



RAND WATER
Customer Bulk Water Quality Report
1 Month

23 October 2019 to 21 November 2019

Date generated: December 06, 2019

							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	1,307	99.0%	100%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	1,307	95.0%	99.62%	0	6.32	19
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	1,307	95.0%	99.85%	7	93.37	287
<i>Cryptosporidium spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	21	99.0%	100%	0	0.00	0
<i>Giardia spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	21	99.0%	95.24%	0	0.22	1
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	114	95.0%	100%	5.01	0.09	5.29
Conductivity	(mS / m)	Aesthetic	≤ 170	1,062	95.0%	100%	20.14	8.81	46.57
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	126	95.0%	100%	151.91	75.51	378.43
Turbidity	(NTU)	Operational	≤ 1	1,116	95.0%	99.64%	0.30	0.25	1.04
Turbidity	(NTU)	Aesthetic	≤ 5	1,116	95.0%	99.91%	0.30	0.25	1.04
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	1,058	95.0%	100%	7.95	0.15	8.39
Chemical Properties: Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	1,060	95.0%	100%	0.20	0.18	0.74
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	121	95.0%	100%	16.95	25.05	92.10
Free chlorine	(mg / L as Cl ₂)	Chronic health	≤ 5	1,307	97.0%	100%	0.37	0.47	1.79
Monochloramine	(mg / L as Cl ₂)	Chronic health	≤ 4.1	941	97.0%	100%	1.38	0.50	2.89
Fluoride	(mg / L as F)	Chronic health	≤ 1.5	121	97.0%	100%	0.37	0.16	0.86
Nitrate	(mg / L as N)	Acute health	≤ 11	1,058	99.0%	100%	0.50	0.03	0.61
Nitrite	(mg / L as N)	Acute health	≤ 0.9	1,058	99.0%	100%	0.03	0.04	0.15
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	1,044	99.0%	100%	0.08	0.05	0.22
Residual disinfectant (4)	(mg / L as Cl ₂)	Operational	≥ (0.1 and 0.2)	1,307	95.0%	97.32%	1.36	0.51	2.89
Sodium	(mg / L as Na)	Aesthetic	≤ 200	121	95.0%	100%	14.22	18.85	70.77
Sulphate	(mg / L as SO ₄)	Aesthetic	≤ 250	121	95.0%	100%	17.25	18.48	72.68
Sulphate	(mg / L as SO ₄)	Acute health	≤ 500	121	99.0%	100%	17.25	18.48	72.68
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	121	95.0%	100%	0.02	0.02	0.07
Chemical Properties: Micro determinands									
Aluminium	(µg / L as Al)	Operational	≤ 300	121	95.0%	100%	44.41	21.96	110.30
Antimony	(µg / L as Sb)	Chronic health	≤ 20	110	97.0%	100%	0.60	0.02	0.65
Arsenic	(µg / L as As)	Chronic health	≤ 10	110	97.0%	100%	0.88	0.38	2.01
Barium	(µg / L as Ba)	Chronic health	≤ 700	121	97.0%	100%	38.12	6.31	57.06
Boron	(µg / L as B)	Chronic health	≤ 2400	121	97.0%	100%	10.97	15.61	57.80
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	110	97.0%	100%	1.00	0.00	1.00
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	121	97.0%	100%	5.00	0.00	5.00
Copper	(µg / L as Cu)	Chronic health	≤ 2000	121	97.0%	100%	9.43	4.01	21.47
Cyanide (Recoverable)	(µg / L as CN)	Acute health	≤ 200	113	99.0%	100%	5.00	0.00	5.00
Iron	(µg / L as Fe)	Chronic health	≤ 2000	121	97.0%	100%	20.15	17.58	72.90
Iron	(µg / L as Fe)	Aesthetic	≤ 300	121	95.0%	100%	20.15	17.58	72.90
Lead	(µg / L as Pb)	Chronic health	≤ 10	110	97.0%	100%	2.00	0.00	2.00
Manganese	(µg / L as Mn)	Chronic health	≤ 400	121	97.0%	100%	4.08	4.80	18.49
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	121	95.0%	100%	4.08	4.80	18.49
Mercury	(µg / L as Hg)	Chronic health	≤ 6	110	97.0%	100%	0.80	0.00	0.80
Nickel	(µg / L as Ni)	Chronic health	≤ 70	121	97.0%	100%	5.00	0.00	5.00
Selenium	(µg / L as Se)	Chronic health	≤ 40	110	97.0%	100%	4.05	0.40	5.24
Uranium	(µg / L as U)	Chronic health	≤ 30	110	97.0%	100%	0.52	0.10	0.80
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	108	97.0%	100%	3.68	0.99	6.67
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	≤ 10	100	95.0%	100%	3.00	0.03	3.09
Chloroform - CHCl ₃	(µg / L)	Chronic health	≤ 300	126	97.0%	100%	38.83	10.02	68.89
Bromoform - CHBr ₃	(µg / L)	Chronic health	≤ 100	126	97.0%	100%	10.00	0.00	10.00
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	≤ 100	126	97.0%	100%	10.42	1.94	16.25
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	≤ 60	126	97.0%	100%	14.29	3.54	24.93
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	126	97.0%	100%	0.39	0.12	0.75
Total Microcystin (2)	(µg / L)	Chronic health	≤ 1	23	97.0%	100%	0.31	0.00	0.31
For monitoring/reporting purposes only									
Calcium (6)	(mg / L as Ca)	Aesthetic	≤ 150	121	not applicable	100%	18.54	7.03	39.61
Hardness (7)	(mg / L as CaCO ₃)	Operational	≥ 20 to ≤ 200	121	not applicable	98.35%	73.12	36.05	181.25
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	121	not applicable	100%	7.73	5.63	24.62
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	121	not applicable	100%	3.40	2.20	10.00
Rand Water Risk Determinands (RWRD) (6)									
Odour	TON	RWRD	≤ 2	384	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	384	not applicable	100%	1.00	0.00	1.00

Water quality risk indices

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%	99.98%
Operational	95.0%	99.27%

Notes

- Specification_SANS 241 date of effect : 1 July 2016
- Measured at water treatment works exit points
- (NO₂/0.9 + NO₃/11)
- Residual disinfectant : Results from both the chlorinated and chloraminated systems
- (CHCl₃/300 + CHBr₃/100 + CHBr₂Cl/100 + CHBrCl₂/60)
- Customer request: Results not included in the risk indices compliance calculations and limits based on SANS 241:2006
- Customer request: Results not included in the risk indices compliance calculations and limits based on RW Internal Spec