



RAND WATER

Govan Mbeki Water Quality Report
1 Month

22 April 2021 to 21 May 2021

Date generated: 04 June 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
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	0.11	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	76	95.0%	100%	8	15.02	53
<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	62	95.0%	100%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	≤ 15	9	95.0%	88.89%	14.00	5.05	29.15
Conductivity	(mS / m)	Aesthetic	≤ 170	76	95.0%	100%	22.49	1.47	26.88
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	9	95.0%	100%	153.89	3.33	163.89
Turbidity	(NTU)	Operational	≤ 1	76	95.0%	98.68%	0.34	0.13	0.73
Turbidity	(NTU)	Aesthetic	≤ 5	76	95.0%	100%	0.34	0.13	0.73
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	75	95.0%	100%	7.77	0.18	8.31
Chemical Properties: Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	76	95.0%	100%	0.13	0.08	0.37
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	9	95.0%	100%	16.56	2.51	24.07
Free chlorine	(mg / L as Cl ₂)	Chronic health	≤ 5	76	97.0%	100%	0.08	0.09	0.36
Monochloramine	(mg / L as Cl ₂)	Chronic health	≤ 4.1	76	97.0%	100%	0.31	0.26	1.09
Fluoride	(mg / L as F)	Chronic health	≤ 1.5	9	97.0%	100%	0.31	0.08	0.56
Nitrate	(mg / L as N)	Acute health	≤ 11	78	99.0%	100%	0.84	0.13	1.24
Nitrite	(mg / L as N)	Acute health	≤ 0.9	76	99.0%	100%	0.16	0.10	0.46
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	65	99.0%	100%	0.26	0.12	0.61
Residual disinfectant (4)	(mg / L as Cl ₂)	Operational	≥ 0.1	76	95.0%	78.95%	0.36	0.28	1.20
Sodium	(mg / L as Na)	Aesthetic	≤ 200	12	95.0%	100%	11.10	2.23	17.80
Sulphate	(mg / L as SO ₄)	Aesthetic	≤ 250	9	95.0%	100%	17.67	1.80	23.08
Sulphate	(mg / L as SO ₄)	Acute health	≤ 500	9	99.0%	100%	17.67	1.80	23.08
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	13	95.0%	100%	0.06	0.04	0.19
Chemical Properties: Micro determinands									
Aluminium	(µg / L as Al)	Operational	≤ 300	13	95.0%	100%	34.69	16.45	84.04
Antimony	(µg / L as Sb)	Chronic health	≤ 20	9	97.0%	100%	0.30	0.00	0.30
Arsenic	(µg / L as As)	Chronic health	≤ 10	9	97.0%	100%	4.02	3.77	15.34
Barium	(µg / L as Ba)	Chronic health	≤ 700	13	97.0%	100%	42.23	9.77	71.53
Boron	(µg / L as B)	Chronic health	≤ 2400	13	97.0%	100%	6.68	3.22	16.35
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	9	97.0%	100%	1.22	0.26	2.01
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	13	97.0%	100%	2.42	2.49	9.89
Copper	(µg / L as Cu)	Chronic health	≤ 2000	13	97.0%	100%	8.48	3.46	18.86
Cyanide (Recoverable)	(µg / L as CN)	Acute health	≤ 200	9	99.0%	100%	5.56	1.67	10.56
Iron	(µg / L as Fe)	Chronic health	≤ 2000	13	97.0%	100%	17.28	12.96	56.18
Iron	(µg / L as Fe)	Aesthetic	≤ 300	13	95.0%	100%	17.28	12.96	56.18
Lead	(µg / L as Pb)	Chronic health	≤ 10	9	97.0%	100%	4.67	3.16	14.15
Manganese	(µg / L as Mn)	Chronic health	≤ 400	13	97.0%	100%	3.16	1.30	7.05
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	13	95.0%	100%	3.16	1.30	7.05
Mercury	(µg / L as Hg)	Chronic health	≤ 6	9	97.0%	100%	1.11	0.37	2.22
Nickel	(µg / L as Ni)	Chronic health	≤ 70	13	97.0%	100%	2.87	2.07	9.08
Selenium	(µg / L as Se)	Chronic health	≤ 40	9	97.0%	100%	5.78	2.11	12.10
Uranium	(µg / L as U)	Chronic health	≤ 30	9	97.0%	100%	0.11	0.02	0.16
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	9	97.0%	100%	5.09	0.12	5.44
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	≤ 10	7	95.0%	100%	2.50	0.00	2.50
Chloroform - CHCl ₃	(µg / L)	Chronic health	≤ 300	9	97.0%	100%	88.22	4.52	101.79
Bromoform - CHBr ₃	(µg / L)	Chronic health	≤ 100	9	97.0%	100%	10.00	0.00	10.00
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	≤ 100	9	97.0%	100%	10.00	0.00	10.00
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	≤ 60	9	97.0%	100%	19.56	1.67	24.56
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	9	97.0%	100%	0.63	0.04	0.76
Total Microcystin (2)	(µg / L)	Chronic health	≤ 1	20	97.0%	100%	0.31	0.00	0.31
For monitoring/reporting purposes only									
Calcium (6)	(mg / L as Ca)	Aesthetic	≤ 150	13	not applicable	100%	17.00	3.14	26.41
Hardness (7)	(mg / L as CaCO ₃)	Operational	≥ 20 to ≤ 200	13	not applicable	100%	71.38	9.40	99.59
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	13	not applicable	100%	7.50	0.48	8.95
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	13	not applicable	100%	4.56	1.23	8.24
Rand Water Risk Determinands (RWRD) (6)									
Odour	TON	RWRD	≤ 2	39	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	39	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%	99.69%
Operational	95.0%	96.26%

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****