



RAND WATER
Ekurhuleni 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	293	99.0%	100%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	293	95.0%	100%	0	0.06	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	303	95.0%	100%	7	56.01	175
<i>Cryptosporidium spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	16	99.0%	100%	0	0.00	0
<i>Giardia spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	16	99.0%	100%	0	0.00	0
Somatic Coliphages (2)	(count per 10 mL)	Operational	Non-detect	64	95.0%	100%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	≤ 15	21	95.0%	100%	7.05	1.47	11.44
Conductivity	(mS / m)	Aesthetic	≤ 170	184	95.0%	100%	21.22	2.98	30.15
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	29	95.0%	100%	152.59	20.73	214.77
Turbidity	(NTU)	Operational	≤ 1	201	95.0%	98.01%	0.29	0.16	0.76
Turbidity	(NTU)	Aesthetic	≤ 5	201	95.0%	100%	0.29	0.16	0.76
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	183	95.0%	100%	8.08	0.17	8.60
Chemical Properties: Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	176	95.0%	100%	0.31	0.18	0.86
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	25	95.0%	100%	11.28	4.67	25.30
Free chlorine	(mg / L as Cl ₂)	Chronic health	≤ 5	303	97.0%	100%	0.21	0.33	1.19
Monochloramine	(mg / L as Cl ₂)	Chronic health	≤ 4.1	261	97.0%	100%	1.63	0.47	3.03
Fluoride	(mg / L as F)	Chronic health	≤ 1.5	25	97.0%	100%	0.28	0.05	0.44
Nitrate	(mg / L as N)	Acute health	≤ 11	173	99.0%	100%	0.58	0.13	0.98
Nitrite	(mg / L as N)	Acute health	≤ 0.9	173	99.0%	100%	0.20	0.25	0.95
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	169	99.0%	100%	0.29	0.28	1.13
Residual disinfectant (4)	(mg / L as Cl ₂)	Operational	≥ (0.1 and 0.2)	303	95.0%	97.36%	1.59	0.51	3.13
Sodium	(mg / L as Na)	Aesthetic	≤ 200	21	95.0%	100%	7.26	2.66	15.25
Sulphate	(mg / L as SO ₄)	Aesthetic	≤ 250	25	95.0%	100%	14.04	1.49	18.50
Sulphate	(mg / L as SO ₄)	Acute health	≤ 500	25	99.0%	100%	14.04	1.49	18.50
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	22	95.0%	100%	0.02	0.04	0.14
Chemical Properties: Micro determinands									
Aluminium	(µg / L as Al)	Operational	≤ 300	22	95.0%	100%	34.36	13.90	76.05
Antimony	(µg / L as Sb)	Chronic health	≤ 20	21	97.0%	100%	0.60	0.01	0.63
Arsenic	(µg / L as As)	Chronic health	≤ 10	21	97.0%	100%	3.20	3.48	13.63
Barium	(µg / L as Ba)	Chronic health	≤ 700	22	97.0%	100%	35.09	3.25	44.84
Boron	(µg / L as B)	Chronic health	≤ 2400	22	97.0%	100%	4.60	4.61	18.43
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	21	97.0%	100%	1.17	0.24	1.89
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	22	97.0%	100%	2.14	2.22	8.78
Copper	(µg / L as Cu)	Chronic health	≤ 2000	22	97.0%	100%	6.00	3.85	17.56
Cyanide (Recoverable)	(µg / L as CN)	Acute health	≤ 200	21	99.0%	100%	5.00	0.00	5.00
Iron	(µg / L as Fe)	Chronic health	≤ 2000	21	97.0%	100%	67.76	42.71	195.88
Iron	(µg / L as Fe)	Aesthetic	≤ 300	21	95.0%	100%	67.76	42.71	195.88
Lead	(µg / L as Pb)	Chronic health	≤ 10	21	97.0%	100%	4.00	2.90	12.69
Manganese	(µg / L as Mn)	Chronic health	≤ 400	22	97.0%	100%	5.99	9.72	35.16
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	22	95.0%	100%	5.99	9.72	35.16
Mercury	(µg / L as Hg)	Chronic health	≤ 6	21	97.0%	100%	1.03	0.34	2.05
Nickel	(µg / L as Ni)	Chronic health	≤ 70	22	97.0%	100%	3.73	0.98	6.68
Selenium	(µg / L as Se)	Chronic health	≤ 40	21	97.0%	100%	5.33	1.93	11.13
Uranium	(µg / L as U)	Chronic health	≤ 30	21	97.0%	100%	0.52	0.11	0.85
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	21	97.0%	100%	2.97	0.41	4.21
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	≤ 10	24	95.0%	100%	3.00	0.00	3.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	≤ 300	21	97.0%	100%	29.71	7.16	51.20
Bromoform - CHBr ₃	(µg / L)	Chronic health	≤ 100	21	97.0%	100%	10.00	0.00	10.00
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	≤ 100	21	97.0%	100%	10.00	0.00	10.00
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	≤ 60	21	97.0%	100%	13.57	1.40	17.77
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	21	97.0%	100%	0.34	0.11	0.66
Total Microcystin (2)	(µg / L)	Chronic health	≤ 1	7	97.0%	100%	0.31	0.00	0.31
For monitoring/reporting purposes only									
Calcium (6)	(mg / L as Ca)	Aesthetic	≤ 150	22	not applicable	100%	19.41	4.24	32.13
Hardness (7)	(mg / L as CaCO ₃)	Operational	≥ 20 to ≤ 200	20	not applicable	100%	77.00	28.02	161.06
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	22	not applicable	100%	7.12	4.06	19.30
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	22	not applicable	100%	3.10	1.50	7.59
Rand Water Risk Determinands (RWRD) (6)									
Odour	TON	RWRD	≤ 2	57	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	57	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%	99.12%

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 chloraminated system = Sum of Free and Monochloramine
(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****