



RAND WATER

Customer Bulk Water Quality Report
1 Month

21 March 2020 to 21 April 2020

Date generated: 06 May 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	1,323	99.0%	100%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	1,323	95.0%	99.62%	0	5.67	17
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	1,323	95.0%	99.40%	25	237.24	736
<i>Cryptosporidium spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	17	99.0%	94.12%	0	0.24	1
<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	109	95.0%	100%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	≤ 15	92	95.0%	100%	5.00	0.00	5.00
Conductivity	(mS / m)	Aesthetic	≤ 170	1,038	95.0%	100%	23.44	6.12	41.78
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	94	95.0%	100%	165.94	50.05	316.07
Turbidity	(NTU)	Operational	≤ 1	1,094	95.0%	100%	0.29	0.06	0.46
Turbidity	(NTU)	Aesthetic	≤ 5	1,094	95.0%	100%	0.29	0.06	0.46
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	1,038	95.0%	100%	7.96	0.14	8.39
Chemical Properties: Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	1,037	95.0%	100%	0.18	0.18	0.73
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	75	95.0%	100%	19.60	20.26	80.38
Free chlorine	(mg / L as Cl ₂)	Chronic health	≤ 5	1,315	97.0%	100%	0.36	0.48	1.80
Monochloramine	(mg / L as Cl ₂)	Chronic health	≤ 4.1	938	97.0%	100%	1.13	0.66	3.10
Fluoride	(mg / L as F)	Chronic health	≤ 1.5	72	97.0%	100%	0.32	0.07	0.54
Nitrate	(mg / L as N)	Acute health	≤ 11	954	99.0%	100%	0.63	0.15	1.07
Nitrite	(mg / L as N)	Acute health	≤ 0.9	1,039	99.0%	100%	0.05	0.06	0.22
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	961	99.0%	100%	0.40	0.30	1.31
Residual disinfectant (4)	(mg / L as Cl ₂)	Operational	≥ (0.1 and 0.2)	1,315	95.0%	96.20%	1.15	0.62	3.01
Sodium	(mg / L as Na)	Aesthetic	≤ 200	93	95.0%	100%	15.73	12.41	52.95
Sulphate	(mg / L as SO ₄)	Aesthetic	≤ 250	151	95.0%	100%	24.13	6.99	45.12
Sulphate	(mg / L as SO ₄)	Acute health	≤ 500	151	99.0%	100%	24.13	6.99	45.12
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	93	95.0%	100%	0.02	0.00	0.03
Chemical Properties: Micro determinands									
Aluminium	(µg / L as Al)	Operational	≤ 300	93	95.0%	100%	26.92	4.51	40.44
Antimony	(µg / L as Sb)	Chronic health	≤ 20	no data	97.0%	no data	.	no data	.
Arsenic	(µg / L as As)	Chronic health	≤ 10	86	97.0%	100%	1.25	0.92	4.00
Barium	(µg / L as Ba)	Chronic health	≤ 700	93	97.0%	100%	44.69	7.69	67.77
Boron	(µg / L as B)	Chronic health	≤ 2400	93	97.0%	100%	11.41	8.47	36.82
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	86	97.0%	100%	1.19	0.40	2.38
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	93	97.0%	100%	5.00	0.00	5.00
Copper	(µg / L as Cu)	Chronic health	≤ 2000	93	97.0%	100%	10.51	4.54	24.12
Cyanide (Recoverable)	(µg / L as CN)	Acute health	≤ 200	89	99.0%	100%	5.00	0.00	5.00
Iron	(µg / L as Fe)	Chronic health	≤ 2000	93	97.0%	100%	13.71	12.41	50.93
Iron	(µg / L as Fe)	Aesthetic	≤ 300	93	95.0%	100%	13.71	12.41	50.93
Lead	(µg / L as Pb)	Chronic health	≤ 10	86	97.0%	100%	2.01	0.07	2.22
Manganese	(µg / L as Mn)	Chronic health	≤ 400	92	97.0%	100%	3.71	3.19	13.27
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	92	95.0%	100%	3.71	3.19	13.27
Mercury	(µg / L as Hg)	Chronic health	≤ 6	83	97.0%	100%	0.87	0.21	1.49
Nickel	(µg / L as Ni)	Chronic health	≤ 70	93	97.0%	100%	5.00	0.00	5.00
Selenium	(µg / L as Se)	Chronic health	≤ 40	86	97.0%	100%	4.00	0.00	4.00
Uranium	(µg / L as U)	Chronic health	≤ 30	no data	97.0%	no data	.	no data	.
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	81	97.0%	100%	3.81	0.37	4.92
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	≤ 10	76	95.0%	100%	3.00	0.00	3.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	≤ 300	98	97.0%	100%	38.91	10.56	70.60
Bromoform - CHBr ₃	(µg / L)	Chronic health	≤ 100	98	97.0%	100%	10.00	0.00	10.00
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	≤ 100	98	97.0%	100%	10.36	1.88	15.99
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	≤ 60	98	97.0%	100%	16.33	3.60	27.12
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	98	97.0%	100%	0.43	0.11	0.75
Total Microcystin (2)	(µg / L)	Chronic health	≤ 1	13	97.0%	100%	0.31	0.00	0.31
For monitoring/reporting purposes only									
Calcium (6)	(mg / L as Ca)	Aesthetic	≤ 150	93	not applicable	100%	19.52	3.69	30.58
Hardness (7)	(mg / L as CaCO ₃)	Operational	≥ 20 to ≤ 200	90	not applicable	100%	81.40	22.21	148.04
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	93	not applicable	100%	9.32	3.68	20.36
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	93	not applicable	100%	4.23	1.33	8.22
Rand Water Risk Determinands (RWRD) (6)									
Odour	TON	RWRD	≤ 2	299	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	299	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%	99.93%
Acute health chemical	99.0%	100%
Chronic health	97.0%	100%
Aesthetic	95.0%	100%
Operational	95.0%	99.00%

- 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****

1 cryptosporidium cyst was detected in a sample taken at the water treatment exit point. All other water quality parameters complied. No cysts were detected at other points from the same treatment station. Furthermore, a resample taken within 24 hours complied. This noncompliance was assessed not to pose an unacceptable health risk for the consumers.