

**Ekurhuleni Municipality Water Quality Report - 12 Month**

24 October 2016 to 23 October 2017

Date generated: 02 November 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
<b>Microbiological determinands</b>									
<i>E. coli</i>	(mpn per 100 mL)	Acute health	99.0%	0	3 729	100.0%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	95.0%	10	3 729	99.9%	0	3.38	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	95.0%	≤1000	3 485	100.0%	3	52.89	57
<i>Cryptosporidium spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	181	100.0%	0	0.00	0
<i>Giardia spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	181	100.0%	0	0.00	0
Somatic Coliphages (5)	(count per 10 mL)	Operational	95.0%	0	784	100.0%	0	0.00	0
<b>Physical and Aesthetic determinands</b>									
Colour	(mg / L as Pt-Co)	Aesthetic	95.0%	≤15	262	100.0%	5.05	0.28	6.00
Conductivity	(mS / m)	Aesthetic	95.0%	≤170	2 347	100.0%	18.26	2.41	22.00
Total Dissolved Solids	(mg / L)	Aesthetic	95.0%	≤1200	2 347	100.0%	130.05	14.04	151.87
Turbidity	(NTU)	Operational	95.0%	≤1	2 474	99.0%	0.32	0.53	0.55
Turbidity	(NTU)	Aesthetic	95.0%	≤5	2 474	99.8%	0.32	0.53	0.55
pH	(pH units)	Operational	95.0%	≥ 5 to ≤ 9.7	2 347	100.0%	7.93	0.17	8.33
<b>Chemical Properties</b>									
<b>Macro determinands</b>									
Ammonia	(mg / L as N)	Aesthetic	95.0%	≤1.5	2 311	100.0%	0.27	0.14	0.54
Chloride	(mg / L as Cl)	Aesthetic	95.0%	≤300	268	100.0%	9.39	1.35	12.00
Free chlorine (2)	(mg / L as Cl <sub>2</sub> )	Chronic health	97.0%	≤5	3 736	100.0%	0.19	0.30	1.44
Monochloramine (3)	(mg / L as Cl <sub>2</sub> )	Chronic health	97.0%	≤4.1	3 736	100.0%	1.37	0.71	2.15
Fluoride	(mg / L as F)	Chronic health	97.0%	≤1.5	268	100.0%	0.17	0.03	0.29
Nitrate	(mg / L as N)	Acute health	99.0%	≤11	2 278	100.0%	0.54	0.16	1.00
Nitrite	(mg / L as N)	Acute health	99.0%	≤0.9	2 311	100.0%	0.04	0.05	0.30
Combined nitrate plus nitrite (7)	(mg / L as N)	Acute health	99.0%	≤1	2 277	100.0%	0.10	0.06	0.39
Residual disinfectant (4)	(mg / L)	Operational	95.0%	≥0.1 Sum of Free and Monochloramine	3 736	97.4%	1.56	0.57	2.20
Sodium	(mg / L as Na)	Aesthetic	95.0%	≤200	265	100.0%	7.51	0.85	9.34
Sulphate	(mg / L as SO <sub>4</sub> )	Aesthetic	95.0%	≤250	268	100.0%	12.12	1.72	15.00
Sulphate	(mg / L as SO <sub>4</sub> )	Acute health	99.0%	≤500	268	100.0%	12.12	1.72	15.00
Zinc	(mg / L as Zn)	Aesthetic	95.0%	≤5	265	100.0%	0.02	0.01	0.06
<b>Micro determinands</b>									
Aluminium	(µg / L as Al)	Operational	95.0%	≤300	265	100.0%	32.14	11.66	78.36
Antimony	(µg / L as Sb)	Chronic health	97.0%	≤20	262	100.0%	0.50	0.04	0.53
Arsenic	(µg / L as As)	Chronic health	97.0%	≤10	262	100.0%	0.85	0.56	2.62
Barium	(µg / L as Ba)	Chronic health	97.0%	≤700	263	100.0%	31.16	5.98	47.28
Boron	(µg / L as B)	Chronic health	97.0%	≤2400	265	100.0%	26.51	16.79	39.80
Cadmium	(µg / L as Cd)	Chronic health	97.0%	≤3	262	100.0%	2.50	0.00	2.50
Chromium (Total)	(µg / L as Cr)	Chronic health	97.0%	≤50	265	100.0%	15.00	0.00	15.00
Copper	(µg / L as Cu)	Chronic health	97.0%	≤2000	265	100.0%	11.65	14.90	22.72
Cyanide (Recoverable)	(µg / L as CN)	Acute health	99.0%	≤200	262	100.0%	5.17	1.58	8.04
Iron	(µg / L as Fe)	Chronic health	97.0%	≤2000	265	100.0%	24.19	27.76	120.00
Iron	(µg / L as Fe)	Aesthetic	95.0%	≤300	265	99.6%	24.19	27.76	120.00
Lead	(µg / L as Pb)	Chronic health	97.0%	≤10	262	100.0%	0.33	0.44	2.47
Manganese	(µg / L as Mn)	Chronic health	97.0%	≤400	265	100.0%	10.17	1.79	14.00
Manganese	(µg / L as Mn)	Aesthetic	95.0%	≤100	265	100.0%	10.17	1.79	14.00
Mercury	(µg / L as Hg)	Chronic health	97.0%	≤6	262	100.0%	0.80	0.00	0.80
Nickel	(µg / L as Ni)	Chronic health	97.0%	≤70	265	100.0%	10.00	0.00	10.00
Selenium	(µg / L as Se)	Chronic health	97.0%	≤40	262	100.0%	0.76	0.67	4.16
Uranium	(µg / L as U)	Chronic health	97.0%	≤30	262	100.0%	0.25	0.59	0.57
<b>Organic determinands</b>									
Total Organic Carbon	(mg / L)	Chronic health	97.0%	≤10	262	100.0%	3.51	0.91	5.76
Phenols as C <sub>6</sub> H <sub>5</sub> OH	(µg / L)	Aesthetic	95.0%	≤10	274	100.0%	5.00	0.00	5.00
Chloroform - CHCl <sub>3</sub>	(µg / L)	Chronic health	97.0%	≤300	262	100.0%	42.23	10.35	66.00
Bromoform - CHBr <sub>3</sub>	(µg / L)	Chronic health	97.0%	≤100	262	100.0%	0.50	0.00	0.50
Dibromochloromethane - CHBr <sub>2</sub> Cl	(µg / L)	Chronic health	97.0%	≤100	262	100.0%	1.61	1.00	4.30
Bromodichloromethane - CHBrCl <sub>2</sub>	(µg / L)	Chronic health	97.0%	≤60	262	100.0%	12.83	2.08	17.00
Combined trihalomethanes (8)	(µg / L)	Chronic health	97.0%	≤1	262	100.0%	0.38	0.06	0.50
Total Microcystin (5)	(µg / L)	Chronic health	97.0%	≤1	181	100.0%	0.35	0.02	0.36
<b>For monitoring/reporting purposes only (6)</b>									
Calcium	(mg / L as Ca)	Aesthetic	not applicable	≤150	265	100.0%	17.41	2.38	23.72
Hardness	(mg / L as CaCO <sub>3</sub> )	Operational	not applicable	≥ 20 to ≤ 200	265	100.0%	62.49	7.50	83.44
Magnesium	(mg / L as Mg)	Aesthetic	not applicable	≤70	265	100.0%	5.48	0.78	7.43
Potassium	(mg / L as K)	Aesthetic	not applicable	≤50	264	100.0%	3.04	0.83	4.34
<b>Rand Water Risk Determinands (RWRD)</b>									
Odour	TON	RWRD	95.0%	≤2	677	100.0%	1.00	0.00	1.00
Taste	FTN	RWRD	95.0%	≤2	677	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%	99.95%
Operational	95.00%	99.26%

**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) (NO<sub>2</sub>/0.9 + NO<sub>3</sub>/11)
- (8) (CHCl<sub>3</sub>/300 + CHBr<sub>3</sub>/100 + CHBr<sub>2</sub>Cl/100 + CHBrCl<sub>2</sub>/60)