



**RAND WATER**  
Mogale Water Quality Report  
1 Month

22 May 2021 to 21 June 2021

Date generated: 13 July 2021

							Descriptive Statistics		
Determinands	Measurement Units	Risks	SANS 241:2015 standard limits (1)	No of results	Required compliances to SANS 241:2015 spec(%)	Achieved compliances to SANS 241:2015 spec(%)	Mean	Standard Deviation	Mean + 3 Std deviations
<b>Microbiological determinands</b>									
<i>E. coli</i>	(mpn per 100 mL)	Acute health	Non-detect	38	99.0%	100%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	38	95.0%	100%	0	0.00	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	38	95.0%	100%	3	8.68	29
<i>Cryptosporidium spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	no data	99.0%	no data	.	no data	.
<i>Giardia spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	no data	99.0%	no data	.	no data	.
Somatic Coliphages (2)	(count per 10 mL)	Operational	Non-detect	64	95.0%	100%	0	0.00	0
<b>Physical and Aesthetic determinands</b>									
Colour	(mg / L as Pt-Co)	Aesthetic	≤ 15	7	95.0%	100%	10.14	2.48	17.58
Conductivity	(mS / m)	Aesthetic	≤ 170	38	95.0%	100%	23.34	1.70	28.43
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	7	95.0%	100%	163.57	16.26	212.34
Turbidity	(NTU)	Operational	≤ 1	38	95.0%	100%	0.29	0.04	0.40
Turbidity	(NTU)	Aesthetic	≤ 5	38	95.0%	100%	0.29	0.04	0.40
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	38	95.0%	100%	7.90	0.12	8.26
<b>Chemical Properties: Macro determinands</b>									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	38	95.0%	100%	0.37	0.07	0.58
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	7	95.0%	100%	17.57	1.40	21.76
Free chlorine	(mg / L as Cl <sub>2</sub> )	Chronic health	≤ 5	38	97.0%	100%	0.07	0.02	0.13
Monochloramine	(mg / L as Cl <sub>2</sub> )	Chronic health	≤ 4.1	38	97.0%	100%	1.53	0.37	2.65
Fluoride	(mg / L as F)	Chronic health	≤ 1.5	7	97.0%	100%	0.47	0.04	0.58
Nitrate	(mg / L as N)	Acute health	≤ 11	38	99.0%	100%	0.64	0.16	1.12
Nitrite	(mg / L as N)	Acute health	≤ 0.9	38	99.0%	100%	0.04	0.02	0.10
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	38	99.0%	100%	0.10	0.03	0.20
Residual disinfectant (4)	(mg / L as Cl <sub>2</sub> )	Operational	≥ 0.1	38	95.0%	100%	1.59	0.38	2.73
Sodium	(mg / L as Na)	Aesthetic	≤ 200	7	95.0%	100%	12.57	0.53	14.18
Sulphate	(mg / L as SO <sub>4</sub> )	Aesthetic	≤ 250	7	95.0%	100%	22.00	1.41	26.24
Sulphate	(mg / L as SO <sub>4</sub> )	Acute health	≤ 500	7	99.0%	100%	22.00	1.41	26.24
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	7	95.0%	100%	0.02	0.01	0.05
<b>Chemical Properties: Micro determinands</b>									
Aluminium	(µg / L as Al)	Operational	≤ 300	7	95.0%	100%	50.00	0.00	50.00
Antimony	(µg / L as Sb)	Chronic health	≤ 20	7	97.0%	100%	0.33	0.08	0.56
Arsenic	(µg / L as As)	Chronic health	≤ 10	7	97.0%	100%	8.00	0.00	8.00
Barium	(µg / L as Ba)	Chronic health	≤ 700	7	97.0%	100%	39.00	3.65	49.95
Boron	(µg / L as B)	Chronic health	≤ 2400	7	97.0%	100%	9.21	1.67	14.23
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	7	97.0%	100%	1.50	0.00	1.50
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	7	97.0%	100%	5.00	0.00	5.00
Copper	(µg / L as Cu)	Chronic health	≤ 2000	7	97.0%	100%	8.00	0.00	8.00
Cyanide (Recoverable)	(µg / L as CN)	Acute health	≤ 200	7	99.0%	100%	5.00	0.00	5.00
Iron	(µg / L as Fe)	Chronic health	≤ 2000	7	97.0%	100%	32.43	17.23	84.13
Iron	(µg / L as Fe)	Aesthetic	≤ 300	7	95.0%	100%	32.43	17.23	84.13
Lead	(µg / L as Pb)	Chronic health	≤ 10	7	97.0%	100%	8.00	0.00	8.00
Manganese	(µg / L as Mn)	Chronic health	≤ 400	7	97.0%	100%	3.00	0.00	3.00
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	7	95.0%	100%	3.00	0.00	3.00
Mercury	(µg / L as Hg)	Chronic health	≤ 6	7	97.0%	100%	1.50	0.00	1.50
Nickel	(µg / L as Ni)	Chronic health	≤ 70	7	97.0%	100%	5.00	0.00	5.00
Selenium	(µg / L as Se)	Chronic health	≤ 40	7	97.0%	100%	8.00	0.00	8.00
Uranium	(µg / L as U)	Chronic health	≤ 30	7	97.0%	100%	0.48	0.98	3.42
<b>Organic determinands</b>									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	6	97.0%	100%	5.10	0.06	5.29
Phenols as C <sub>6</sub> H <sub>5</sub> OH	(µg / L)	Aesthetic	≤ 10	7	95.0%	100%	2.50	0.00	2.50
Chloroform - CHCl <sub>3</sub>	(µg / L)	Chronic health	≤ 300	7	97.0%	100%	105.43	6.37	124.55
Bromoform - CHBr <sub>3</sub>	(µg / L)	Chronic health	≤ 100	7	97.0%	100%	10.00	0.00	10.00
Dibromochloromethane - CHBr <sub>2</sub> Cl	(µg / L)	Chronic health	≤ 100	7	97.0%	100%	10.00	0.00	10.00
Bromodichloromethane - CHBrCl <sub>2</sub>	(µg / L)	Chronic health	≤ 60	7	97.0%	100%	21.57	1.27	25.39
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	7	97.0%	100%	0.71	0.03	0.79
Total Microcystin (2)	(µg / L)	Chronic health	≤ 1	17	97.0%	100%	0.31	0.00	0.31
<b>For monitoring/reporting purposes only</b>									
Calcium (6)	(mg / L as Ca)	Aesthetic	≤ 150	7	not applicable	100%	17.86	0.90	20.56
Hardness (7)	(mg / L as CaCO <sub>3</sub> )	Operational	≥ 20 to ≤ 200	7	not applicable	100%	70.86	2.97	79.76
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	7	not applicable	100%	7.53	0.22	8.19
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	7	not applicable	100%	4.67	0.20	5.26
<b>Rand Water Risk Determinands (RWRD) (6)</b>									
Odour	TON	RWRD	≤ 2	23	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	23	not applicable	100%	1.00	0.00	1.00

Risks	Required compliances to SANS 241: 2015 standard	Overall Compliances - SANS 241: 2015 standard
Acute health microbiological	99.0%	100%
Acute health chemical	99.0%	100%
Chronic health	97.0%	100%
Aesthetic	95.0%	100%
Operational	95.0%	100%

Notes  
 (1) Specification SANS 241 date of effect : 1 July 2016  
 (2) Measured at water treatment works exit points  
 (3) (NO<sub>2</sub>/0.9 + NO<sub>3</sub>/11)  
 (4) Residual disinfectant : Results from the chloraminated system = Sum of Free and Monochloramine  
 (5) (CHCl<sub>3</sub>/300 + CHBr<sub>3</sub>/100 + CHBr<sub>2</sub>Cl/100 + CHBrCl<sub>2</sub>/60)  
 (6) Customer request: Results not included in the risk indices compliance calculations and limits based on SANS 241:2006  
 (7) Customer request: Results not included in the risk indices compliance calculations and limits based on RW Internal Spec  
 \*\*\*\* Determinands with no data are due to instrument breakdown\*\*\*\*