

Merafong Municipality Water Quality Report - 1 Month

23 January 2020 to 19 February 2020 Date generated: 13 March 2020

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	59	100.0%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	95.0%	10	59	98.3%	1	6.90	22
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	95.0%	≤1000	59	100.0%	39	76.60	269
<i>Cryptosporidium spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	15	100.0%	0	0.00	0
<i>Giardia spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	15	100.0%	0	0.00	0
Somatic Coliphages (5)	(count per 10 mL)	Operational	95.0%	0	60	100.0%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	95.0%	≤15	5	100.0%	5.00	0.00	5.00
Conductivity	(mS / m)	Aesthetic	95.0%	≤170	55	100.0%	23.29	1.51	27.82
Total Dissolved Solids	(mg / L)	Aesthetic	95.0%	≤1200	5	100.0%	161.00	2.24	167.71
Turbidity	(NTU)	Operational	95.0%	≤1	55	100.0%	0.31	0.07	0.52
Turbidity	(NTU)	Aesthetic	95.0%	≤5	55	100.0%	0.31	0.07	0.52
pH	(pH units)	Operational	95.0%	≥ 5 to ≤ 9.7	55	100.0%	7.87	0.10	8.16
Chemical Properties									
Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	95.0%	≤1.5	58	100.0%	0.06	0.08	0.30
Chloride	(mg / L as Cl)	Aesthetic	95.0%	≤300	5	100.0%	13.60	0.89	16.28
Free chlorine (2)	(mg / L as Cl ₂)	Chronic health	97.0%	≤5	59	100.0%	0.09	0.03	0.18
Monochloramine (3)	(mg / L as Cl ₂)	Chronic health	97.0%	≤4.1	59	100.0%	0.39	0.42	1.64
Fluoride	(mg / L as F)	Chronic health	97.0%	≤1.5	5	100.0%	0.21	0.01	0.23
Nitrate	(mg / L as N)	Acute health	99.0%	≤11	57	100.0%	0.77	0.16	1.25
Nitrite	(mg / L as N)	Acute health	99.0%	≤0.9	57	100.0%	0.16	0.15	0.63
Combined nitrate plus nitrite (7)	(mg / L as N)	Acute health	99.0%	≤1	56	100.0%	0.24	0.16	0.73
Residual disinfectant (4)	(mg / L)	Operational	95.0%	≥0.1 Sum of Free and Monochloramine	59	86.4%	0.46	0.44	1.79
Sodium	(mg / L as Na)	Aesthetic	95.0%	≤200	6	100.0%	12.00	0.00	12.00
Sulphate	(mg / L as SO ₄)	Aesthetic	95.0%	≤250	5	100.0%	22.60	0.55	24.24
Sulphate	(mg / L as SO ₄)	Acute health	99.0%	≤500	5	100.0%	22.60	0.55	24.24
Zinc	(mg / L as Zn)	Aesthetic	95.0%	≤5	6	100.0%	0.09	0.17	0.61
Micro determinands									
Aluminium	(µg / L as Al)	Operational	95.0%	≤300	6	100.0%	26.17	2.86	34.74
Antimony	(µg / L as Sb)	Chronic health	97.0%	≤20	no data (9)	no data (9)	no data (9)	no data (9)	no data (9)
Arsenic	(µg / L as As)	Chronic health	97.0%	≤10	no data (9)	no data (9)	no data (9)	no data (9)	no data (9)
Barium	(µg / L as Ba)	Chronic health	97.0%	≤700	6	100.0%	50.83	0.75	53.09
Boron	(µg / L as B)	Chronic health	97.0%	≤2400	6	100.0%	11.83	0.75	14.09
Cadmium	(µg / L as Cd)	Chronic health	97.0%	≤3	no data (9)	no data (9)	no data (9)	no data (9)	no data (9)
Chromium (Total)	(µg / L as Cr)	Chronic health	97.0%	≤50	6	100.0%	5.00	0.00	5.00
Copper	(µg / L as Cu)	Chronic health	97.0%	≤2000	6	100.0%	9.10	2.41	16.34
Cyanide (Recoverable)	(µg / L as CN)	Acute health	99.0%	≤200	5	100.0%	5.00	0.00	5.00
Iron	(µg / L as Fe)	Chronic health	97.0%	≤2000	6	100.0%	20.17	9.70	49.28
Iron	(µg / L as Fe)	Aesthetic	95.0%	≤300	6	100.0%	20.17	9.70	49.28
Lead	(µg / L as Pb)	Chronic health	97.0%	≤10	no data (9)	no data (9)	no data (9)	no data (9)	no data (9)
Manganese	(µg / L as Mn)	Chronic health	97.0%	≤400	6	100.0%	3.00	0.00	3.00
Manganese	(µg / L as Mn)	Aesthetic	95.0%	≤100	6	100.0%	3.00	0.00	3.00
Mercury	(µg / L as Hg)	Chronic health	97.0%	≤6	no data (9)	no data (9)	no data (9)	no data (9)	no data (9)
Nickel	(µg / L as Ni)	Chronic health	97.0%	≤70	6	100.0%	5.00	0.00	5.00
Selenium	(µg / L as Se)	Chronic health	97.0%	≤40	no data (9)	no data (9)	no data (9)	no data (9)	no data (9)
Uranium	(µg / L as U)	Chronic health	97.0%	≤30	no data (9)	no data (9)	no data (9)	no data (9)	no data (9)
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	97.0%	≤10	6	100.0%	3.15	0.23	3.83
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	95.0%	≤10	6	100.0%	3.00	0.00	3.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	97.0%	≤300	7	100.0%	49.29	10.92	82.04
Bromoform - CHBr ₃	(µg / L)	Chronic health	97.0%	≤100	7	100.0%	10.00	0.00	10.00
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	97.0%	≤100	7	100.0%	10.00	0.00	10.00
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	97.0%	≤60	7	100.0%	18.14	1.86	23.74
Combined trihalomethanes (8)	(µg / L)	Chronic health	97.0%	≤1	7	100.0%	0.50	0.07	0.70
Total Microcystin (5)	(µg / L)	Chronic health	97.0%	≤1	15	100.0%	0.31	0.00	0.31
For monitoring/reporting purposes only (6)									
Calcium	(mg / L as Ca)	Aesthetic	not applicable	≤150	6	100.0%	18.00	0.63	19.90
Hardness	(mg / L as CaCO ₃)	Operational	not applicable	≥ 20 to ≤ 200	6	100.0%	72.67	1.97	78.57
Magnesium	(mg / L as Mg)	Aesthetic	not applicable	≤70	6	100.0%	7.98	0.08	8.21
Potassium	(mg / L as K)	Aesthetic	not applicable	≤50	6	100.0%	3.70	0.06	3.89
Rand Water Risk Determinands (RWRD)									
Odour	TON	RWRD	95.0%	≤2	24	100.0%	1.00	0.00	1.00
Taste	FTN	RWRD	95.0%	≤2	24	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%	97.45%

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