



RAND WATER
Lesedi 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	33	99.0%	100%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	33	95.0%	100%	0	0.17	1
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	38	95.0%	100%	0	0.55	2
<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	4	95.0%	100%	7.25	0.96	10.12
Conductivity	(mS / m)	Aesthetic	≤ 170	38	95.0%	100%	21.55	2.89	30.23
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	4	95.0%	100%	150.00	12.25	186.74
Turbidity	(NTU)	Operational	≤ 1	38	95.0%	100%	0.30	0.10	0.61
Turbidity	(NTU)	Aesthetic	≤ 5	38	95.0%	100%	0.30	0.10	0.61
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	38	95.0%	100%	8.17	0.13	8.56
Chemical Properties: Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	38	95.0%	100%	0.41	0.16	0.89
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	4	95.0%	100%	10.35	1.11	13.69
Free chlorine	(mg / L as Cl ₂)	Chronic health	≤ 5	38	97.0%	100%	0.08	0.02	0.13
Monochloramine	(mg / L as Cl ₂)	Chronic health	≤ 4.1	38	97.0%	100%	1.55	0.17	2.07
Fluoride	(mg / L as F)	Chronic health	≤ 1.5	4	97.0%	100%	0.24	0.08	0.50
Nitrate	(mg / L as N)	Acute health	≤ 11	38	99.0%	100%	0.53	0.05	0.68
Nitrite	(mg / L as N)	Acute health	≤ 0.9	38	99.0%	100%	0.18	0.24	0.91
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	38	99.0%	100%	0.25	0.27	1.05
Residual disinfectant (4)	(mg / L as Cl ₂)	Operational	≥ 0.1	38	95.0%	100%	1.62	0.18	2.14
Sodium	(mg / L as Na)	Aesthetic	≤ 200	5	95.0%	100%	7.92	1.54	12.53
Sulphate	(mg / L as SO ₄)	Aesthetic	≤ 250	4	95.0%	100%	15.25	0.50	16.75
Sulphate	(mg / L as SO ₄)	Acute health	≤ 500	4	99.0%	100%	15.25	0.50	16.75
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	5	95.0%	100%	0.01	0.00	0.02
Chemical Properties: Micro determinands									
Aluminium	(µg / L as Al)	Operational	≤ 300	5	95.0%	100%	64.80	33.67	165.81
Antimony	(µg / L as Sb)	Chronic health	≤ 20	4	97.0%	100%	0.64	0.09	0.90
Arsenic	(µg / L as As)	Chronic health	≤ 10	4	97.0%	100%	4.40	4.16	16.87
Barium	(µg / L as Ba)	Chronic health	≤ 700	5	97.0%	100%	35.20	1.92	40.97
Boron	(µg / L as B)	Chronic health	≤ 2400	5	97.0%	100%	8.36	8.18	32.91
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	4	97.0%	100%	1.25	0.29	2.12
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	5	97.0%	100%	3.20	2.46	10.59
Copper	(µg / L as Cu)	Chronic health	≤ 2000	5	97.0%	100%	6.04	2.79	14.42
Cyanide (Recoverable)	(µg / L as CN)	Acute health	≤ 200	4	99.0%	100%	5.00	0.00	5.00
Iron	(µg / L as Fe)	Chronic health	≤ 2000	4	97.0%	100%	44.00	38.82	160.47
Iron	(µg / L as Fe)	Aesthetic	≤ 300	4	95.0%	100%	44.00	38.82	160.47
Lead	(µg / L as Pb)	Chronic health	≤ 10	4	97.0%	100%	5.00	3.46	15.39
Manganese	(µg / L as Mn)	Chronic health	≤ 400	5	97.0%	100%	2.94	0.61	4.76
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	5	95.0%	100%	2.94	0.61	4.76
Mercury	(µg / L as Hg)	Chronic health	≤ 6	4	97.0%	100%	1.15	0.40	2.36
Nickel	(µg / L as Ni)	Chronic health	≤ 70	5	97.0%	100%	4.20	1.10	7.49
Selenium	(µg / L as Se)	Chronic health	≤ 40	4	97.0%	100%	6.00	2.31	12.93
Uranium	(µg / L as U)	Chronic health	≤ 30	4	97.0%	100%	0.52	0.03	0.61
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	4	97.0%	100%	3.05	0.37	4.16
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	4	97.0%	100%	34.75	1.89	40.43
Bromoform - CHBr ₃	(µg / L)	Chronic health	≤ 100	4	97.0%	100%	10.00	0.00	10.00
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	≤ 100	4	97.0%	100%	10.00	0.00	10.00
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	≤ 60	4	97.0%	100%	15.25	0.50	16.75
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	4	97.0%	100%	0.41	0.01	0.45
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	5	not applicable	100%	17.40	1.14	20.82
Hardness (7)	(mg / L as CaCO ₃)	Operational	≥ 20 to ≤ 200	4	not applicable	100%	65.75	3.20	75.35
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	5	not applicable	100%	5.84	0.25	6.59
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	5	not applicable	100%	2.72	0.15	3.16
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%	100%

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****