



RAND WATER
Customer Bulk Water Quality Report
1 Month

23 October 2020 to 20 November 2020

Date generated: 04 December 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	1,203	99.0%	100%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	1,203	95.0%	99.33%	1	10.68	33
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	1,228	95.0%	99.67%	14	173.60	535
<i>Cryptosporidium spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	19	99.0%	100%	0	0.00	0
<i>Giardia spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	19	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
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	≤ 15	119	95.0%	100%	6.97	1.61	11.80
Conductivity	(mS / m)	Aesthetic	≤ 170	960	95.0%	100%	22.32	8.00	46.33
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	127	95.0%	100%	165.20	73.60	385.99
Turbidity	(NTU)	Operational	≤ 1	1,012	95.0%	99.60%	0.27	0.09	0.54
Turbidity	(NTU)	Aesthetic	≤ 5	1,012	95.0%	100%	0.27	0.09	0.54
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	959	95.0%	100%	8.08	0.18	8.61
Chemical Properties: Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	947	95.0%	100%	0.27	0.17	0.77
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	119	95.0%	100%	15.88	20.11	76.23
Free chlorine	(mg / L as Cl ₂)	Chronic health	≤ 5	1,228	97.0%	100%	0.40	0.56	2.08
Monochloramine	(mg / L as Cl ₂)	Chronic health	≤ 4.1	870	97.0%	100%	1.41	0.48	2.85
Fluoride	(mg / L as F)	Chronic health	≤ 1.5	118	97.0%	100%	0.27	0.08	0.50
Nitrate	(mg / L as N)	Acute health	≤ 11	934	99.0%	100%	0.56	0.09	0.83
Nitrite	(mg / L as N)	Acute health	≤ 0.9	933	99.0%	100%	0.17	0.24	0.88
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	941	99.0%	100%	0.25	0.27	1.05
Residual disinfectant (4)	(mg / L as Cl ₂)	Operational	≥ (0.1 and 0.2)	1,228	95.0%	97.96%	1.40	0.49	2.87
Sodium	(mg / L as Na)	Aesthetic	≤ 200	116	95.0%	100%	10.21	12.62	48.06
Sulphate	(mg / L as SO ₄)	Aesthetic	≤ 250	121	95.0%	100%	18.67	15.32	64.62
Sulphate	(mg / L as SO ₄)	Acute health	≤ 500	121	99.0%	100%	18.67	15.32	64.62
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	118	95.0%	100%	0.02	0.03	0.10
Chemical Properties: Micro determinands									
Aluminium	(µg / L as Al)	Operational	≤ 300	114	95.0%	100%	42.37	23.72	113.52
Antimony	(µg / L as Sb)	Chronic health	≤ 20	113	97.0%	100%	0.64	0.14	1.07
Arsenic	(µg / L as As)	Chronic health	≤ 10	110	97.0%	100%	3.22	3.42	13.47
Barium	(µg / L as Ba)	Chronic health	≤ 700	118	97.0%	100%	36.54	13.69	77.62
Boron	(µg / L as B)	Chronic health	≤ 2400	118	97.0%	100%	6.14	9.29	34.01
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	111	97.0%	100%	1.17	0.24	1.88
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	117	97.0%	100%	2.16	2.17	8.69
Copper	(µg / L as Cu)	Chronic health	≤ 2000	118	97.0%	100%	7.88	10.36	38.97
Cyanide (Recoverable)	(µg / L as CN)	Acute health	≤ 200	119	99.0%	100%	5.00	0.00	5.00
Iron	(µg / L as Fe)	Chronic health	≤ 2000	110	97.0%	100%	69.95	38.93	186.75
Iron	(µg / L as Fe)	Aesthetic	≤ 300	110	95.0%	100%	69.95	38.93	186.75
Lead	(µg / L as Pb)	Chronic health	≤ 10	110	97.0%	100%	4.02	2.85	12.56
Manganese	(µg / L as Mn)	Chronic health	≤ 400	113	97.0%	100%	6.48	8.93	33.25
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	113	95.0%	100%	6.48	8.93	33.25
Mercury	(µg / L as Hg)	Chronic health	≤ 6	110	97.0%	100%	1.04	0.33	2.03
Nickel	(µg / L as Ni)	Chronic health	≤ 70	117	97.0%	100%	3.74	0.97	6.64
Selenium	(µg / L as Se)	Chronic health	≤ 40	110	97.0%	100%	5.35	1.90	11.04
Uranium	(µg / L as U)	Chronic health	≤ 30	113	97.0%	100%	0.68	0.68	2.73
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	113	97.0%	100%	3.01	0.54	4.62
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	≤ 10	108	95.0%	100%	3.00	0.00	3.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	≤ 300	129	97.0%	100%	28.59	8.39	53.77
Bromoform - CHBr ₃	(µg / L)	Chronic health	≤ 100	129	97.0%	100%	10.00	0.00	10.00
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	≤ 100	129	97.0%	100%	10.44	2.23	17.12
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	≤ 60	129	97.0%	100%	13.52	3.06	22.70
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	129	97.0%	100%	0.35	0.12	0.70
Total Microcystin (2)	(µg / L)	Chronic health	≤ 1	10	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%	19.79	4.54	33.42
Hardness (7)	(mg / L as CaCO ₃)	Operational	≥ 20 to ≤ 200	108	not applicable	100%	78.36	26.66	158.34
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	117	not applicable	100%	7.31	4.18	19.85
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	117	not applicable	100%	3.32	1.61	8.15
Rand Water Risk Determinands (RWRD) (6)									
Odour	TON	RWRD	≤ 2	363	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	363	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%	100%
Operational	95.0%	99.30%

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****