



RAND WATER
Lesedi Water Quality Report
12 Month

22 August 2019 to 21 August 2020

Date generated: 28 August 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	453	99.0%	100%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	453	95.0%	99.34%	0	4.36	13
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	453	95.0%	100%	1	5.29	17
<i>Cryptosporidium spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	196	99.0%	98.98%	0	0.10	0
<i>Giardia spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	196	99.0%	98.47%	0	0.12	0
Somatic Coliphages (2)	(count per 10 mL)	Operational	Non-detect	846	95.0%	99.88%	0	0.03	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	≤ 15	53	95.0%	100%	5.02	0.14	5.43
Conductivity	(mS / m)	Aesthetic	≤ 170	441	95.0%	100%	21.66	2.80	30.07
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	58	95.0%	100%	151.72	16.98	202.65
Turbidity	(NTU)	Operational	≤ 1	446	95.0%	100%	0.29	0.05	0.44
Turbidity	(NTU)	Aesthetic	≤ 5	446	95.0%	100%	0.29	0.05	0.44
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	447	95.0%	100%	7.92	0.14	8.34
Chemical Properties: Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	443	95.0%	100%	0.28	0.16	0.75
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	47	95.0%	100%	11.66	2.02	17.73
Free chlorine	(mg / L as Cl ₂)	Chronic health	≤ 5	453	97.0%	100%	0.10	0.12	0.45
Monochloramine	(mg / L as Cl ₂)	Chronic health	≤ 4.1	453	97.0%	100%	1.23	0.36	2.30
Fluoride	(mg / L as F)	Chronic health	≤ 1.5	47	97.0%	100%	0.26	0.18	0.80
Nitrate	(mg / L as N)	Acute health	≤ 11	446	99.0%	100%	0.56	0.08	0.79
Nitrite	(mg / L as N)	Acute health	≤ 0.9	451	99.0%	100%	0.05	0.07	0.24
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	450	99.0%	100%	0.17	0.20	0.78
Residual disinfectant (4)	(mg / L as Cl ₂)	Operational	≥ 0.1	453	95.0%	100%	1.31	0.35	2.36
Sodium	(mg / L as Na)	Aesthetic	≤ 200	65	95.0%	100%	10.34	2.06	16.51
Sulphate	(mg / L as SO ₄)	Aesthetic	≤ 250	48	95.0%	100%	17.69	4.87	32.30
Sulphate	(mg / L as SO ₄)	Acute health	≤ 500	48	99.0%	100%	17.69	4.87	32.30
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	65	95.0%	100%	0.02	0.01	0.04
Chemical Properties: Micro determinands									
Aluminium	(µg / L as Al)	Operational	≤ 300	65	95.0%	100%	35.03	16.69	85.09
Antimony	(µg / L as Sb)	Chronic health	≤ 20	44	97.0%	100%	0.60	0.00	0.60
Arsenic	(µg / L as As)	Chronic health	≤ 10	53	97.0%	100%	2.89	3.14	12.30
Barium	(µg / L as Ba)	Chronic health	≤ 700	65	97.0%	100%	44.57	6.47	63.98
Boron	(µg / L as B)	Chronic health	≤ 2400	65	97.0%	100%	8.31	2.77	16.62
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	53	97.0%	100%	1.14	0.23	1.82
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	65	97.0%	100%	5.00	0.00	5.00
Copper	(µg / L as Cu)	Chronic health	≤ 2000	65	97.0%	100%	8.46	1.75	13.70
Cyanide (Recoverable)	(µg / L as CN)	Acute health	≤ 200	53	99.0%	100%	5.21	1.51	9.74
Iron	(µg / L as Fe)	Chronic health	≤ 2000	65	97.0%	100%	22.82	16.48	72.25
Iron	(µg / L as Fe)	Aesthetic	≤ 300	65	95.0%	100%	22.82	16.48	72.25
Lead	(µg / L as Pb)	Chronic health	≤ 10	53	97.0%	100%	3.60	2.66	11.59
Manganese	(µg / L as Mn)	Chronic health	≤ 400	65	97.0%	100%	3.55	2.60	11.35
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	65	95.0%	100%	3.55	2.60	11.35
Mercury	(µg / L as Hg)	Chronic health	≤ 6	48	97.0%	100%	1.03	0.33	2.03
Nickel	(µg / L as Ni)	Chronic health	≤ 70	65	97.0%	100%	5.00	0.00	5.00
Selenium	(µg / L as Se)	Chronic health	≤ 40	53	97.0%	100%	5.06	1.78	10.40
Uranium	(µg / L as U)	Chronic health	≤ 30	44	97.0%	100%	0.53	0.20	1.12
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	52	97.0%	100%	3.85	0.62	5.70
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	≤ 10	29	95.0%	100%	3.00	0.00	3.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	≤ 300	53	97.0%	100%	40.11	10.81	72.53
Bromoform - CHBr ₃	(µg / L)	Chronic health	≤ 100	53	97.0%	100%	10.00	0.00	10.00
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	≤ 100	53	97.0%	100%	10.00	0.00	10.00
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	≤ 60	53	97.0%	100%	16.60	2.93	25.40
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	51	97.0%	100%	0.44	0.08	0.69
Total Microcystin (2)	(µg / L)	Chronic health	≤ 1	195	97.0%	100%	0.31	0.00	0.31
For monitoring/reporting purposes only									
Calcium (6)	(mg / L as Ca)	Aesthetic	≤ 150	65	not applicable	100%	17.69	1.51	22.22
Hardness (7)	(mg / L as CaCO ₃)	Operational	≥ 20 to ≤ 200	65	not applicable	100%	68.49	6.94	89.30
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	65	not applicable	100%	7.00	1.20	10.59
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	65	not applicable	100%	3.31	0.55	4.97
Rand Water Risk Determinands (RWRD) (6)									
Odour	TON	RWRD	≤ 2	222	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	222	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%	99.41%
Acute health chemical	99.0%	100%
Chronic health	97.0%	100%
Aesthetic	95.0%	100%
Operational	95.0%	99.87%

- 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