

Mogale 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	574	100.0%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	95.0%	10	574	100.0%	0	0.17	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	95.0%	≤1000	567	100.0%	4	9.36	38
<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	82	100.0%	5.04	0.19	6.00
Conductivity	(mS / m)	Aesthetic	95.0%	≤1700	574	100.0%	18.18	1.95	23.00
Total Dissolved Solids	(mg / L)	Aesthetic	95.0%	≤1200	574	100.0%	129.61	11.39	157.70
Turbidity	(NTU)	Operational	95.0%	≤1	560	99.1%	0.29	0.31	0.49
Turbidity	(NTU)	Aesthetic	95.0%	≤5	560	99.8%	0.29	0.31	0.49
pH	(pH units)	Operational	95.0%	≥ 5 to ≤ 9.7	574	100.0%	7.94	0.17	8.31
Chemical Properties									
Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	95.0%	≤1.5	574	100.0%	0.29	0.12	0.50
Chloride	(mg / L as Cl)	Aesthetic	95.0%	≤300	89	100.0%	9.62	1.53	13.00
Free chlorine (2)	(mg / L as Cl ₂)	Chronic health	97.0%	≤5	574	100.0%	0.10	0.14	0.84
Monochloramine (3)	(mg / L as Cl ₂)	Chronic health	97.0%	≤4.1	574	100.0%	1.29	0.47	1.89
Fluoride	(mg / L as F)	Chronic health	97.0%	≤1.5	89	100.0%	0.19	0.06	0.38
Nitrate	(mg / L as N)	Acute health	99.0%	≤11	574	100.0%	0.52	0.17	0.91
Nitrite	(mg / L as N)	Acute health	99.0%	≤0.9	574	100.0%	0.05	0.07	0.41
Combined nitrate plus nitrite (7)	(mg / L as N)	Acute health	99.0%	≤1	574	100.0%	0.11	0.09	0.53
Residual disinfectant (4)	(mg / L)	Operational	95.0%	≥0.1 Sum of Free and Monochloramine	574	98.4%	1.38	0.47	2.00
Sodium	(mg / L as Na)	Aesthetic	95.0%	≤200	82	100.0%	7.47	1.02	9.79
Sulphate	(mg / L as SO ₄)	Aesthetic	95.0%	≤250	89	100.0%	12.08	2.06	17.00
Sulphate	(mg / L as SO ₄)	Acute health	99.0%	≤500	89	100.0%	12.08	2.06	17.00
Zinc	(mg / L as Zn)	Aesthetic	95.0%	≤5	82	100.0%	0.01	0.01	0.03
Micro determinands									
Aluminium	(µg / L as Al)	Operational	95.0%	≤300	82	100.0%	28.01	10.83	83.13
Antimony	(µg / L as Sb)	Chronic health	97.0%	≤20	82	100.0%	0.50	0.00	0.50
Arsenic	(µg / L as As)	Chronic health	97.0%	≤10	82	100.0%	0.73	0.45	1.42
Barium	(µg / L as Ba)	Chronic health	97.0%	≤700	81	100.0%	30.59	6.35	53.20
Boron	(µg / L as B)	Chronic health	97.0%	≤2400	82	100.0%	27.11	17.71	65.93
Cadmium	(µg / L as Cd)	Chronic health	97.0%	≤3	82	100.0%	2.50	0.00	2.50
Chromium (Total)	(µg / L as Cr)	Chronic health	97.0%	≤50	82	100.0%	15.00	0.00	15.00
Copper	(µg / L as Cu)	Chronic health	97.0%	≤2000	82	100.0%	10.22	1.08	16.19
Cyanide (Recoverable)	(µg / L as CN)	Acute health	99.0%	≤200	82	100.0%	5.02	0.20	5.50
Iron	(µg / L as Fe)	Chronic health	97.0%	≤2000	82	100.0%	23.20	20.85	96.23
Iron	(µg / L as Fe)	Aesthetic	95.0%	≤300	82	100.0%	23.20	20.85	96.23
Lead	(µg / L as Pb)	Chronic health	97.0%	≤10	82	100.0%	0.26	0.17	1.04
Manganese	(µg / L as Mn)	Chronic health	97.0%	≤400	82	100.0%	10.71	2.97	25.00
Manganese	(µg / L as Mn)	Aesthetic	95.0%	≤100	82	100.0%	10.71	2.97	25.00
Mercury	(µg / L as Hg)	Chronic health	97.0%	≤6	82	100.0%	0.80	0.00	0.80
Nickel	(µg / L as Ni)	Chronic health	97.0%	≤70	82	100.0%	10.00	0.00	10.00
Selenium	(µg / L as Se)	Chronic health	97.0%	≤40	82	100.0%	0.69	0.38	2.10
Uranium	(µg / L as U)	Chronic health	97.0%	≤30	82	100.0%	0.20	0.02	0.29
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	97.0%	≤10	83	100.0%	3.43	0.98	5.60
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	95.0%	≤10	82	100.0%	4.87	0.77	5.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	97.0%	≤300	82	100.0%	43.91	12.62	66.33
Bromoform - CHBr ₃	(µg / L)	Chronic health	97.0%	≤100	82	100.0%	0.50	0.00	0.50
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	97.0%	≤100	82	100.0%	1.74	0.99	4.22
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	97.0%	≤60	82	100.0%	13.00	2.27	17.00
Combined trihalomethanes (8)	(µg / L)	Chronic health	97.0%	≤1	82	100.0%	0.39	0.07	0.50
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	82	100.0%	16.96	2.29	23
Hardness	(mg / L as CaCO ₃)	Operational	not applicable	≥ 20 to ≤ 200	82	100.0%	60.98	6.43	77.62
Magnesium	(mg / L as Mg)	Aesthetic	not applicable	≤70	82	100.0%	5.37	0.58	6.22
Potassium	(mg / L as K)	Aesthetic	not applicable	≤50	82	100.0%	2.87	0.91	4.25
Rand Water Risk Determinands (RWRD)									
Odour	TON	RWRD	95.0%	≤2	350	100.0%	1.00	0.00	1.00
Taste	FTN	RWRD	95.0%	≤2	350	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%	99.97%
Operational	95.00%	99.62%

- 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)