



RAND WATER
Customer Bulk Water Quality Report
1 Month

23 December 2020 to 22 January 2021

Date generated: 08 February 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	1,336	99.0%	99.93%	0	0.52	2
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	1,336	95.0%	98.05%	2	19.29	60
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	1,336	95.0%	99.33%	30	243.19	760
<i>Cryptosporidium spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	28	99.0%	100%	0	0.00	0
<i>Giardia spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	28	99.0%	100%	0	0.00	0
Somatic Coliphages (2)	(count per 10 mL)	Operational	Non-detect	95	95.0%	100%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	≤ 15	148	95.0%	98.65%	7.94	2.01	13.97
Conductivity	(mS / m)	Aesthetic	≤ 170	1,057	95.0%	100%	24.23	8.11	48.56
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	159	95.0%	100%	167.01	70.01	377.05
Turbidity	(NTU)	Operational	≤ 1	1,108	95.0%	98.92%	0.37	0.18	0.91
Turbidity	(NTU)	Aesthetic	≤ 5	1,108	95.0%	100%	0.37	0.18	0.91
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	1,057	95.0%	100%	7.91	0.18	8.47
Chemical Properties: Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	1,057	95.0%	100%	0.27	0.19	0.85
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	146	95.0%	100%	19.00	25.78	96.35
Free chlorine	(mg / L as Cl ₂)	Chronic health	≤ 5	1,336	97.0%	100%	0.35	0.50	1.85
Monochloramine	(mg / L as Cl ₂)	Chronic health	≤ 4.1	957	97.0%	100%	1.13	0.63	3.03
Fluoride	(mg / L as F)	Chronic health	≤ 1.5	146	97.0%	100%	0.30	0.10	0.59
Nitrate	(mg / L as N)	Acute health	≤ 11	1,055	99.0%	100%	0.52	0.05	0.68
Nitrite	(mg / L as N)	Acute health	≤ 0.9	1,045	99.0%	100%	0.06	0.07	0.27
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	1,042	99.0%	100%	0.13	0.10	0.42
Residual disinfectant (4)	(mg / L as Cl ₂)	Operational	≥ (0.1 and 0.2)	1,336	95.0%	94.54%	1.15	0.60	2.97
Sodium	(mg / L as Na)	Aesthetic	≤ 200	148	95.0%	100%	10.48	8.54	36.11
Sulphate	(mg / L as SO ₄)	Aesthetic	≤ 250	149	95.0%	100%	19.48	15.88	67.12
Sulphate	(mg / L as SO ₄)	Acute health	≤ 500	149	99.0%	100%	19.48	15.88	67.12
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	149	95.0%	100%	0.00	0.01	0.02
Chemical Properties: Micro determinands									
Aluminium	(µg / L as Al)	Operational	≤ 300	146	95.0%	100%	26.18	8.44	51.49
Antimony	(µg / L as Sb)	Chronic health	≤ 20	142	97.0%	100%	0.60	0.00	0.60
Arsenic	(µg / L as As)	Chronic health	≤ 10	144	97.0%	100%	0.81	0.04	0.93
Barium	(µg / L as Ba)	Chronic health	≤ 700	149	97.0%	100%	39.34	5.08	54.58
Boron	(µg / L as B)	Chronic health	≤ 2400	149	97.0%	100%	5.39	5.56	22.06
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	144	97.0%	100%	1.00	0.00	1.00
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	149	97.0%	100%	0.66	0.43	1.95
Copper	(µg / L as Cu)	Chronic health	≤ 2000	149	97.0%	100%	6.35	5.53	22.95
Cyanide (Recoverable)	(µg / L as CN)	Acute health	≤ 200	97	99.0%	100%	5.80	3.13	15.20
Iron	(µg / L as Fe)	Chronic health	≤ 2000	149	97.0%	100%	100.20	2.46	107.57
Iron	(µg / L as Fe)	Aesthetic	≤ 300	149	95.0%	100%	100.20	2.46	107.57
Lead	(µg / L as Pb)	Chronic health	≤ 10	144	97.0%	100%	2.00	0.00	2.00
Manganese	(µg / L as Mn)	Chronic health	≤ 400	148	97.0%	100%	3.08	5.24	18.82
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	148	95.0%	100%	3.08	5.24	18.82
Mercury	(µg / L as Hg)	Chronic health	≤ 6	137	97.0%	100%	0.80	0.00	0.80
Nickel	(µg / L as Ni)	Chronic health	≤ 70	149	97.0%	100%	3.00	0.00	3.00
Selenium	(µg / L as Se)	Chronic health	≤ 40	144	97.0%	100%	4.00	0.00	4.00
Uranium	(µg / L as U)	Chronic health	≤ 30	142	97.0%	100%	0.50	0.00	0.50
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	139	97.0%	100%	3.44	0.60	5.25
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	≤ 10	130	95.0%	100%	3.01	0.09	3.30
Chloroform - CHCl ₃	(µg / L)	Chronic health	≤ 300	156	97.0%	100%	50.56	15.03	95.65
Bromoform - CHBr ₃	(µg / L)	Chronic health	≤ 100	156	97.0%	100%	10.00	0.00	10.00
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	≤ 100	156	97.0%	100%	10.53	2.98	19.46
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	≤ 60	156	97.0%	100%	14.47	3.79	25.85
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	156	97.0%	99.36%	0.44	0.13	0.82
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	149	not applicable	100%	17.32	3.39	27.50
Hardness (7)	(mg / L as CaCO ₃)	Operational	≥ 20 to ≤ 200	149	not applicable	99.33%	71.61	23.78	142.96
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	149	not applicable	100%	6.90	3.86	18.48
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	149	not applicable	100%	3.30	1.41	7.55
Rand Water Risk Determinands (RWRD) (6)									
Odour	TON	RWRD	≤ 2	309	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	309	not applicable	99.68%	1.03	0.46	2.39

Risks	Required compliances to SANS 241: 2015 standard	Overall Compliances - SANS 241: 2015 standard
Acute health microbiological	99.0%	99.93%
Acute health chemical	99.0%	100%
Chronic health	97.0%	99.98%
Aesthetic	95.0%	99.96%
Operational	95.0%	98.13%

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 both the chlorinated and chloraminated systems
 (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****