



RAND WATER
Customer Bulk Water Quality Report
1 Month

23 January 2020 to 19 February 2020

Date generated: March 12, 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	1,166	99.0%	100%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	1,166	95.0%	99.23%	1	9.41	29
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	1,166	95.0%	99.66%	18	178.28	553
<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	88	95.0%	100%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	≤ 15	112	95.0%	100%	5.00	0.00	5.00
Conductivity	(mS / m)	Aesthetic	≤ 170	938	95.0%	99.89%	25.16	8.51	50.68
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	123	95.0%	100%	177.81	51.94	333.62
Turbidity	(NTU)	Operational	≤ 1	983	95.0%	99.80%	0.31	0.22	0.99
Turbidity	(NTU)	Aesthetic	≤ 5	983	95.0%	99.90%	0.31	0.22	0.99
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	938	95.0%	99.89%	8.00	0.19	8.57
Chemical Properties: Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	919	95.0%	100%	0.15	0.16	0.63
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	114	95.0%	100%	18.23	17.99	72.20
Free chlorine	(mg / L as Cl ₂)	Chronic health	≤ 5	1,166	97.0%	100%	0.31	0.40	1.50
Monochloramine	(mg / L as Cl ₂)	Chronic health	≤ 4.1	861	97.0%	100%	1.13	0.63	3.04
Fluoride	(mg / L as F)	Chronic health	≤ 1.5	114	97.0%	100%	0.25	0.08	0.48
Nitrate	(mg / L as N)	Acute health	≤ 11	927	99.0%	100%	0.64	0.14	1.06
Nitrite	(mg / L as N)	Acute health	≤ 0.9	946	99.0%	100%	0.06	0.10	0.36
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	912	99.0%	100%	0.14	0.14	0.58
Residual disinfectant (4)	(mg / L as Cl ₂)	Operational	≥ (0.1 and 0.2)	1,166	95.0%	95.97%	1.13	0.62	2.98
Sodium	(mg / L as Na)	Aesthetic	≤ 200	117	95.0%	100%	14.64	10.02	44.71
Sulphate	(mg / L as SO ₄)	Aesthetic	≤ 250	114	95.0%	100%	23.90	9.29	51.78
Sulphate	(mg / L as SO ₄)	Acute health	≤ 500	114	99.0%	100%	23.90	9.29	51.78
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	117	95.0%	100%	0.02	0.04	0.15
Chemical Properties: Micro determinands									
Aluminium	(µg / L as Al)	Operational	≤ 300	117	95.0%	100%	33.46	18.43	88.77
Antimony	(µg / L as Sb)	Chronic health	≤ 20	41	97.0%	100%	0.60	0.00	0.60
Arsenic	(µg / L as As)	Chronic health	≤ 10	97	97.0%	100%	0.90	0.60	2.69
Barium	(µg / L as Ba)	Chronic health	≤ 700	117	97.0%	100%	48.38	4.06	60.56
Boron	(µg / L as B)	Chronic health	≤ 2400	117	97.0%	100%	12.20	6.70	32.29
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	97	97.0%	100%	1.00	0.00	1.00
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	117	97.0%	100%	5.00	0.00	5.00
Copper	(µg / L as Cu)	Chronic health	≤ 2000	117	97.0%	100%	10.58	6.15	29.02
Cyanide (Recoverable)	(µg / L as CN)	Acute health	≤ 200	112	99.0%	100%	5.11	1.05	8.26
Iron	(µg / L as Fe)	Chronic health	≤ 2000	117	97.0%	100%	24.76	24.08	97.01
Iron	(µg / L as Fe)	Aesthetic	≤ 300	117	95.0%	100%	24.76	24.08	97.01
Lead	(µg / L as Pb)	Chronic health	≤ 10	96	97.0%	100%	2.14	0.41	3.37
Manganese	(µg / L as Mn)	Chronic health	≤ 400	117	97.0%	100%	4.32	5.37	20.43
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	117	95.0%	100%	4.32	5.37	20.43
Mercury	(µg / L as Hg)	Chronic health	≤ 6	41	97.0%	100%	0.80	0.00	0.80
Nickel	(µg / L as Ni)	Chronic health	≤ 70	117	97.0%	100%	5.01	0.12	5.37
Selenium	(µg / L as Se)	Chronic health	≤ 40	97	97.0%	100%	4.00	0.00	4.00
Uranium	(µg / L as U)	Chronic health	≤ 30	41	97.0%	100%	0.50	0.00	0.50
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	109	97.0%	100%	3.83	0.68	5.86
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	≤ 10	102	95.0%	100%	3.00	0.00	3.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	≤ 300	125	97.0%	100%	46.76	13.59	87.52
Bromoform - CHBr ₃	(µg / L)	Chronic health	≤ 100	125	97.0%	100%	10.00	0.00	10.00
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	≤ 100	125	97.0%	100%	10.33	1.71	15.46
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	≤ 60	125	97.0%	100%	17.15	4.25	29.90
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	125	97.0%	100%	0.47	0.13	0.87
Total Microcystin (2)	(µg / L)	Chronic health	≤ 1	22	97.0%	100%	0.31	0.00	0.31
For monitoring/reporting purposes only									
Calcium (6)	(mg / L as Ca)	Aesthetic	≤ 150	117	not applicable	100%	19.31	2.99	28.29
Hardness (7)	(mg / L as CaCO ₃)	Operational	≥ 20 to ≤ 200	117	not applicable	100%	78.13	16.92	128.88
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	117	not applicable	100%	8.61	2.84	17.13
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	117	not applicable	100%	4.04	1.14	7.47
Rand Water Risk Determinands (RWRD) (6)									
Odour	TON	RWRD	≤ 2	339	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	339	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%	100%
Acute health chemical	99.0%	100%
Chronic health	97.0%	100%
Aesthetic	95.0%	99.95%
Operational	95.0%	98.88%

- 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