



RAND WATER
Barrage Water Quality Report
1 Month

22 August 2020 to 21 September 2020

Date generated: 02 October 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	36	99.0%	100%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	36	95.0%	100%	0	0.00	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	36	95.0%	100%	0	0.58	2
<i>Cryptosporidium spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	2	99.0%	100%	0	0.00	0
<i>Giardia spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	2	99.0%	100%	0	0.00	0
Somatic Coliphages (2)	(count per 10 mL)	Operational	Non-detect	5	95.0%	100%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	≤ 15	10	95.0%	100%	7.30	1.77	12.60
Conductivity	(mS / m)	Aesthetic	≤ 170	36	95.0%	100%	21.00	0.63	22.90
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	22	95.0%	100%	145.00	3.78	156.34
Turbidity	(NTU)	Operational	≤ 1	36	95.0%	97.22%	0.42	0.19	1.01
Turbidity	(NTU)	Aesthetic	≤ 5	36	95.0%	100%	0.42	0.19	1.01
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	36	95.0%	100%	7.98	0.08	8.22
Chemical Properties: Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	68	95.0%	100%	0.03	0.03	0.12
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	5	95.0%	100%	13.60	0.55	15.24
Free chlorine	(mg / L as Cl ₂)	Chronic health	≤ 5	36	97.0%	100%	1.03	0.26	1.81
Monochloramine	(mg / L as Cl ₂)	Chronic health	≤ 4.1	n/a	97.0%	no data	n/a	n/a	n/a
Fluoride	(mg / L as F)	Chronic health	≤ 1.5	5	97.0%	100%	0.20	0.00	0.20
Nitrate	(mg / L as N)	Acute health	≤ 11	68	99.0%	100%	0.52	0.05	0.66
Nitrite	(mg / L as N)	Acute health	≤ 0.9	70	99.0%	100%	0.04	0.12	0.38
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	68	99.0%	100%	0.13	0.19	0.71
Residual disinfectant (4)	(mg / L as Cl ₂)	Operational	≥ 0.2	36	95.0%	100%	1.03	0.26	1.81
Sodium	(mg / L as Na)	Aesthetic	≤ 200	10	95.0%	100%	11.90	0.88	14.53
Sulphate	(mg / L as SO ₄)	Aesthetic	≤ 250	5	95.0%	100%	18.20	0.45	19.54
Sulphate	(mg / L as SO ₄)	Acute health	≤ 500	5	99.0%	100%	18.20	0.45	19.54
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	10	95.0%	100%	0.02	0.00	0.03
Chemical Properties: Micro determinands									
Aluminium	(µg / L as Al)	Operational	≤ 300	10	95.0%	100%	29.30	12.91	68.03
Antimony	(µg / L as Sb)	Chronic health	≤ 20	2	97.0%	100%	0.60	0.00	0.60
Arsenic	(µg / L as As)	Chronic health	≤ 10	2	97.0%	100%	8.00	0.00	8.00
Barium	(µg / L as Ba)	Chronic health	≤ 700	10	97.0%	100%	40.10	4.04	52.22
Boron	(µg / L as B)	Chronic health	≤ 2400	10	97.0%	100%	7.53	2.78	15.88
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	2	97.0%	100%	1.50	0.00	1.50
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	10	97.0%	100%	5.00	0.00	5.00
Copper	(µg / L as Cu)	Chronic health	≤ 2000	10	97.0%	100%	8.00	0.00	8.00
Cyanide (Recoverable)	(µg / L as CN)	Acute health	≤ 200	6	99.0%	100%	5.00	0.00	5.00
Iron	(µg / L as Fe)	Chronic health	≤ 2000	10	97.0%	100%	81.60	15.75	128.85
Iron	(µg / L as Fe)	Aesthetic	≤ 300	10	95.0%	100%	81.60	15.75	128.85
Lead	(µg / L as Pb)	Chronic health	≤ 10	2	97.0%	100%	8.00	0.00	8.00
Manganese	(µg / L as Mn)	Chronic health	≤ 400	10	97.0%	100%	3.03	0.09	3.31
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	10	95.0%	100%	3.03	0.09	3.31
Mercury	(µg / L as Hg)	Chronic health	≤ 6	2	97.0%	100%	1.50	0.00	1.50
Nickel	(µg / L as Ni)	Chronic health	≤ 70	10	97.0%	100%	5.00	0.00	5.00
Selenium	(µg / L as Se)	Chronic health	≤ 40	2	97.0%	100%	8.00	0.00	8.00
Uranium	(µg / L as U)	Chronic health	≤ 30	2	97.0%	100%	0.50	0.00	0.50
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	2	97.0%	100%	5.85	1.63	10.73
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	≤ 10	2	95.0%	100%	3.00	0.00	3.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	≤ 300	2	97.0%	100%	46.00	5.66	62.97
Bromoform - CHBr ₃	(µg / L)	Chronic health	≤ 100	2	97.0%	100%	10.00	0.00	10.00
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	≤ 100	2	97.0%	100%	10.00	0.00	10.00
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	≤ 60	2	97.0%	100%	15.50	0.71	17.62
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	2	97.0%	100%	0.44	0.04	0.54
Total Microcystin (2)	(µg / L)	Chronic health	≤ 1	1	97.0%	100%	0.31	n/a	0.31
For monitoring/reporting purposes only									
Calcium (6)	(mg / L as Ca)	Aesthetic	≤ 150	10	not applicable	100%	17.90	1.52	22.47
Hardness (7)	(mg / L as CaCO ₃)	Operational	≥ 20 to ≤ 200	10	not applicable	100%	69.20	5.71	86.33
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	10	not applicable	100%	7.02	0.67	9.04
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	10	not applicable	100%	3.32	0.27	4.13
Rand Water Risk Determinands (RWRD) (6)									
Odour	TON	RWRD	≤ 2	19	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	19	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%	99.49%

- 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 the chlorinated system = Free available chlorine
 (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****