



RAND WATER
Govan Mbeki Water Quality Report
1 Month

20 February 2020 to 20 March 2020

Date generated: 13 April 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	90	99.0%	100%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	90	95.0%	100%	0	0.11	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	90	95.0%	100%	6	17.25	58
<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%	98.44%	0	0.13	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	≤ 15	12	95.0%	100%	5.00	0.00	5.00
Conductivity	(mS / m)	Aesthetic	≤ 170	84	95.0%	100%	24.49	1.66	29.47
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	16	95.0%	100%	168.75	10.57	200.45
Turbidity	(NTU)	Operational	≤ 1	90	95.0%	100%	0.30	0.05	0.45
Turbidity	(NTU)	Aesthetic	≤ 5	90	95.0%	100%	0.30	0.05	0.45
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	89	95.0%	100%	7.93	0.11	8.25
Chemical Properties: Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	87	95.0%	100%	0.15	0.14	0.58
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	11	95.0%	100%	15.36	2.06	21.55
Free chlorine	(mg / L as Cl ₂)	Chronic health	≤ 5	90	97.0%	100%	0.24	0.44	1.56
Monochloramine	(mg / L as Cl ₂)	Chronic health	≤ 4.1	90	97.0%	100%	0.53	0.42	1.79
Fluoride	(mg / L as F)	Chronic health	≤ 1.5	11	97.0%	100%	0.21	0.01	0.24
Nitrate	(mg / L as N)	Acute health	≤ 11	86	99.0%	100%	0.73	0.16	1.20
Nitrite	(mg / L as N)	Acute health	≤ 0.9	87	99.0%	100%	0.07	0.08	0.30
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	76	99.0%	100%	0.25	0.23	0.95
Residual disinfectant (4)	(mg / L as Cl ₂)	Operational	≥ 0.1	90	95.0%	88.89%	0.76	0.49	2.22
Sodium	(mg / L as Na)	Aesthetic	≤ 200	18	95.0%	100%	12.78	1.86	18.37
Sulphate	(mg / L as SO ₄)	Aesthetic	≤ 250	11	95.0%	100%	23.55	0.93	26.35
Sulphate	(mg / L as SO ₄)	Acute health	≤ 500	11	99.0%	100%	23.55	0.93	26.35
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	18	95.0%	100%	0.02	0.01	0.06
Chemical Properties: Micro determinands									
Aluminium	(µg / L as Al)	Operational	≤ 300	18	95.0%	100%	34.44	24.63	108.33
Antimony	(µg / L as Sb)	Chronic health	≤ 20	no data	97.0%	no data	.	no data	.
Arsenic	(µg / L as As)	Chronic health	≤ 10	12	97.0%	100%	0.98	0.57	2.70
Barium	(µg / L as Ba)	Chronic health	≤ 700	18	97.0%	100%	44.94	2.67	52.95
Boron	(µg / L as B)	Chronic health	≤ 2400	18	97.0%	100%	10.04	1.33	14.04
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	12	97.0%	100%	1.00	0.00	1.00
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	18	97.0%	100%	5.00	0.00	5.00
Copper	(µg / L as Cu)	Chronic health	≤ 2000	18	97.0%	100%	9.72	4.22	22.38
Cyanide (Recoverable)	(µg / L as CN)	Acute health	≤ 200	12	99.0%	100%	5.00	0.00	5.00
Iron	(µg / L as Fe)	Chronic health	≤ 2000	18	97.0%	100%	21.06	17.08	72.29
Iron	(µg / L as Fe)	Aesthetic	≤ 300	18	95.0%	100%	21.06	17.08	72.29
Lead	(µg / L as Pb)	Chronic health	≤ 10	12	97.0%	100%	2.26	0.50	3.76
Manganese	(µg / L as Mn)	Chronic health	≤ 400	18	97.0%	100%	3.00	0.00	3.00
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	18	95.0%	100%	3.00	0.00	3.00
Mercury	(µg / L as Hg)	Chronic health	≤ 6	no data	97.0%	no data	.	no data	.
Nickel	(µg / L as Ni)	Chronic health	≤ 70	18	97.0%	100%	5.00	0.00	5.00
Selenium	(µg / L as Se)	Chronic health	≤ 40	12	97.0%	100%	4.00	0.00	4.00
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	12	97.0%	100%	3.94	0.26	4.71
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	≤ 10	10	95.0%	100%	3.00	0.00	3.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	≤ 300	12	97.0%	100%	50.17	4.61	63.99
Bromoform - CHBr ₃	(µg / L)	Chronic health	≤ 100	12	97.0%	100%	10.00	0.00	10.00
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	≤ 100	12	97.0%	100%	10.00	0.00	10.00
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	≤ 60	12	97.0%	100%	18.75	1.91	24.49
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	12	97.0%	100%	0.51	0.05	0.66
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	18	not applicable	100%	17.78	1.00	20.79
Hardness (7)	(mg / L as CaCO ₃)	Operational	≥ 20 to ≤ 200	18	not applicable	100%	70.61	3.18	80.16
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	18	not applicable	100%	7.56	0.27	8.35
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	18	not applicable	100%	3.68	0.26	4.44
Rand Water Risk Determinands (RWRD) (6)									
Odour	TON	RWRD	≤ 2	46	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	46	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%	97.93%

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****