

**Lesedi Municipality Water Quality Report - 12 Month**

23 January 2017 to 22 January 2018

Date generated: 01 February 2018

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
<b>Microbiological determinands</b>									
<i>E. coli</i>	(mpn per 100 mL)	Acute health	99.0%	0	452	100.0%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	95.0%	10	452	100.0%	0	0.12	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	95.0%	≤1000	450	100.0%	1	4.95	25
<i>Cryptosporidium spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	179	100.0%	0	0.00	0
<i>Giardia spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	179	100.0%	0	0.00	0
Somatic Coliphages (5)	(count per 10 mL)	Operational	95.0%	0	775	100.0%	0	0.00	0
<b>Physical and Aesthetic determinands</b>									
Colour	(mg / L as Pt-Co)	Aesthetic	95.0%	≤15	54	100.0%	5.15	0.60	7.41
Conductivity	(mS / m)	Aesthetic	95.0%	≤170	451	100.0%	18.80	1.71	22.50
Total Dissolved Solids	(mg / L)	Aesthetic	95.0%	≤1200	58	100.0%	134.48	7.18	150.00
Turbidity	(NTU)	Operational	95.0%	≤1	449	100.0%	0.29	0.10	0.48
Turbidity	(NTU)	Aesthetic	95.0%	≤5	449	100.0%	0.29	0.10	0.48
pH	(pH units)	Operational	95.0%	≥ 5 to ≤ 9.7	447	100.0%	7.81	0.17	8.40
<b>Chemical Properties</b>									
<b>Macro determinands</b>									
Ammonia	(mg / L as N)	Aesthetic	95.0%	≤1.5	451	100.0%	0.24	0.13	0.46
Chloride	(mg / L as Cl)	Aesthetic	95.0%	≤300	54	100.0%	10.24	1.06	13.00
Free chlorine (2)	(mg / L as Cl <sub>2</sub> )	Chronic health	97.0%	≤5	452	100.0%	0.10	0.18	1.01
Monochloramine (3)	(mg / L as Cl <sub>2</sub> )	Chronic health	97.0%	≤4.1	452	100.0%	1.03	0.49	1.76
Fluoride	(mg / L as F)	Chronic health	97.0%	≤1.5	54	100.0%	0.18	0.03	0.25
Nitrate	(mg / L as N)	Acute health	99.0%	≤11	451	100.0%	0.53	0.11	0.82
Nitrite	(mg / L as N)	Acute health	99.0%	≤0.9	451	99.6%	0.13	0.17	0.61
Combined nitrate plus nitrite (7)	(mg / L as N)	Acute health	99.0%	≤1	451	99.6%	0.19	0.19	0.71
Residual disinfectant (4)	(mg / L)	Operational	95.0%	≥0.1 Sum of Free and Monochloramine	452	98.2%	1.13	0.49	1.86
Sodium	(mg / L as Na)	Aesthetic	95.0%	≤200	57	100.0%	7.99	0.72	9.89
Sulphate	(mg / L as SO <sub>4</sub> )	Aesthetic	95.0%	≤250	54	100.0%	12.90	1.18	15.47
Sulphate	(mg / L as SO <sub>4</sub> )	Acute health	99.0%	≤500	54	100.0%	12.90	1.18	15.47
Zinc	(mg / L as Zn)	Aesthetic	95.0%	≤5	57	100.0%	0.02	0.00	0.03
<b>Micro determinands</b>									
Aluminium	(µg / L as Al)	Operational	95.0%	≤300	57	100.0%	39.35	11.04	60.44
Antimony	(µg / L as Sb)	Chronic health	97.0%	≤20	50	100.0%	0.50	0.01	0.55
Arsenic	(µg / L as As)	Chronic health	97.0%	≤10	53	100.0%	0.96	0.72	2.89
Barium	(µg / L as Ba)	Chronic health	97.0%	≤700	57	100.0%	33.04	5.20	45.28
Boron	(µg / L as B)	Chronic health	97.0%	≤2400	57	100.0%	25.00	0.00	25.00
Cadmium	(µg / L as Cd)	Chronic health	97.0%	≤3	53	100.0%	2.50	0.00	2.50
Chromium (Total)	(µg / L as Cr)	Chronic health	97.0%	≤50	57	100.0%	15.00	0.00	15.00
Copper	(µg / L as Cu)	Chronic health	97.0%	≤2000	57	100.0%	10.51	3.32	22.12
Cyanide (Recoverable)	(µg / L as CN)	Acute health	99.0%	≤200	54	100.0%	5.03	0.24	5.85
Iron	(µg / L as Fe)	Chronic health	97.0%	≤2000	57	100.0%	21.17	11.13	48.64
Iron	(µg / L as Fe)	Aesthetic	95.0%	≤300	57	100.0%	21.17	11.13	48.64
Lead	(µg / L as Pb)	Chronic health	97.0%	≤10	53	100.0%	0.31	0.50	2.40
Manganese	(µg / L as Mn)	Chronic health	97.0%	≤400	57	100.0%	10.09	0.47	12.44
Manganese	(µg / L as Mn)	Aesthetic	95.0%	≤100	57	100.0%	10.09	0.47	12.44
Mercury	(µg / L as Hg)	Chronic health	97.0%	≤6	52	100.0%	0.80	0.00	0.80
Nickel	(µg / L as Ni)	Chronic health	97.0%	≤70	57	100.0%	10.00	0.00	10.00
Selenium	(µg / L as Se)	Chronic health	97.0%	≤40	53	100.0%	0.91	0.99	5.22
Uranium	(µg / L as U)	Chronic health	97.0%	≤30	50	100.0%	0.26	0.27	1.48
<b>Organic determinands</b>									
Total Organic Carbon	(mg / L)	Chronic health	97.0%	≤10	54	100.0%	3.93	0.72	5.82
Phenols as C <sub>6</sub> H <sub>5</sub> OH	(µg / L)	Aesthetic	95.0%	≤10	32	100.0%	5.00	0.00	5.00
Chloroform - CHCl <sub>3</sub>	(µg / L)	Chronic health	97.0%	≤300	54	100.0%	49.07	6.81	64.41
Bromoform - CHBr <sub>3</sub>	(µg / L)	Chronic health	97.0%	≤100	54	100.0%	0.50	0.00	0.50
Dibromochloromethane - CHBr <sub>2</sub> Cl	(µg / L)	Chronic health	97.0%	≤100	54	100.0%	1.38	0.71	3.05
Bromodichloromethane - CHBrCl <sub>2</sub>	(µg / L)	Chronic health	97.0%	≤60	54	100.0%	14.30	1.94	18.00
Combined trihalomethanes (8)	(µg / L)	Chronic health	97.0%	≤1	54	100.0%	0.42	0.05	0.52
Total Microcystin (5)	(µg / L)	Chronic health	97.0%	≤1	179	100.0%	0.33	0.02	0.36
<b>For monitoring/reporting purposes only (6)</b>									
Calcium	(mg / L as Ca)	Aesthetic	not applicable	≤150	57	100.0%	16.91	2.44	22.88
Hardness	(mg / L as CaCO <sub>3</sub> )	Operational	not applicable	≥ 20 to ≤ 200	55	100.0%	61.62	7.20	78.84
Magnesium	(mg / L as Mg)	Aesthetic	not applicable	≤70	57	100.0%	5.55	0.54	6.58
Potassium	(mg / L as K)	Aesthetic	not applicable	≤50	57	100.0%	3.52	0.46	4.34
<b>Rand Water Risk Determinands (RWRD)</b>									
Odour	TON	RWRD	95.0%	≤2	238	100.0%	1.00	0.00	1.00
Taste	FTN	RWRD	95.0%	≤2	239	100.0%	1.00	0.00	1.00

Risk	Required compliance to SANS 241: 2015 standard	Overall Compliance-SANS 241
Acute health microbiological	99.00%	100.00%
Acute health chemical	99.00%	99.73%
Chronic health	97.00%	100.00%
Aesthetic	95.00%	100.00%
Operational	95.00%	99.74%

- 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) (NO<sub>2</sub>/0.9 + NO<sub>3</sub>/11)
  - (8) (CHCl<sub>3</sub>/300 + CHBr<sub>3</sub>/100 + CHBr<sub>2</sub>Cl/100 + CHBrCl<sub>2</sub>/60)