



RAND WATER

Johannesburg Water Quality Report  
1 Month

23 January 2021 to 19 February 2021

Date generated: 10 March 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
<b>Microbiological determinands</b>									
<i>E. coli</i>	(mpn per 100 mL)	Acute health	Non-detect	261	99.0%	99.62%	0	0.12	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	261	95.0%	97.70%	1	9.22	29
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	261	95.0%	100%	10	51.32	164
<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
<b>Physical and Aesthetic determinands</b>									
Colour	(mg / L as Pt-Co)	Aesthetic	≤ 15	27	95.0%	100%	6.41	1.62	11.28
Conductivity	(mS / m)	Aesthetic	≤ 170	181	95.0%	100%	22.79	2.84	31.30
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	33	95.0%	100%	160.15	17.16	211.64
Turbidity	(NTU)	Operational	≤ 1	213	95.0%	99.53%	0.39	0.17	0.90
Turbidity	(NTU)	Aesthetic	≤ 5	213	95.0%	100%	0.39	0.17	0.90
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	181	95.0%	100%	7.85	0.16	8.33
<b>Chemical Properties: Macro determinands</b>									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	181	95.0%	100%	0.33	0.22	1.00
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	25	95.0%	100%	12.52	1.12	15.89
Free chlorine	(mg / L as Cl <sub>2</sub> )	Chronic health	≤ 5	261	97.0%	100%	0.15	0.26	0.94
Monochloramine	(mg / L as Cl <sub>2</sub> )	Chronic health	≤ 4.1	209	97.0%	100%	1.40	0.54	3.03
Fluoride	(mg / L as F)	Chronic health	≤ 1.5	30	97.0%	100%	0.23	0.07	0.43
Nitrate	(mg / L as N)	Acute health	≤ 11	176	99.0%	100%	0.68	0.20	1.27
Nitrite	(mg / L as N)	Acute health	≤ 0.9	158	99.0%	100%	0.09	0.15	0.54
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	159	99.0%	100%	0.26	0.26	1.04
Residual disinfectant (4)	(mg / L as Cl <sub>2</sub> )	Operational	≥ (0.1 and 0.2)	261	95.0%	90.42%	1.27	0.68	3.32
Sodium	(mg / L as Na)	Aesthetic	≤ 200	22	95.0%	100%	11.23	1.53	15.81
Sulphate	(mg / L as SO <sub>4</sub> )	Aesthetic	≤ 250	25	95.0%	100%	15.88	2.20	22.49
Sulphate	(mg / L as SO <sub>4</sub> )	Acute health	≤ 500	25	99.0%	100%	15.88	2.20	22.49
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	23	95.0%	100%	0.01	0.01	0.05
<b>Chemical Properties: Micro determinands</b>									
Aluminium	(µg / L as Al)	Operational	≤ 300	23	95.0%	100%	11.09	4.62	24.94
Antimony	(µg / L as Sb)	Chronic health	≤ 20	23	97.0%	100%	0.60	0.00	0.60
Arsenic	(µg / L as As)	Chronic health	≤ 10	23	97.0%	100%	0.83	0.06	1.02
Barium	(µg / L as Ba)	Chronic health	≤ 700	23	97.0%	100%	46.22	9.12	73.58
Boron	(µg / L as B)	Chronic health	≤ 2400	21	97.0%	100%	7.59	10.17	38.10
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	23	97.0%	100%	1.00	0.00	1.00
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	23	97.0%	100%	0.50	0.00	0.50
Copper	(µg / L as Cu)	Chronic health	≤ 2000	23	97.0%	100%	9.16	7.00	30.15
Cyanide (Recoverable)	(µg / L as CN)	Acute health	≤ 200	27	99.0%	100%	5.07	0.37	6.17
Iron	(µg / L as Fe)	Chronic health	≤ 2000	23	97.0%	100%	100.00	0.00	100.00
Iron	(µg / L as Fe)	Aesthetic	≤ 300	23	95.0%	100%	100.00	0.00	100.00
Lead	(µg / L as Pb)	Chronic health	≤ 10	23	97.0%	100%	2.01	0.06	2.20
Manganese	(µg / L as Mn)	Chronic health	≤ 400	22	97.0%	100%	2.64	0.70	4.74
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	22	95.0%	100%	2.64	0.70	4.74
Mercury	(µg / L as Hg)	Chronic health	≤ 6	22	97.0%	100%	0.80	0.00	0.80
Nickel	(µg / L as Ni)	Chronic health	≤ 70	23	97.0%	100%	3.04	0.21	3.67
Selenium	(µg / L as Se)	Chronic health	≤ 40	23	97.0%	100%	4.00	0.00	4.00
Uranium	(µg / L as U)	Chronic health	≤ 30	23	97.0%	100%	0.50	0.00	0.50
<b>Organic determinands</b>									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	27	97.0%	100%	4.38	0.81	6.80
Phenols as C <sub>6</sub> H <sub>5</sub> OH	(µg / L)	Aesthetic	≤ 10	23	95.0%	100%	3.00	0.00	3.00
Chloroform - CHCl <sub>3</sub>	(µg / L)	Chronic health	≤ 300	27	97.0%	100%	76.48	16.30	125.39
Bromoform - CHBr <sub>3</sub>	(µg / L)	Chronic health	≤ 100	27	97.0%	100%	10.00	0.00	10.00
Dibromochloromethane - CHBr <sub>2</sub> Cl	(µg / L)	Chronic health	≤ 100	27	97.0%	100%	10.00	0.00	10.00
Bromodichloromethane - CHBrCl <sub>2</sub>	(µg / L)	Chronic health	≤ 60	27	97.0%	100%	15.15	2.07	21.36
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	27	97.0%	100%	0.52	0.08	0.75
Total Microcystin (2)	(µg / L)	Chronic health	≤ 1	no data	97.0%	no data	.	no data	.
<b>For monitoring/reporting purposes only</b>									
Calcium (6)	(mg / L as Ca)	Aesthetic	≤ 150	23	not applicable	100%	21.87	4.06	34.05
Hardness (7)	(mg / L as CaCO <sub>3</sub> )	Operational	≥ 20 to ≤ 200	23	not applicable	100%	86.22	23.27	156.01
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	23	not applicable	100%	7.65	3.83	19.16
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	23	not applicable	100%	4.43	1.22	8.09
<b>Rand Water Risk Determinands (RWRD) (6)</b>									
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%	99.66%
Acute health chemical	99.0%	100%
Chronic health	97.0%	100%
Aesthetic	95.0%	100%
Operational	95.0%	97.47%

Notes  
 (1) Specification SANS 241 date of effect : 1 July 2016  
 (2) Measured at water treatment works exit points  
 (3) (NO<sub>2</sub>/0.9 + NO<sub>3</sub>/11)  
 (4) Residual disinfectant : Results from the chloraminated system = Sum of Free and Monochloramine  
 (5) (CHCl<sub>3</sub>/300 + CHBr<sub>3</sub>/100 + CHBr<sub>2</sub>Cl/100 + CHBrCl<sub>2</sub>/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\*\*\*\*