

Madibeng Municipality Water Quality Report - 1 Month

22 November 2018 to 21 December 2018 Date generated: 10 January 2019

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	32	100.0%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	95.0%	10	32	100.0%	0	0.00	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	95.0%	≤1000	32	100.0%	1	1.74	6
<i>Cryptosporidium spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	16	100.0%	0	0.00	0
<i>Giardia spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	16	100.0%	0	0.00	0
Somatic Coliphages (5)	(count per 10 mL)	Operational	95.0%	0	64	100.0%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	95.0%	≤15	1	100.0%	5.00	not applicable	5.00
Conductivity	(mS / m)	Aesthetic	95.0%	≤170	32	100.0%	20.16	1.69	25.22
Total Dissolved Solids	(mg / L)	Aesthetic	95.0%	≤1200	1	100.0%	140.00	not applicable	140.00
Turbidity	(NTU)	Operational	95.0%	≤1	32	96.9%	0.40	0.25	1.16
Turbidity	(NTU)	Aesthetic	95.0%	≤5	32	100.0%	0.40	0.25	1.16
pH	(pH units)	Operational	95.0%	≥ 5 to ≤ 9.7	32	100.0%	8.07	0.08	8.31
Chemical Properties									
Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	95.0%	≤1.5	32	100.0%	0.22	0.11	0.54
Chloride	(mg / L as Cl)	Aesthetic	95.0%	≤300	2	100.0%	11.00	0.00	11.00
Free chlorine (2)	(mg / L as Cl ₂)	Chronic health	97.0%	≤5	32	100.0%	0.06	0.03	0.16
Monochloramine (3)	(mg / L as Cl ₂)	Chronic health	97.0%	≤4.1	32	100.0%	1.18	0.18	1.71
Fluoride	(mg / L as F)	Chronic health	97.0%	≤1.5	2	100.0%	0.20	0.00	0.20
Nitrate	(mg / L as N)	Acute health	99.0%	≤11	32	100.0%	0.50	0.00	0.50
Nitrite	(mg / L as N)	Acute health	99.0%	≤0.9	32	100.0%	0.04	0.03	0.13
Combined nitrate plus nitrite (7)	(mg / L as N)	Acute health	99.0%	≤1	32	100.0%	0.09	0.03	0.19
Residual disinfectant (4)	(mg / L)	Operational	95.0%	≥0.1 Sum of Free and Monochloramine	32	100.0%	1.24	0.18	1.77
Sodium	(mg / L as Na)	Aesthetic	95.0%	≤200	1	100.0%	8.60	not applicable	8.60
Sulphate	(mg / L as SO ₄)	Aesthetic	95.0%	≤250	2	100.0%	14.00	0.00	14.00
Sulphate	(mg / L as SO ₄)	Acute health	99.0%	≤500	2	100.0%	14.00	0.00	14.00
Zinc	(mg / L as Zn)	Aesthetic	95.0%	≤5	1	100.0%	0.01	not applicable	0.01
Micro determinands									
Aluminium	(µg / L as Al)	Operational	95.0%	≤300	1	100.0%	25.00	not applicable	25.00
Antimony	(µg / L as Sb)	Chronic health	97.0%	≤20	17	100.0%	0.61	0.05	0.77
Arsenic	(µg / L as As)	Chronic health	97.0%	≤10	1	100.0%	0.80	not applicable	0.80
Barium	(µg / L as Ba)	Chronic health	97.0%	≤700	1	100.0%	37.00	not applicable	37.00
Boron	(µg / L as B)	Chronic health	97.0%	≤2400	1	100.0%	3.00	not applicable	3.00
Cadmium	(µg / L as Cd)	Chronic health	97.0%	≤3	1	100.0%	1.00	not applicable	1.00
Chromium (Total)	(µg / L as Cr)	Chronic health	97.0%	≤50	1	100.0%	5.00	not applicable	5.00
Copper	(µg / L as Cu)	Chronic health	97.0%	≤2000	1	100.0%	8.00	not applicable	8.00
Cyanide (Recoverable)	(µg / L as CN)	Acute health	99.0%	≤200	1	100.0%	20.00	not applicable	20.00
Iron	(µg / L as Fe)	Chronic health	97.0%	≤2000	1	100.0%	10.00	not applicable	10.00
Iron	(µg / L as Fe)	Aesthetic	95.0%	≤300	1	100.0%	10.00	not applicable	10.00
Lead	(µg / L as Pb)	Chronic health	97.0%	≤10	1	100.0%	2.00	not applicable	2.00
Manganese	(µg / L as Mn)	Chronic health	97.0%	≤400	1	100.0%	3.00	not applicable	3.00
Manganese	(µg / L as Mn)	Aesthetic	95.0%	≤100	1	100.0%	3.00	not applicable	3.00
Mercury	(µg / L as Hg)	Chronic health	97.0%	≤6	17	100.0%	0.80	0.00	0.80
Nickel	(µg / L as Ni)	Chronic health	97.0%	≤70	1	100.0%	5.00	not applicable	5.00
Selenium	(µg / L as Se)	Chronic health	97.0%	≤40	1	100.0%	4.00	not applicable	4.00
Uranium	(µg / L as U)	Chronic health	97.0%	≤30	17	100.0%	0.71	0.30	1.63
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	97.0%	≤10	1	100.0%	3.70	not applicable	3.70
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	95.0%	≤10	1	100.0%	3.00	not applicable	3.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	97.0%	≤300	1	100.0%	30.00	not applicable	30.00
Bromoform - CHBr ₃	(µg / L)	Chronic health	97.0%	≤100	1	100.0%	10.00	not applicable	10.00
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	97.0%	≤100	1	100.0%	10.00	not applicable	10.00
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	97.0%	≤60	1	100.0%	12.00	not applicable	12.00
Combined trihalomethanes (8)	(µg / L)	Chronic health	97.0%	≤1	1	100.0%	0.50	not applicable	0.50
Total Microcystin (5)	(µg / L)	Chronic health	97.0%	≤1	16	100.0%	0.31	0.00	0.31
For monitoring/reporting purposes only (6)									
Calcium	(mg / L as Ca)	Aesthetic	not applicable	≤150	1	100.0%	15.00	not applicable	15
Hardness	(mg / L as CaCO ₃)	Operational	not applicable	≥ 20 to ≤ 200	1	100.0%	57.00	not applicable	57.00
Magnesium	(mg / L as Mg)	Aesthetic	not applicable	≤70	1	100.0%	5.60	not applicable	5.60
Potassium	(mg / L as K)	Aesthetic	not applicable	≤50	1	100.0%	3.00	not applicable	3.00
Rand Water Risk Determinands (RWRD)									
Odour	TON	RWRD	95.0%	≤2	14	100.0%	1.00	0.00	1.00
Taste	FTN	RWRD	95.0%	≤2	14	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%	99.56%

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)