RAND WATER

Reports for Rustenburg - Rand Water Supply

21 November 2015 to 22 December 2015

Date generated : 05 January 2016

Report compiled by Mighty Mohotsi
Water Quality Information Management

Rustenburg - Rand Water Supply Water Quality Report

21 November 2015 to 22 December 2015 — **Date generated : 05 January 2016**

Parameter	Units of measure	Specifications (based on SANS241: 2005)		No of results	Achieved compliance levels	
		Required compliance				
		95% min to Class I	99% min to Class II		Class I	Class II
SPECIFICATIONS						
Chemical and Physical properties						
Colour	(mg / l as Pt)	< 20	≤ 50	12	100.0%	100.0%
Conductivity	(mS / m)	< 150	≤ 370	23	100.0%	100.0%
pH	(pH units)	≥ 5 to ≤ 9.5	≥ 4 to ≤ 10	23	100.0%	100.0%
Turbidity	(NTU)	< 1	≤ 5	23	100.0%	100.0%
Total Dissolved Solids	(mg / l)	< 1000	≤ 2400	23	100.0%	100.0%
Taste	(FTN)	< 5	≤ 10	12	100.0%	100.0%
Odour	(TON)	< 5	≤ 10	12	100.0%	100.0%
Organic Determinants						
Total Trihalomethanes	(ug / l)	< 200	≤ 300	12	100.0%	100.0%
Phenols as C6H5OH	(ug / l)	< 10	≤ 70	8	100.0%	100.0%
Dissolved Organic Carbon	(mg / l)	< 10	≤ 20	12	100.0%	100.0%
Micro Elements						
Antimony	(µg / l as Sb)	< 10	≤ 50	14	100.0%	100.0%
Arsenic	(µg / l as As)	< 10	≤ 50	14	100.0%	100.0%
Cadmium	(µg / l as Cd)	< 5	≤ 10	14	100.0%	100.0%
Chromium (Total)	(µg / l as Cr)	< 100	≤ 500	14	100.0%	100.0%
Cobalt	(µg / l as Co)	< 500	≤ 1000	14	100.0%	100.0%
Cyanide (Recoverable)	(µg / l as CN)	< 50	≤ 70	10	100.0%	100.0%
Lead	(µg / l as Pb)	< 20	≤ 50	14	100.0%	100.0%
Mercury	(µg / l as Hg)	< 1	≤ 5	14	100.0%	100.0%
Nickel	(µg / l as Ni)	< 150	≤ 350	14	100.0%	100.0%
Selenium	(µg / l as Se)	< 20	≤ 50	14	100.0%	100.0%
Vanadium	(µg / l as V)	< 200	≤ 500	14	100.0%	100.0%
Macro Elements & Miscellaneous Determinants						
Aluminium	(mg / l as Al)	< 0.3	≤ 0.5	14	100.0%	100.0%
Ammonia	(mg / l as N)	< 1	≤ 2	17	100.0%	100.0%
Calcium	(mg / l as Ca)	< 150	≤ 300	14	100.0%	100.0%
Chloride	(mg / l as Cl)	< 200	≤ 600	14	100.0%	100.0%
Copper	(mg / l as Cu)	< 1	≤ 2	14	100.0%	100.0%
Fluoride	(mg / l as F)	< 1	≤ 1.5	14	100.0%	100.0%
Iron	(mg / l as Fe)	< 0.2	≤ 2	14	100.0%	100.0%
Magnesium	(mg / l as Mg)	< 70	≤ 100	14	100.0%	100.0%
Manganese	(mg / l as Mn)	< 0.1	≤ 1	14	100.0%	100.0%
Nitrate & Nitrite	(mg / l as N)	< 10	≤ 20	17	100.0%	100.0%
Potassium	(mg / l as K)	< 50	≤ 100	14	100.0%	100.0%
Sodium	(mg / l as Na)	< 200	≤ 400	14	100.0%	100.0%
Sulphate	(mg / l as SO4)	< 400	≤ 600	14	100.0%	100.0%
Zinc	(mg / l as Zn)	< 5	≤ 10	14	100.0%	100.0%
Microbiological						
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	23	100.0%	100.0%
Other Determinants as required by supply contract (3),(4)						
Free chlorine and monochloramine	(mg / l)	Chloraminated system: ≥ 0.1 min 95% compliance; Chlorinated system: ≥ 0.2 min 95% compliance		23	100.0%	

Notes :

(1) Specification date of effect : July 2006

(2) Guideline derived from SANS 241: 2005 operations alert and industry practices

(3) Complince for Free and monochloramine is against 0.2 mg/l for areas in the chlorinated system

(4) Compliance for Free and monochloramine is against 0.1 mg/l for areas in the chloraminated system after 30 June 2014

(5) Compliance for Standard Plate Count is against 100 cfu per 1ml before 30 June 2014 and 500 cfu per 1ml after 30 June 2014 mg/l for areas in the chloraminated system

Rustenburg - Rand Water Supply Water Quality Report

21 November 2015 to 22 December 2015 **Date generated : 05 January 2016**

Parameter	Units of measure	Specification	No of samples	Mean - 3 SD	Mean - 1 SD	Mean	Mean + 1 SD	Mean + 3 SD	Standard Deviation
Chemical and Physical properties									
Colour	(mg / l as Pt)	< 20	12	5.00	5.00	5.00	5.00	5.00	0.00
Conductivity	(mS / m)	< 150	23	20.00	20.12	21.26	22.40	24.67	1.14
pH	(pH units)	≥ 5 to ≤ 9.5	23	7.62	7.86	8.02	8.17	8.19	0.16
Turbidity	(NTU)	< 1	23	0.13	0.20	0.28	0.36	0.41	0.08
Total Dissolved Solids	(mg / l)	< 1000	23	140.00	140.00	146.74	153.58	167.27	6.84
Hardness	(mg / l as CaCO3)	> 20 to < 200	14	64.00	65.76	70.21	74.67	79.00	4.46
Taste	(FTN)	< 5	12	1.00	1.00	1.00	1.00	1.00	0.00
Odour	(TON)	< 5	12	1.00	1.00	1.00	1.00	1.00	0.00
Organic Determinants									
Total Trihalomethanes	(ug / l)	< 200	12	27.00	28.40	34.25	40.10	47.00	5.85
Phenols as C6H5OH	(ug / l)	< 10	8	2.50	2.50	2.50	2.50	2.50	0.00
Dissolved Organic Carbon	(mg / l)	< 10	12	3.50	3.67	3.86	4.05	4.10	0.19
Micro Elements									
Antimony	(µg / l as Sb)	< 10	14	0.25	0.25	0.25	0.25	0.25	0.00
Arsenic	(µg / l as As)	< 10	14	0.05	0.23	0.60	0.97	1.10	0.37
Cadmium	(µg / l as Cd)	< 5	14	1.25	1.25	1.25	1.25	1.25	0.00
Chromium (Total)	(µg / l as Cr)	< 100	14	7.50	7.50	7.50	7.50	7.50	0.00
Cobalt	(µg / l as Co)	< 500	14	5.00	5.00	5.00	5.00	5.00	0.00
Cyanide (Recoverable)	(µg / l as CN)	< 50	10	2.50	2.50	1.00	12.77	24.00	6.95
Lead	(µg / l as Pb)	< 20	14	0.10	0.10	0.10	0.10	0.10	0.00
Mercury	(µg / l as Hg)	< 1	14	0.40	0.40	0.40	0.40	0.40	0.00
Nickel	(µg / l as Ni)	< 150	14	5.00	5.00	5.00	5.00	5.00	0.00
Selenium	(µg / l as Se)	< 20	14	0.78	1.45	3.88	6.31	7.60	2.43
Vanadium	(µg / l as V)	< 200	14	5.00	5.00	5.00	5.00	5.00	0.00
Macro Elements & Miscellaneous Determinants									
Aluminium	(mg / l as Al)	< 0.3	14	0.013	0.013	0.013	0.013	0.013	0.000
Ammonia	(mg / l as N)	< 1	17	0.050	0.105	0.180	0.254	0.270	0.075
Calcium	(mg / l as Ca)	< 150	14	16.000	16.580	18.071	19.563	21.000	1.492
Chloride	(mg / l as Cl)	< 200	14	10.000	10.141	11.357	12.573	14.000	1.216
Copper	(mg / l as Cu)	< 1	14	0.005	0.005	0.017	0.032	0.045	0.014
Fluoride	(mg / l as F)	< 1	14	0.075	0.112	0.162	0.212	0.220	0.050
Iron	(mg / l as Fe)	< 0.2	14	0.003	0.004	0.012	0.020	0.028	0.008
Magnesium	(mg / l as Mg)	< 70	14	6.500	6.850	7.236	7.600	7.600	0.386
Manganese	(mg / l as Mn)	< 0.1	14	0.005	0.005	0.005	0.005	0.005	0.000
Nitrate & Nitrite	(mg / l as N)	< 10	17	0.110	0.134	0.203	0.272	0.350	0.069
Potassium	(mg / l as K)	< 50	14	2.400	2.615	2.793	2.970	3.000	0.177
Sodium	(mg / l as Na)	< 200	14	8.700	9.586	10.436	11.000	11.000	0.850
Sulphate	(mg / l as SO4)	< 400	14	13.000	13.000	14.500	16.675	19.000	2.175
Zinc	(mg / l as Zn)	< 5	14	0.008	0.008	0.009	0.012	0.017	0.003
Microbiological									
E. Coli	(cfu per 100 ml)	minimum of 95% of the original results shall be non-detected	23	0.0	0.0	0.0	0.0	0.0	0.0
Other Determinants as required by supply contract (3),(4)									
Free chlorine and monochloramine	(mg / l)	Chloraminated system: ≥ 0.1 min 95% compliance; Chlorinated system: ≥ 0.2 min 95% compliance	23	1.07	1.10	1.31	1.52	1.71	0.21

Notes :
(1) Specification date of effect : July 2006
(2) Guideline derived from SANS 241: 2005 operations alert and industry practices

Report compiled by Mighty Mohotsi
Water Quality Information Management