

Ekurhuleni Municipality Water Quality Report - 12 Month

October 2016 to September 2017 Date generated: 03 October 2017

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									
E. coli	(mpn per 100 mL)	Acute health	99.0%	0	3 614	100.0%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	95.0%	10	3 614	99.9%	0	3.44	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	95.0%	≤1000	3 595	100.0%	3	52.09	57
Cryptosporidium spp (5)	(org / 10 Litre)	Acute health	99.0%	0	183	100.0%	0	0.00	0
Giardia spp (5)	(org / 10 Litre)	Acute health	99.0%	0	183	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	256	100.0%	5.04	0.25	6.00
Conductivity	(mS / m)	Aesthetic	95.0%	≤1700	2 285	100.0%	18.04	2.40	22.00
Total Dissolved Solids	(mg / L)	Aesthetic	95.0%	≤1200	2 285	100.0%	128.77	14.00	151.87
Turbidity	(NTU)	Operational	95.0%	≤1	2 395	99.2%	0.31	0.33	0.50
Turbidity	(NTU)	Aesthetic	95.0%	≤5	2 395	99.8%	0.31	0.33	0.50
pH	(pH units)	Operational	95.0%	≥ 5 to ≤ 9.7	2 285	100.0%	7.94	0.17	8.34
Chemical Properties									
Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	95.0%	≤1.5	2 253	100.0%	0.27	0.14	0.51
Chloride	(mg / L as Cl)	Aesthetic	95.0%	≤300	261	100.0%	9.19	1.47	12.00
Free chlorine (2)	(mg / L as Cl ₂)	Chronic health	97.0%	≤5	3 621	100.0%	0.19	0.28	1.26
Monochloramine (3)	(mg / L as Cl ₂)	Chronic health	97.0%	≤4.1	3 621	100.0%	1.39	0.70	2.15
Fluoride	(mg / L as F)	Chronic health	97.0%	≤1.5	261	100.0%	0.17	0.04	0.30
Nitrate	(mg / L as N)	Acute health	99.0%	≤11	2 221	100.0%	0.54	0.19	1.00
Nitrite	(mg / L as N)	Acute health	99.0%	≤0.9	2 253	100.0%	0.04	0.05	0.30
Combined nitrate plus nitrite (7)	(mg / L as N)	Acute health	99.0%	≤1	2 221	100.0%	0.09	0.06	0.39
Residual disinfectant (4)	(mg / L)	Operational	95.0%	≥0.1 Sum of Free and Monochloramine	3 621	97.4%	1.58	0.57	2.20
Sodium	(mg / L as Na)	Aesthetic	95.0%	≤200	259	100.0%	7.42	0.85	9.34
Sulphate	(mg / L as SO ₄)	Aesthetic	95.0%	≤250	261	100.0%	11.80	1.77	15.00
Sulphate	(mg / L as SO ₄)	Acute health	99.0%	≤500	261	100.0%	11.80	1.77	15.00
Zinc	(mg / L as Zn)	Aesthetic	95.0%	≤5	259	100.0%	0.02	0.01	0.06
Micro determinands									
Aluminium	(µg / L as Al)	Operational	95.0%	≤300	259	100.0%	31.35	11.34	78.42
Antimony	(µg / L as Sb)	Chronic health	97.0%	≤20	256	100.0%	0.50	0.04	0.54
Arsenic	(µg / L as As)	Chronic health	97.0%	≤10	256	100.0%	0.84	0.57	2.64
Barium	(µg / L as Ba)	Chronic health	97.0%	≤700	257	100.0%	31.63	5.80	47.64
Boron	(µg / L as B)	Chronic health	97.0%	≤2400	259	100.0%	26.55	16.98	40.10
Cadmium	(µg / L as Cd)	Chronic health	97.0%	≤3	256	100.0%	2.50	0.00	2.50
Chromium (Total)	(µg / L as Cr)	Chronic health	97.0%	≤50	259	100.0%	15.00	0.00	15.00
Copper	(µg / L as Cu)	Chronic health	97.0%	≤2000	259	100.0%	10.79	2.50	21.42
Cyanide (Recoverable)	(µg / L as CN)	Acute health	99.0%	≤200	256	100.0%	5.06	0.55	6.94
Iron	(µg / L as Fe)	Chronic health	97.0%	≤2000	259	100.0%	24.09	27.73	120.00
Iron	(µg / L as Fe)	Aesthetic	95.0%	≤300	259	99.6%	24.09	27.73	120.00
Lead	(µg / L as Pb)	Chronic health	97.0%	≤10	256	100.0%	0.30	0.38	2.04
Manganese	(µg / L as Mn)	Chronic health	97.0%	≤400	259	100.0%	10.18	1.81	14.00
Manganese	(µg / L as Mn)	Aesthetic	95.0%	≤100	259	100.0%	10.18	1.81	14.00
Mercury	(µg / L as Hg)	Chronic health	97.0%	≤6	256	100.0%	0.80	0.00	0.80
Nickel	(µg / L as Ni)	Chronic health	97.0%	≤70	259	100.0%	10.00	0.00	10.00
Selenium	(µg / L as Se)	Chronic health	97.0%	≤40	256	100.0%	0.84	0.74	4.18
Uranium	(µg / L as U)	Chronic health	97.0%	≤30	256	100.0%	0.26	0.60	0.58
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	97.0%	≤10	256	100.0%	3.39	0.94	5.78
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	95.0%	≤10	267	100.0%	4.77	0.92	5.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	97.0%	≤300	256	100.0%	39.52	12.44	66.00
Bromoform - CHBr ₃	(µg / L)	Chronic health	97.0%	≤100	256	100.0%	0.50	0.00	0.50
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	97.0%	≤100	256	100.0%	1.75	0.98	4.30
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	97.0%	≤60	256	100.0%	12.45	2.42	17.00
Combined trihalomethanes (8)	(µg / L)	Chronic health	97.0%	≤1	256	100.0%	0.36	0.08	0.50
Total Microcystin (5)	(µg / L)	Chronic health	97.0%	≤1	183	100.0%	0.35	0.02	0.36
For monitoring/reporting purposes only (6)									
Calcium	(mg / L as Ca)	Aesthetic	not applicable	≤150	259	100.0%	17.44	2.42	23.84
Hardness	(mg / L as CaCO ₃)	Operational	not applicable	≥ 20 to ≤ 200	259	100.0%	62.52	7.42	84.37
Magnesium	(mg / L as Mg)	Aesthetic	not applicable	≤70	259	100.0%	5.47	0.79	7.57
Potassium	(mg / L as K)	Aesthetic	not applicable	≤50	258	100.0%	2.83	0.88	4.23
Rand Water Risk Determinands (RWRD)									
Odour	TON	RWRD	95.0%	≤2	676	100.0%	1.00	0.00	1.00
Taste	FTN	RWRD	95.0%	≤2	676	100.0%	1.00	0.00	1.00

Water quality risk indices		
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%	99.29%

- 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)