

Mogale 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
Microbiological determinands									
<i>E. coli</i>	(mpn per 100 mL)	Acute health	99.0%	0	598	100.0%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	95.0%	10	598	99.8%	0	8.22	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	95.0%	≤1000	591	100.0%	4	12.45	47
<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
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	95.0%	≤15	86	100.0%	5.05	0.21	6.00
Conductivity	(mS / m)	Aesthetic	95.0%	≤170	598	100.0%	18.77	1.84	23.03
Total Dissolved Solids	(mg / L)	Aesthetic	95.0%	≤1200	85	100.0%	131.69	15.71	153.00
Turbidity	(NTU)	Operational	95.0%	≤1	589	99.5%	0.30	0.29	0.49
Turbidity	(NTU)	Aesthetic	95.0%	≤5	589	99.8%	0.30	0.29	0.49
pH	(pH units)	Operational	95.0%	≥ 5 to ≤ 9.7	598	100.0%	7.88	0.14	8.21
Chemical Properties									
Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	95.0%	≤1.5	598	100.0%	0.33	0.12	0.50
Chloride	(mg / L as Cl)	Aesthetic	95.0%	≤300	93	100.0%	10.52	1.08	13.00
Free chlorine (2)	(mg / L as Cl ₂)	Chronic health	97.0%	≤5	598	100.0%	0.12	0.22	1.33
Monochloramine (3)	(mg / L as Cl ₂)	Chronic health	97.0%	≤4.1	598	100.0%	1.30	0.47	1.90
Fluoride	(mg / L as F)	Chronic health	97.0%	≤1.5	93	100.0%	0.20	0.05	0.37
Nitrate	(mg / L as N)	Acute health	99.0%	≤11	598	100.0%	0.52	0.13	0.90
Nitrite	(mg / L as N)	Acute health	99.0%	≤0.9	598	100.0%	0.05	0.07	0.40
Combined nitrate plus nitrite (7)	(mg / L as N)	Acute health	99.0%	≤1	597	100.0%	0.10	0.09	0.53
Residual disinfectant (4)	(mg / L)	Operational	95.0%	≥0.1 Sum of Free and Monochloramine	598	99.0%	1.42	0.45	2.05
Sodium	(mg / L as Na)	Aesthetic	95.0%	≤200	86	100.0%	8.04	0.75	9.81
Sulphate	(mg / L as SO ₄)	Aesthetic	95.0%	≤250	93	100.0%	13.11	1.29	17.00
Sulphate	(mg / L as SO ₄)	Acute health	99.0%	≤500	93	100.0%	13.11	1.29	17.00
Zinc	(mg / L as Zn)	Aesthetic	95.0%	≤5	86	100.0%	0.02	0.00	0.03
Micro determinands									
Aluminium	(µg / L as Al)	Operational	95.0%	≤300	86	100.0%	27.74	6.71	49.95
Antimony	(µg / L as Sb)	Chronic health	97.0%	≤20	78	100.0%	0.50	0.00	0.50
Arsenic	(µg / L as As)	Chronic health	97.0%	≤10	86	100.0%	0.80	0.46	1.50
Barium	(µg / L as Ba)	Chronic health	97.0%	≤700	85	100.0%	31.16	6.12	53.16
Boron	(µg / L as B)	Chronic health	97.0%	≤2400	86	100.0%	27.01	17.29	60.05
Cadmium	(µg / L as Cd)	Chronic health	97.0%	≤3	86	100.0%	2.50	0.00	2.50
Chromium (Total)	(µg / L as Cr)	Chronic health	97.0%	≤50	86	100.0%	15.00	0.00	15.00
Copper	(µg / L as Cu)	Chronic health	97.0%	≤2000	86	100.0%	10.19	1.01	16.15
Cyanide (Recoverable)	(µg / L as CN)	Acute health	99.0%	≤200	82	100.0%	5.06	0.31	6.68
Iron	(µg / L as Fe)	Chronic health	97.0%	≤2000	86	100.0%	27.30	33.53	155.75
Iron	(µg / L as Fe)	Aesthetic	95.0%	≤300	86	100.0%	27.30	33.53	155.75
Lead	(µg / L as Pb)	Chronic health	97.0%	≤10	86	100.0%	0.33	0.58	2.38
Manganese	(µg / L as Mn)	Chronic health	97.0%	≤400	86	100.0%	10.58	2.84	25.15
Manganese	(µg / L as Mn)	Aesthetic	95.0%	≤100	86	100.0%	10.58	2.84	25.15
Mercury	(µg / L as Hg)	Chronic health	97.0%	≤6	78	100.0%	0.80	0.00	0.80
Nickel	(µg / L as Ni)	Chronic health	97.0%	≤70	86	100.0%	10.00	0.00	10.00
Selenium	(µg / L as Se)	Chronic health	97.0%	≤40	86	100.0%	0.77	0.96	6.28
Uranium	(µg / L as U)	Chronic health	97.0%	≤30	78	100.0%	0.20	0.01	0.23
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	97.0%	≤10	87	100.0%	3.74	0.52	4.96
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	95.0%	≤10	86	100.0%	5.00	0.00	5.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	97.0%	≤300	86	100.0%	50.64	6.47	66.05
Bromoform - CHBr ₃	(µg / L)	Chronic health	97.0%	≤100	86	100.0%	0.50	0.00	0.50
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	97.0%	≤100	86	100.0%	1.27	0.72	3.00
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	97.0%	≤60	86	100.0%	14.00	1.54	17.00
Combined trihalomethanes (8)	(µg / L)	Chronic health	97.0%	≤1	86	100.0%	0.42	0.04	0.50
Total Microcystin (5)	(µg / L)	Chronic health	97.0%	≤1	179	100.0%	0.33	0.02	0.36
For monitoring/reporting purposes only (6)									
Calcium	(mg / L as Ca)	Aesthetic	not applicable	≤150	86	100.0%	16.99	2.70	23
Hardness	(mg / L as CaCO ₃)	Operational	not applicable	≥ 20 to ≤ 200	86	100.0%	61.59	7.63	78.00
Magnesium	(mg / L as Mg)	Aesthetic	not applicable	≤70	86	100.0%	5.52	0.44	6.22
Potassium	(mg / L as K)	Aesthetic	not applicable	≤50	86	100.0%	3.57	0.49	4.73
Rand Water Risk Determinands (RWRD)									
Odour	TON	RWRD	95.0%	≤2	362	100.0%	1.00	0.00	1.00
Taste	FTN	RWRD	95.0%	≤2	362	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%	100.00%
Chronic health	97.00%	100.00%
Aesthetic	95.00%	99.96%
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) (NO₂/0.9 + NO₃/11)
 - (8) (CHCl₃/300 + CHBr₃/100 + CHBr₂Cl/100 + CHBrCl₂/60)