



RAND WATER
Customer Bulk Water Quality Report
1 Month

21 November 2020 to 22 December 2020

Date generated: 08 January 2021

							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	950	99.0%	99.79%	0	6.52	20
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	950	95.0%	99.16%	1	13.08	40
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	1,318	95.0%	99.62%	16	161.96	502
<i>Cryptosporidium spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	20	99.0%	100%	0	0.00	0
<i>Giardia spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	20	99.0%	100%	0	0.00	0
Somatic Coliphages (2)	(count per 10 mL)	Operational	Non-detect	111	95.0%	99.10%	0	2.28	7
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	≤ 15	110	95.0%	97.27%	7.80	2.55	15.45
Conductivity	(mS / m)	Aesthetic	≤ 170	1,040	95.0%	100%	22.54	7.67	45.54
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	121	95.0%	100%	166.53	80.37	407.64
Turbidity	(NTU)	Operational	≤ 1	1,092	95.0%	99.54%	0.28	0.11	0.62
Turbidity	(NTU)	Aesthetic	≤ 5	1,092	95.0%	100%	0.28	0.11	0.62
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	1,040	95.0%	100%	8.04	0.19	8.60
Chemical Properties: Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	1,039	95.0%	100%	0.24	0.17	0.75
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	110	95.0%	100%	18.83	26.77	99.13
Free chlorine	(mg / L as Cl ₂)	Chronic health	≤ 5	1,318	97.0%	100%	0.43	0.57	2.13
Monochloramine	(mg / L as Cl ₂)	Chronic health	≤ 4.1	931	97.0%	100%	1.30	0.56	2.98
Fluoride	(mg / L as F)	Chronic health	≤ 1.5	110	97.0%	100%	0.26	0.09	0.52
Nitrate	(mg / L as N)	Acute health	≤ 11	1,033	99.0%	100%	0.52	0.06	0.70
Nitrite	(mg / L as N)	Acute health	≤ 0.9	1,062	99.0%	100%	0.11	0.18	0.65
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	1,020	99.0%	100%	0.22	0.24	0.93
Residual disinfectant (4)	(mg / L as Cl ₂)	Operational	≥ (0.1 and 0.2)	1,318	95.0%	96.28%	1.33	0.53	2.92
Sodium	(mg / L as Na)	Aesthetic	≤ 200	112	95.0%	100%	9.24	11.01	42.26
Sulphate	(mg / L as SO ₄)	Aesthetic	≤ 250	114	95.0%	100%	20.05	17.26	71.83
Sulphate	(mg / L as SO ₄)	Acute health	≤ 500	114	99.0%	100%	20.05	17.26	71.83
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	90	95.0%	100%	0.01	0.01	0.03
Chemical Properties: Micro determinands									
Aluminium	(µg / L as Al)	Operational	≤ 300	112	95.0%	100%	24.24	12.64	62.15
Antimony	(µg / L as Sb)	Chronic health	≤ 20	104	97.0%	100%	0.60	0.00	0.60
Arsenic	(µg / L as As)	Chronic health	≤ 10	106	97.0%	100%	0.80	0.03	0.91
Barium	(µg / L as Ba)	Chronic health	≤ 700	112	97.0%	100%	35.86	8.15	60.31
Boron	(µg / L as B)	Chronic health	≤ 2400	112	97.0%	100%	4.46	4.70	18.57
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	105	97.0%	100%	1.00	0.00	1.00
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	111	97.0%	100%	0.50	0.00	0.50
Copper	(µg / L as Cu)	Chronic health	≤ 2000	112	97.0%	100%	4.62	3.76	15.91
Cyanide (Recoverable)	(µg / L as CN)	Acute health	≤ 200	110	99.0%	100%	5.00	0.00	5.00
Iron	(µg / L as Fe)	Chronic health	≤ 2000	110	97.0%	100%	101.27	7.43	123.57
Iron	(µg / L as Fe)	Aesthetic	≤ 300	110	95.0%	100%	101.27	7.43	123.57
Lead	(µg / L as Pb)	Chronic health	≤ 10	106	97.0%	100%	2.00	0.00	2.00
Manganese	(µg / L as Mn)	Chronic health	≤ 400	111	97.0%	100%	3.31	5.02	18.37
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	111	95.0%	100%	3.31	5.02	18.37
Mercury	(µg / L as Hg)	Chronic health	≤ 6	106	97.0%	100%	0.80	0.00	0.80
Nickel	(µg / L as Ni)	Chronic health	≤ 70	112	97.0%	100%	3.03	0.19	3.58
Selenium	(µg / L as Se)	Chronic health	≤ 40	106	97.0%	100%	4.00	0.00	4.00
Uranium	(µg / L as U)	Chronic health	≤ 30	104	97.0%	100%	0.50	0.00	0.50
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	103	97.0%	100%	2.81	0.51	4.36
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	≤ 10	98	95.0%	100%	3.00	0.00	3.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	≤ 300	118	97.0%	100%	38.19	12.39	75.35
Bromoform - CHBr ₃	(µg / L)	Chronic health	≤ 100	118	97.0%	100%	10.00	0.00	10.00
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	≤ 100	118	97.0%	100%	10.54	2.72	18.69
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	≤ 60	118	97.0%	100%	14.91	3.96	26.78
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	119	97.0%	100%	0.41	0.14	0.82
Total Microcystin (2)	(µg / L)	Chronic health	≤ 1	no data	97.0%	no data	.	no data	.
For monitoring/reporting purposes only									
Calcium (6)	(mg / L as Ca)	Aesthetic	≤ 150	112	not applicable	100%	15.44	3.83	26.93
Hardness (7)	(mg / L as CaCO ₃)	Operational	≥ 20 to ≤ 200	112	not applicable	100%	62.66	21.36	126.73
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	112	not applicable	100%	5.85	3.06	15.03
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	112	not applicable	100%	2.79	1.44	7.12
Rand Water Risk Determinands (RWRD) (6)									
Odour	TON	RWRD	≤ 2	388	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	388	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%	99.80%
Acute health chemical	99.0%	100%
Chronic health	97.0%	100%
Aesthetic	95.0%	99.93%
Operational	95.0%	98.86%

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****