

Merafong Municipality Water Quality Report - 12 Month

23 March 2017 to 22 March 2018 Date generated: 03 April 2018

Determinand	Measurement units	Risk	Required compliance to SANS 241: 2015 standard (%)	SANS 241: 2015 standard limits (1)	No of results	Achieved Compliance to SANS 241: 2015 Spec(%)	Descriptive statistics		
							Mean	Standard Deviation	Mean + 3 standard deviations
Microbiological determinands									
<i>E. coli</i>	(mpn per 100 mL)	Acute health	99.0%	0	577	100.0%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	95.0%	10	577	100.0%	0	0.09	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	95.0%	≤1000	577	100.0%	5	24.19	136
<i>Cryptosporidium spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	182	100.0%	0	0.00	0
<i>Giardia spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	182	100.0%	0	0.00	0
Somatic Coliphages (5)	(count per 10 mL)	Operational	95.0%	0	786	100.0%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	95.0%	≤15	57	100.0%	5.09	0.34	6.44
Conductivity	(mS / m)	Aesthetic	95.0%	≤170	577	100.0%	18.90	1.33	22.00
Total Dissolved Solids	(mg / L)	Aesthetic	95.0%	≤1200	54	100.0%	133.70	9.67	154.70
Turbidity	(NTU)	Operational	95.0%	≤1	576	100.0%	0.30	0.10	0.49
Turbidity	(NTU)	Aesthetic	95.0%	≤5	576	100.0%	0.30	0.10	0.49
pH	(pH units)	Operational	95.0%	≥ 5 to ≤ 9.7	577	100.0%	7.82	0.14	8.27
Chemical Properties									
Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	95.0%	≤1.5	609	100.0%	0.29	0.13	0.50
Chloride	(mg / L as Cl)	Aesthetic	95.0%	≤300	58	100.0%	11.06	1.14	14.43
Free chlorine (2)	(mg / L as Cl ₂)	Chronic health	97.0%	≤5	578	100.0%	0.11	0.16	0.84
Monochloramine (3)	(mg / L as Cl ₂)	Chronic health	97.0%	≤4.1	578	100.0%	1.08	0.52	1.86
Fluoride	(mg / L as F)	Chronic health	97.0%	≤1.5	58	100.0%	0.19	0.02	0.24
Nitrate	(mg / L as N)	Acute health	99.0%	≤11	602	100.0%	0.48	0.08	0.83
Nitrite	(mg / L as N)	Acute health	99.0%	≤0.9	604	100.0%	0.06	0.08	0.40
Combined nitrate plus nitrite (7)	(mg / L as N)	Acute health	99.0%	≤1	602	100.0%	0.11	0.09	0.49
Residual disinfectant (4)	(mg / L)	Operational	95.0%	≥0.1 Sum of Free and Monochloramine	578	95.0%	1.20	0.52	1.94
Sodium	(mg / L as Na)	Aesthetic	95.0%	≤200	59	100.0%	8.45	0.59	9.50
Sulphate	(mg / L as SO ₄)	Aesthetic	95.0%	≤250	58	100.0%	13.21	0.85	15.00
Sulphate	(mg / L as SO ₄)	Acute health	99.0%	≤500	58	100.0%	13.21	0.85	15.00
Zinc	(mg / L as Zn)	Aesthetic	95.0%	≤5	59	100.0%	0.02	0.01	0.05
Micro determinands									
Aluminium	(µg / L as Al)	Operational	95.0%	≤300	59	100.0%	32.22	10.55	72.46
Antimony	(µg / L as Sb)	Chronic health	97.0%	≤20	57	100.0%	0.50	0.00	0.50
Arsenic	(µg / L as As)	Chronic health	97.0%	≤10	57	100.0%	0.96	0.88	4.18
Barium	(µg / L as Ba)	Chronic health	97.0%	≤700	59	100.0%	33.68	7.50	53.42
Boron	(µg / L as B)	Chronic health	97.0%	≤2400	59	100.0%	25.00	0.00	25.00
Cadmium	(µg / L as Cd)	Chronic health	97.0%	≤3	57	100.0%	2.50	0.00	2.50
Chromium (Total)	(µg / L as Cr)	Chronic health	97.0%	≤50	59	100.0%	15.00	0.00	15.00
Copper	(µg / L as Cu)	Chronic health	97.0%	≤2000	59	100.0%	10.95	2.29	19.00
Cyanide (Recoverable)	(µg / L as CN)	Acute health	99.0%	≤200	57	100.0%	5.41	2.57	15.82
Iron	(µg / L as Fe)	Chronic health	97.0%	≤2000	59	100.0%	27.72	22.99	112.74
Iron	(µg / L as Fe)	Aesthetic	95.0%	≤300	59	100.0%	27.72	22.99	112.74
Lead	(µg / L as Pb)	Chronic health	97.0%	≤10	57	100.0%	0.51	1.18	6.42
Manganese	(µg / L as Mn)	Chronic health	97.0%	≤400	59	100.0%	10.05	0.29	11.42
Manganese	(µg / L as Mn)	Aesthetic	95.0%	≤100	59	100.0%	10.05	0.29	11.42
Mercury	(µg / L as Hg)	Chronic health	97.0%	≤6	57	100.0%	0.80	0.00	0.80
Nickel	(µg / L as Ni)	Chronic health	97.0%	≤70	59	100.0%	10.00	0.00	10.00
Selenium	(µg / L as Se)	Chronic health	97.0%	≤40	57	100.0%	0.90	0.95	4.91
Uranium	(µg / L as U)	Chronic health	97.0%	≤30	57	100.0%	0.21	0.10	0.53
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	97.0%	≤10	58	100.0%	3.91	0.76	6.05
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	95.0%	≤10	57	100.0%	5.00	0.00	5.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	97.0%	≤300	65	100.0%	48.74	6.98	64.00
Bromoform - CHBr ₃	(µg / L)	Chronic health	97.0%	≤100	65	100.0%	0.50	0.02	0.60
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	97.0%	≤100	65	100.0%	1.25	0.80	3.94
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	97.0%	≤60	65	100.0%	14.18	1.67	18.00
Combined trihalomethanes (8)	(µg / L)	Chronic health	97.0%	≤1	65	100.0%	0.42	0.05	0.53
Total Microcystin (5)	(µg / L)	Chronic health	97.0%	≤1	184	100.0%	0.32	0.02	0.36
For monitoring/reporting purposes only (6)									
Calcium	(mg / L as Ca)	Aesthetic	not applicable	≤150	59	100.0%	17.36	2.44	21.42
Hardness	(mg / L as CaCO ₃)	Operational	not applicable	≥ 20 to ≤ 200	59	100.0%	63.05	6.71	73.84
Magnesium	(mg / L as Mg)	Aesthetic	not applicable	≤70	59	100.0%	5.68	0.50	6.84
Potassium	(mg / L as K)	Aesthetic	not applicable	≤50	59	100.0%	3.79	0.33	4.48
Rand Water Risk Determinands (RWRD)									
Odour	TON	RWRD	95.0%	≤2	206	100.0%	1.00	0.00	1.00
Taste	FTN	RWRD	95.0%	≤2	206	100.0%	1.00	0.00	1.00

Risk	Required compliance to SANS 241: 2015 standard	Overall Compliance-SANS 241
Acute health microbiological	99.00%	100.00%
Acute health chemical	99.00%	100.00%
Chronic health	97.00%	100.00%
Aesthetic	95.00%	100.00%
Operational	95.00%	99.22%

- Notes:**
- (1) Specification date of effect : 1 July 2016
 - (2) Free chlorine : Results from chloraminated system
 - (3) Monochloramine : Results are from the chloraminated systems
 - (4) Residual disinfectant : Results from chloraminated system
 - (5) Measured at water treatment works exit points
 - (6) Customer request: Results not included in the risk indices compliance calculations
 - (7) (NO₂/0.9 + NO₃/11)
 - (8) (CHCl₃/300 + CHBr₃/100 + CHBr₂Cl/100 + CHBrCl₂/60)