



RAND WATER
Mogale Water Quality Report
1 Month

20 February 2021 to 22 March 2021

Date generated: 08 April 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
Microbiological determinands									
<i>E. coli</i>	(mpn per 100 mL)	Acute health	Non-detect	37	99.0%	100%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	37	95.0%	100%	0	0.00	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	37	95.0%	100%	26	51.66	181
<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
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	≤ 15	5	95.0%	100%	7.00	0.00	7.00
Conductivity	(mS / m)	Aesthetic	≤ 170	37	95.0%	100%	23.22	1.72	28.37
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	5	95.0%	100%	162.00	2.74	170.22
Turbidity	(NTU)	Operational	≤ 1	37	95.0%	100%	0.33	0.05	0.47
Turbidity	(NTU)	Aesthetic	≤ 5	37	95.0%	100%	0.33	0.05	0.47
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	36	95.0%	100%	7.84	0.13	8.24
Chemical Properties: Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	37	95.0%	100%	0.32	0.15	0.78
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	5	95.0%	100%	18.40	0.55	20.04
Free chlorine	(mg / L as Cl ₂)	Chronic health	≤ 5	37	97.0%	100%	0.07	0.02	0.13
Monochloramine	(mg / L as Cl ₂)	Chronic health	≤ 4.1	37	97.0%	100%	0.96	0.57	2.66
Fluoride	(mg / L as F)	Chronic health	≤ 1.5	5	97.0%	100%	0.34	0.03	0.42
Nitrate	(mg / L as N)	Acute health	≤ 11	37	99.0%	100%	0.98	0.18	1.51
Nitrite	(mg / L as N)	Acute health	≤ 0.9	37	99.0%	100%	0.10	0.11	0.43
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	34	99.0%	100%	0.25	0.20	0.85
Residual disinfectant (4)	(mg / L as Cl ₂)	Operational	≥ 0.1	37	95.0%	91.89%	1.02	0.58	2.76
Sodium	(mg / L as Na)	Aesthetic	≤ 200	5	95.0%	100%	11.18	4.79	25.57
Sulphate	(mg / L as SO ₄)	Aesthetic	≤ 250	5	95.0%	100%	19.60	0.55	21.24
Sulphate	(mg / L as SO ₄)	Acute health	≤ 500	5	99.0%	100%	19.60	0.55	21.24
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	5	95.0%	100%	0.01	0.00	0.02
Chemical Properties: Micro determinands									
Aluminium	(µg / L as Al)	Operational	≤ 300	5	95.0%	100%	13.36	8.38	38.49
Antimony	(µg / L as Sb)	Chronic health	≤ 20	5	97.0%	100%	0.63	0.07	0.85
Arsenic	(µg / L as As)	Chronic health	≤ 10	5	97.0%	100%	0.82	0.03	0.89
Barium	(µg / L as Ba)	Chronic health	≤ 700	5	97.0%	100%	43.00	8.51	68.54
Boron	(µg / L as B)	Chronic health	≤ 2400	5	97.0%	100%	2.20	0.99	5.17
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	5	97.0%	100%	1.00	0.00	1.00
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	5	97.0%	100%	0.50	0.00	0.50
Copper	(µg / L as Cu)	Chronic health	≤ 2000	5	97.0%	100%	11.58	6.84	32.09
Cyanide (Recoverable)	(µg / L as CN)	Acute health	≤ 200	5	99.0%	100%	6.40	3.13	15.79
Iron	(µg / L as Fe)	Chronic health	≤ 2000	5	97.0%	100%	100.00	0.00	100.00
Iron	(µg / L as Fe)	Aesthetic	≤ 300	5	95.0%	100%	100.00	0.00	100.00
Lead	(µg / L as Pb)	Chronic health	≤ 10	5	97.0%	100%	2.00	0.00	2.00
Manganese	(µg / L as Mn)	Chronic health	≤ 400	5	97.0%	100%	4.40	5.37	20.50
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	5	95.0%	100%	4.40	5.37	20.50
Mercury	(µg / L as Hg)	Chronic health	≤ 6	5	97.0%	100%	0.80	0.00	0.80
Nickel	(µg / L as Ni)	Chronic health	≤ 70	5	97.0%	100%	3.00	0.00	3.00
Selenium	(µg / L as Se)	Chronic health	≤ 40	5	97.0%	100%	4.00	0.00	4.00
Uranium	(µg / L as U)	Chronic health	≤ 30	5	97.0%	100%	0.50	0.00	0.50
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	5	97.0%	100%	5.64	0.65	7.59
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	≤ 10	5	95.0%	100%	3.00	0.00	3.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	≤ 300	5	97.0%	100%	134.00	19.17	191.51
Bromoform - CHBr ₃	(µg / L)	Chronic health	≤ 100	5	97.0%	100%	10.00	0.00	10.00
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	≤ 100	5	97.0%	100%	10.00	0.00	10.00
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	≤ 60	5	97.0%	100%	19.80	0.45	21.14
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	5	97.0%	100%	0.79	0.05	0.94
Total Microcystin (2)	(µg / L)	Chronic health	≤ 1	4	97.0%	100%	0.31	0.00	0.31
For monitoring/reporting purposes only									
Calcium (6)	(mg / L as Ca)	Aesthetic	≤ 150	5	not applicable	100%	21.40	8.59	47.17
Hardness (7)	(mg / L as CaCO ₃)	Operational	≥ 20 to ≤ 200	5	not applicable	100%	83.60	33.95	185.44
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	5	not applicable	100%	7.38	3.00	16.38
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	5	not applicable	100%	4.40	2.10	10.71
Rand Water Risk Determinands (RWRD) (6)									
Odour	TON	RWRD	≤ 2	24	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	24	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%	98.81%

Notes
 (1) Specification SANS 241 date of effect : 1 July 2016
 (2) Measured at water treatment works exit points
 (3) (NO₂/0.9 + NO₃/11)
 (4) Residual disinfectant : Results from the chloraminated system = Sum of Free and Monochloramine
 (5) (CHCl₃/300 + CHBr₃/100 + CHBr₂Cl/100 + CHBrCl₂/60)
 (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****