

Johannesburg Metro Water Quality Report - 1 Month

23 October 2018 to 21 November 2018 Date generated: 11 December 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	301	99.7%	0	0.06	0
Total Coliforms	(mpn per 100 mL)	Operational	95.0%	10	301	100.0%	0	0.11	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	95.0%	≤1000	301	100.0%	5	24.80	79
<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	80	100.0%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	95.0%	≤15	24	100.0%	5.00	0.00	5.00
Conductivity	(mS / m)	Aesthetic	95.0%	≤170	213	100.0%	20.34	0.76	22.62
Total Dissolved Solids	(mg / L)	Aesthetic	95.0%	≤1200	30	100.0%	142.17	4.09	154.42
Turbidity	(NTU)	Operational	95.0%	≤1	248	100.0%	0.30	0.06	0.48
Turbidity	(NTU)	Aesthetic	95.0%	≤5	248	100.0%	0.30	0.06	0.48
pH	(pH units)	Operational	95.0%	≥ 5 to ≤ 9.7	213	100.0%	8.01	0.10	8.32
Chemical Properties									
Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	95.0%	≤1.5	213	100.0%	0.29	0.18	0.83
Chloride	(mg / L as Cl)	Aesthetic	95.0%	≤300	24	100.0%	10.68	0.83	13.18
Free chlorine (2)	(mg / L as Cl ₂)	Chronic health	97.0%	≤5	301	100.0%	0.27	0.40	1.47
Monochloramine (3)	(mg / L as Cl ₂)	Chronic health	97.0%	≤4.1	236	100.0%	1.58	0.34	2.60
Fluoride	(mg / L as F)	Chronic health	97.0%	≤1.5	24	100.0%	0.21	0.02	0.27
Nitrate	(mg / L as N)	Acute health	99.0%	≤11	213	100.0%	0.50	0.02	0.57
Nitrite	(mg / L as N)	Acute health	99.0%	≤0.9	213	100.0%	0.04	0.04	0.15
Combined nitrate plus nitrite (7)	(mg / L as N)	Acute health	99.0%	≤1	213	100.0%	0.09	0.07	0.29
Residual disinfectant (4)	(mg / L)	Operational	95.0%	≥0.2 Free Chlorine; ≥0.1 Sum of Free and Monochloramine	301	97.0%	1.51	0.49	2.98
Sodium	(mg / L as Na)	Aesthetic	95.0%	≤200	24	100.0%	9.19	0.50	10.70
Sulphate	(mg / L as SO ₄)	Aesthetic	95.0%	≤250	24	100.0%	14.13	0.95	16.97
Sulphate	(mg / L as SO ₄)	Acute health	99.0%	≤500	24	100.0%	14.13	0.95	16.97
Zinc	(mg / L as Zn)	Aesthetic	95.0%	≤5	24	100.0%	0.02	0.00	0.03
Micro determinands									
Aluminium	(µg / L as Al)	Operational	95.0%	≤300	24	100.0%	26.00	3.08	35.24
Antimony (9)	(µg / L as Sb)	Chronic health	97.0%	≤20	16	100.0%	0.60	0.00	0.60
Arsenic	(µg / L as As)	Chronic health	97.0%	≤10	20	100.0%	5.15	3.59	15.91
Barium	(µg / L as Ba)	Chronic health	97.0%	≤700	24	100.0%	41.08	4.14	53.50
Boron	(µg / L as B)	Chronic health	97.0%	≤2400	24	100.0%	4.21	1.76	9.49
Cadmium	(µg / L as Cd)	Chronic health	97.0%	≤3	20	100.0%	1.42	0.42	2.68
Chromium (Total)	(µg / L as Cr)	Chronic health	97.0%	≤50	24	100.0%	5.00	0.00	5.00
Copper	(µg / L as Cu)	Chronic health	97.0%	≤2000	24	100.0%	12.08	8.32	37.05
Cyanide (Recoverable)	(µg / L as CN)	Acute health	99.0%	≤200	24	100.0%	20.00	0.00	20.00
Iron	(µg / L as Fe)	Chronic health	97.0%	≤2000	24	100.0%	18.61	21.34	82.65
Iron	(µg / L as Fe)	Aesthetic	95.0%	≤300	24	100.0%	18.61	21.34	82.65
Lead	(µg / L as Pb)	Chronic health	97.0%	≤10	20	100.0%	5.60	3.02	14.65
Manganese	(µg / L as Mn)	Chronic health	97.0%	≤400	24	100.0%	4.58	5.37	20.71
Manganese	(µg / L as Mn)	Aesthetic	95.0%	≤100	24	100.0%	4.58	5.37	20.71
Mercury (9)	(µg / L as Hg)	Chronic health	97.0%	≤6	16	100.0%	0.80	0.00	0.80
Nickel	(µg / L as Ni)	Chronic health	97.0%	≤70	24	100.0%	5.00	0.00	5.00
Selenium	(µg / L as Se)	Chronic health	97.0%	≤40	20	100.0%	6.40	2.01	12.43
Uranium (9)	(µg / L as U)	Chronic health	97.0%	≤30	16	100.0%	0.50	0.00	0.50
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	97.0%	≤10	24	100.0%	4.13	0.48	5.56
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	95.0%	≤10	20	100.0%	3.00	0.00	3.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	97.0%	≤300	24	100.0%	35.33	5.14	50.75
Bromoform - CHBr ₃	(µg / L)	Chronic health	97.0%	≤100	24	100.0%	10.00	0.00	10.00
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	97.0%	≤100	24	100.0%	10.00	0.00	10.00
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	97.0%	≤60	24	100.0%	12.29	1.65	17.26
Combined trihalomethanes (8)	(µg / L)	Chronic health	97.0%	≤1	24	100.0%	0.52	0.04	0.63
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	24	100.0%	17.71	1.46	22.0852739
Hardness	(mg / L as CaCO ₃)	Operational	not applicable	≥ 20 to ≤ 200	24	100.0%	66.25	4.66	80.24
Magnesium	(mg / L as Mg)	Aesthetic	not applicable	≤70	24	100.0%	6.35	0.43	7.63
Potassium	(mg / L as K)	Aesthetic	not applicable	≤50	24	100.0%	3.13	0.23	3.82
Rand Water Risk Determinands (RWRD)									
Odour	TON	RWRD	95.0%	≤2	107	100.0%	1.00	0.00	1.00
Taste	FTN	RWRD	95.0%	≤2	107	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%	99.70%
Acute health chemical	99.00%	100.00%
Chronic health	97.00%	100.00%
Aesthetic	95.00%	100.00%
Operational	95.00%	99.39%

- Notes:**
- (1) Specification date of effect : 1 July 2016
 - (2) Free chlorine : Results from both the chlorinated and chloraminated systems
 - (3) Monochloramine : Results are from the chloraminated systems
 - (4) Residual disinfectant : Results from both the chlorinated and chloraminated systems
 - (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)
 - (9) November 2018: measured at the water treatment works exit