



RAND WATER

Johannesburg 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	317	99.0%	100%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	317	95.0%	100%	0	0.00	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	317	95.0%	100%	2	11.91	38
<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	34	95.0%	100%	6.32	1.27	10.14
Conductivity	(mS / m)	Aesthetic	≤ 170	228	95.0%	100%	20.92	4.42	34.19
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	43	95.0%	100%	147.44	12.74	185.67
Turbidity	(NTU)	Operational	≤ 1	264	95.0%	100%	0.26	0.02	0.33
Turbidity	(NTU)	Aesthetic	≤ 5	264	95.0%	100%	0.26	0.02	0.33
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	228	95.0%	100%	8.04	0.13	8.44
Chemical Properties: Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	228	95.0%	100%	0.31	0.18	0.84
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	30	95.0%	100%	10.79	1.45	15.13
Free chlorine	(mg / L as Cl ₂)	Chronic health	≤ 5	318	97.0%	100%	0.25	0.39	1.42
Monochloramine	(mg / L as Cl ₂)	Chronic health	≤ 4.1	256	97.0%	100%	1.63	0.33	2.62
Fluoride	(mg / L as F)	Chronic health	≤ 1.5	30	97.0%	100%	0.27	0.02	0.34
Nitrate	(mg / L as N)	Acute health	≤ 11	224	99.0%	100%	0.59	0.09	0.86
Nitrite	(mg / L as N)	Acute health	≤ 0.9	228	99.0%	100%	0.03	0.03	0.12
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	228	99.0%	100%	0.09	0.04	0.20
Residual disinfectant (4)	(mg / L as Cl ₂)	Operational	≥ (0.1 and 0.2)	318	95.0%	98.74%	1.55	0.47	2.96
Sodium	(mg / L as Na)	Aesthetic	≤ 200	34	95.0%	100%	9.29	0.62	11.14
Sulphate	(mg / L as SO ₄)	Aesthetic	≤ 250	30	95.0%	100%	14.77	0.86	17.34
Sulphate	(mg / L as SO ₄)	Acute health	≤ 500	30	99.0%	100%	14.77	0.86	17.34
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	34	95.0%	100%	0.37	0.47	1.79
Chemical Properties: Micro determinands									
Aluminium	(µg / L as Al)	Operational	≤ 300	34	95.0%	100%	50.59	3.26	60.36
Antimony	(µg / L as Sb)	Chronic health	≤ 20	32	97.0%	100%	0.60	0.00	0.60
Arsenic	(µg / L as As)	Chronic health	≤ 10	34	97.0%	100%	8.00	0.00	8.00
Barium	(µg / L as Ba)	Chronic health	≤ 700	34	97.0%	100%	36.53	3.00	45.52
Boron	(µg / L as B)	Chronic health	≤ 2400	34	97.0%	100%	4.05	2.29	10.93
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	34	97.0%	100%	1.50	0.00	1.50
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	34	97.0%	100%	5.00	0.00	5.00
Copper	(µg / L as Cu)	Chronic health	≤ 2000	34	97.0%	100%	9.87	4.50	23.38
Cyanide (Recoverable)	(µg / L as CN)	Acute health	≤ 200	30	99.0%	100%	5.00	0.00	5.00
Iron	(µg / L as Fe)	Chronic health	≤ 2000	34	97.0%	100%	25.89	22.36	92.95
Iron	(µg / L as Fe)	Aesthetic	≤ 300	34	95.0%	100%	25.89	22.36	92.95
Lead	(µg / L as Pb)	Chronic health	≤ 10	34	97.0%	100%	8.00	0.00	8.00
Manganese	(µg / L as Mn)	Chronic health	≤ 400	34	97.0%	100%	3.00	0.00	3.00
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	34	95.0%	100%	3.00	0.00	3.00
Mercury	(µg / L as Hg)	Chronic health	≤ 6	34	97.0%	100%	1.50	0.00	1.50
Nickel	(µg / L as Ni)	Chronic health	≤ 70	34	97.0%	100%	5.00	0.00	5.00
Selenium	(µg / L as Se)	Chronic health	≤ 40	34	97.0%	100%	8.00	0.00	8.00
Uranium	(µg / L as U)	Chronic health	≤ 30	32	97.0%	100%	0.72	0.75	2.99
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	30	97.0%	100%	3.67	0.50	5.17
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	≤ 10	26	95.0%	100%	3.00	0.00	3.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	≤ 300	30	97.0%	100%	30.40	8.27	55.22
Bromoform - CHBr ₃	(µg / L)	Chronic health	≤ 100	30	97.0%	100%	10.00	0.00	10.00
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	≤ 100	30	97.0%	100%	10.00	0.00	10.00
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	≤ 60	30	97.0%	100%	13.67	1.97	19.58
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	30	97.0%	100%	0.36	0.06	0.53
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	34	not applicable	100%	18.50	1.58	23.24
Hardness (7)	(mg / L as CaCO ₃)	Operational	≥ 20 to ≤ 200	34	not applicable	100%	67.71	5.07	82.91
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	34	not applicable	100%	6.20	0.49	7.66
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	34	not applicable	100%	2.91	0.17	3.40
Rand Water Risk Determinands (RWRD) (6)									
Odour	TON	RWRD	≤ 2	90	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	90	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%	99.74%

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****