

## Mogale Municipality Water Quality Report

22 June 2011 to 22 July 2011

Date generated : 01 August 2011

Parameter	Units of measure	Specifications (based on SANS241: 2005)		No of results	Achieved compliance levels	
		Required compliance			Class I	Class II
		95% min to Class I	99% min to Class II			
<b>SPECIFICATIONS</b>						
<b>Chemical and Physical properties</b>						
Colour	(mg / l as Pt)	< 20	≤ 50	17	100.0%	100.0%
Conductivity	(mS / m)	< 150	≤ 370	57	100.0%	100.0%
pH	(pH units)	≥ 5 to ≤ 9.5	≥ 4 to ≤ 10	57	100.0%	100.0%
Turbidity	(NTU)	< 1	≤ 5	129	100.0%	100.0%
Total Dissolved Solids	(mg / l)	< 1000	≤ 2400	17	100.0%	100.0%
Taste	(FTN)	< 5	≤ 10	17	100.0%	100.0%
Odour	(TON)	< 5	≤ 10	17	100.0%	100.0%
<b>Organic Determinants</b>						
Total Trihalomethanes	(ug / l)	< 200	≤ 300	17	100.0%	100.0%
Phenols as C6H5OH	(ug / l)	< 10	≤ 70	10	100.0%	100.0%
Dissolved Organic Carbon	(mg / l)	< 10	≤ 20	17	100.0%	100.0%
<b>Micro Elements</b>						
Antimony	(ug / l as Sb)	< 10	≤ 50	17	100.0%	100.0%
Arsenic	(ug / l as As)	< 10	≤ 50	17	100.0%	100.0%
Cadmium	(ug / l as Cd)	< 5	≤ 10	17	100.0%	100.0%
Chromium (Total)	(ug / l as Cr)	< 100	≤ 500	17	100.0%	100.0%
Cobalt	(ug / l as Co)	< 500	≤ 1000	17	100.0%	100.0%
Cyanide (Recoverable)	(ug / l as CN)	< 50	≤ 70	17	100.0%	100.0%
Lead	(ug / l as Pb)	< 20	≤ 50	17	100.0%	100.0%
Mercury	(ug / l as Hg)	< 1	≤ 5	17	100.0%	100.0%
Nickel	(ug / l as Ni)	< 150	≤ 350	17	100.0%	100.0%
Selenium	(ug / l as Se)	< 20	≤ 50	17	100.0%	100.0%
Vanadium	(ug / l as V)	< 200	≤ 500	17	100.0%	100.0%
<b>Macro Elements &amp; Miscellaneous Determinants</b>						
Aluminium	(mg / l as Al)	< 0.3	≤ 0.5	17	100.0%	100.0%
Ammonia	(mg / l as N)	< 1	≤ 2	17	100.0%	100.0%
Calcium	(mg / l as Ca)	< 150	≤ 300	17	100.0%	100.0%
Chloride	(mg / l as Cl)	< 200	≤ 600	10	100.0%	100.0%
Copper	(mg / l as Cu)	< 1	≤ 2	17	100.0%	100.0%
Fluoride	(mg / l as F)	< 1	≤ 1.5	10	100.0%	100.0%
Iron	(mg / l as Fe)	< 0.2	≤ 2	17	100.0%	100.0%
Magnesium	(mg / l as Mg)	< 70	≤ 100	17	100.0%	100.0%
Manganese	(mg / l as Mn)	< 0.1	≤ 1	17	100.0%	100.0%
Nitrate & Nitrite	(mg / l as N)	< 10	≤ 20	17	100.0%	100.0%
Potassium	(mg / l as K)	< 50	≤ 100	17	100.0%	100.0%
Sodium	(mg / l as Na)	< 200	≤ 400	17	100.0%	100.0%
Sulphate	(mg / l as SO4)	< 400	≤ 600	10	100.0%	100.0%
Zinc	( mg / l as Zn)	< 5	≤ 10	17	100.0%	100.0%
<b>Microbiological</b>						
E. Coli	(cfu per 100 ml)	minimum of 95% of the original results shall be non-detected	minimum of 99% of the original and repeat/consecutive results shall be non-detected	129	100.0%	100.0%
<b>Other Determinants as required by supply contract</b>						
Free chlorine and monochloramine	(mg / l)	≥ 0.2 min 95% compliance		129	93.8%	
<b>Notes :</b>						
(1) Specification date of effect : July 2006						
(2) Guideline derived from SANS 241: 2005 operations alert and industry practices						

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Parameter	Units of measure	Specification	No of samples	Mean - 3 SD	Mean - 1 SD	Mean	Mean + 1 SD	Mean + 3 SD	Standard Deviation
<b>Chemical and Physical properties</b>									
Colour	(mg / l as Pt)	< 20	17	5.00	5.00	5.00	5.00	5.00	0.00
Conductivity	(mS / m)	< 150	57	17.00	18.74	23.09	27.44	35.00	4.35
pH	(pH units)	≥ 5 to ≤ 9.5	57	7.09	7.37	7.59	7.81	8.08	0.22
Turbidity	(NTU)	< 1	129	0.20	0.24	0.30	0.36	0.44	0.06
Total Dissolved Solids	(mg / l)	< 1000	17	135.00	138.65	159.41	180.17	195.00	20.76
Hardness	(mg / l as CaCO <sub>3</sub> )	> 20 to < 200	17	57.00	67.51	83.35	99.19	115.00	15.84
Taste	(FTN)	< 5	17	1.00	1.00	1.00	1.00	1.00	0.00
Odour	(TON)	< 5	17	1.00	1.00	1.00	1.00	1.00	0.00
<b>Organic Determinants</b>									
Total Trihalomethanes	(ug / l)	< 200	17	42.43	52.40	62.86	73.32	78.81	10.46
Phenols as C <sub>6</sub> H <sub>5</sub> OH	(ug / l)	< 10	10	1.50	1.72	2.57	3.42	4.50	0.85
Dissolved Organic Carbon	(mg / l)	< 10	17	4.90	5.03	5.19	5.35	5.50	0.16
<b>Micro Elements</b>									
Antimony	(ug / l as Sb)	< 10	17	1.00	1.00	1.00	1.00	1.00	0.00
Arsenic	(ug / l as As)	< 10	17	1.00	1.00	1.12	1.45	2.00	0.33
Cadmium	(ug / l as Cd)	< 5	17	1.25	1.25	1.25	1.25	1.25	0.00
Chromium (Total)	(ug / l as Cr)	< 100	17	5.00	5.00	6.18	8.36	10.00	2.19
Cobalt	(ug / l as Co)	< 500	17	7.50	7.50	7.50	7.50	7.50	0.00
Cyanide (Recoverable)	(ug / l as CN)	< 50	17	5.00	5.00	5.00	5.00	5.00	0.00
Lead	(ug / l as Pb)	< 20	17	4.00	4.00	4.00	4.00	4.00	0.00
Mercury	(ug / l as Hg)	< 1	17	0.40	0.40	0.40	0.40	0.40	0.00
Nickel	(ug / l as Ni)	< 150	17	7.50	7.50	7.50	7.50	7.50	0.00
Selenium	(ug / l as Se)	< 20	17	1.00	1.00	1.00	1.00	1.00	0.00
Vanadium	(ug / l as V)	< 200	17	15.00	15.00	15.00	15.00	15.00	0.00
<b>Macro Elements &amp; Miscellaneous Determinants</b>									
Aluminium	(mg / l as Al)	< 0.3	17	0.005	0.008	0.020	0.033	0.040	0.013
Ammonia	(mg / l as N)	< 1	17	0.122	0.122	0.161	0.256	0.446	0.095
Calcium	(mg / l as Ca)	< 150	17	15.000	16.087	23.941	31.795	39.000	7.854
Chloride	(mg / l as Cl)	< 200	10	11.000	11.084	11.600	12.000	12.000	0.516
Copper	(mg / l as Cu)	< 1	17	0.005	0.005	0.008	0.013	0.020	0.005
Fluoride	(mg / l as F)	< 1	10	0.180	0.180	0.183	0.188	0.190	0.005
Iron	(mg / l as Fe)	< 0.2	17	0.003	0.009	0.037	0.065	0.090	0.028
Magnesium	(mg / l as Mg)	< 70	17	3.800	3.800	5.635	7.966	9.800	2.331
Manganese	(mg / l as Mn)	< 0.1	17	0.002	0.002	0.004	0.007	0.010	0.004
Nitrate & Nitrite	(mg / l as N)	< 10	17	0.010	0.010	0.420	0.871	1.772	0.451
Potassium	(mg / l as K)	< 50	17	0.155	0.671	1.485	2.299	3.000	0.814
Sodium	(mg / l as Na)	< 200	17	6.200	6.381	7.188	7.995	8.600	0.807
Sulphate	(mg / l as SO <sub>4</sub> )	< 400	10	13.000	13.751	14.700	15.649	16.000	0.949
Zinc	( mg / l as Zn)	< 5	17	0.004	0.004	0.019	0.044	0.070	0.025
<b>Microbiological</b>									
E. Coli	(cfu per 100 ml)	minimum of 95% of the original results shall be non-detected	129	0.0	0.0	0	0.0	0.0	0.0
<b>Other Determinants as required by supply contract</b>									
Free chlorine and monochloramine	(mg / l)	≥ 0.2 min 95% compliance	129	0.04	0.44	0.96	1.48	1.98	0.52
Notes :									
(1) Specification date of effect : July 2006									
(2) Guideline derived from SANS 241: 2005 operations alert and industry practices									