



RAND WATER

Customer Bulk Water Quality Report  
1 Month

23 July 2020 to 21 August 2020

Date generated: 14 September 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
<b>Microbiological determinands</b>									
<i>E. coli</i>	(mpn per 100 mL)	Acute health	Non-detect	1,294	99.0%	100%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	1,294	95.0%	99.92%	0	2.06	6
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	1,294	95.0%	99.77%	9	129.35	397
<i>Cryptosporidium spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	18	99.0%	100%	0	0.00	0
<i>Giardia spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	18	99.0%	100%	0	0.00	0
Somatic Coliphages (2)	(count per 10 mL)	Operational	Non-detect	92	95.0%	100%	0	0.00	0
<b>Physical and Aesthetic determinands</b>									
Colour	(mg / L as Pt-Co)	Aesthetic	≤ 15	140	95.0%	100%	5.66	1.09	8.93
Conductivity	(mS / m)	Aesthetic	≤ 170	1,026	95.0%	100%	23.12	7.59	45.90
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	150	95.0%	100%	168.13	74.01	390.18
Turbidity	(NTU)	Operational	≤ 1	1,073	95.0%	99.91%	0.29	0.20	0.88
Turbidity	(NTU)	Aesthetic	≤ 5	1,073	95.0%	99.91%	0.29	0.20	0.88
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	1,026	95.0%	100%	8.05	0.15	8.50
<b>Chemical Properties: Macro determinands</b>									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	1,023	95.0%	100%	0.26	0.17	0.77
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	141	95.0%	100%	17.93	23.87	89.55
Free chlorine	(mg / L as Cl <sub>2</sub> )	Chronic health	≤ 5	1,294	97.0%	100%	0.46	0.59	2.24
Monochloramine	(mg / L as Cl <sub>2</sub> )	Chronic health	≤ 4.1	907	97.0%	100%	1.60	0.48	3.03
Fluoride	(mg / L as F)	Chronic health	≤ 1.5	142	97.0%	100%	0.22	0.06	0.41
Nitrate	(mg / L as N)	Acute health	≤ 11	1,021	99.0%	100%	0.56	0.07	0.76
Nitrite	(mg / L as N)	Acute health	≤ 0.9	1,022	99.0%	100%	0.02	0.04	0.15
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	1,010	99.0%	100%	0.23	0.27	1.05
Residual disinfectant (4)	(mg / L as Cl <sub>2</sub> )	Operational	≥ (0.1 and 0.2)	1,294	95.0%	99.00%	1.57	0.47	2.99
Sodium	(mg / L as Na)	Aesthetic	≤ 200	149	95.0%	100%	13.98	13.09	53.26
Sulphate	(mg / L as SO <sub>4</sub> )	Aesthetic	≤ 250	145	95.0%	100%	23.55	15.84	71.09
Sulphate	(mg / L as SO <sub>4</sub> )	Acute health	≤ 500	145	99.0%	100%	23.55	15.84	71.09
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	149	95.0%	100%	0.02	0.01	0.06
<b>Chemical Properties: Micro determinands</b>									
Aluminium	(µg / L as Al)	Operational	≤ 300	149	95.0%	100%	31.03	15.28	76.86
Antimony	(µg / L as Sb)	Chronic health	≤ 20	134	97.0%	100%	0.60	0.00	0.60
Arsenic	(µg / L as As)	Chronic health	≤ 10	138	97.0%	100%	8.00	0.00	8.00
Barium	(µg / L as Ba)	Chronic health	≤ 700	149	97.0%	100%	45.32	7.66	68.31
Boron	(µg / L as B)	Chronic health	≤ 2400	149	97.0%	100%	12.84	9.25	40.58
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	138	97.0%	100%	1.50	0.00	1.50
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	149	97.0%	100%	5.00	0.00	5.00
Copper	(µg / L as Cu)	Chronic health	≤ 2000	149	97.0%	100%	9.47	7.00	30.48
Cyanide (Recoverable)	(µg / L as CN)	Acute health	≤ 200	140	99.0%	100%	5.00	0.00	5.00
Iron	(µg / L as Fe)	Chronic health	≤ 2000	149	97.0%	100%	29.40	22.44	96.72
Iron	(µg / L as Fe)	Aesthetic	≤ 300	149	95.0%	100%	29.40	22.44	96.72
Lead	(µg / L as Pb)	Chronic health	≤ 10	138	97.0%	100%	8.00	0.00	8.00
Manganese	(µg / L as Mn)	Chronic health	≤ 400	149	97.0%	100%	3.46	1.92	9.23
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	149	95.0%	100%	3.46	1.92	9.23
Mercury	(µg / L as Hg)	Chronic health	≤ 6	138	97.0%	100%	1.50	0.00	1.50
Nickel	(µg / L as Ni)	Chronic health	≤ 70	149	97.0%	100%	5.00	0.00	5.00
Selenium	(µg / L as Se)	Chronic health	≤ 40	138	97.0%	100%	8.00	0.00	8.00
Uranium	(µg / L as U)	Chronic health	≤ 30	134	97.0%	100%	0.50	0.00	0.50
<b>Organic determinands</b>									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	137	97.0%	100%	4.35	0.37	5.47
Phenols as C <sub>6</sub> H <sub>5</sub> OH	(µg / L)	Aesthetic	≤ 10	128	95.0%	100%	3.00	0.00	3.00
Chloroform - CHCl <sub>3</sub>	(µg / L)	Chronic health	≤ 300	151	97.0%	100%	25.04	7.54	47.66
Bromoform - CHBr <sub>3</sub>	(µg / L)	Chronic health	≤ 100	151	97.0%	100%	10.00	0.00	10.00
Dibromochloromethane - CHBr <sub>2</sub> Cl	(µg / L)	Chronic health	≤ 100	151	97.0%	100%	10.44	2.05	16.59
Bromodichloromethane - CHBrCl <sub>2</sub>	(µg / L)	Chronic health	≤ 60	151	97.0%	100%	14.03	2.52	21.58
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	151	97.0%	100%	0.34	0.10	0.64
Total Microcystin (2)	(µg / L)	Chronic health	≤ 1	24	97.0%	100%	0.31	0.00	0.31
<b>For monitoring/reporting purposes only</b>									
Calcium (6)	(mg / L as Ca)	Aesthetic	≤ 150	149	not applicable	100%	18.97	5.23	34.67
Hardness (7)	(mg / L as CaCO <sub>3</sub> )	Operational	≥ 20 to ≤ 200	149	not applicable	100%	75.01	27.48	157.46
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	149	not applicable	100%	7.97	4.26	20.76
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	149	not applicable	100%	3.72	1.50	8.21
<b>Rand Water Risk Determinands (RWRD) (6)</b>									
Odour	TON	RWRD	≤ 2	387	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	387	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%	99.98%
Operational	95.0%	99.71%

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\*\*\*\*