



RAND WATER

Johannesburg Water Quality Report
1 Month

21 November 2020 to 22 December 2020

Date generated: 08 January 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	216	99.0%	100%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	216	95.0%	100%	0	0.31	1
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	309	95.0%	100%	12	63.12	202
<i>Cryptosporidium spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	17	99.0%	100%	0	0.00	0
<i>Giardia spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	17	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	27	95.0%	100%	7.04	0.85	9.60
Conductivity	(mS / m)	Aesthetic	≤ 170	222	95.0%	100%	21.53	3.32	31.47
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	34	95.0%	100%	144.12	13.62	184.98
Turbidity	(NTU)	Operational	≤ 1	256	95.0%	100%	0.28	0.07	0.50
Turbidity	(NTU)	Aesthetic	≤ 5	256	95.0%	100%	0.28	0.07	0.50
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	222	95.0%	100%	8.02	0.17	8.54
Chemical Properties: Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	222	95.0%	100%	0.27	0.19	0.84
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	27	95.0%	100%	10.93	1.02	13.98
Free chlorine	(mg / L as Cl ₂)	Chronic health	≤ 5	309	97.0%	100%	0.23	0.35	1.28
Monochloramine	(mg / L as Cl ₂)	Chronic health	≤ 4.1	250	97.0%	100%	1.42	0.51	2.94
Fluoride	(mg / L as F)	Chronic health	≤ 1.5	27	97.0%	100%	0.23	0.05	0.38
Nitrate	(mg / L as N)	Acute health	≤ 11	222	99.0%	100%	0.51	0.03	0.59
Nitrite	(mg / L as N)	Acute health	≤ 0.9	223	99.0%	100%	0.07	0.13	0.46
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	222	99.0%	100%	0.18	0.21	0.80
Residual disinfectant (4)	(mg / L as Cl ₂)	Operational	≥ (0.1 and 0.2)	309	95.0%	95.47%	1.38	0.55	3.04
Sodium	(mg / L as Na)	Aesthetic	≤ 200	26	95.0%	100%	6.50	1.63	11.40
Sulphate	(mg / L as SO ₄)	Aesthetic	≤ 250	27	95.0%	100%	15.11	0.64	17.03
Sulphate	(mg / L as SO ₄)	Acute health	≤ 500	27	99.0%	100%	15.11	0.64	17.03
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	18	95.0%	100%	0.01	0.01	0.04
Chemical Properties: Micro determinands									
Aluminium	(µg / L as Al)	Operational	≤ 300	26	95.0%	100%	25.72	16.21	74.34
Antimony	(µg / L as Sb)	Chronic health	≤ 20	26	97.0%	100%	0.60	0.00	0.60
Arsenic	(µg / L as As)	Chronic health	≤ 10	26	97.0%	100%	0.80	0.00	0.80
Barium	(µg / L as Ba)	Chronic health	≤ 700	26	97.0%	100%	35.31	4.17	47.83
Boron	(µg / L as B)	Chronic health	≤ 2400	26	97.0%	100%	3.68	2.35	10.73
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	26	97.0%	100%	1.00	0.00	1.00
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	26	97.0%	100%	0.50	0.00	0.50
Copper	(µg / L as Cu)	Chronic health	≤ 2000	26	97.0%	100%	5.38	4.68	19.44
Cyanide (Recoverable)	(µg / L as CN)	Acute health	≤ 200	27	99.0%	100%	5.00	0.00	5.00
Iron	(µg / L as Fe)	Chronic health	≤ 2000	26	97.0%	100%	101.15	5.88	118.80
Iron	(µg / L as Fe)	Aesthetic	≤ 300	26	95.0%	100%	101.15	5.88	118.80
Lead	(µg / L as Pb)	Chronic health	≤ 10	26	97.0%	100%	2.00	0.00	2.00
Manganese	(µg / L as Mn)	Chronic health	≤ 400	26	97.0%	100%	2.90	4.11	15.23
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	26	95.0%	100%	2.90	4.11	15.23
Mercury	(µg / L as Hg)	Chronic health	≤ 6	26	97.0%	100%	0.80	0.00	0.80
Nickel	(µg / L as Ni)	Chronic health	≤ 70	26	97.0%	100%	3.00	0.00	3.00
Selenium	(µg / L as Se)	Chronic health	≤ 40	26	97.0%	100%	4.00	0.00	4.00
Uranium	(µg / L as U)	Chronic health	≤ 30	26	97.0%	100%	0.50	0.00	0.50
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	27	97.0%	100%	2.62	0.19	3.18
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	≤ 10	23	95.0%	100%	3.00	0.00	3.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	≤ 300	27	97.0%	100%	38.81	5.91	56.54
Bromoform - CHBr ₃	(µg / L)	Chronic health	≤ 100	27	97.0%	100%	10.00	0.00	10.00
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	≤ 100	27	97.0%	100%	10.00	0.00	10.00
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	≤ 60	27	97.0%	100%	14.00	1.44	18.32
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	27	97.0%	100%	0.39	0.04	0.52
Total Microcystin (2)	(µg / L)	Chronic health	≤ 1	no data	97.0%	no data	.	no data	.
For monitoring/reporting purposes only									
Calcium (6)	(mg / L as Ca)	Aesthetic	≤ 150	26	not applicable	100%	14.54	0.81	16.97
Hardness (7)	(mg / L as CaCO ₃)	Operational	≥ 20 to ≤ 200	26	not applicable	100%	57.50	3.57	68.21
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	26	not applicable	100%	5.18	0.56	6.86
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	26	not applicable	100%	2.46	0.10	2.75
Rand Water Risk Determinands (RWRD) (6)									
Odour	TON	RWRD	≤ 2	112	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	112	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%	99.01%

- 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****