



RAND WATER

Govan Mbeki Water Quality Report  
1 Month

21 November 2020 to 22 December 2020

Date generated: 08 January 2021

							Descriptive Statistics		
Determinands	Measurement Units	Risks	SANS 241:2015 standard limits (1)	No of results	Required compliances to SANS 241:2015 spec(%)	Achieved compliances to SANS 241:2015 spec(%)	Mean	Standard Deviation	Mean + 3 Std deviations
<b>Microbiological determinands</b>									
<i>E. coli</i>	(mpn per 100 mL)	Acute health	Non-detect	49	99.0%	100%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	49	95.0%	100%	0	0.00	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	71	95.0%	100%	4	11.07	37
<i>Cryptosporidium spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	17	99.0%	100%	0	0.00	0
<i>Giardia spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	17	99.0%	100%	0	0.00	0
Somatic Coliphages (2)	(count per 10 mL)	Operational	Non-detect	80	95.0%	100%	0	0.00	0
<b>Physical and Aesthetic determinands</b>									
Colour	(mg / L as Pt-Co)	Aesthetic	≤ 15	7	95.0%	100%	6.43	0.53	8.03
Conductivity	(mS / m)	Aesthetic	≤ 170	70	95.0%	100%	22.71	2.44	30.03
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	7	95.0%	100%	157.14	12.54	194.75
Turbidity	(NTU)	Operational	≤ 1	70	95.0%	100%	0.28	0.03	0.37
Turbidity	(NTU)	Aesthetic	≤ 5	70	95.0%	100%	0.28	0.03	0.37
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	70	95.0%	100%	8.00	0.21	8.62
<b>Chemical Properties: Macro determinands</b>									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	70	95.0%	100%	0.22	0.16	0.70
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	6	95.0%	100%	12.60	3.09	21.86
Free chlorine	(mg / L as Cl <sub>2</sub> )	Chronic health	≤ 5	71	97.0%	100%	0.37	0.63	2.26
Monochloramine	(mg / L as Cl <sub>2</sub> )	Chronic health	≤ 4.1	71	97.0%	100%	0.94	0.58	2.67
Fluoride	(mg / L as F)	Chronic health	≤ 1.5	6	97.0%	100%	0.20	0.00	0.20
Nitrate	(mg / L as N)	Acute health	≤ 11	69	99.0%	100%	0.60	0.13	0.98
Nitrite	(mg / L as N)	Acute health	≤ 0.9	81	99.0%	100%	0.34	0.27	1.13
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	70	99.0%	100%	0.44	0.30	1.33
Residual disinfectant (4)	(mg / L as Cl <sub>2</sub> )	Operational	≥ 0.1	71	95.0%	100%	1.31	0.46	2.69
Sodium	(mg / L as Na)	Aesthetic	≤ 200	9	95.0%	100%	8.16	1.94	13.99
Sulphate	(mg / L as SO <sub>4</sub> )	Aesthetic	≤ 250	6	95.0%	100%	15.17	0.75	17.43
Sulphate	(mg / L as SO <sub>4</sub> )	Acute health	≤ 500	6	99.0%	100%	15.17	0.75	17.43
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	9	95.0%	100%	0.01	0.00	0.02
<b>Chemical Properties: Micro determinands</b>									
Aluminium	(µg / L as Al)	Operational	≤ 300	9	95.0%	100%	39.33	15.90	87.03
Antimony	(µg / L as Sb)	Chronic health	≤ 20	7	97.0%	100%	0.60	0.00	0.60
Arsenic	(µg / L as As)	Chronic health	≤ 10	7	97.0%	100%	0.80	0.00	0.80
Barium	(µg / L as Ba)	Chronic health	≤ 700	9	97.0%	100%	35.56	6.46	54.95
Boron	(µg / L as B)	Chronic health	≤ 2400	9	97.0%	100%	4.46	1.14	7.87
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	7	97.0%	100%	1.00	0.00	1.00
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	9	97.0%	100%	0.50	0.00	0.50
Copper	(µg / L as Cu)	Chronic health	≤ 2000	9	97.0%	100%	4.54	2.94	13.37
Cyanide (Recoverable)	(µg / L as CN)	Acute health	≤ 200	7	99.0%	100%	5.00	0.00	5.00
Iron	(µg / L as Fe)	Chronic health	≤ 2000	9	97.0%	100%	100.00	0.00	100.00
Iron	(µg / L as Fe)	Aesthetic	≤ 300	9	95.0%	100%	100.00	0.00	100.00
Lead	(µg / L as Pb)	Chronic health	≤ 10	7	97.0%	100%	2.00	0.00	2.00
Manganese	(µg / L as Mn)	Chronic health	≤ 400	9	97.0%	100%	2.32	0.54	3.93
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	9	95.0%	100%	2.32	0.54	3.93
Mercury	(µg / L as Hg)	Chronic health	≤ 6	7	97.0%	100%	0.80	0.00	0.80
Nickel	(µg / L as Ni)	Chronic health	≤ 70	9	97.0%	100%	3.16	0.47	4.56
Selenium	(µg / L as Se)	Chronic health	≤ 40	7	97.0%	100%	4.00	0.00	4.00
Uranium	(µg / L as U)	Chronic health	≤ 30	7	97.0%	100%	0.50	0.00	0.50
<b>Organic determinands</b>									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	7	97.0%	100%	2.86	0.10	3.15
Phenols as C <sub>6</sub> H <sub>5</sub> OH	(µg / L)	Aesthetic	≤ 10	6	95.0%	100%	3.00	0.00	3.00
Chloroform - CHCl <sub>3</sub>	(µg / L)	Chronic health	≤ 300	7	97.0%	100%	51.71	15.52	98.28
Bromoform - CHBr <sub>3</sub>	(µg / L)	Chronic health	≤ 100	7	97.0%	100%	10.00	0.00	10.00
Dibromochloromethane - CHBr <sub>2</sub> Cl	(µg / L)	Chronic health	≤ 100	7	97.0%	100%	10.00	0.00	10.00
Bromodichloromethane - CHBrCl <sub>2</sub>	(µg / L)	Chronic health	≤ 60	7	97.0%	100%	17.43	2.51	24.95
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	7	97.0%	100%	0.51	0.10	0.80
Total Microcystin (2)	(µg / L)	Chronic health	≤ 1	no data	97.0%	no data	.	no data	.
<b>For monitoring/reporting purposes only</b>									
Calcium (6)	(mg / L as Ca)	Aesthetic	≤ 150	9	not applicable	100%	15.22	1.30	19.13
Hardness (7)	(mg / L as CaCO <sub>3</sub> )	Operational	≥ 20 to ≤ 200	9	not applicable	100%	58.33	3.46	68.73
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	9	not applicable	100%	4.96	0.41	6.19
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	9	not applicable	100%	2.48	0.12	2.84
<b>Rand Water Risk Determinands (RWRD) (6)</b>									
Odour	TON	RWRD	≤ 2	36	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	36	not applicable	100%	1.00	0.00	1.00

Risks	Required compliances to SANS 241: 2015 standard	Overall Compliances - SANS 241: 2015 standard
Acute health microbiological	99.0%	100%
Acute health chemical	99.0%	100%
Chronic health	97.0%	100%
Aesthetic	95.0%	100%
Operational	95.0%	100%

- Notes  
 (1) Specification SANS 241 date of effect : 1 July 2016  
 (2) Measured at water treatment works exit points  
 (3) (NO<sub>2</sub>/0.9 + NO<sub>3</sub>/11)  
 (4) Residual disinfectant : Results from the chloraminated system = Sum of Free and Monochloramine  
 (5) (CHCl<sub>3</sub>/300 + CHBr<sub>3</sub>/100 + CHBr<sub>2</sub>Cl/100 + CHBrCl<sub>2</sub>/60)  
 (6) Customer request: Results not included in the risk indices compliance calculations and limits based on SANS 241:2006  
 (7) Customer request: Results not included in the risk indices compliance calculations and limits based on RW Internal Spec  
 \*\*\*\* Determinands with no data are due to instrument breakdown\*\*\*\*