



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

23 October 2020 to 20 November 2020

Date generated: 04 December 2020

							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	43	99.0%	100%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	43	95.0%	100%	0	0.00	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	43	95.0%	100%	8	21.10	71
<i>Cryptosporidium spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	16	99.0%	100%	0	0.00	0
<i>Giardia spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	16	99.0%	100%	0	0.00	0
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%	5.71	0.49	7.18
Conductivity	(mS / m)	Aesthetic	≤ 170	43	95.0%	100%	21.07	2.41	28.31
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	7	95.0%	100%	141.43	6.27	160.23
Turbidity	(NTU)	Operational	≤ 1	43	95.0%	100%	0.25	0.00	0.25
Turbidity	(NTU)	Aesthetic	≤ 5	43	95.0%	100%	0.25	0.00	0.25
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	43	95.0%	100%	8.07	0.11	8.40
<b>Chemical Properties: Macro determinands</b>									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	43	95.0%	100%	0.32	0.12	0.69
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	7	95.0%	100%	11.39	2.25	18.12
Free chlorine	(mg / L as Cl <sub>2</sub> )	Chronic health	≤ 5	43	97.0%	100%	0.07	0.02	0.13
Monochloramine	(mg / L as Cl <sub>2</sub> )	Chronic health	≤ 4.1	43	97.0%	100%	1.30	0.34	2.31
Fluoride	(mg / L as F)	Chronic health	≤ 1.5	7	97.0%	100%	0.25	0.07	0.45
Nitrate	(mg / L as N)	Acute health	≤ 11	43	99.0%	100%	0.55	0.06	0.72
Nitrite	(mg / L as N)	Acute health	≤ 0.9	43	99.0%	100%	0.21	0.26	0.99
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	43	99.0%	100%	0.28	0.29	1.15
Residual disinfectant (4)	(mg / L as Cl <sub>2</sub> )	Operational	≥ 0.1	43	95.0%	100%	1.37	0.35	2.41
Sodium	(mg / L as Na)	Aesthetic	≤ 200	6	95.0%	100%	8.33	1.81	13.75
Sulphate	(mg / L as SO <sub>4</sub> )	Aesthetic	≤ 250	7	95.0%	100%	16.00	2.52	23.55
Sulphate	(mg / L as SO <sub>4</sub> )	Acute health	≤ 500	7	99.0%	100%	16.00	2.52	23.55
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	7	95.0%	100%	0.01	0.02	0.06
<b>Chemical Properties: Micro determinands</b>									
Aluminium	(µg / L as Al)	Operational	≤ 300	7	95.0%	100%	32.57	11.13	65.97
Antimony	(µg / L as Sb)	Chronic health	≤ 20	7	97.0%	100%	0.62	0.03	0.72
Arsenic	(µg / L as As)	Chronic health	≤ 10	6	97.0%	100%	0.80	0.00	0.80
Barium	(µg / L as Ba)	Chronic health	≤ 700	7	97.0%	100%	54.86	55.19	220.43
Boron	(µg / L as B)	Chronic health	≤ 2400	7	97.0%	100%	7.71	16.44	57.04
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	7	97.0%	100%	1.00	0.00	1.00
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	6	97.0%	100%	0.50	0.00	0.50
Copper	(µg / L as Cu)	Chronic health	≤ 2000	7	97.0%	100%	11.50	17.75	64.74
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%	100.71	1.89	106.38
Iron	(µg / L as Fe)	Aesthetic	≤ 300	7	95.0%	100%	100.71	1.89	106.38
Lead	(µg / L as Pb)	Chronic health	≤ 10	6	97.0%	100%	2.00	0.00	2.00
Manganese	(µg / L as Mn)	Chronic health	≤ 400	6	97.0%	100%	5.62	4.96	20.49
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	6	95.0%	100%	5.62	4.96	20.49
Mercury	(µg / L as Hg)	Chronic health	≤ 6	6	97.0%	100%	0.80	0.00	0.80
Nickel	(µg / L as Ni)	Chronic health	≤ 70	6	97.0%	100%	3.00	0.00	3.00
Selenium	(µg / L as Se)	Chronic health	≤ 40	6	97.0%	100%	4.00	0.00	4.00
Uranium	(µg / L as U)	Chronic health	≤ 30	7	97.0%	100%	1.10	0.78	3.45
<b>Organic determinands</b>									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	7	97.0%	100%	2.76	0.17	3.27
Phenols as C <sub>6</sub> H <sub>5</sub> OH	(µg / L)	Aesthetic	≤ 10	7	95.0%	100%	3.00	0.00	3.00
Chloroform - CHCl <sub>3</sub>	(µg / L)	Chronic health	≤ 300	7	97.0%	100%	35.57	2.57	43.29
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%	14.14	0.38	15.28
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	7	97.0%	100%	0.38	0.01	0.42
Total Microcystin (2)	(µg / L)	Chronic health	≤ 1	7	97.0%	100%	0.31	0.00	0.31
<b>For monitoring/reporting purposes only</b>									
Calcium (6)	(mg / L as Ca)	Aesthetic	≤ 150	6	not applicable	100%	20.50	3.15	29.94
Hardness (7)	(mg / L as CaCO <sub>3</sub> )	Operational	≥ 20 to ≤ 200	6	not applicable	100%	79.50	12.08	115.74
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	6	not applicable	100%	6.88	0.99	9.86
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	6	not applicable	100%	3.27	0.56	4.96
<b>Rand Water Risk Determinands (RWRD) (6)</b>									
Odour	TON	RWRD	≤ 2	27	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	27	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\*\*\*\*