

Ekurhuleni 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	3 790	99.9%	0	0.26	1
Total Coliforms	(mpn per 100 mL)	Operational	95.0%	10	3 790	99.9%	0	1.07	3
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	95.0%	≤1000	3 790	100.0%	4	55.53	170
<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	257	100.0%	5.39	0.91	8.13
Conductivity	(mS / m)	Aesthetic	95.0%	≤170	2 326	100.0%	20.58	1.49	25.04
Total Dissolved Solids	(mg / L)	Aesthetic	95.0%	≤1200	351	100.0%	143.13	8.42	168.39
Turbidity	(NTU)	Operational	95.0%	≤1	2 525	99.8%	0.31	0.15	0.77
Turbidity	(NTU)	Aesthetic	95.0%	≤5	2 525	100.0%	0.31	0.15	0.77
pH	(pH units)	Operational	95.0%	≥ 5 to ≤ 9.7	2 328	100.0%	7.99	0.15	8.43
Chemical Properties									
Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	95.0%	≤1.5	2 211	100.0%	0.29	0.17	0.80
Chloride	(mg / L as Cl)	Aesthetic	95.0%	≤300	282	100.0%	10.79	0.90	13.49
Free chlorine (2)	(mg / L as Cl ₂)	Chronic health	97.0%	≤5	3 789	100.0%	0.19	0.27	0.99
Monochloramine (3)	(mg / L as Cl ₂)	Chronic health	97.0%	≤4.1	3 259	100.0%	1.57	0.53	3.16
Fluoride	(mg / L as F)	Chronic health	97.0%	≤1.5	282	100.0%	0.20	0.02	0.24
Nitrate	(mg / L as N)	Acute health	99.0%	≤11	2 264	100.0%	0.47	0.06	0.64
Nitrite	(mg / L as N)	Acute health	99.0%	≤0.9	2 277	100.0%	0.05	0.05	0.21
Combined nitrate plus nitrite (7)	(mg / L as N)	Acute health	99.0%	≤1	2 230	100.0%	0.09	0.06	0.28
Residual disinfectant (4)	(mg / L)	Operational	95.0%	≥0.1 Sum of Free and Monochloramine	3 789	97.4%	1.54	0.59	3.32
Sodium	(mg / L as Na)	Aesthetic	95.0%	≤200	265	100.0%	9.54	5.43	25.83
Sulphate	(mg / L as SO ₄)	Aesthetic	95.0%	≤250	282	100.0%	14.73	0.96	17.60
Sulphate	(mg / L as SO ₄)	Acute health	99.0%	≤500	282	100.0%	14.73	0.96	17.60
Zinc	(mg / L as Zn)	Aesthetic	95.0%	≤5	265	100.0%	0.07	0.22	0.74
Micro determinands									
Aluminium	(µg / L as Al)	Operational	95.0%	≤300	265	100.0%	34.71	14.58	78.46
Antimony	(µg / L as Sb)	Chronic health	97.0%	≤20	433	100.0%	0.56	0.30	1.46
Arsenic	(µg / L as As)	Chronic health	97.0%	≤10	255	100.0%	2.07	2.50	9.57
Barium	(µg / L as Ba)	Chronic health	97.0%	≤700	265	100.0%	41.72	6.09	59.98
Boron	(µg / L as B)	Chronic health	97.0%	≤2400	265	100.0%	20.18	34.43	123.49
Cadmium	(µg / L as Cd)	Chronic health	97.0%	≤3	255	100.0%	1.95	0.68	3.99
Chromium (Total)	(µg / L as Cr)	Chronic health	97.0%	≤50	265	100.0%	10.96	4.92	25.71
Copper	(µg / L as Cu)	Chronic health	97.0%	≤2000	265	100.0%	11.31	14.27	54.12
Cyanide (Recoverable)	(µg / L as CN)	Acute health	99.0%	≤200	257	100.0%	14.99	7.08	36.23
Iron	(µg / L as Fe)	Chronic health	97.0%	≤2000	264	100.0%	18.57	17.25	70.31
Iron	(µg / L as Fe)	Aesthetic	95.0%	≤300	264	100.0%	18.57	17.25	70.31
Lead	(µg / L as Pb)	Chronic health	97.0%	≤10	257	100.0%	1.81	2.48	9.26
Manganese	(µg / L as Mn)	Chronic health	97.0%	≤400	265	100.0%	7.85	5.19	23.43
Manganese	(µg / L as Mn)	Aesthetic	95.0%	≤100	265	100.0%	7.85	5.19	23.43
Mercury	(µg / L as Hg)	Chronic health	97.0%	≤6	433	100.0%	0.79	0.10	1.09
Nickel	(µg / L as Ni)	Chronic health	97.0%	≤70	265	100.0%	7.98	2.46	15.35
Selenium	(µg / L as Se)	Chronic health	97.0%	≤40	255	100.0%	2.74	2.53	10.32
Uranium	(µg / L as U)	Chronic health	97.0%	≤30	429	100.0%	0.37	0.27	1.19
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	97.0%	≤10	257	100.0%	3.83	0.56	5.51
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	95.0%	≤10	277	100.0%	4.19	0.98	7.14
Chloroform - CHCl ₃	(µg / L)	Chronic health	97.0%	≤300	256	100.0%	36.64	7.09	57.92
Bromoform - CHBr ₃	(µg / L)	Chronic health	97.0%	≤100	256	100.0%	4.36	4.67	18.38
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	97.0%	≤100	256	100.0%	5.27	3.97	17.19
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	97.0%	≤60	256	100.0%	13.81	2.18	20.34
Combined trihalomethanes (8)	(µg / L)	Chronic health	97.0%	≤1	256	100.0%	0.45	0.10	0.74
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	265	100.0%	17.59	3.27	27.39325939
Hardness	(mg / L as CaCO ₃)	Operational	not applicable	≥ 20 to ≤ 200	265	98.9%	67.42	12.86	106.02
Magnesium	(mg / L as Mg)	Aesthetic	not applicable	≤70	263	100.0%	6.81	2.13	13.21
Potassium	(mg / L as K)	Aesthetic	not applicable	≤50	265	100.0%	3.42	0.86	6.00
Rand Water Risk Determinands (RWRD)									
Odour	TON	RWRD	95.0%	≤2	660	100.0%	1.00	0.00	1.00
Taste	FTN	RWRD	95.0%	≤2	660	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%	99.95%
Acute health chemical	99.00%	100.00%
Chronic health	97.00%	100.00%
Aesthetic	95.00%	99.99%
Operational	95.00%	99.37%

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)