



RAND WATER

Govan Mbeki Water Quality Report
1 Month

22 September 2020 to 22 October 2020

Date generated: 06 November 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	84	99.0%	100%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	84	95.0%	100%	0	0.00	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	84	95.0%	100%	3	6.64	23
<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	80	95.0%	100%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	≤ 15	4	95.0%	100%	7.50	1.29	11.37
Conductivity	(mS / m)	Aesthetic	≤ 170	84	95.0%	100%	20.96	1.52	25.54
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	6	95.0%	100%	143.33	6.06	161.50
Turbidity	(NTU)	Operational	≤ 1	84	95.0%	100%	0.26	0.05	0.42
Turbidity	(NTU)	Aesthetic	≤ 5	84	95.0%	100%	0.26	0.05	0.42
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	84	95.0%	100%	8.14	0.18	8.67
Chemical Properties: Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	84	95.0%	100%	0.35	0.18	0.89
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	3	95.0%	100%	11.13	1.50	15.64
Free chlorine	(mg / L as Cl ₂)	Chronic health	≤ 5	84	97.0%	100%	0.17	0.31	1.11
Monochloramine	(mg / L as Cl ₂)	Chronic health	≤ 4.1	84	97.0%	100%	1.34	0.59	3.11
Fluoride	(mg / L as F)	Chronic health	≤ 1.5	3	97.0%	100%	0.31	0.05	0.46
Nitrate	(mg / L as N)	Acute health	≤ 11	83	99.0%	100%	0.59	0.06	0.78
Nitrite	(mg / L as N)	Acute health	≤ 0.9	84	99.0%	100%	0.03	0.01	0.05
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	84	99.0%	100%	0.08	0.01	0.11
Residual disinfectant (4)	(mg / L as Cl ₂)	Operational	≥ 0.1	84	95.0%	100%	1.50	0.47	2.90
Sodium	(mg / L as Na)	Aesthetic	≤ 200	4	95.0%	100%	9.75	0.89	12.42
Sulphate	(mg / L as SO ₄)	Aesthetic	≤ 250	3	95.0%	100%	14.67	0.58	16.40
Sulphate	(mg / L as SO ₄)	Acute health	≤ 500	3	99.0%	100%	14.67	0.58	16.40
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	4	95.0%	100%	0.55	0.53	2.12
Chemical Properties: Micro determinands									
Aluminium	(µg / L as Al)	Operational	≤ 300	4	95.0%	100%	43.75	12.50	81.25
Antimony	(µg / L as Sb)	Chronic health	≤ 20	4	97.0%	100%	0.60	0.00	0.60
Arsenic	(µg / L as As)	Chronic health	≤ 10	4	97.0%	100%	8.00	0.00	8.00
Barium	(µg / L as Ba)	Chronic health	≤ 700	4	97.0%	100%	38.50	3.42	48.75
Boron	(µg / L as B)	Chronic health	≤ 2400	4	97.0%	100%	5.73	2.84	13.64
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	4	97.0%	100%	1.50	0.00	1.50
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	4	97.0%	100%	5.00	0.00	5.00
Copper	(µg / L as Cu)	Chronic health	≤ 2000	4	97.0%	100%	8.00	0.00	8.00
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%	24.10	18.20	78.69
Iron	(µg / L as Fe)	Aesthetic	≤ 300	4	95.0%	100%	24.10	18.20	78.69
Lead	(µg / L as Pb)	Chronic health	≤ 10	4	97.0%	100%	8.00	0.00	8.00
Manganese	(µg / L as Mn)	Chronic health	≤ 400	4	97.0%	100%	3.00	0.00	3.00
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	4	95.0%	100%	3.00	0.00	3.00
Mercury	(µg / L as Hg)	Chronic health	≤ 6	4	97.0%	100%	1.50	0.00	1.50
Nickel	(µg / L as Ni)	Chronic health	≤ 70	4	97.0%	100%	5.00	0.00	5.00
Selenium	(µg / L as Se)	Chronic health	≤ 40	4	97.0%	100%	8.00	0.00	8.00
Uranium	(µg / L as U)	Chronic health	≤ 30	4	97.0%	100%	0.50	0.00	0.50
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	4	97.0%	100%	4.03	0.26	4.81
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	≤ 10	2	95.0%	100%	3.00	0.00	3.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	≤ 300	4	97.0%	100%	34.00	6.06	52.17
Bromoform - CHBr ₃	(µg / L)	Chronic health	≤ 100	4	97.0%	100%	10.00	0.00	10.00
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	≤ 100	4	97.0%	100%	10.00	0.00	10.00
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	≤ 60	4	97.0%	100%	15.25	1.26	19.02
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	4	97.0%	100%	0.40	0.04	0.52
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	4	not applicable	100%	20.50	1.29	24.37
Hardness (7)	(mg / L as CaCO ₃)	Operational	≥ 20 to ≤ 200	4	not applicable	100%	73.50	4.20	86.11
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	4	not applicable	100%	6.45	0.26	7.24
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	4	not applicable	100%	3.00	0.16	3.49
Rand Water Risk Determinands (RWRD) (6)									
Odour	TON	RWRD	≤ 2	33	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	33	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****