

Metsimaholo Municipality Water Quality Report - 12 Month

23 January 2017 to 22 January 2018

Date generated: 01 February 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	624	100.0%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	95.0%	10	624	100.0%	0	0.33	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	95.0%	≤1000	623	100.0%	1	3.08	7
<i>Cryptosporidium spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	179	100.0%	0	0.00	0
<i>Giardia spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	179	100.0%	0	0.00	0
Somatic Coliphages (5)	(count per 10 mL)	Operational	95.0%	0	775	100.0%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	95.0%	≤15	69	100.0%	5.07	0.31	6.32
Conductivity	(mS / m)	Aesthetic	95.0%	≤170	308	100.0%	18.96	1.82	23.00
Total Dissolved Solids	(mg / L)	Aesthetic	95.0%	≤1200	69	100.0%	133.84	8.83	160.00
Turbidity	(NTU)	Operational	95.0%	≤1	307	99.7%	0.30	0.18	0.48
Turbidity	(NTU)	Aesthetic	95.0%	≤5	307	100.0%	0.30	0.18	0.48
pH	(pH units)	Operational	95.0%	≥ 5 to ≤ 9.7	308	100.0%	7.96	0.19	8.48
Chemical Properties									
Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	95.0%	≤1.5	312	100.0%	0.05	0.04	0.32
Chloride	(mg / L as Cl)	Aesthetic	95.0%	≤300	34	100.0%	10.61	1.38	14.67
Free chlorine (2)	(mg / L as Cl ₂)	Chronic health	97.0%	≤5	621	100.0%	1.38	0.47	2.20
Monochloramine (3)	(mg / L as Cl ₂)	Chronic health	97.0%	≤4.1	not applicable	not applicable	not applicable	not applicable	not applicable
Fluoride	(mg / L as F)	Chronic health	97.0%	≤1.5	32	100.0%	0.19	0.06	0.41
Nitrate	(mg / L as N)	Acute health	99.0%	≤11	311	100.0%	0.48	0.08	0.68
Nitrite	(mg / L as N)	Acute health	99.0%	≤0.9	312	100.0%	0.03	0.01	0.09
Combined nitrate plus nitrite (7)	(mg / L as N)	Acute health	99.0%	≤1	311	100.0%	0.08	0.02	0.14
Residual disinfectant (4)	(mg / L)	Operational	95.0%	≥0.2 Free Chlorine	621	99.2%	1.38	0.47	2.20
Sodium	(mg / L as Na)	Aesthetic	95.0%	≤200	73	100.0%	8.22	0.69	9.63
Sulphate	(mg / L as SO ₄)	Aesthetic	95.0%	≤250	69	100.0%	13.35	1.07	16.00
Sulphate	(mg / L as SO ₄)	Acute health	99.0%	≤500	69	100.0%	13.35	1.07	16.00
Zinc	(mg / L as Zn)	Aesthetic	95.0%	≤5	73	100.0%	0.02	0.01	0.04
Micro determinands									
Aluminium	(µg / L as Al)	Operational	95.0%	≤300	73	100.0%	28.27	7.76	59.80
Antimony	(µg / L as Sb)	Chronic health	97.0%	≤20	28	100.0%	0.55	0.25	1.51
Arsenic	(µg / L as As)	Chronic health	97.0%	≤10	32	100.0%	0.85	1.10	4.77
Barium	(µg / L as Ba)	Chronic health	97.0%	≤700	73	100.0%	27.85	6.61	44.08
Boron	(µg / L as B)	Chronic health	97.0%	≤2400	73	100.0%	25.01	0.12	25.28
Cadmium	(µg / L as Cd)	Chronic health	97.0%	≤3	32	100.0%	2.50	0.00	2.50
Chromium (Total)	(µg / L as Cr)	Chronic health	97.0%	≤50	73	100.0%	15.00	0.00	15.00
Copper	(µg / L as Cu)	Chronic health	97.0%	≤2000	73	100.0%	10.00	0.00	10.00
Cyanide (Recoverable)	(µg / L as CN)	Acute health	99.0%	≤200	68	100.0%	5.07	0.41	7.33
Iron	(µg / L as Fe)	Chronic health	97.0%	≤2000	73	100.0%	25.68	23.59	122.80
Iron	(µg / L as Fe)	Aesthetic	95.0%	≤300	73	100.0%	25.68	23.59	122.80
Lead	(µg / L as Pb)	Chronic health	97.0%	≤10	32	100.0%	0.24	0.13	0.76
Manganese	(µg / L as Mn)	Chronic health	97.0%	≤400	73	100.0%	10.08	0.52	12.56
Manganese	(µg / L as Mn)	Aesthetic	95.0%	≤100	73	100.0%	10.08	0.52	12.56
Mercury	(µg / L as Hg)	Chronic health	97.0%	≤6	29	100.0%	0.80	0.00	0.80
Nickel	(µg / L as Ni)	Chronic health	97.0%	≤70	73	100.0%	10.00	0.00	10.00
Selenium	(µg / L as Se)	Chronic health	97.0%	≤40	32	100.0%	0.84	0.83	4.00
Uranium	(µg / L as U)	Chronic health	97.0%	≤30	28	100.0%	0.21	0.06	0.42
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	97.0%	≤10	32	100.0%	3.64	0.53	4.89
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	95.0%	≤10	32	100.0%	5.00	0.00	5.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	97.0%	≤300	44	100.0%	36.63	23.37	84.99
Bromoform - CHBr ₃	(µg / L)	Chronic health	97.0%	≤100	43	100.0%	0.50	0.00	0.50
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	97.0%	≤100	43	100.0%	1.05	0.78	3.60
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	97.0%	≤60	43	100.0%	10.60	4.61	19.00
Combined trihalomethanes (8)	(µg / L)	Chronic health	97.0%	≤1	43	100.0%	0.31	0.16	0.61
Total Microcystin (5)	(µg / L)	Chronic health	97.0%	≤1	179	100.0%	0.33	0.02	0.36
For monitoring/reporting purposes only (6)									
Calcium	(mg / L as Ca)	Aesthetic	not applicable	≤150	73	100.0%	17.68	3.74	28.12
Hardness	(mg / L as CaCO ₃)	Operational	not applicable	≥ 20 to ≤ 200	73	100.0%	62.30	9.57	87.36
Magnesium	(mg / L as Mg)	Aesthetic	not applicable	≤70	73	100.0%	5.22	0.63	6.41
Potassium	(mg / L as K)	Aesthetic	not applicable	≤50	73	100.0%	3.51	0.47	4.33
Rand Water Risk Determinands (RWRD)									
Odour	TON	RWRD	95.0%	≤2	48	100.0%	1.00	0.00	1.00
Taste	FTN	RWRD	95.0%	≤2	48	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%	99.82%

Notes:

- (1) Specification date of effect : 1 July 2016
- (2) Free chlorine : Results from chlorinated system
- (3) Monochloramine : Chlorinated system has no monochloramine
- (4) Residual disinfectant : Results from chlorinated 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)