



RAND WATER

Govan Mbeki Water Quality Report
1 Month

23 May 2020 to 19 June 2020

Date generated: 01 July 2020

							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
Microbiological determinands									
<i>E. coli</i>	(mpn per 100 mL)	Acute health	Non-detect	76	99.0%	100%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	76	95.0%	100%	0	0.46	1
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	76	95.0%	100%	1	3.13	10
<i>Cryptosporidium spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	16	99.0%	100%	0	0.00	0
<i>Giardia spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	16	99.0%	100%	0	0.00	0
Somatic Coliphages (2)	(count per 10 mL)	Operational	Non-detect	64	95.0%	100%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	≤ 15	8	95.0%	100%	5.00	0.00	5.00
Conductivity	(mS / m)	Aesthetic	≤ 170	65	95.0%	100%	23.15	2.52	30.71
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	4	95.0%	100%	157.50	19.36	215.60
Turbidity	(NTU)	Operational	≤ 1	65	95.0%	100%	0.30	0.07	0.50
Turbidity	(NTU)	Aesthetic	≤ 5	65	95.0%	100%	0.30	0.07	0.50
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	65	95.0%	100%	7.93	0.10	8.24
Chemical Properties: Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	76	95.0%	100%	0.19	0.14	0.62
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	8	95.0%	100%	12.00	0.00	12.00
Free chlorine	(mg / L as Cl ₂)	Chronic health	≤ 5	76	97.0%	100%	0.25	0.42	1.50
Monochloramine	(mg / L as Cl ₂)	Chronic health	≤ 4.1	76	97.0%	100%	0.70	0.46	2.09
Fluoride	(mg / L as F)	Chronic health	≤ 1.5	8	97.0%	100%	0.20	0.00	0.21
Nitrate	(mg / L as N)	Acute health	≤ 11	76	99.0%	100%	0.66	0.17	1.18
Nitrite	(mg / L as N)	Acute health	≤ 0.9	76	99.0%	100%	0.06	0.07	0.26
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	76	99.0%	100%	0.21	0.22	0.85
Residual disinfectant (4)	(mg / L as Cl ₂)	Operational	≥ 0.1	76	95.0%	100%	0.93	0.41	2.16
Sodium	(mg / L as Na)	Aesthetic	≤ 200	10	95.0%	100%	11.80	0.42	13.06
Sulphate	(mg / L as SO ₄)	Aesthetic	≤ 250	8	95.0%	100%	20.38	0.52	21.93
Sulphate	(mg / L as SO ₄)	Acute health	≤ 500	8	99.0%	100%	20.38	0.52	21.93
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	10	95.0%	100%	0.02	0.00	0.03
Chemical Properties: Micro determinands									
Aluminium	(µg / L as Al)	Operational	≤ 300	10	95.0%	100%	25.00	0.00	25.00
Antimony	(µg / L as Sb)	Chronic health	≤ 20	no data	97.0%	no data	.	no data	.
Arsenic	(µg / L as As)	Chronic health	≤ 10	8	97.0%	100%	8.00	0.00	8.00
Barium	(µg / L as Ba)	Chronic health	≤ 700	10	97.0%	100%	46.30	4.11	58.63
Boron	(µg / L as B)	Chronic health	≤ 2400	10	97.0%	100%	9.40	3.01	18.42
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	8	97.0%	100%	1.78	0.30	2.66
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	10	97.0%	100%	5.00	0.00	5.00
Copper	(µg / L as Cu)	Chronic health	≤ 2000	10	97.0%	100%	8.03	0.09	8.31
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	10	97.0%	100%	20.70	11.80	56.11
Iron	(µg / L as Fe)	Aesthetic	≤ 300	10	95.0%	100%	20.70	11.80	56.11
Lead	(µg / L as Pb)	Chronic health	≤ 10	8	97.0%	100%	8.00	0.00	8.00
Manganese	(µg / L as Mn)	Chronic health	≤ 400	10	97.0%	100%	3.00	0.00	3.00
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	10	95.0%	100%	3.00	0.00	3.00
Mercury	(µg / L as Hg)	Chronic health	≤ 6	8	97.0%	100%	1.50	0.00	1.50
Nickel	(µg / L as Ni)	Chronic health	≤ 70	10	97.0%	100%	5.00	0.00	5.00
Selenium	(µg / L as Se)	Chronic health	≤ 40	8	97.0%	100%	8.00	0.00	8.00
Uranium	(µg / L as U)	Chronic health	≤ 30	no data	97.0%	no data	.	no data	.
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	8	97.0%	100%	4.41	0.34	5.42
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	≤ 10	6	95.0%	100%	3.00	0.00	3.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	≤ 300	8	97.0%	100%	35.50	3.25	45.25
Bromoform - CHBr ₃	(µg / L)	Chronic health	≤ 100	8	97.0%	100%	10.00	0.00	10.00
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	≤ 100	8	97.0%	100%	10.00	0.00	10.00
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	≤ 60	8	97.0%	100%	16.63	2.33	23.60
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	8	97.0%	100%	0.42	0.05	0.58
Total Microcystin (2)	(µg / L)	Chronic health	≤ 1	16	97.0%	100%	0.31	0.00	0.31
For monitoring/reporting purposes only									
Calcium (6)	(mg / L as Ca)	Aesthetic	≤ 150	10	not applicable	100%	17.70	0.95	20.55
Hardness (7)	(mg / L as CaCO ₃)	Operational	≥ 20 to ≤ 200	10	not applicable	100%	71.70	3.23	81.40
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	10	not applicable	100%	7.92	0.28	8.75
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	10	not applicable	100%	3.81	0.15	4.27
Rand Water Risk Determinands (RWRD) (6)									
Odour	TON	RWRD	≤ 2	40	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	40	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) (NO₂/0.9 + NO₃/11)
 (4) Residual disinfectant : Results from the chloraminated system = Sum of Free and Monochloramine
 (5) (CHCl₃/300 + CHBr₃/100 + CHBr₂Cl/100 + CHBrCl₂/60)
 (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****