

CERTIFICATE OF ANALYSES

GENERAL WATER QUALITY PARAMETERS

Date received: 2018-08-15

Date completed: 2018-09-13

Project number: 1000

Report number: 76568

Order number:

Client name: Optimum Holdings

Contact person: Mr. D. Georgiades

Address: 6 Velling Place, Wapadrand,

e-mail: david@optimumholdings.co.za

Telephone: 082 445 3902

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Mobile: 082 445 3902

Analyses in mg/ℓ (Unless specified otherwise)	Method Identification	Risk	SANS 241 : 2015 Limits	Sample Identification		
				Control	Treated	
Sample Number				037794	037795	
Date/Time Sampled				N/A	N/A	
pH - Value @ 25 °C	A	WLAB065	Operational	≥5 to ≤ 9.7	8.1	7.3
Electrical Conductivity in mS/m @ 25°C	A	WLAB002	Aesthetic	≤170	37.8	42.7
Total Dissolved Solids @ 180°C	A	WLAB003	Aesthetic	≤1200	236	304
Colour in PtCo Units	N	WLAB006	Aesthetic	≤15	24↓	6
Turbidity in N.T.U	A	WLAB005	Operational/Aesthetic	≤1 / ≤5	46↓	0.4
Free Residual Chlorine as Cl ₂	N	WLAB036	Chronic health	≤5	0.1	0.8
Monochloramine	N	WLAB036	Chronic health	≤3	<0.1	0.6
Total Alkalinity as CaCO ₃	A	WLAB007	---	---	160	108
Langeller Index at 25°C	A	WLAB053	---	---	0.4	-0.6
Chloride as Cl	A	WLAB046	Aesthetic	≤300	19	54
Sulphate as SO ₄	A	WLAB046	Acute health/Aesthetic	≤500 / ≤250	26	27
Fluoride as F	A	WLAB014	Chronic health	≤1.5	0.4	0.2
Nitrate as N	A	WLAB046	Acute health	≤11	0.3	0.4
Nitrite as N	A	WLAB046	Acute health	≤0.9	<0.05	<0.05
Combined Nitrate & Nitrite	A	WLAB046	Acute health	≤1	0.1	0.1
Free Cyanide as CN (µg/l)	N	WLAB056	Acute health	≤200	<10	<10
Total Organic Carbon as C	N	WLAB060	Chronic health	≤10	3.5	7.2
Phenols (µg/l)	N	WLAB041	Aesthetic	≤10	<10	<10
Microcystin as LR (µg/ℓ)	S	---	Chronic health	≤1	<0.15	<0.15
Chloroform as CHCl ₃ (µg/l)	N	WLAB059	Chronic health	≤300	<10	10
Bromoform as CHBr ₃ (µg/l)	N	WLAB059	Chronic health	≤100	<10	<10
Dibromochloromethane as CHBr ₂ Cl (µg/l)	N	WLAB059	Chronic health	≤100	<10	<10
Bromodichloromethane as CHBrCl ₂ (µg/l)	N	WLAB059	Chronic health	≤60	<10	<10
Combined Trihalomethanes	N	WLAB059	Chronic health	≤1	<0.10	<0.10
Total Coliform Bacteria / (100 ml)	A	WLAB021	Operational	≤10	1400↓	0
E. coli / (100 ml)	A	WLAB021	Acute health	Not detected	3↓	0
Heterotrophic Plate Count / (1 ml)	A	WLAB021	Operational	≤1 000	250	<10
Cryptosporidium species / (10 ℓ)	S	---	Acute health	Not detected	0	0
Giardia species / (10 ℓ)	S	---	Acute health	Not detected	0	0
Somatic Coliphages / (10 ml)	S	---	Operational	Not detected	0	0
Free and Saline Ammonia as N	A	WLAB046	Aesthetic	≤1.5	0.4	0.4



A. van de Wetering - Chemical Technical Signatory



N. Ntuli - Microbiological Technical Signatory

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Sample condition acceptable unless specified on the report.

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				Control	Treated	
Sample Number				037794	037795	
Date/Time Sampled				N/A	N/A	
Sodium as Na	A	WLAB015	Aesthetic	≤200	13	16
Potassium as K	A	WLAB015	---	---	3.4	3.5
Calcium as Ca	A	WLAB015	---	---	38	39
Magnesium as Mg	A	WLAB015	---	---	17	18
Aluminium as Al (µg/l)	A	WLAB015	Operational	≤300	639↓	213
Antimony as Sb (µg/l)	A	WLAB050	Chronic health	≤20	<1	<1
Arsenic as As (µg/l)	A	WLAB050	Chronic health	≤10	1	1
Barium as Ba (µg/l)	A	WLAB015	Chronic health	≤700	124	104
Boron as B (µg/l)	A	WLAB015	Chronic health	≤2400	<25	<25
Cadmium as Cd (µg/l)	A	WLAB015	Chronic health	≤3	<3	<3
Total Chromium as Cr (µg/l)	A	WLAB015	Chronic health	≤50	<25	<25
Copper as Cu (µg/l)	A	WLAB015	Chronic health	≤2000	<10	<10
Iron as Fe (µg/l)	A	WLAB015	Chronic health/Aesthetic	≤ 2000 / ≤300	553↓	<25
Lead as Pb (µg/l)	A	WLAB015	Chronic health	≤10	<10	<10
Manganese as Mn (µg/l)	A	WLAB015	Chronic health/Aesthetic	≤ 400 / ≤100	176↓	<25
Mercury as Hg (µg/l)	N	WLAB047	Chronic health	≤6	<1	3
Nickel as Ni (µg/l)	A	WLAB015	Chronic health	≤70	<25	<25
Selenium as Se (µg/l)	A	WLAB050	Chronic health	≤40	<1	<1
Uranium as U (µg/l)	A	WLAB050	Chronic health	≤ 30	1	<1
Zinc as Zn	A	WLAB015	Aesthetic	≤5	<0.025	<0.025
% Balancing	N	---	---	---	95.8	99.5



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Information regarding accredited analyses

Analysis	Method Identification	Reporting limit	Average Uncertainty
pH Value	WLAB001	0.6	21%
Electrical Conductivity	WLAB002	0.1 mS/m	7%
Total Alkalinity	WLAB007	5 mg/L	10%
Chemical Oxygen Demand	WLAB018	10 mg/L	16%
Sulphate	WLAB046	2 mg/L	14%
Free & Saline Ammonia	WLAB046	0.1 mg/L	14%
Nitrate	WLAB046	0.1 mg/L	6.2%
Nitrite	WLAB046	0.05 mg/L	10%
Ortho Phosphate	WLAB046	0.1 mg/L	26%
Chloride	WLAB046	2 mg/L	10%
Fluoride	WLAB014	0.2 mg/L	7%
Turbidity	WLAB005	0.1 NTU	8%
Sodium	WLAB015	2 mg/L	13%
Potassium	WLAB015	1.0 mg/L	7.3%
Calcium	WLAB015	2 mg/L	7.8%
Magnesium	WLAB015	2 mg/L	8.0%
Aluminium	WLAB015	0.100 mg/L	7.2%
Cadmium	WLAB015	0.005 mg/L	9.1%
Cobalt	WLAB015	0.025 mg/L	4.6%
Chromium	WLAB015	0.025 mg/L	6.8%
Copper	WLAB015	0.025 mg/L	36%
Iron	WLAB015	0.025 mg/L	3.8%
Manganese	WLAB015	0.025 mg/L	4.4%
Nickel	WLAB015	0.025 mg/L	14%
Lead	WLAB015	0.010 mg/L	7.7%
Zinc	WLAB015	0.025 mg/L	23%
Total Coliform Bacteria	WLAB021	0 CFU/100 mL	6.1%
E. coli	WLAB021	0 CFU/100 mL	23%



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