

Institute for Groundwater Studies

IGS Laboratory Services
 University of the Free State
 * 339, BLOEMFONTEIN, 9300
 (+27-(0)51 - 401 2317
 7 : +27-(0)51 - 444 6538 e-mail: igslab@ufs.ac.za



Test Report

Client: Mohokare Municipality
Contact: Moshe Fobane
Delivered by: Moshe Fobane & Malcolm on 30 June 2010
Reference: ORD 02998 (80778)
Date received: 30 June 2010

Determinand	Sample number: Lab number: Units	SANS 241:2006 specifications	FXMMSM-002 Water Treatment final	FXMMRX-004 Role le a Thunya Library	FXMMRX-005 Municipal Office	FXMMRX-006 Distribution	FXMMSM-004 Distribution	FXMMSM-002 Water Treatment Final	FXMMSM-003 Mofulatshepe Clinic	FXMMSM-004 Distribution	FXMMSM-010 Hospital	FXMMSM-011 Municipal Office	FXMMZN-002 Water Treatment Final	FXMMRX-007 Matlakeng clinic	FXMMZN-004 Municipal Office	FXMMZN-008 Distribution	FXMMZN-007 Wastewater Tap
		M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13	M14	M15	
		value	Value	Value	Value	Value	Value	Value	Value	Value	Value	Value	Value	Value	Value	Value	Value
Colour (true)	mg/L Pt	20 - 50	3	8	6	5	8	12	10	10	8	8	8	3	4	7	4
Turbidity	NTU	1 - 5	0.24	6.82	4.25	3.46	0.67	2.95	0.55	5.74	0.84	0.74	0.68	6.38	1.00	0.53	0.41
Dissolved solids	mg/L		171	194	194	193	181	192	179	194	180	185	189	190	190	188	187
Odour	TON	5 - 10	1.0	1.4	1.4	1.4	1.4	1.4	1.0	1.0	1.0	1.0	1.4	1.0	1.0	1.0	1.0
Ammonia as N	mg/L	1 - 2	0.089	0.092	0.116	0.113	0.108	0.101	0.090	0.082	0.169	0.111	0.115	0.090	0.104	0.083	0.112
pH		5 - 9.5	7.50	7.70	7.46	7.64	7.55	7.82	7.57	8.05	7.63	7.55	7.16	7.39	7.36	7.16	7.43
Electrical conductivity	mS/m	150 - 370	48.5	27.4	27.0	26.8	24.5	26.7	24.5	37.2	24.1	24.5	28.6	28.3	28.3	29.3	29.3
Calcium as Ca	mg/L	150 - 300	24.9	24.1	24.1	24.5	25.9	24.1	25.7	24.2	25.5	26.7	17.3	17.4	17.1	17.3	17.2
Magnesium as Mg	mg/L	70 - 100	9.1	9.0	9.0	9.1	9.5	9.1	9.4	8.9	9.3	9.8	10.0	9.6	10.0	9.9	9.7
Sodium as Na	mg/L	200 - 400	13.8	16.2	16.9	16.7	14.7	16.6	14.5	17.1	14.3	14.9	23.9	23.6	23.8	23.5	22.8
Potassium as K	mg/L	50 - 100	2.4	9.2	9.2	9.5	2.4	9.2	2.3	9.2	2.3	2.5	8.5	8.0	8.3	8.4	8.1
Total Alkalinity	mg/L		95.0	97.1	94.7	95.5	102.0	95.8	102.0	95.7	103.0	105.0	89.9	91.8	90.6	90.9	91.1
Fluoride as F	mg/L	1 - 1.5	0.15	0.14	0.18	0.15	0.18	0.15	0.16	0.15	0.21	0.16	0.17	0.19	0.22	0.19	0.21
Chloride as Cl	mg/L	200 - 600	10.1	20.1	21.1	19.6	10.6	19.5	10.5	20.1	10.3	10.5	24.6	24.7	25.2	24.3	24.3
Nitrate & Nitrite as N	mg/L	10 - 20	0.4	0.8	0.8	0.7	0.4	0.7	0.3	0.8	0.4	0.4	0.6	0.6	0.6	0.6	0.6
Sulfate as SO4	mg/L	400 - 600	14.0	14.8	15.1	14.6	13.6	14.5	13.5	15.3	13.5	14.1	11.5	11.6	11.7	11.2	11.4
Aluminium as Al	mg/L	0.3 - 0.5	0.013	0.024	0.019	0.023	0.014	0.018	0.013	0.022	0.013	0.014	0.010	0.051	0.043	0.030	0.023
Antimony as Sb	mg/L	0.01 - 0.05	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Arsenic as As	mg/L	0.01 - 0.05	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Cadmium as Cd	mg/L	0.005 - 0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total Chromium as Cr	mg/L	0.1 - 0.5	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Cobalt as Co	mg/L	0.5 - 1.0	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Copper as Cu	mg/L	1 - 2	0.004	0.006	0.005	0.005	0.005	0.004	0.003	0.004	0.010	0.004	0.004	0.005	0.008	0.004	0.006
Cyanide (free) as CN	mg/L	0.05 - 0.07	0.004	0.005	0.010	0.005	0.006	0.005	0.008	0.004	0.002	0.002	0.003	0.004	<0.002	0.003	0.002
Iron as Fe	mg/L	0.2 - 2.0	0.013	0.010	0.011	0.013	0.012	0.014	0.013	0.011	0.011	0.012	0.010	0.029	0.033	0.018	0.016
Lead as Pb	mg/L	0.02 - 0.05	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Manganese as Mn	mg/L	0.1 - 1.0	0.001	0.004	0.002	0.002	0.002	0.003	0.003	0.004	0.003	0.003	0.003	0.001	0.002	0.003	0.001
Mercury as Hg	mg/L	0.001 - 0.005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Nickel as Ni	mg/L	0.15 - 0.35	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Selenium as Se	mg/L	0.02 - 0.05	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Vanadium as V	mg/L	0.2 - 0.5	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Zinc as Zn	mg/L	5 - 10	0.019	0.013	0.029	0.039	0.024	0.018	0.015	0.014	0.024	0.022	0.012	0.031	0.136	0.009	0.016
Dissolved organic carbon as C	mg/L	10 - 20	1.82	4.32	4.16	4.55	1.45	3.47	1.79	4.48	2.02	1.71	5.98	5.79	6.16	5.26	6.00
Trihalomethanes:	mg/L	0.2 - 0.3	0.026	0.06	0.056	0.048	0.024	0.055	0.030	0.060	0.027	0.028	0.049	0.045	0.039	0.053	0.053
CHCl3	mg/L		0.010	0.026	0.024	0.024	0.010	0.026	0.012	0.030	0.009	0.011	0.025	0.024	0.022	0.028	0.031
CHBrCl2	mg/L		0.011	0.024	0.022	0.016	0.009	0.020	0.011	0.020	0.010	0.010	0.017	0.015	0.012	0.019	0.015
CHBr2Cl	mg/L		0.005	0.008	0.008	0.007	0.005	0.008	0.006	0.008	0.006	0.006	0.006	0.006	0.005	0.006	0.006
CHBr3	mg/L		<0.001	0.002	0.002	0.001	<0.001	0.001	0.001	0.002	0.002	0.001	<0.001	<0.001	<0.001	<0.001	0.001
Phenols (total)	mg/L	0.01 - 0.07	0.004	0.004	0.004	0.003	0.006	0.006	<0.003	<0.003	0.003	0.003	<0.003	0.003	0.004	<0.003	0.004
Heterotrophic plate count	cfu/ml	100	0	7	3	4	1	0	0	1	0	0	0	0	0	1	3
Total coliforms	cfu/100ml	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0
E.coli	cfu/100ml	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Chemistry note: to follow - Parameters higher than specifications, are clearly **marked**.

Bacterial note: Parameters higher than specifications are clearly **indicated**.

Signed:
 L Cruywagen (Head: Laboratory)

Date issued: 2 August 2010

This report relates only to the samples supplied to the Laboratory at the Institute for Groundwater Studies