer in any company, it is the word RISK.

The Blue Drop Risk Rating (BDRR) tool identifies, quantifies and manages the risks associated with drinking water services provision across the nine provinces. This allows us to take a precautionary approach, warning the Water Services Institutions in the country about the level of risk at which water services and water quality is delivered to the citizens of South Africa. The further aim of the BDRR tool is to contribute to the overall risk assessment of the Water Services Institutions. In so doing the organisation will be empowered to take relevant strategic management and operational decisions to support and improve on long term sustainable water services.

The Blue Drop incentivises and encourages municipalities to implement risk-informed decision making and planning. South Africa is a world leader and has earned numerous accolades for its Blue Drop and Water Safety Planning (WSP) Process. This plan enables municipalities to assess and rate their risks and to prioritise budget and resources to mitigate high risks. The following table shows that 77% of all water supply systems have developed site-specific WSPs.

Province	Number of municipalities	Number of WSPs	% WSPs per province
EC	124	111	89.5
FS	93	50	53.8
GP	58	58	100
KZN	141	125	88.7
LP	58	55	94.8
MP	76	44	57.9
NW	37	14	40.5
NC	79	31	39.2
WC	158	145	91.8
National	824	633	76.8



Blue Drop

The Blue Drop forces municipalities to identify their critical risks. This means that they can plan in advance and motivate successfully for budgets and other resources to Council to address these risks. This has led to an overall improvement in drinking water quality management in South Africa.



Guidelines on using the refined and translated web-enabled Water Safety Plan Tool (2013 version)

RISK MANAGEMENT



Since the Blue Drop was implemented, a notable reduction in the national average Blue Drop Risk Ratio has been observed. The 2014 assessment indicates that of all the systems assessed, 146 systems (15%) showed a significant reduction in the BDRR since the 2012 assessment. Continuous risk abatement translates to lower risk scores, improved drinking water quality and improved water quality management in South Africa.

The top performing systems with a BDRR less than 15% deserves special mention:

Blue Drop Risk Ratio Parameters	90 – 100% Critical risk	
	70 - <90% High risk	
	50-<70% Medium risk	
	<50% Low risk	

System	WSA	WSP	2013 BDRR
Buffeljags Bay	Overstrand LM	Overstrand LM	12.16%
City of Johannesburg	City of Johannesburg MM	Johannesburg Water and Rand Water	12.16%
Ekurhuleni	Ekurhuleni MM	Rand Water	12.16%
Tshwane Central & South (Rietvlei)	City of Tshwane MM	Tshwane MM and Rand Water	12.16%
Nieuwoudtville	Hantam LM	Hantam LM	12.31%
Tulbagh	Witzenberg LM	Witzenberg LM	12.32%
Mogale City	Mogale LM	City of Johannesburg and Rand Water	12.40%
Saldana Bay	Saldanha LM	West Coast DM	12.50%

The risk-based approach of Blue Drop regulation has had the following positive impacts:

- 💧 Significant investment in upgrading of water networks, purification plants and technology.
- 💧 General improvement in the quality of tap water, reducing negative impact on human health.
 - o Monitoring of water quality has increased drastically (2.5 million samples in 2014);
 - o Drinking water quality has improved across the country (98.9% compliance to SANS in 2014).
- 💧 Many municipalities are improving staff competency and aiming to comply with Regulation 2834 and 17 by recruiting the correct staff to meet the Department of Water and Sanitation requirements.

- o In 2009, few municipalities were even aware of legislative requirements regarding process controllers and supervisors in the water industry. Further improvements are expected in the short-to-medium term.
- o The number of classified process controllers has increased significantly.
- 💧 Maintenance and repair of water bearing infrastructure has also improved.

12 From Red to Blue

The BDRR risk scores gives the Department of Water and Sanitation, as well as its sector partners Cooperative Governance and Traditional Affairs (CoGTA, South African Local Government Association (SALGA), Treasury, etc. valuable information to identify which municipalities are in Intensive Care Unit (ICU) (critical risk) and how they can be resuscitated.

For example, the 2014 risk assessment shows that 61% of drinking water systems reside in low and medium risk space. This figure provides comfort to the consumer, but it also highlights that **155** systems (**15%**) need interventions.

*BDRR	Category	Number	%
90 - 100	Critical Risk	155	15%
70 < 90	High Risk	238	24%
50 < 70	Medium Risk	294	29%
<50	Low Risk	322	32%
		1009	100%

The results further show that **77%** of our water supply has a low Drinking Water Quality Risk Ratio (DWQRR) to the health of the consumer. However, the DWQRR indicates that **2%** of systems (**18**) need intervention to rectify the critical risk status.

*DWQRR	Category	Number	%
90 - 100	Critical Risk	18	2%
70 < 90	High Risk	190	19%
50 < 70	Medium Risk	20	2%
<50	Low Risk	781	77%
		1009	100%

*Note: BDRR – refers to overall risk; DWQRR – linked to risk of drinking water quality

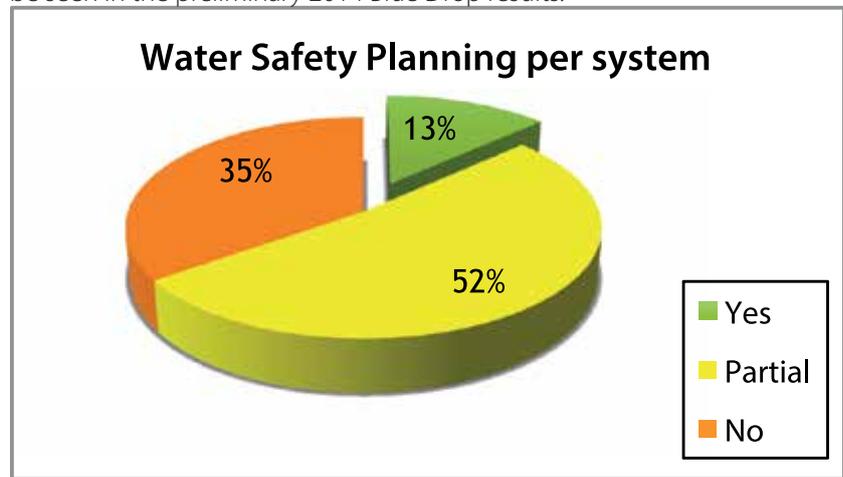
Blue Drop

- 💧 The risk-based approach of the Blue Drop flags municipalities with critical risks. As such, it is an invaluable tool for DWS to identify potential hot spots and act on time to prevent human fatalities.

The progress in risk planning is commendable; however there is still significant room for improvement.

Only 13% of WSPs are actively implemented. The value of the Blue Drop, once again, comes to the fore by ensuring that this aspect is actively and continuously monitored and addressed in the field.

The Blue Drop not only commends and recognises good performance and progressive improvement, but places a high premium on identifying and rectifying non-performance! The implementation of this specific risk management approach has therefore contributed to significant improvement of the Blue Drop status in a large number of systems as can be seen in the preliminary 2014 Blue Drop results.



Percentage increase in Blue Drop score	Number of systems
60	1
50	6
40	18
30	43
20	92
10	182

Blue Drop

The Blue Drop raised awareness of the importance of good drinking water services management. In the past, water was taken for granted. Today, municipalities and their Council has put water management at the centre of service delivery, because they realise that people's lives are at stake.

13

Participation and buy-in steadily on the increase

The Blue Drop System (BDS) was developed to assist users to register their plants and the process controllers online, and to provide monthly performance information to the Regulator. The BDS tool is a first of its kind

in the world, and, is used by municipalities to monitor their performance and compliance. It is also used by tourists to ascertain the drinking water quality at their destination of choice. The BDS is the Regulator's compass to track compliance and identify early warnings of drinking water supply systems that are digressing. The BDS has also become a reference source to many specialist studies and surveys, providing a source of credible data to the industry.

14 Perspectives from 'Blue Droppers'

The quotes below illustrate the attitude of municipalities and regional officials towards the Blue Drop initiative. (Quotes reference: DWS audits 2011 – 2014; WRC/WIN-SA best practice lesson: 2015)

Blue Drop succeeded to bring cohesion and cooperation between municipalities. It sharpened our planning skills and to plan according to risk.
Camdeboo Municipality, 2014

Blue Drop started out as a burden to the municipality, but once we embraced it and used it as a tool to motivate for budget and resources, it started to work for the team and the services delivery.
Drakenstein Municipality, 2011

"The Blue Drop encourages us to attend to the full value chain involved in the provision of safe drinking water: from technical to HR, from source to sink, in a logical step-by-step plan.
Khara Hais Municipality, 2015

"The "My Water" web page has been a user friendly website to visitors of the World Cup Football event in South Africa. The site can be used to verify the quality of tap water in any South African town or city ..."
DWS, 2013



Blue Drop

The Blue Drop has created opportunities for people and water organisations to exchange knowledge and work closely together. Blue Drop is a catalyst which focuses resources and actions towards excellence.

"Blue Drop has become a sought after brand. It elevates the water business and the people who excel in this field. Blue Drop has advanced training and professionalism in water services more than any other initiative to date.

Witzenberg Municipality, 2015..."

"The Blue Drop programme is one of Water Affairs' greatest initiatives ever. It gave new status to the profession and people are proud to be a part of this important work. We feel now that we are not just a number, but that we are recognised for the work we do and that we mean something or can contribute towards making our community better..."

SA Municipal Water Sector, WISA 2014

High quality water is more than the dream of the conservationists, more than a political slogan. High quality water, in the right quantity at the right place at the right time, is essential to health, recreation, and economic growth.

Edmund Muskie, 1966



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