

Lesedi Municipality Water Quality Report - 12 Month

October 2016 to September 2017 Date generated: 03 October 2017

Determinand	Measurement units	Risk	Required compliance to SANS 241: 2015 standard (%)	SANS 241: 2015 standard limits (1)	No of results	Achieved Compliance to SANS 241: 2015 Spec(%)	Descriptive statistics		
							Mean	Standard Deviation	Mean + 3 standard deviations
Microbiological determinands									
<i>E. coli</i>	(mpn per 100 mL)	Acute health	99.0%	0	409	100.0%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	95.0%	10	409	100.0%	0	0.23	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	95.0%	≤1000	407	100.0%	1	3.95	15
<i>Cryptosporidium spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	183	100.0%	0	0.00	0
<i>Giardia spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	183	100.0%	0	0.00	0
Somatic Coliphages (5)	(count per 10 mL)	Operational	95.0%	0	775	100.0%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	95.0%	≤15	54	100.0%	5.11	0.57	7.41
Conductivity	(mS / m)	Aesthetic	95.0%	≤170	408	100.0%	18.08	1.96	22.93
Total Dissolved Solids	(mg / L)	Aesthetic	95.0%	≤1200	408	100.0%	129.03	11.44	157.29
Turbidity	(NTU)	Operational	95.0%	≤1	406	100.0%	0.28	0.10	0.47
Turbidity	(NTU)	Aesthetic	95.0%	≤5	406	100.0%	0.28	0.10	0.47
pH	(pH units)	Operational	95.0%	≥ 5 to ≤ 9.7	408	100.0%	7.89	0.18	8.43
Chemical Properties									
Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	95.0%	≤1.5	408	100.0%	0.27	0.13	0.50
Chloride	(mg / L as Cl)	Aesthetic	95.0%	≤300	54	100.0%	9.51	1.59	13.00
Free chlorine (2)	(mg / L as Cl ₂)	Chronic health	97.0%	≤5	409	100.0%	0.12	0.19	0.97
Monochloramine (3)	(mg / L as Cl ₂)	Chronic health	97.0%	≤4.1	409	100.0%	1.17	0.45	1.87
Fluoride	(mg / L as F)	Chronic health	97.0%	≤1.5	54	100.0%	0.17	0.04	0.35
Nitrate	(mg / L as N)	Acute health	99.0%	≤11	406	100.0%	0.54	0.15	0.85
Nitrite	(mg / L as N)	Acute health	99.0%	≤0.9	408	100.0%	0.09	0.11	0.47
Combined nitrate plus nitrite (7)	(mg / L as N)	Acute health	99.0%	≤1	406	100.0%	0.14	0.13	0.60
Residual disinfectant (4)	(mg / L)	Operational	95.0%	≥0.1 Sum of Free and Monochloramine	409	99.5%	1.29	0.47	1.93
Sodium	(mg / L as Na)	Aesthetic	95.0%	≤200	54	100.0%	7.54	0.96	9.89
Sulphate	(mg / L as SO ₄)	Aesthetic	95.0%	≤250	54	100.0%	11.83	1.96	15.47
Sulphate	(mg / L as SO ₄)	Acute health	99.0%	≤500	54	100.0%	11.83	1.96	15.47
Zinc	(mg / L as Zn)	Aesthetic	95.0%	≤5	54	100.0%	0.02	0.01	0.03
Micro determinands									
Aluminium	(µg / L as Al)	Operational	95.0%	≤300	54	100.0%	35.19	10.60	58.41
Antimony	(µg / L as Sb)	Chronic health	97.0%	≤20	54	100.0%	0.50	0.01	0.54
Arsenic	(µg / L as As)	Chronic health	97.0%	≤10	54	100.0%	0.83	0.65	2.78
Barium	(µg / L as Ba)	Chronic health	97.0%	≤700	54	100.0%	32.30	5.50	48.82
Boron	(µg / L as B)	Chronic health	97.0%	≤2400	54	100.0%	25.00	0.00	25.00
Cadmium	(µg / L as Cd)	Chronic health	97.0%	≤3	54	100.0%	2.50	0.00	2.50
Chromium (Total)	(µg / L as Cr)	Chronic health	97.0%	≤50	54	100.0%	15.00	0.00	15.00
Copper	(µg / L as Cu)	Chronic health	97.0%	≤2000	54	100.0%	10.04	0.19	11.00
Cyanide (Recoverable)	(µg / L as CN)	Acute health	99.0%	≤200	54	100.0%	5.06	0.33	6.75
Iron	(µg / L as Fe)	Chronic health	97.0%	≤2000	54	100.0%	22.24	10.55	47.41
Iron	(µg / L as Fe)	Aesthetic	95.0%	≤300	54	100.0%	22.24	10.55	47.41
Lead	(µg / L as Pb)	Chronic health	97.0%	≤10	53	100.0%	0.30	0.49	2.40
Manganese	(µg / L as Mn)	Chronic health	97.0%	≤400	54	100.0%	10.09	0.49	12.47
Manganese	(µg / L as Mn)	Aesthetic	95.0%	≤100	54	100.0%	10.09	0.49	12.47
Mercury	(µg / L as Hg)	Chronic health	97.0%	≤6	54	100.0%	0.80	0.00	0.80
Nickel	(µg / L as Ni)	Chronic health	97.0%	≤70	54	100.0%	10.00	0.00	10.00
Selenium	(µg / L as Se)	Chronic health	97.0%	≤40	54	100.0%	0.88	0.88	4.35
Uranium	(µg / L as U)	Chronic health	97.0%	≤30	54	100.0%	0.26	0.27	1.47
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	97.0%	≤10	54	100.0%	3.64	0.93	5.82
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	95.0%	≤10	34	100.0%	4.72	1.14	5.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	97.0%	≤300	56	100.0%	42.43	12.54	64.35
Bromoform - CHBr ₃	(µg / L)	Chronic health	97.0%	≤100	56	100.0%	0.50	0.00	0.50
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	97.0%	≤100	56	100.0%	1.83	0.95	4.19
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	97.0%	≤60	56	100.0%	13.18	2.45	18.00
Combined trihalomethanes (8)	(µg / L)	Chronic health	97.0%	≤1	56	100.0%	0.38	0.08	0.52
Total Microcystin (5)	(µg / L)	Chronic health	97.0%	≤1	183	100.0%	0.35	0.02	0.36
For monitoring/reporting purposes only (6)									
Calcium	(mg / L as Ca)	Aesthetic	not applicable	≤150	54	100.0%	17.28	2.03	21.47
Hardness	(mg / L as CaCO ₃)	Operational	not applicable	≥ 20 to ≤ 200	54	100.0%	61.82	5.91	75.26
Magnesium	(mg / L as Mg)	Aesthetic	not applicable	≤70	54	100.0%	5.38	0.55	6.59
Potassium	(mg / L as K)	Aesthetic	not applicable	≤50	54	100.0%	2.93	0.85	4.00
Rand Water Risk Determinands (RWRD)									
Odour	TON	RWRD	95.0%	≤2	235	100.0%	1.00	0.00	1.00
Taste	FTN	RWRD	95.0%	≤2	236	100.0%	1.00	0.00	1.00

Water quality risk indices		
Risk	Required compliance to SANS 241: 2015 standard	Overall Compliance-SANS 241
Acute health microbiological	99.00%	100.00%
Acute health chemical	99.00%	100.00%
Chronic health	97.00%	100.00%
Aesthetic	95.00%	100.00%
Operational	95.00%	99.93%

- Notes:**
- (1) Specification date of effect : 1 July 2016
 - (2) Free chlorine : Results from chloraminated system
 - (3) Monochloramine : Results are from the chloraminated systems
 - (4) Residual disinfectant : Results from chloraminated system
 - (5) Measured at water treatment works exit points
 - (6) Customer request: Results not included in the risk indices compliance calculations
 - (7) (NO₂/0.9 + NO₃/11)
 - (8) (CHCl₃/300 + CHBr₃/100 + CHBr₂Cl/100 + CHBrCl₂/60)