



**RAND WATER**  
**Merafong Water Quality Report**  
**1 Month**

23 January 2021 to 19 February 2021

Date generated: 10 March 2021

							Descriptive Statistics		
Determinands	Measurement Units	Risks	SANS 241:2015 standard limits (1)	No of results	Required compliances to SANS 241:2015 spec(%)	Achieved compliances to SANS 241:2015 spec(%)	Mean	Standard Deviation	Mean + 3 Std deviations
<b>Microbiological determinands</b>									
<i>E. coli</i>	(mpn per 100 mL)	Acute health	Non-detect	53	99.0%	100%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	53	95.0%	100%	0	0.19	1
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	53	95.0%	100%	42	60.92	224
<i>Cryptosporidium spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	16	99.0%	100%	0	0.00	0
<i>Giardia spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	16	99.0%	100%	0	0.00	0
Somatic Coliphages (2)	(count per 10 mL)	Operational	Non-detect	64	95.0%	100%	0	0.00	0
<b>Physical and Aesthetic determinands</b>									
Colour	(mg / L as Pt-Co)	Aesthetic	≤ 15	3	95.0%	100%	7.00	2.00	13.00
Conductivity	(mS / m)	Aesthetic	≤ 170	49	95.0%	100%	21.49	1.77	26.80
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	3	95.0%	100%	155.00	8.66	180.98
Turbidity	(NTU)	Operational	≤ 1	49	95.0%	97.96%	0.43	0.32	1.40
Turbidity	(NTU)	Aesthetic	≤ 5	49	95.0%	100%	0.43	0.32	1.40
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	49	95.0%	100%	7.69	0.08	7.94
<b>Chemical Properties: Macro determinands</b>									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	52	95.0%	100%	0.12	0.08	0.35
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	3	95.0%	100%	12.33	1.15	15.80
Free chlorine	(mg / L as Cl <sub>2</sub> )	Chronic health	≤ 5	53	97.0%	100%	0.08	0.07	0.29
Monochloramine	(mg / L as Cl <sub>2</sub> )	Chronic health	≤ 4.1	53	97.0%	100%	0.24	0.27	1.06
Fluoride	(mg / L as F)	Chronic health	≤ 1.5	7	97.0%	100%	0.20	0.00	0.20
Nitrate	(mg / L as N)	Acute health	≤ 11	51	99.0%	100%	0.78	0.33	1.77
Nitrite	(mg / L as N)	Acute health	≤ 0.9	51	99.0%	100%	0.17	0.12	0.53
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	45	99.0%	100%	0.30	0.18	0.85
Residual disinfectant (4)	(mg / L as Cl <sub>2</sub> )	Operational	≥ 0.1	53	95.0%	73.58%	0.28	0.32	1.24
Sodium	(mg / L as Na)	Aesthetic	≤ 200	2	95.0%	100%	11.00	1.41	15.24
Sulphate	(mg / L as SO <sub>4</sub> )	Aesthetic	≤ 250	3	95.0%	100%	14.67	0.58	16.40
Sulphate	(mg / L as SO <sub>4</sub> )	Acute health	≤ 500	3	99.0%	100%	14.67	0.58	16.40
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	2	95.0%	100%	0.01	0.00	0.01
<b>Chemical Properties: Micro determinands</b>									
Aluminium	(µg / L as Al)	Operational	≤ 300	2	95.0%	100%	5.50	4.95	20.35
Antimony	(µg / L as Sb)	Chronic health	≤ 20	1	97.0%	100%	0.60	n/a	0.60
Arsenic	(µg / L as As)	Chronic health	≤ 10	2	97.0%	100%	0.80	0.00	0.80
Barium	(µg / L as Ba)	Chronic health	≤ 700	2	97.0%	100%	39.50	2.12	45.86
Boron	(µg / L as B)	Chronic health	≤ 2400	2	97.0%	100%	1.70	0.28	2.55
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	2	97.0%	100%	1.00	0.00	1.00
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	2	97.0%	100%	0.50	0.00	0.50
Copper	(µg / L as Cu)	Chronic health	≤ 2000	2	97.0%	100%	10.45	6.43	29.75
Cyanide (Recoverable)	(µg / L as CN)	Acute health	≤ 200	3	99.0%	100%	5.00	0.00	5.00
Iron	(µg / L as Fe)	Chronic health	≤ 2000	2	97.0%	100%	100.00	0.00	100.00
Iron	(µg / L as Fe)	Aesthetic	≤ 300	2	95.0%	100%	100.00	0.00	100.00
Lead	(µg / L as Pb)	Chronic health	≤ 10	2	97.0%	100%	2.00	0.00	2.00
Manganese	(µg / L as Mn)	Chronic health	≤ 400	2	97.0%	100%	2.15	0.21	2.79
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	2	95.0%	100%	2.15	0.21	2.79
Mercury	(µg / L as Hg)	Chronic health	≤ 6	2	97.0%	100%	0.80	0.00	0.80
Nickel	(µg / L as Ni)	Chronic health	≤ 70	2	97.0%	100%	3.00	0.00	3.00
Selenium	(µg / L as Se)	Chronic health	≤ 40	2	97.0%	100%	4.00	0.00	4.00
Uranium	(µg / L as U)	Chronic health	≤ 30	1	97.0%	100%	0.50	n/a	0.50
<b>Organic determinands</b>									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	3	97.0%	100%	4.60	0.36	5.68
Phenols as C <sub>6</sub> H <sub>5</sub> OH	(µg / L)	Aesthetic	≤ 10	3	95.0%	100%	3.00	0.00	3.00
Chloroform - CHCl <sub>3</sub>	(µg / L)	Chronic health	≤ 300	4	97.0%	100%	81.00	6.48	100.44
Bromoform - CHBr <sub>3</sub>	(µg / L)	Chronic health	≤ 100	4	97.0%	100%	10.00	0.00	10.00
Dibromochloromethane - CHBr <sub>2</sub> Cl	(µg / L)	Chronic health	≤ 100	4	97.0%	100%	10.00	0.00	10.00
Bromodichloromethane - CHBrCl <sub>2</sub>	(µg / L)	Chronic health	≤ 60	4	97.0%	100%	15.50	3.11	24.83
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	4	97.0%	100%	0.54	0.04	0.66
Total Microcystin (2)	(µg / L)	Chronic health	≤ 1	no data	97.0%	no data	.	no data	.
<b>For monitoring/reporting purposes only</b>									
Calcium (6)	(mg / L as Ca)	Aesthetic	≤ 150	2	not applicable	100%	20.50	2.12	26.86
Hardness (7)	(mg / L as CaCO <sub>3</sub> )	Operational	≥ 20 to ≤ 200	2	not applicable	100%	80.00	8.49	105.46
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	2	not applicable	100%	7.00	0.85	9.55
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	2	not applicable	100%	4.35	0.49	5.83
<b>Rand Water Risk Determinands (RWRD) (6)</b>									
Odour	TON	RWRD	≤ 2	21	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	21	not applicable	100%	1.00	0.00	1.00

Risks	Required compliances to SANS 241: 2015 standard	Overall Compliances - SANS 241: 2015 standard
Acute health microbiological	99.0%	100%
Acute health chemical	99.0%	100%
Chronic health	97.0%	100%
Aesthetic	95.0%	100%
Operational	95.0%	95.36%

Notes  
(1) Specification SANS 241 date of effect : 1 July 2016  
(2) Measured at water treatment works exit points  
(3) (NO<sub>2</sub>/0.9 + NO<sub>3</sub>/11)  
(4) Residual disinfectant : Results from the chloraminated system = Sum of Free and Monochloramine  
(5) (CHCl<sub>3</sub>/300 + CHBr<sub>3</sub>/100 + CHBr<sub>2</sub>Cl/100 + CHBrCl<sub>2</sub>/60)  
(6) Customer request: Results not included in the risk indices compliance calculations and limits based on SANS 241:2006  
(7) Customer request: Results not included in the risk indices compliance calculations and limits based on RW Internal Spec  
\*\*\*\* Determinands with no data are due to instrument breakdown\*\*\*\*