



RAND WATER

Govan Mbeki Water Quality Report  
1 Month

23 March 2021 to 21 April 2021

Date generated: 14 May 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	83	99.0%	100%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	83	95.0%	98.80%	0	3.51	11
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	83	95.0%	100%	24	65.74	221
<i>Cryptosporidium spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	no data	99.0%	no data	.	no data	.
<i>Giardia spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	no data	99.0%	no data	.	no data	.
Somatic Coliphages (2)	(count per 10 mL)	Operational	Non-detect	79	95.0%	100%	0	0.00	0
<b>Physical and Aesthetic determinands</b>									
Colour	(mg / L as Pt-Co)	Aesthetic	≤ 15	4	95.0%	100%	9.25	3.86	20.84
Conductivity	(mS / m)	Aesthetic	≤ 170	83	95.0%	100%	24.04	1.78	29.37
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	6	95.0%	100%	159.17	3.76	170.46
Turbidity	(NTU)	Operational	≤ 1	83	95.0%	100%	0.40	0.07	0.61
Turbidity	(NTU)	Aesthetic	≤ 5	83	95.0%	100%	0.40	0.07	0.61
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	83	95.0%	100%	7.77	0.14	8.18
<b>Chemical Properties: Macro determinands</b>									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	83	95.0%	100%	0.15	0.14	0.58
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	4	95.0%	100%	14.00	0.00	14.00
Free chlorine	(mg / L as Cl <sub>2</sub> )	Chronic health	≤ 5	83	97.0%	100%	0.10	0.15	0.56
Monochloramine	(mg / L as Cl <sub>2</sub> )	Chronic health	≤ 4.1	83	97.0%	100%	0.39	0.32	1.36
Fluoride	(mg / L as F)	Chronic health	≤ 1.5	4	97.0%	100%	0.23	0.03	0.30
Nitrate	(mg / L as N)	Acute health	≤ 11	84	99.0%	100%	0.92	0.22	1.57
Nitrite	(mg / L as N)	Acute health	≤ 0.9	83	99.0%	100%	0.16	0.11	0.49
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	83	99.0%	100%	0.27	0.15	0.71
Residual disinfectant (4)	(mg / L as Cl <sub>2</sub> )	Operational	≥ 0.1	83	95.0%	85.54%	0.47	0.34	1.49
Sodium	(mg / L as Na)	Aesthetic	≤ 200	4	95.0%	100%	7.45	0.76	9.73
Sulphate	(mg / L as SO <sub>4</sub> )	Aesthetic	≤ 250	4	95.0%	100%	17.00	2.71	25.12
Sulphate	(mg / L as SO <sub>4</sub> )	Acute health	≤ 500	4	99.0%	100%	17.00	2.71	25.12
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	3	95.0%	100%	0.03	0.06	0.21
<b>Chemical Properties: Micro determinands</b>									
Aluminium	(µg / L as Al)	Operational	≤ 300	4	95.0%	100%	14.63	7.72	37.77
Antimony	(µg / L as Sb)	Chronic health	≤ 20	4	97.0%	100%	0.45	0.17	0.97
Arsenic	(µg / L as As)	Chronic health	≤ 10	4	97.0%	100%	0.80	0.00	0.80
Barium	(µg / L as Ba)	Chronic health	≤ 700	4	97.0%	100%	40.75	3.50	51.25
Boron	(µg / L as B)	Chronic health	≤ 2400	4	97.0%	100%	3.53	0.62	5.38
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	4	97.0%	100%	1.00	0.00	1.00
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	4	97.0%	100%	0.35	0.17	0.87
Copper	(µg / L as Cu)	Chronic health	≤ 2000	4	97.0%	100%	4.20	2.42	11.45
Cyanide (Recoverable)	(µg / L as CN)	Acute health	≤ 200	4	99.0%	100%	5.00	0.00	5.00
Iron	(µg / L as Fe)	Chronic health	≤ 2000	4	97.0%	100%	53.90	53.40	214.10
Iron	(µg / L as Fe)	Aesthetic	≤ 300	4	95.0%	100%	53.90	53.40	214.10
Lead	(µg / L as Pb)	Chronic health	≤ 10	4	97.0%	100%	2.00	0.00	2.00
Manganese	(µg / L as Mn)	Chronic health	≤ 400	4	97.0%	100%	2.25	0.71	4.39
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	4	95.0%	100%	2.25	0.71	4.39
Mercury	(µg / L as Hg)	Chronic health	≤ 6	4	97.0%	100%	0.80	0.00	0.80
Nickel	(µg / L as Ni)	Chronic health	≤ 70	4	97.0%	100%	1.93	1.23	5.63
Selenium	(µg / L as Se)	Chronic health	≤ 40	4	97.0%	100%	4.00	0.00	4.00
Uranium	(µg / L as U)	Chronic health	≤ 30	4	97.0%	100%	0.30	0.23	0.99
<b>Organic determinands</b>									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	4	97.0%	100%	5.43	0.79	7.80
Phenols as C <sub>6</sub> H <sub>5</sub> OH	(µg / L)	Aesthetic	≤ 10	2	95.0%	100%	2.75	0.35	3.81
Chloroform - CHCl <sub>3</sub>	(µg / L)	Chronic health	≤ 300	4	97.0%	100%	83.50	2.65	91.44
Bromoform - CHBr <sub>3</sub>	(µg / L)	Chronic health	≤ 100	4	97.0%	100%	10.00	0.00	10.00
Dibromochloromethane - CHBr <sub>2</sub> Cl	(µg / L)	Chronic health	≤ 100	4	97.0%	100%	10.00	0.00	10.00
Bromodichloromethane - CHBrCl <sub>2</sub>	(µg / L)	Chronic health	≤ 60	4	97.0%	100%	19.00	0.82	21.45
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	4	97.0%	100%	0.61	0.01	0.65
Total Microcystin (2)	(µg / L)	Chronic health	≤ 1	24	97.0%	100%	0.31	0.00	0.31
<b>For monitoring/reporting purposes only</b>									
Calcium (6)	(mg / L as Ca)	Aesthetic	≤ 150	4	not applicable	100%	13.75	1.89	19.43
Hardness (7)	(mg / L as CaCO <sub>3</sub> )	Operational	≥ 20 to ≤ 200	4	not applicable	100%	54.25	5.38	70.38
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	4	not applicable	100%	4.90	0.47	6.31
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	4	not applicable	100%	2.75	0.24	3.46
<b>Rand Water Risk Determinands (RWRD) (6)</b>									
Odour	TON	RWRD	≤ 2	32	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	32	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%	97.39%

- 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\*\*\*\*