

MONTHLY REPORT ON THE IRIS DRINKING WATER QUALITY COMPLIANCE PER SUPPLY SYSTEM WITHIN THE UTHUKELA DISTRICT MUNICIPALITY

MONTH : AUGUST 2021

Compiled by : GENERAL MANAGER: MUNICIPAL HEALTH SERVICES & WSA

Reference No. :

Routing

Manco : 06/09/2021

Portfolio (WSH) : 09/2021

Exco : 09/2021

Council : 09/2021

1. PURPOSE

For the committee to note the report on the IRIS Drinking Water Quality compliance per supply system for the month of August 2021.

2. BACKGROUND / DISCUSSION

An incentive-based regulation programme, termed Blue Drop Certification, commenced on the 11 September 2008 and promised to be the catalyst for sustainable improvement of South African drinking water quality management in its entirety. Heightened levels of commitment to drinking water quality management has been detected within the Municipal fraternity that is to the good of the general public who depends on consuming water of the highest standard at all times. On the 1st of October 2017 Integrated Regulatory Information System (IRIS) replaced the Blue Drop Certification programme.

DEFINITIONS:

- **Residual Chlorine (Cl₂)**: Chlorine is the most generally used agent to disinfect water. The residual or free and available chlorine must generally be at least 0.5 mg/L after a contact time of 30 minutes to ensure proper disinfected potable water. According to SANS 241 -1:2015, the maximum limit for chlorine is ≤5mg/l.
- **Turbidity**: Turbidity is often caused by inorganic clay minerals in surface water and can be readily removed from water by coagulation, flocculation and separation. Inadequate coagulation can adversely affect flocculation, sedimentation, filtration and disinfection. This can have an indirect health impact due to inadequacies that may occur in the disinfection process.
- **E.coli**: Total Coliforms are a group of closely related bacteria that are most commonly used as indicator organisms for drinking water. E. coli is a subset of the Total Coliform group and is an indicator of recent pollution. The presence of E.coli in treated water is a health risk and also an indicator of the presence of harmful bacteria as well as other disease-causing organisms such as viruses.

3. REPORT

According to SANS 241-2:2015 all water institutions or water services intermediaries shall implement a water quality-monitoring programme. Sample points shall be selected in a manner that will ensure that the quality of the drinking water can be verified throughout the entire water supply system. The sample programme shall include the following sample points:

1. Final water
2. Raw water (Abstraction Points)
3. Storage points (Reservoirs)
4. Distribution system (Representative sample points to ensure 80% coverage of the distribution system)

LEGEND

- A. Items: Items considered by Exco and referred to Council for resolution / final decision making.
- B. Items: Items to be resolved (finalised) by Exco under delegated powers.
- C. Items: Confidential matter considered by Exco and referred to Council for resolution.
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Based on the minimum monitoring frequency and the population served the minimum number of samples to be taken monthly are 122. For the month of August 2021, **195** water samples (163 potable water and 32 raw water samples) were collected for analysis within the UThukela District Municipality, thus complied 100% with the sampling programme minimum requirements.

Bulk water supply systems are required to comply with SANS 241:2015 that requires the performance to be reported against five risk categories:-

1. Acute Health: Microbiological
Microbial water quality is the state of the water with respect to the absence (good water quality) or presence (poor water quality) of certain disease causing micro-organisms. Where a microbiological value exceeds the numerical limit as specified in SANS 241:2015 an unacceptable risk to human health is implied. As the microbiological value increases, an increasing risk to health is expected.
2. Acute Health: Chemical
Determinant that poses an immediate unacceptable health risk if present at concentration values exceeding the numerical limits as specified in SANS 241:2015.
3. Chronic Health: Chemical
Determinant that poses an unacceptable health risk if ingested over an extended period if present at concentration values exceeding the numerical limits as specified in SANS 241:2015.
4. Operational
Determinant that is essential for assessing the efficient operation of treatment systems.
5. Aesthetic
Determinant that taint water with respect to taste, odour or colour and that does not pose an unacceptable health risk if present at concentration values exceeding the numerical limits as specified in SANS 241:2015.

The parameters analyzed can be broadly categorized in three distinct groups, i.e. microbiological, chemical and physical. Chemical parameters can be subdivided into macro- (mg/L) and micro- (µg/L) constituents. Water shall comply with the physical, aesthetic and chemical numerical limits for lifetime consumption as per SANS 241:2015 Edition 2 requirements.

During the month of August 2021, fifteen (15) drinking water supply systems were monitored for compliance with SANS 241:2015 drinking water standards.

1. Acute Health: Microbiological (AHMC)
Ten (10) drinking water supply systems complied 100% with the Acute Health Microbiological Compliance drinking water quality standards. The following health failures were recorded:-

WATER SUPPLY SYSTEM	DATE SAMPLED	Free Cl₂ mg/L	E.coli cfu/100mL	RESOLVED/NOT RESOLVED
1.A.Rodel final	16/08/2021	0.49	32.0*	Not Resolved
2.eZakheni final	02/08/2021	<0.01	4.0*	Not Resolved
3.Loskop 1 final	18/08/2021	0.42	8.0*	Not Resolved
4.Loskop 2 final	02/08/2021	0.05	24.0*	Not Resolved
5.Weenen 2 final	04/08/2021	0.29	6.0*	Not Resolved

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NOTE: The incidences were not resolved due to unavailability of Chlorine gas in most Water Treatment Facilities.

2. Acute Health: Chemical (AHCC)
All fifteen (15) drinking water supply systems complied 100% against the Acute Health Chemical Compliance.
3. Chronic Health: Chemical (CHCC)
All fifteen (15) drinking water supply systems complied 100% against the Chronic Health Chemical Compliance.
4. Operational Compliance (ORC)
No drinking water supply systems complied with Operational Compliance requirements.
5. Aesthetic Compliance (AC)
All fifteen (15) drinking water supply systems complied 100% against the Aesthetic Compliance requirements.

4. FINANCIAL IMPLICATIONS

- 2021/2022 Budget

5. LEGISLATION

- 5.1 SANS 241:2015
- 5.2 Water Services Act 108 of 1997
- 5.3 DWS Integrated Regulatory Information System (IRIS)

6. ATTACHMENTS

- Microbiological, Acute Health Chemical, Chronic Health Chemical, Operational and Aesthetic Compliance water quality report for August 2021.
- August 2021 IRIS Incident Register (IMP – Incident Management Protocol)

7. RECOMMENDATIONS

1. That the committee notes the report on the August 2021 IRIS Water Quality Compliance.
2. That the committee supports the submission of the report to Water, Sanitation, Technical and Health portfolio Committee.

For noting



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BH KHOZA
GENERAL MANAGER: MHS&WSA
01/09/2021

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**POTABLE WATER RISK ANALYSIS SUMMARY FOR THE PERIOD 01/08/2021 TO 31/08/2021 ACCORDING TO SANS 241:2015
AS ON 01/09/2021**

WATER SUPPLY SYSTEM AS REGISTERED ON IRIS	Acute Health Microbiological Compliance (AHMC)		Acute Health Chemical Compliance (AHCC)		Chronic Health Chemical Compliance (CHCC)		Operational Compliance (ORC)		Aesthetic Compliance (AC)	
	Determinant	Standard	Determinant	Standard	Determinant	Standard	Determinant	Standard	Determinant	Standard
	E. coli (cfu/100ml)	Not detected	Nitrate as N Nitrite as N Sulphate as SO ₄ ²⁻	≤11.0 mg/l ≤0.9 mg/l ≤500.0mg/l	Free Cl ₂ Fluoride as F ⁻ Iron as Fe ⁻ Manganese as Mn	≤5.0 mg/l ≤1.5 mg/l 2000.0 µg/l ≤400 µg/l	Turbidity as NTU pH as pH Units Aluminium as Al Free Cl ₂ – Final - RES - RET	≤1.0 mg/l ≥5 to ≤9.7 ≤300 µg/l 0.5 to 1.0mg/l 0.3 to 0.8mg/l 0.2 to 0.3mg/l	Cond. at 25°C Total Dis. Solids Ammonia as N Chloride as Cl ⁻	≤170 mS/m ≤1200 mg/l ≤1.5 mg/l ≤300 mg/l
	% Compliant	Rating	% Compliant	Rating	% Compliant	Rating	% Compliant	Rating	% Compliant	Rating
1. Colenso	100.00%	E	100.00%	E	100.00%	E	45.83%	U	100.00%	E
2. Ezakheni	93.33%	U	100.00%	E	100.00%	E	39.13%	U	100.00%	E
3. Ladysmith	100.00%	E	100.00%	E	100.00%	E	42.86%	U	100.00%	E
4. Oliphantskop	100.00%	E	100.00%	E	100.00%	E	56.25%	U	100.00%	E
5. Tugela Estate	100.00%	E	100.00%	E	100.00%	E	46.67%	U	100.00%	E
6. Archie Rodel	94.44%	U	100.00%	E	100.00%	E	40.74%	U	100.00%	E
7. George Cross	100.00%	E	100.00%	E	100.00%	E	50.00%	U	100.00%	E
8. Loskop 1 - Old Plant	92.90%	U	100.00%	E	100.00%	E	35.71%	U	100.00%	E
9. Loskop 2 - New Plant	66.67%	U	100.00%	E	100.00%	E	33.33%	U	100.00%	E
10. Weenen 1 – Old Plant	100.00%	E	100.00%	E	100.00%	E	38.90%	U	100.00%	E
11. Weenen 2 – New Plant	80.00%	U	100.00%	E	100.00%	E	33.33%	U	100.00%	E
12. Bergville	100.00%	E	100.00%	E	100.00%	E	51.28%	U	100.00%	E
13. Langkloof	100.00%	E	100.00%	E	100.00%	E	52.38%	U	100.00%	E
14. Moyeni/Zwelisha	100.00%	E	100.00%	E	100.00%	E	50.00%	U	100.00%	E
15. Winterton	100.00%	E	100.00%	E	100.00%	E	36.36%	U	100.00%	E
UTHUKELA DM %	96.93%	U	100.00%	E	100.00%	E	43.20%	U	100.00%	E

RED = UNACCEPTABLE

YELLOW = GOOD

BLUE = EXEPTIONAL

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