



LEADERS IN ENVIRONMENTAL MONITORING



**ORGANISATION UNDOING TAX
ABUSE (OUTA)**

BATCH 70364 – WEEK 2

HAMAANSKRAAL

WATER QUALITY REPORT

25 JULY 2019

Compiled by Aquatico Scientific

**10TH FLOOR
OKEEFFE AND SWARTZ BUILDING
318 OAK AVENUE**

ATTENTION: ORGANISATION UNDOING TAX ABUSE

25 JULY 2019

CONCISE WATER QUALITY EVALUATION
(TEST REPORT 71797)

WATER QUALITY RESULTS

A water sample was submitted to Aquatico Laboratories on **19 July 2019** for testing the quality for intended use as domestic water. The water quality test results are displayed on the attached Test Report. Water quality is compared to the SANS 241-1:2015 Drinking Water Standard (SABS, 2015).

Table 1. Sampling Register

SAMPLING REGISTER : WEEKLY							
SAMPLER NAME:				Emanuel Mathebula			
Hammanskraal Potable water							
Locality	Description	Coordinates		Sample Time	Status	Remarks	Lab no
		Latitude	Longitude				
Monitoring Localities							
Hammanskraal Magalies Water	Magalies Water supply in Hammanskraal	S25.28381	E28.27420	2019-07-19 13:15	Yes	CLEAR	29125

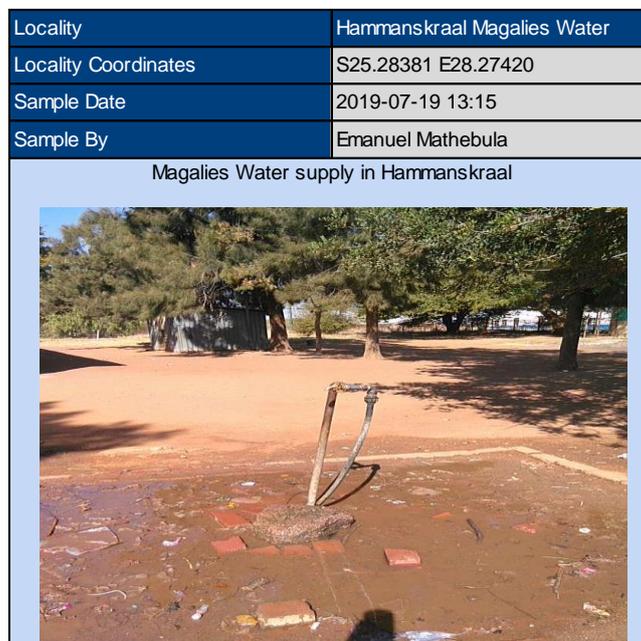


Figure 1. Photographic Catalogue of sampling locality



DATA TABLE

CLIENT NAME	Organisation Undoing Tax Abuse	DATE COMPILED	2019-07-25	
ASSESSMENT SET	SANS 241-1:2015 Drinking Water Standard (SABS, 2015)	COMPILED BY	Ian Belford	
<i>*Value exceeds the assessment set</i>				
VARIABLE	UNITS	ASSESSMENT SET	SAMPLE NAME : Hammanskraal Magalies Water	POSSIBLE HEALTH EFFECTS
pH @ 25°C	pH	Range 5.0 - 9.7	7.48	No health effects
Electrical conductivity (EC) @ 25°C	mS/m	170	195	Slight possibility of salt overload in sensitive groups
Total Dissolved solids @ 180°C	mg/l	1200	1112	
Chloride (Cl)	mg/l	300	323	Increasing health risks to sensitive users
Sulphate (SO ₄)	mg/l	500	49.2	No effects
Nitrate (NO ₃) as N	mg/l	11	24.7	Possible chronic risk to some babies
Nitrite (NO ₂) as N	mg/l	0.9	0.099	
Ammonium (NH ₄) as N	mg/l	1.5	0.059	
Ammonia (NH ₃) as N	mg/l	-	<0.015	
Fluoride (F)	mg/l	1.5	<0.466	
Acid Soluble Sodium (Na)	mg/l	-	133	Insignificant effects
Acid Soluble Aluminium (Al)	mg/l	0.3	<0.005	
Acid Soluble Iron (Fe)	mg/l	0.3	<0.009	
Acid Soluble Manganese (Mn)	mg/l	0.1	<0.001	
Acid Soluble Chromium (Cr)	mg/l	0.05	<0.007	
Acid Soluble Copper (Cu)	mg/l	2	0.022	No health effects
Acid Soluble Nickel (Ni)	mg/l	0.07	<0.005	
Acid Soluble Zinc (Zn)	mg/l	5	0.005	No effects
Acid Soluble Cadmium (Cd)	mg/l	0.003	<0.005	
E.coli	CFU/100 ml	0	32	Clinical infections common
Total coliform	CFU/100 ml	10	35	Clinical infections unlikely
TotalViableCount	CFU/ml	1000	135	
Turbidity	NTU	1	0.269	Slight risk of potential health effects
Free chlorine (Cl ₂)	mg/l	5	<0.1	
Total organic carbon (TOC)	mg/l	10	1.88	
Temperature	°C	-	20.1	
Total oxidised nitrogen	mg/l	-	24.80	
Monochloramine	mg/l	3	0.12	

The water quality of the sample called '**Hammanskraal Magalies Water**' can be described as neutral (pH 6.0 - 8.5), non-saline (TDS < 450 mg/l) and very hard (total hardness > 300 CaCO₃) with E.coli and total coliforms detected.

Compliance with the 'SANS 241-1:2015 Drinking Water Standard (SABS, 2015)' guidelines is as follows:

Chronic health Risk: All compliant
Acute health Risk: NO₃-N 24.7 mg/l (> 11.0 mg/l), E.coli 32 CFU/100ml (> 0 CFU/100ml)
Operational (non-health): Total coliforms 35 CFU/100ml (> 10 CFU/100ml)
Aesthetic (non-health): EC 195 mS/m (> 170 mS/m), Cl 323 mg/l (> 300 mg/l)

In terms of the classification system of the 'Quality of Domestic water supplies' (WRC,1998) the quality is classified as follows :

Drinking:	Class 3 - Poor	due to NO ₃ -N, E.coli
Bathing:	Class 3 - Poor	due to E.coli
Washing:	Class 2 - Marginal	due to Cl
Food Preparation:	Class 3 - Poor	due to NO ₃ -N, E.coli
Aesthetic:	Class 2 - Marginal	due to EC, Cl

Based on the assessment of variables analysed in comparison to 'SANS 241-1:2015 Drinking Water Standard (SABS, 2015)' and 'Quality of Domestic water supplies' (WRC, 1998), the tested water sample is **Not Fit** for use as potable water and domestic use.

Treatment for intended use: ~~Optional~~, ~~Recommended~~, **Essential**

Variables requiring treatment: NO₃-N, E.coli, EC, Cl, Total coliforms

Test Report

Page 1 of 2

Client: Organisation Undoing Tax Abuse
Address: 10th Floor, Okeeffe and Swartz Building, 318 Oak Avenue, Ferndale, Randburg
Report no: 71797
Project: Hammanskraal Potable water

Date of certificate: 25 July 2019
Date accepted: 19 July 2019
Date completed: 25 July 2019
Date received: 19 July 2019

Lab no:				29125
Date sampled:				19-Jul-19
Aquatico sampled:				Yes
Sample type:				Water
Locality description:				Hammanskraal Magalies Water
Analyses	Unit	Method		
A pH @ 25°C	pH	ALM 20		7.48
A Electrical conductivity (EC) @ 25°C	mS/m	ALM 20		195
A Total Dissolved solids @ 180°C	mg/l	ALM 24		1112
A Chloride (Cl)	mg/l	ALM 02		323
A Sulphate (SO ₄)	mg/l	ALM 03		49.2
A Nitrate (NO ₃) as N	mg/l	ALM 06		24.7
A Nitrite (NO ₂) as N	mg/l	ALM 07		0.099
A Ammonium (NH ₄) as N	mg/l	ALM 05		0.059
N Ammonia (NH ₃) as N	mg/l	ALM 26		<0.005
A Fluoride (F)	mg/l	ALM 08		0.378
A Acid Soluble Sodium (Na)	mg/l	ALM 30		133
A Acid Soluble Aluminium (Al)	mg/l	ALM 31		<0.002
A Acid Soluble Iron (Fe)	mg/l	ALM 31		<0.004
A Acid Soluble Manganese (Mn)	mg/l	ALM 31		<0.001
A Acid Soluble Chromium (Cr)	mg/l	ALM 31		<0.003
A Acid Soluble Copper (Cu)	mg/l	ALM 31		0.022
A Acid Soluble Nickel (Ni)	mg/l	ALM 31		<0.002
A Acid Soluble Zinc (Zn)	mg/l	ALM 31		0.005
A Acid Soluble Cadmium (Cd)	mg/l	ALM 31		<0.002
A E.coli	CFU/100ml	ALM 40		32
A Total coliform	CFU/100ml	ALM 40		35
A TotalViableCount	CFU/ml	ALM 43		135
A Turbidity	NTU	ALM 21		0.269
N Free chlorine (Cl ₂)	mg/l	ALM 23		<0.10
A Total organic carbon (TOC)	mg/l	ALM 63		1.88
N Temperature	°C	ALM 20		20.1
N Total oxidised nitrogen	mg/l	ALM 26		24.80
N Monochloramine	mg/l	ALM 67		0.12

A = Accredited N = Non accredited Out = Outsourced Sub = Sub-contracted NR = Not requested RTF = Results to follow NATD = Not able to determine ATR = Alternative test report ; The results relates only to the test item tested; Results reported against the limit of detection; Results marked 'Non SANAS Accredited' in this report are not included in the SANAS Schedule of Accreditation for this laboratory; Uncertainty of measurement available on request for all methods included in the SANAS Schedule of Accreditation; The report shall not be reproduced except in full without approval of the laboratory

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Lab no:	29125		
Date sampled:	19-Jul-19		
Aquatico sampled:	Yes		
Sample type:	Water		
Locality description:	Hammanskraal Magalies Water		
Analyses	Unit	Method	
N Combined Nitrate plus Nitrite	ratio	ALM 26	2.4

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