

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

23 May 2017 to 22 May 2018 Date generated: 01 June 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
<b>Microbiological determinands</b>									
<i>E. coli</i>	(mpn per 100 mL)	Acute health	99.0%	0	3 839	99.9%	0	0.15	0
Total Coliforms	(mpn per 100 mL)	Operational	95.0%	10	3 839	99.9%	0	3.42	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	95.0%	≤1000	3 839	100.0%	3	51.85	50
<i>Cryptosporidium spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	183	100.0%	0	0.00	0
<i>Giardia spp</i> (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	809	100.0%	0	0.00	0
<b>Physical and Aesthetic determinands</b>									
Colour	(mg / L as Pt-Co)	Aesthetic	95.0%	≤15	269	100.0%	5.16	0.72	8.00
Conductivity	(mS / m)	Aesthetic	95.0%	≤170	2 382	100.0%	19.15	2.05	23.00
Total Dissolved Solids	(mg / L)	Aesthetic	95.0%	≤1200	366	100.0%	135.48	7.50	150.00
Turbidity	(NTU)	Operational	95.0%	≤1	2 580	99.1%	0.34	0.52	0.66
Turbidity	(NTU)	Aesthetic	95.0%	≤5	2 580	99.8%	0.34	0.52	0.66
pH	(pH units)	Operational	95.0%	≥ 5 to ≤ 9.7	2 383	100.0%	7.90	0.16	8.30
<b>Chemical Properties</b>									
<b>Macro determinands</b>									
Ammonia	(mg / L as N)	Aesthetic	95.0%	≤1.5	2 220	100.0%	0.30	0.16	0.59
Chloride	(mg / L as Cl)	Aesthetic	95.0%	≤300	295	100.0%	10.31	1.19	13.00
Free chlorine (2)	(mg / L as Cl <sub>2</sub> )	Chronic health	97.0%	≤5	3 838	100.0%	0.19	0.28	1.44
Monochloramine (3)	(mg / L as Cl <sub>2</sub> )	Chronic health	97.0%	≤4.1	3 316	100.0%	1.54	0.57	2.15
Fluoride	(mg / L as F)	Chronic health	97.0%	≤1.5	291	100.0%	0.19	0.01	0.22
Nitrate	(mg / L as N)	Acute health	99.0%	≤11	2 303	100.0%	0.47	0.09	0.86
Nitrite	(mg / L as N)	Acute health	99.0%	≤0.9	2 333	100.0%	0.05	0.06	0.31
Combined nitrate plus nitrite (7)	(mg / L as N)	Acute health	99.0%	≤1	2 303	100.0%	0.10	0.06	0.39
Residual disinfectant (4)	(mg / L)	Operational	95.0%	≥0.1 Sum of Free and Monochloramine	3 838	97.5%	1.52	0.61	2.20
Sodium	(mg / L as Na)	Aesthetic	95.0%	≤200	274	100.0%	8.52	1.33	11.27
Sulphate	(mg / L as SO <sub>4</sub> )	Aesthetic	95.0%	≤250	289	100.0%	13.60	1.00	16.00
Sulphate	(mg / L as SO <sub>4</sub> )	Acute health	99.0%	≤500	289	100.0%	13.60	1.00	16.00
Zinc	(mg / L as Zn)	Aesthetic	95.0%	≤5	274	100.0%	0.02	0.03	0.06
<b>Micro determinands</b>									
Aluminium	(µg / L as Al)	Operational	95.0%	≤300	274	100.0%	35.04	16.45	93.32
Antimony	(µg / L as Sb)	Chronic health	97.0%	≤20	269	100.0%	0.52	0.15	0.90
Arsenic	(µg / L as As)	Chronic health	97.0%	≤10	269	100.0%	0.89	0.90	4.36
Barium	(µg / L as Ba)	Chronic health	97.0%	≤700	272	100.0%	34.43	7.57	58.00
Boron	(µg / L as B)	Chronic health	97.0%	≤2400	274	100.0%	29.07	35.88	184.70
Cadmium	(µg / L as Cd)	Chronic health	97.0%	≤3	269	100.0%	2.50	0.00	2.50
Chromium (Total)	(µg / L as Cr)	Chronic health	97.0%	≤50	274	100.0%	15.00	0.00	15.00
Copper	(µg / L as Cu)	Chronic health	97.0%	≤2000	274	100.0%	11.99	15.41	30.00
Cyanide (Recoverable)	(µg / L as CN)	Acute health	99.0%	≤200	269	100.0%	5.21	1.57	8.35
Iron	(µg / L as Fe)	Chronic health	97.0%	≤2000	273	100.0%	22.76	22.91	109.20
Iron	(µg / L as Fe)	Aesthetic	95.0%	≤300	273	100.0%	22.76	22.91	109.20
Lead	(µg / L as Pb)	Chronic health	97.0%	≤10	269	100.0%	0.40	0.75	3.78
Manganese	(µg / L as Mn)	Chronic health	97.0%	≤400	274	100.0%	10.46	3.92	25.78
Manganese	(µg / L as Mn)	Aesthetic	95.0%	≤100	274	100.0%	10.46	3.92	25.78
Mercury	(µg / L as Hg)	Chronic health	97.0%	≤6	269	100.0%	0.80	0.00	0.80
Nickel	(µg / L as Ni)	Chronic health	97.0%	≤70	274	100.0%	10.00	0.00	10.00
Selenium	(µg / L as Se)	Chronic health	97.0%	≤40	269	100.0%	0.92	1.05	5.80
Uranium	(µg / L as U)	Chronic health	97.0%	≤30	269	100.0%	0.28	0.62	1.80
<b>Organic determinands</b>									
Total Organic Carbon	(mg / L)	Chronic health	97.0%	≤10	269	100.0%	3.83	0.62	5.73
Phenols as C <sub>6</sub> H <sub>5</sub> OH	(µg / L)	Aesthetic	95.0%	≤10	283	100.0%	5.00	0.00	5.00
Chloroform - CHCl <sub>3</sub>	(µg / L)	Chronic health	97.0%	≤300	269	100.0%	43.68	7.70	59.00
Bromoform - CHBr <sub>3</sub>	(µg / L)	Chronic health	97.0%	≤100	269	100.0%	0.50	0.00	0.50
Dibromochloromethane - CHBr <sub>2</sub> Cl	(µg / L)	Chronic health	97.0%	≤100	269	100.0%	1.42	0.88	3.43
Bromodichloromethane - CHBrCl <sub>2</sub>	(µg / L)	Chronic health	97.0%	≤60	269	100.0%	14.00	2.00	18.32
Combined trihalomethanes (8)	(µg / L)	Chronic health	97.0%	≤1	269	100.0%	0.40	0.05	0.53
Total Microcystin (5)	(µg / L)	Chronic health	97.0%	≤1	186	100.0%	0.32	0.02	0.36
<b>For monitoring/reporting purposes only (6)</b>									
Calcium	(mg / L as Ca)	Aesthetic	not applicable	≤150	274	100.0%	17.33	3.60	26.35
Hardness	(mg / L as CaCO <sub>3</sub> )	Operational	not applicable	≥ 20 to ≤ 200	274	99.3%	64.84	13.43	112.70
Magnesium	(mg / L as Mg)	Aesthetic	not applicable	≤70	272	100.0%	6.26	2.13	10.58
Potassium	(mg / L as K)	Aesthetic	not applicable	≤50	273	100.0%	3.80	0.82	4.73
<b>Rand Water Risk Determinands (RWRD)</b>									
Odour	TON	RWRD	95.0%	≤2	679	100.0%	1.00	0.00	1.00
Taste	FTN	RWRD	95.0%	≤2	679	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%	99.88%
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) (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)