

Emfuleni Municipality Water Quality Report - 12 Month

23 January 2018 to 22 January 2019 Date generated: 11 February 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	795	100.0%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	95.0%	10	795	99.9%	0	1.16	4
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	95.0%	≤1000	795	100.0%	2	13.59	43
<i>Cryptosporidium spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	191	100.0%	0	0.00	0
<i>Giardia spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	191	100.0%	0	0.00	0
Somatic Coliphages (5)	(count per 10 mL)	Operational	95.0%	0	841	100.0%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	95.0%	≤15	16	100.0%	5.06	0.25	5.81
Conductivity	(mS / m)	Aesthetic	95.0%	≤170	795	100.0%	20.26	1.74	25.47
Total Dissolved Solids	(mg / L)	Aesthetic	95.0%	≤1200	16	100.0%	143.13	8.34	168.15
Turbidity	(NTU)	Operational	95.0%	≤1	786	99.9%	0.32	0.29	1.18
Turbidity	(NTU)	Aesthetic	95.0%	≤5	786	99.9%	0.32	0.29	1.18
pH	(pH units)	Operational	95.0%	≥ 5 to ≤ 9.7	795	99.9%	7.98	0.16	8.46
Chemical Properties									
Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	95.0%	≤1.5	795	100.0%	0.04	0.05	0.19
Chloride	(mg / L as Cl)	Aesthetic	95.0%	≤300	16	100.0%	11.25	0.93	14.04
Free chlorine (2)	(mg / L as Cl ₂)	Chronic health	97.0%	≤5	795	100.0%	1.27	0.45	2.63
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	16	100.0%	0.20	0.01	0.21
Nitrate	(mg / L as N)	Acute health	99.0%	≤11	795	100.0%	0.46	0.04	0.58
Nitrite	(mg / L as N)	Acute health	99.0%	≤0.9	795	100.0%	0.03	0.01	0.07
Combined nitrate plus nitrite (7)	(mg / L as N)	Acute health	99.0%	≤1	795	100.0%	0.07	0.01	0.09
Residual disinfectant (4)	(mg / L)	Operational	95.0%	≥0.2 Free Chlorine	795	98.4%	1.27	0.45	2.63
Sodium	(mg / L as Na)	Aesthetic	95.0%	≤200	16	100.0%	9.28	0.79	11.65
Sulphate	(mg / L as SO ₄)	Aesthetic	95.0%	≤250	16	100.0%	14.99	1.84	20.53
Sulphate	(mg / L as SO ₄)	Acute health	99.0%	≤500	16	100.0%	14.99	1.84	20.53
Zinc	(mg / L as Zn)	Aesthetic	95.0%	≤5	16	100.0%	0.08	0.25	0.82
Micro determinands									
Aluminium	(µg / L as Al)	Operational	95.0%	≤300	16	100.0%	27.69	6.89	48.35
Antimony	(µg / L as Sb)	Chronic health	97.0%	≤20	202	100.0%	0.59	0.40	1.80
Arsenic	(µg / L as As)	Chronic health	97.0%	≤10	16	100.0%	2.01	2.43	9.31
Barium	(µg / L as Ba)	Chronic health	97.0%	≤700	16	100.0%	42.00	4.27	54.82
Boron	(µg / L as B)	Chronic health	97.0%	≤2400	16	100.0%	16.49	10.21	47.12
Cadmium	(µg / L as Cd)	Chronic health	97.0%	≤3	16	100.0%	1.91	0.71	4.04
Chromium (Total)	(µg / L as Cr)	Chronic health	97.0%	≤50	16	100.0%	10.63	5.12	26.00
Copper	(µg / L as Cu)	Chronic health	97.0%	≤2000	16	100.0%	10.06	3.32	20.01
Cyanide (Recoverable)	(µg / L as CN)	Acute health	99.0%	≤200	16	100.0%	15.31	7.18	36.85
Iron	(µg / L as Fe)	Chronic health	97.0%	≤2000	16	100.0%	12.71	7.47	35.11
Iron	(µg / L as Fe)	Aesthetic	95.0%	≤300	16	100.0%	12.71	7.47	35.11
Lead	(µg / L as Pb)	Chronic health	97.0%	≤10	16	100.0%	1.95	2.57	9.65
Manganese	(µg / L as Mn)	Chronic health	97.0%	≤400	16	100.0%	7.51	3.77	18.80
Manganese	(µg / L as Mn)	Aesthetic	95.0%	≤100	16	100.0%	7.51	3.77	18.80
Mercury	(µg / L as Hg)	Chronic health	97.0%	≤6	202	100.0%	0.80	0.01	0.82
Nickel	(µg / L as Ni)	Chronic health	97.0%	≤70	16	100.0%	7.81	2.56	15.50
Selenium	(µg / L as Se)	Chronic health	97.0%	≤40	16	100.0%	3.19	2.59	10.96
Uranium	(µg / L as U)	Chronic health	97.0%	≤30	202	100.0%	0.38	0.27	1.20
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	97.0%	≤10	16	100.0%	3.97	0.55	5.62
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	95.0%	≤10	16	100.0%	4.13	1.02	7.20
Chloroform - CHCl ₃	(µg / L)	Chronic health	97.0%	≤300	94	100.0%	24.85	12.06	61.02
Bromoform - CHBr ₃	(µg / L)	Chronic health	97.0%	≤100	94	100.0%	4.74	4.75	18.99
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	97.0%	≤100	94	100.0%	5.25	4.33	18.24
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	97.0%	≤60	94	100.0%	10.89	2.97	19.79
Combined trihalomethanes (8)	(µg / L)	Chronic health	97.0%	≤1	94	100.0%	0.36	0.13	0.76
Total Microcystin (5)	(µg / L)	Chronic health	97.0%	≤1	195	100.0%	0.31	0.00	0.31
For monitoring/reporting purposes only (6)									
Calcium	(mg / L as Ca)	Aesthetic	not applicable	≤150	16	100.0%	16.94	2.35	23.99175404
Hardness	(mg / L as CaCO ₃)	Operational	not applicable	≥ 20 to ≤ 200	16	100.0%	66.06	9.04	93.19
Magnesium	(mg / L as Mg)	Aesthetic	not applicable	≤70	16	100.0%	6.84	1.01	9.87
Potassium	(mg / L as K)	Aesthetic	not applicable	≤50	16	100.0%	3.38	0.43	4.66
Rand Water Risk Determinands (RWRD)									
Odour	TON	RWRD	95.0%	≤2	no data	no data	no data	no data	no data
Taste	FTN	RWRD	95.0%	≤2	no data	no data	no data	no data	no data

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%	99.96%
Operational	95.00%	99.67%

- 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)