



LEADERS IN ENVIRONMENTAL MONITORING



**ORGANISATION UNDOING TAX
ABUSE (OUTA)**

BATCH 70364 – WEEK 1

HAMAANSKRAAL

WATER QUALITY REPORT

17 JULY 2019

Compiled by Aquatico Scientific

10TH FLOOR
 OKEEFFE AND SWARTZ BUILDING
 318 OAK AVENUE

ATTENTION: ORGANISATION UNDOING TAX ABUSE

17 JULY 2019

WATER QUALITY EVALUATION
(TEST REPORT 70364)

WATER QUALITY RESULTS

A water sample was submitted to Aquatico Laboratories on **5 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:				Phillip Makhuvela			
Hammanskraal Potable water							
Locality	Description	Coordinates		Sample Time	Status	Remarks	Lab no
		Latitude	Longitude				
Monitoring Localities							
Hammanskraal Magalies Water	Magalies Water supply in Hammanskraal	S25.40363	E28.28801	2019-07-05 11:29	Yes	HAMMANSKRAAL METRO POLICE REGIONAL OFFICE REGION 2	25373

Locality	Hammanskraal Magalies Water
Locality Coordinates	S25.40363 E28.28801
Sample Date	2019-07-05 11:29
Sample By	Phillip Makhuvela
Magalies Water supply in Hammanskraal	
	

Figure 1: Photographic Monitoring Catalogue of sampling location in Hamaanskraal.

DATA TABLE				
CLIENT NAME	Organisation Undoing Tax Abuse	DATE COMPILED	2019-07-17	
ASSESSMENT SET	SANS 241-1:2015 Drinking Water Standard (SABS, 2015)	COMPILED BY	Ian Belford	
*Value exceeds the assessment set				
VARIABLE	UNITS	ASSESSMENT SET	SAMPLE NAME : Hammanskraal Magalies Water	POSSIBLE HEALTH EFFECTS
pH @ 25°C	pH	Range 5.0 - 9.7	7.07	No health effects
Electrical conductivity (EC) @ 25°C	mS/m	170	79.1	Insignificant effect on sensitive users
Total Dissolved solids @ 180°C	mg/l	1200	394	
Chloride (Cl)	mg/l	300	80.1	No health effects
Sulphate (SO ₄)	mg/l	500	65.5	No effects
Nitrate (NO ₃) as N	mg/l	11	16.4	Slight chronic risk to some babies
Nitrite (NO ₂) as N	mg/l	0.9	3.94	
Ammonium (NH ₄) as N	mg/l	1.5	1.38	
Ammonia (NH ₃) as N	mg/l	-	<0.015	
Fluoride (F)	mg/l	1.5	<0.466	
Acid Soluble Sodium (Na)	mg/l	-	71.0	Negligible effects
Acid Soluble Aluminium (Al)	mg/l	0.3	0.043	
Acid Soluble Iron (Fe)	mg/l	0.3	0.134	No effects
Acid Soluble Manganese (Mn)	mg/l	0.1	0.100	Negligible effects
Acid Soluble Chromium (Cr)	mg/l	0.05	<0.007	
Acid Soluble Copper (Cu)	mg/l	2	0.011	No health effects
Acid Soluble Nickel (Ni)	mg/l	0.07	<0.005	
Acid Soluble Zinc (Zn)	mg/l	5	0.039	No effects
Acid Soluble Cadmium (Cd)	mg/l	0.003	<0.005	
E.coli	CFU/100 ml	0	0	
Total coliform	CFU/100 ml	10	0	
TotalViableCount	CFU/ml	1000	8720	
Turbidity	NTU	1	2.36	Possibility of secondary health effects
Free chlorine (Cl ₂)	mg/l	5	<0.1	
Total organic carbon (TOC)	mg/l	10	9.80	
Temperature	°C	-	19.1	
Total oxidised nitrogen	mg/l	-	20.38	
Monochloramine	mg/l	3	0.06	

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 moderately hard (total hardness 150 - 200 CaCO₃) with no E.coli and no 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 16.4 mg/l (> 11.0 mg/l), NO₂-N 3.94 mg/l (> 0.900 mg/l)

Operational (non-health): TVC Spiral 8720 CFU/ml (> 1000 CFU/ml), Turbidity 2.36 NTU (> 1.00 NTU)

Aesthetic (non-health): All compliant

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

Drinking:	Class 2 - Marginal	due to NO ₃ -N, Turbidity
Bathing:	Class 1 - Good	
Washing:	Class 1 - Good	
Food Preparation:	Class 2 - Marginal	due to NO ₃ -N, Turbidity
Aesthetic:	Class 2 - Marginal	due to Turbidity

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, Turbidity, NO₂-N, TVC Spiral, Turbidity

Test Report

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Client: Organisation Undoing Tax Abuse
Address: 10th Floor, Okeeffe and Swartz Building, 318 Oak Avenue, Ferndale, Randburg
Report no: 70364
Project: Hammanskraal Potable water

Date of certificate: 11 July 2019
Date accepted: 05 July 2019
Date completed: 11 July 2019
Date received: 05 July 2019

Lab no:				25373
Date sampled:				05-Jul-19
Aquatico sampled:				Yes
Sample type:				Water
Locality description:				Hammanskraal Magalies Water
Analyses	Unit	Method		
A pH @ 25°C	pH	ALM 20		7.07
A Electrical conductivity (EC) @ 25°C	mS/m	ALM 20		79.1
A Total Dissolved solids @ 180°C	mg/l	ALM 24		394
A Chloride (Cl)	mg/l	ALM 02		80.1
A Sulphate (SO ₄)	mg/l	ALM 03		65.5
A Nitrate (NO ₃) as N	mg/l	ALM 06		16.4
A Nitrite (NO ₂) as N	mg/l	ALM 07		3.94
A Ammonium (NH ₄) as N	mg/l	ALM 05		1.38
N Ammonia (NH ₃) as N	mg/l	ALM 26		0.007
A Fluoride (F)	mg/l	ALM 08		0.427
A Acid Soluble Sodium (Na)	mg/l	ALM 30		71.0
A Acid Soluble Aluminium (Al)	mg/l	ALM 31		0.043
A Acid Soluble Iron (Fe)	mg/l	ALM 31		0.134
A Acid Soluble Manganese (Mn)	mg/l	ALM 31		0.100
A Acid Soluble Chromium (Cr)	mg/l	ALM 31		<0.003
A Acid Soluble Copper (Cu)	mg/l	ALM 31		0.011
A Acid Soluble Nickel (Ni)	mg/l	ALM 31		<0.002
A Acid Soluble Zinc (Zn)	mg/l	ALM 31		0.039
A Acid Soluble Cadmium (Cd)	mg/l	ALM 31		<0.002
A E.coli	CFU/100ml	ALM 40		<1
A Total coliform	CFU/100ml	ALM 40		<1
A TotalViableCount	CFU/ml	ALM 43		8720
A Turbidity	NTU	ALM 21		2.36
N Free chlorine (Cl ₂)	mg/l	ALM 23		<0.10
A Total organic carbon (TOC)	mg/l	ALM 63		9.80
N Temperature	°C	ALM 20		19.1
N Total oxidised nitrogen	mg/l	ALM 26		20.38
N Monochloramine	mg/l	ALM 67		0.06

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:	25373		
Date sampled:	05-Jul-19		
Aquatico sampled:	Yes		
Sample type:	Water		
Locality description:	Hammanskraal Magalies Water		
Analyses	Unit	Method	
N Combined Nitrate plus Nitrite	ratio	ALM 26	5.9

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