

Merafong Municipality Water Quality Report - 12 Month

24 October 2016 to 23 October 2017

Date generated: 02 November 2017

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	639	100.0%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	95.0%	10	639	100.0%	0	0.06	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	95.0%	≤1000	599	100.0%	2	7.13	23
<i>Cryptosporidium spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	181	100.0%	0	0.00	0
<i>Giardia spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	181	100.0%	0	0.00	0
Somatic Coliphages (5)	(count per 10 mL)	Operational	95.0%	0	784	100.0%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	95.0%	≤15	62	100.0%	5.06	0.31	6.39
Conductivity	(mS / m)	Aesthetic	95.0%	≤170	639	100.0%	18.15	2.08	22.00
Total Dissolved Solids	(mg / L)	Aesthetic	95.0%	≤1200	639	100.0%	129.41	12.15	151.87
Turbidity	(NTU)	Operational	95.0%	≤1	629	100.0%	0.28	0.10	0.48
Turbidity	(NTU)	Aesthetic	95.0%	≤5	629	100.0%	0.28	0.10	0.48
pH	(pH units)	Operational	95.0%	≥ 5 to ≤ 9.7	639	100.0%	7.90	0.16	8.28
Chemical Properties									
Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	95.0%	≤1.5	637	100.0%	0.28	0.13	0.50
Chloride	(mg / L as Cl)	Aesthetic	95.0%	≤300	63	100.0%	9.99	1.66	14.38
Free chlorine (2)	(mg / L as Cl ₂)	Chronic health	97.0%	≤5	640	100.0%	0.10	0.14	0.78
Monochloramine (3)	(mg / L as Cl ₂)	Chronic health	97.0%	≤4.1	640	100.0%	1.07	0.51	1.87
Fluoride	(mg / L as F)	Chronic health	97.0%	≤1.5	63	100.0%	0.17	0.03	0.23
Nitrate	(mg / L as N)	Acute health	99.0%	≤11	629	100.0%	0.54	0.17	1.07
Nitrite	(mg / L as N)	Acute health	99.0%	≤0.9	636	100.0%	0.07	0.08	0.40
Combined nitrate plus nitrite (7)	(mg / L as N)	Acute health	99.0%	≤1	628	100.0%	0.12	0.10	0.52
Residual disinfectant (4)	(mg / L)	Operational	95.0%	≥0.1 Sum of Free and Monochloramine	640	94.5%	1.18	0.52	1.96
Sodium	(mg / L as Na)	Aesthetic	95.0%	≤200	60	100.0%	7.54	1.01	9.30
Sulphate	(mg / L as SO ₄)	Aesthetic	95.0%	≤250	63	100.0%	11.97	1.72	15.00
Sulphate	(mg / L as SO ₄)	Acute health	99.0%	≤500	63	100.0%	11.97	1.72	15.00
Zinc	(mg / L as Zn)	Aesthetic	95.0%	≤5	60	100.0%	0.01	0.01	0.04
Micro determinands									
Aluminium	(µg / L as Al)	Operational	95.0%	≤300	60	100.0%	30.27	6.68	46.23
Antimony	(µg / L as Sb)	Chronic health	97.0%	≤20	62	100.0%	0.50	0.00	0.50
Arsenic	(µg / L as As)	Chronic health	97.0%	≤10	62	100.0%	0.91	0.56	2.42
Barium	(µg / L as Ba)	Chronic health	97.0%	≤700	60	100.0%	32.30	7.54	53.41
Boron	(µg / L as B)	Chronic health	97.0%	≤2400	60	100.0%	25.00	0.00	25.00
Cadmium	(µg / L as Cd)	Chronic health	97.0%	≤3	62	100.0%	2.50	0.00	2.50
Chromium (Total)	(µg / L as Cr)	Chronic health	97.0%	≤50	60	100.0%	15.00	0.00	15.00
Copper	(µg / L as Cu)	Chronic health	97.0%	≤2000	60	100.0%	10.38	1.53	17.23
Cyanide (Recoverable)	(µg / L as CN)	Acute health	99.0%	≤200	62	100.0%	5.07	0.56	6.72
Iron	(µg / L as Fe)	Chronic health	97.0%	≤2000	60	100.0%	23.96	18.98	89.85
Iron	(µg / L as Fe)	Aesthetic	95.0%	≤300	60	100.0%	23.96	18.98	89.85
Lead	(µg / L as Pb)	Chronic health	97.0%	≤10	62	100.0%	0.30	0.24	1.32
Manganese	(µg / L as Mn)	Chronic health	97.0%	≤400	60	100.0%	10.03	0.26	10.82
Manganese	(µg / L as Mn)	Aesthetic	95.0%	≤100	60	100.0%	10.03	0.26	10.82
Mercury	(µg / L as Hg)	Chronic health	97.0%	≤6	62	100.0%	0.80	0.00	0.80
Nickel	(µg / L as Ni)	Chronic health	97.0%	≤70	60	100.0%	10.00	0.00	10.00
Selenium	(µg / L as Se)	Chronic health	97.0%	≤40	62	100.0%	0.76	0.45	2.28
Uranium	(µg / L as U)	Chronic health	97.0%	≤30	62	100.0%	0.23	0.16	1.04
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	97.0%	≤10	62	100.0%	3.78	0.98	6.72
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	95.0%	≤10	61	100.0%	5.00	0.00	5.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	97.0%	≤300	69	100.0%	44.36	10.16	64.00
Bromoform - CHBr ₃	(µg / L)	Chronic health	97.0%	≤100	69	100.0%	0.50	0.00	0.50
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	97.0%	≤100	69	100.0%	1.69	0.92	3.40
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	97.0%	≤60	69	100.0%	13.13	2.07	17.00
Combined trihalomethanes (8)	(µg / L)	Chronic health	97.0%	≤1	69	100.0%	0.39	0.06	0.51
Total Microcystin (5)	(µg / L)	Chronic health	97.0%	≤1	181	100.0%	0.35	0.02	0.36
For monitoring/reporting purposes only (6)									
Calcium	(mg / L as Ca)	Aesthetic	not applicable	≤150	60	100.0%	17.29	2.41	23
Hardness	(mg / L as CaCO ₃)	Operational	not applicable	≥ 20 to ≤ 200	60	100.0%	61.56	6.75	77.84
Magnesium	(mg / L as Mg)	Aesthetic	not applicable	≤70	60	100.0%	5.30	0.49	6.20
Potassium	(mg / L as K)	Aesthetic	not applicable	≤50	60	100.0%	2.95	0.83	3.90
Rand Water Risk Determinands (RWRD)									
Odour	TON	RWRD	95.0%	≤2	245	100.0%	1.00	0.00	1.00
Taste	FTN	RWRD	95.0%	≤2	245	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%	99.12%

- 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)