



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

23 March 2021 to 21 April 2021

Date generated: 14 May 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                        | 333           | 99.0%   | 100%  | 0                      | 0.00               | 0                       |
| Total Coliforms                                | (mpn per 100 mL)               | Operational    | ≤ 10                              | 333           | 95.0%   | 99.10%  | 1                      | 5.96               | 18                      |
| Heterotrophic Plate Count                      | (cfu per 1 mL)                 | Operational    | ≤ 1000                            | 333           | 95.0%   | 100%  | 8                      | 29.49              | 97                      |
| <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                        | 79            | 95.0%   | 100%  | 0                      | 0.00               | 0                       |
| <b>Physical and Aesthetic determinands</b>     |                                |                |                                   |               |   |   |                        |                    |                         |
| Colour   | (mg / L as Pt-Co)              | Aesthetic      | ≤ 15                              | 26            | 95.0%   | 100%  | 10.81                  | 3.16               | 20.30                   |
| Conductivity                                   | (mS / m)                       | Aesthetic      | ≤ 170                             | 207           | 95.0%   | 100%  | 23.93                  | 2.54               | 31.55                   |
| Total Dissolved Solids                         | (mg / L)                       | Aesthetic      | ≤ 1200                            | 33            | 95.0%   | 100%  | 168.18                 | 22.84              | 236.70                  |
| Turbidity                                      | (NTU)                          | Operational    | ≤ 1                               | 225           | 95.0%   | 99.11%  | 0.37                   | 0.17               | 0.87                    |
| Turbidity                                      | (NTU)                          | Aesthetic      | ≤ 5                               | 225           | 95.0%   | 100%  | 0.37                   | 0.17               | 0.87                    |
| pH   | (pH units)                     | Operational    | ≥ 5 to ≤ 9.7                      | 207           | 95.0%   | 100%  | 7.84                   | 0.16               | 8.33                    |
| <b>Chemical Properties: Macro determinands</b> |                                |                |                                   |               |   |   |                        |                    |                         |
| Ammonia  | (mg / L as N)                  | Aesthetic      | ≤ 1.5                             | 203           | 95.0%   | 100%  | 0.25                   | 0.18               | 0.78                    |
| Chloride                                       | (mg / L as Cl)                 | Aesthetic      | ≤ 300                             | 23            | 95.0%   | 100%  | 17.35                  | 1.72               | 22.51                   |
| Free chlorine                                  | (mg / L as Cl <sub>2</sub> )   | Chronic health | ≤ 5                               | 333           | 97.0%   | 100%  | 0.09                   | 0.04               | 0.23                    |
| Monochloramine                                 | (mg / L as Cl <sub>2</sub> )   | Chronic health | ≤ 4.1                             | 289           | 97.0%   | 100%  | 1.39                   | 0.66               | 3.36                    |
| Fluoride                                       | (mg / L as F)                  | Chronic health | ≤ 1.5                             | 23            | 97.0%   | 100%  | 0.42                   | 0.05               | 0.58                    |
| Nitrate  | (mg / L as N)                  | Acute health   | ≤ 11                              | 200           | 99.0%   | 100%  | 0.85                   | 0.22               | 1.51                    |
| Nitrite  | (mg / L as N)                  | Acute health   | ≤ 0.9                             | 200           | 99.0%   | 100%  | 0.07                   | 0.09               | 0.33                    |
| Combined nitrate plus nitrite (3)              | (mg / L as N)                  | Acute health   | ≤ 1                               | 183           | 99.0%   | 100%  | 0.16                   | 0.10               | 0.46                    |
| Residual disinfectant (4)                      | (mg / L as Cl <sub>2</sub> )   | Operational    | ≥ (0.1 and 0.2)                   | 333           | 95.0%   | 80.78%  | 1.28                   | 0.78               | 3.62                    |
| Sodium   | (mg / L as Na)                 | Aesthetic      | ≤ 200                             | 25            | 95.0%   | 100%  | 6.80                   | 0.44               | 8.14                    |
| Sulphate                                       | (mg / L as SO <sub>4</sub> )   | Aesthetic      | ≤ 250                             | 23            | 95.0%   | 100%  | 19.61                  | 1.23               | 23.31                   |
| Sulphate                                       | (mg / L as SO <sub>4</sub> )   | Acute health   | ≤ 500                             | 23            | 99.0%   | 100%  | 19.61                  | 1.23               | 23.31                   |
| Zinc   | (mg / L as Zn)                 | Aesthetic      | ≤ 5                               | 17            | 95.0%   | 100%  | 0.09                   | 0.03               | 0.18                    |
| <b>Chemical Properties: Micro determinands</b> |                                |                |                                   |               |   |   |                        |                    |                         |
| Aluminium                                      | (µg / L as Al)                 | Operational    | ≤ 300                             | 25            | 95.0%   | 100%  | 11.03                  | 10.18              | 41.57                   |
| Antimony                                       | (µg / L as Sb)                 | Chronic health | ≤ 20                              | 26            | 97.0%   | 100%  | 0.36                   | 0.12               | 0.72                    |
| Arsenic  | (µg / L as As)                 | Chronic health | ≤ 10                              | 25            | 97.0%   | 100%  | 0.75                   | 0.17               | 1.25                    |
| Barium   | (µg / L as Ba)                 | Chronic health | ≤ 700                             | 25            | 97.0%   | 100%  | 41.56                  | 4.85               | 56.11                   |
| Boron  | (µg / L as B)                  | Chronic health | ≤ 2400                            | 25            | 97.0%   | 100%  | 3.64                   | 2.64               | 11.57                   |
| Cadmium  | (µg / L as Cd)                 | Chronic health | ≤ 3                               | 25            | 97.0%   | 100%  | 1.00                   | 0.00               | 1.00                    |
| Chromium (Total)                               | (µg / L as Cr)                 | Chronic health | ≤ 50                              | 25            | 97.0%   | 100%  | 0.25                   | 0.11               | 0.58                    |
| Copper   | (µg / L as Cu)                 | Chronic health | ≤ 2000                            | 25            | 97.0%   | 100%  | 3.22                   | 2.89               | 11.89                   |
| Cyanide (Recoverable)                          | (µg / L as CN)                 | Acute health   | ≤ 200                             | 26            | 99.0%   | 100%  | 5.02                   | 0.12               | 5.38                    |
| Iron   | (µg / L as Fe)                 | Chronic health | ≤ 2000                            | 25            | 97.0%   | 100%  | 26.24                  | 34.16              | 128.71                  |
| Iron   | (µg / L as Fe)                 | Aesthetic      | ≤ 300                             | 25            | 95.0%   | 100%  | 26.24                  | 34.16              | 128.71                  |
| Lead   | (µg / L as Pb)                 | Chronic health | ≤ 10                              | 25            | 97.0%   | 100%  | 2.00                   | 0.00               | 2.00                    |
| Manganese                                      | (µg / L as Mn)                 | Chronic health | ≤ 400                             | 25            | 97.0%   | 100%  | 1.78                   | 0.93               | 4.58                    |
| Manganese                                      | (µg / L as Mn)                 | Aesthetic      | ≤ 100                             | 25            | 95.0%   | 100%  | 1.78                   | 0.93               | 4.58                    |
| Mercury  | (µg / L as Hg)                 | Chronic health | ≤ 6                               | 25            | 97.0%   | 100%  | 0.77                   | 0.14               | 1.19                    |
| Nickel   | (µg / L as Ni)                 | Chronic health | ≤ 70                              | 25            | 97.0%   | 100%  | 1.10                   | 0.87               | 3.72                    |
| Selenium                                       | (µg / L as Se)                 | Chronic health | ≤ 40                              | 25            | 97.0%   | 100%  | 4.00                   | 0.00               | 4.00                    |
| Uranium  | (µg / L as U)                  | Chronic health | ≤ 30                              | 26            | 97.0%   | 100%  | 0.18                   | 0.16               | 0.66                    |
| <b>Organic determinands</b>                    |                                |                |                                   |               |   |   |                        |                    |                         |
| Total Organic Carbon                           | (mg / L)                       | Chronic health | ≤ 10                              | 26            | 97.0%   | 100%  | 5.14                   | 0.61               | 6.96                    |
| Phenols as C <sub>6</sub> H <sub>5</sub> OH    | (µg / L)                       | Aesthetic      | ≤ 10                              | 25            | 95.0%   | 100%  | 2.56                   | 0.17               | 3.06                    |
| Chloroform - CHCl <sub>3</sub>                 | (µg / L)                       | Chronic health | ≤ 300                             | 26            | 97.0%   | 100%  | 85.81                  | 11.67              | 120.82                  |
| Bromoform - CHBr <sub>3</sub>                  | (µg / L)                       | Chronic health | ≤ 100                             | 26            | 97.0%   | 100%  | 10.00                  | 0.00               | 10.00                   |
| Dibromochloromethane - CHBr <sub>2</sub> Cl    | (µg / L)                       | Chronic health | ≤ 100                             | 26            | 97.0%   | 100%  | 10.00                  | 0.00               | 10.00                   |
| Bromodichloromethane - CHBrCl <sub>2</sub>     | (µg / L)                       | Chronic health | ≤ 60                              | 26            | 97.0%   | 100%  | 18.77                  | 2.50               | 26.28                   |
| Combined trihalomethanes (5)                   | (µg / L)                       | Chronic health | ≤ 1                               | 26            | 97.0%   | 100%  | 0.61                   | 0.07               | 0.84                    |
| Total Microcystin (2)                          | (µg / L)                       | Chronic health | ≤ 1                               | 24            | 97.0%   | 100%  | 0.31                   | 0.00               | 0.31                    |
| <b>For monitoring/reporting purposes only</b>  |                                |                |                                   |               |   |   |                        |                    |                         |
| Calcium (6)                                    | (mg / L as Ca)                 | Aesthetic      | ≤ 150                             | 25            | not applicable                                | 100%  | 11.34                  | 1.54               | 15.95                   |
| Hardness (7)                                   | (mg / L as CaCO <sub>3</sub> ) | Operational    | ≥ 20 to ≤ 200                     | 25            | not applicable                                | 100%  | 46.80                  | 4.39               | 59.96                   |
| Magnesium (6)                                  | (mg / L as Mg)                 | Aesthetic      | ≤ 70                              | 25            | not applicable                                | 100%  | 4.54                   | 0.32               | 5.48                    |
| Potassium (6)                                  | (mg / L as K)                  | Aesthetic      | ≤ 50                              | 25            | not applicable                                | 100%  | 2.43                   | 0.23               | 3.13                    |
| <b>Rand Water Risk Determinands (RWRD) (6)</b> |                                |                |                                   |               |   |   |                        |                    |                         |
| Odour  | TON                            | RWRD           | ≤ 2                               | 48            | not applicable                                | 100%  | 1.00                   | 0.00               | 1.00                    |
| Taste  | FTN                            | RWRD           | ≤ 2                               | 48            | 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%   | 95.50%  |

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\*\*\*\*