APPENDIX 1 : SPECIFIC METHODS USED FOR THE ANALYSES OF PARAMETERS INDICATED IN THIS REPORT

ALA Method No.	Parameter	Method	Limit of Detection
45	Acidity (mg/l)	STD Method 2310 B (1992)	-
94	Alkalinity (mg/l as $CaCO_3$) *	Discrete Analyzer using the Gallery	11
N/A	Algae Identification and Count (per ml)	*(Outsourced)*	-
92	Aluminium (µg/l as Al) *	Based on SANS 11885:2008 (ICP)	12
92a	Aluminium (µg/l as Al) *	Based on SANS 11885:2008 (ICP)	12
3	Ammonia (mg/l as N) *	STD Method 4500-NH_3:C (1992)	0.15
95	Ammonia (mg/l as N) *	Discrete Analyzer using the Gallery	0.10
92	Antimony (µg/l as Sb) *	Based on SANS 11885:2008 (ICP)	10
92a	Antimony (µg/l as Sb) *	Based on SANS 11885:2008 (ICP)	10
92	Arsenic (µg/l as As) *	Based on SANS 11885:2008 (ICP)	10
92a	Arsenic (µg/l as As) *	Based on SANS 11885:2008 (ICP)	10
92	Barium (µg/l) *	Based on SANS 11885:2008 (ICP)	5
92a	Barium (µg/l) *	Based on SANS 11885:2008 (ICP)	5
92	Beryllium µg/l as Be) *	Based on SANS 11885:2008 (ICP)	1
92a	Beryllium µg/l as Be) *	Based on SANS 11885:2008 (ICP)	1
Calc	Bicarbonate (mg/l)	Calculation	-
N/A	Biochemical Oxygen Demand (mg/l O_2)	*(Outsourced)*	-
47	Boron (mg/l as B)	Discrete Analyzer using the Gallery	0.10
92a	Boron (µg/l as B)	Based on SANS 11885:2008 (ICP)	7
N/A	Bromine (mg/l as Br)	*(Outsourced)*	1.0
N/A	Bromide (mg/l as Br-)	*(Outsourced)*	-
92	Cadmium (µg/l as Cd) *	Based on SANS 11885:2008 (ICP)	1
92a	Cadmium (µg/l as Cd) *	Based on SANS 11885:2008 (ICP)	1
92	Calcium (mg/l as Ca) *	Based on SANS 11885:2008 (ICP)	1
92a	Calcium (mg/l as Ca) *	Based on SANS 11885:2008 (ICP)	1
Calc	Calcium (meq/l as Ca)	Calculation	-
Calc	Calcium Carbonate Precipitation Potential	Calculation	0.01
Calc	Calcium Hardness	Calculation	-
Calc	Carbonate (mg/l)	Calculation	-
2	Chemical Oxygen Demand (mg/l) *	SANS 6048	8
Calc	Chloride (meq/l as Cl^-)	Calculation	-
25	Chloride (mg/l as Cl) *	SABS 202	1.0
96	Chloride (mg/l as Cl) *	Discrete Analyzer using the Gallery	1.0
69	Chlorine Demand (mg/l)	STD Method 2350 B (1992)	-
N/A	Chlorophyll-a (µg/l)	*(Outsourced)*	-
N/A	Clostridium Perfringens (cfu/100 ml)	*(Outsourced)*	-
92	Cobalt (µg/l as Co) *	Based on SANS 11885:2008 (ICP)	14
92a	Cobalt (µg/l as Co) *	Based on SANS 11885:2008 (ICP)	14
N/A	Colony Count (cfu/ml)	*(Outsourced)*	-
97	Colour (mg/l as Pt) *	Discrete Analyzer using the Gallery	4
Calc.	Combined Nitrate & Nitrate (mg/l as N)	Calculation	-
Calc.	Combined Trihalomethanes	Calculation	-
Calc	Corrosivity Ratio	Calculation	-
9	Electrical Conductivity (mS/m) (at 25 °C) *	STD Method 2501 A (1992)	0.32
92	Copper (µg/l as Cu) *	Based on SANS 11885:2008 (ICP)	6
92a	Copper (µg/l as Cu) *	Based on SANS 11885:2008 (ICP)	6
N/A	Cryptosporidium (per 10 litres)	*(Outsourced)*	-
5	Cyanide (µg/l as CN^-)	Discrete Analyzer using the Gallery	20
N/A	Cytopathic Viruses (count per 10 litres)	*(Outsourced)*	-
105	Dissolved Organic Carbon (mg/l as C)	Hach 101029	1.0
68	Dissolved Oxygen (mg/l)	STD Method 4500 O-G	1
78	Dissolved Solids (mg/l)	STD Method 2501 A (1992)	-
84	E.coli (count per 100 ml) *	Colilert - 18 / Quanti-Tray Method	1
87	Enterococci (count per 100 ml) *	Enterolert-24 / Quanti-Tray Method	1
86	Faecal Coliforms (count per 100 ml) *	Colilert - 18 / Quanti-Tray Method	1
N/A	Faecal Streptococcus (count per 100 ml) *	*(Outsourced)*	-
N/A	Formaldehyde	*(Outsourced)*	-
29	Fluoride (mg/l as F) *	Hach 8029	0.10

ALA Method No.	Parameter	Method	Limit of Detection
98	Fluoride (mg/l as F) *	Discrete Analyzer using the Gallery	0.10
66	Free Chlorine (mg/l)	Lovibond Method 3	0.05
N/A	Giardia (per 10 litres)	*(Outsourced)*	-
N/A	Helminth Ova (Total & Viable) (per 4 g dry weight)	*(Outsourced)*	-
88	Heterotrophic Plate Count (count per ml) *	Petrifilm ™ Aqua	1
88	Heterotrophic Plate Count (count per ml) *	MC-Media Pad	1
N/A	Hexavalent Chromium (mg/l)	Hach 8023	1.0
N/A	Hydrocarbons	*(Outsourced)*	-
46	Hydrogen Sulphide (mg/l)	Hach 8051	1.0
92	Iron (µg/l as Fe) *	Based on SANS 11885:2008 (ICP)	24
92a	Iron (µg/l as Fe) *	Based on SANS 11885:2008 (ICP)	24
Calc	Langelier Saturation Index (at 25 °C)	Calculation	Calc
92	Lead (µg/l as Pb) *	Based on SANS 11885:2008 (ICP)	7
92a	Lead (µg/l as Pb) *	Based on SANS 11885:2008 (ICP)	7
N/A	Legionella (cfu/l)	*(Outsourced)*	-
92a	Lithium (mg/l as Li)	Based on SANS 11885:2008 (ICP)	5
N/A	Listeria Monocytogenes (per 100 ml)	*(Outsourced)*	-
Calc	Magnesium (meq/l as Mg)	Calculation	-
92	Manganese (µg/l as Mn) *	Based on SANS 11885:2008 (ICP)	19
92a	Manganese (µg/l as Mn) *	Based on SANS 11885:2008 (ICP)	19
92	Magnesium (mg/l as Mg) *	Based on SANS 11885:2008 (ICP)	1.1
92a	Magnesium (mg/l as Mg) *	Based on SANS 11885:2008 (ICP)	1.1
Calc	Magnesium Hardness	Calculation	-
92	Mercury (µg/l as Hg)	Based on SANS 11885:2008 (ICP)	5
N/A	Monochloramine (mg/l)	Lovibond Method	-
92	Molybdenum (µg/l as Mo) *	Based on SANS 11885:2008 (ICP)	91
92a	Molybdenum (µg/l as Mo) *	Based on SANS 11885:2008 (ICP)	5
N/A	Mould (cfu/100 ml)	(Outsourced)	-
92	Nickel (µg/l as Ni) *	Based on SANS 11885:2008 (ICP)	6
92a	Nickel (µg/l as Ni) *	Based on SANS 11885:2008 (ICP)	6
4A	Nitrate Nitrogen (mg/l as N) *	Hach 8039 *(Applicable to Sewage Analysis)*	0.20
4B	Nitrate & Nitrite Nitrogen (mg/l as N) *	Lovibond Method using Brucine *(Applicable to Water Analysis)*	0.20
100	Nitrate Nitrogen (mg/l as N) *	Discrete Analyzer using the Gallery	0.20
5	Nitrite Nitrogen (mg/l as N) *	Lovibond (Griess-Ilosvay's Reagent)	0.08
99	Nitrite Nitrogen (mg/l as N) *	Discrete Analyzer using the Gallery	0.20
Calc	Nitrate Nitrogen (mg/l as N) *	Calculation	-
18	Oil & Grease (mg/l)	SABS 1051 (Nov. 1982)	1
76	Odour (Threshold Odour Number)	STD Method 2150 (B)	1
N/A	Organochlorine Pesticides (OCP)	*(Outsourced)*	-
N/A	Organophosphorus Pesticides (OPP)	*(Outsourced)*	-
10	Ortho Phosphate (mg/l as P) *	Hach 8114	0.20
101	Ortho Phosphate (mg/l as P) *	Discrete Analyzer using the Gallery	0.10
1	Oxygen Absorbed (mg/l as O)	SANS 5220 : 2005	-
N/A	Pesticides (µg/kg)	*(Outsourced)*	-
Calc	Potassium (meq/l as K)	Calculation	-
92a	Potassium (mg/l as K)	Based on SANS 11885:2008 (ICP)	1
N/A	Pseudomonas Aeroginosa (cfu/100 ml)	*(Outsourced)*	-
19	pH (at 25 °C) – Lab *	SABS 11	2.00
19	pH (at 25 °C) – Field	SABS 11	-
Calc	pHs (at 25 °C)	Calculation	-
52	Phenols (mg/l)	Discrete Analyzer using the Gallery	0.01
N/A	Polychlorinated Biphenyls (PCB's)	*(Outsourced)*	-
92	Potassium (mg/l as K) *	Based on SANS 11885:2008 (ICP)	0.32
Calc	Ryznar Index	Calculation	-
N/A	Salmonella (per 100 ml)	*(Outsourced)*	-
92	Selenium (µg/l as Se) *	Based on SANS 11885:2008 (ICP)	10
92a	Selenium (µg/l as Se) *	Based on SANS 11885:2008 (ICP)	10
67	Settleable Solids (ml/l)	STD Method 2540 F (1992)	0.10
N/A	Shingella (per 100 ml)	*(Outsourced)*	-
Cal	Silica (mg/l) *	Calculation	0.06

ALA Method No.	Parameter	Method	Limit of Detection
92	Silicon (µg/l)	Based on SANAS 11885:2008 (ICP)	27
92a	Silicon (µg/l)	Based on SANAS 11885:2008 (ICP)	5
Calc.	Silica (µg/l) *	Calculation	58
Calc	% Sodium	Calculation	-
Calc	Sodium Absorption Ratio	Calculation	-
Calc	Sodium (meq/l as Na)	Calculation	-
92	Sodium (mg/l as Na) *	Based on SANS 11885:2008 (ICP)	0.36
92a	Sodium (mg/l as Na) *	Based on SANS 11885:2008 (ICP)	1
Calc	% Solids	Calculation	-
N/A	Somatic Coliphages (count per 10 ml)	Fast Phage Somatic Presence/Absence	-
92	Strontium (mg/l) *	Based on SANS 11885:2008 (ICP)	4
92a	Strontium (mg/l) *	Based on SANS 11885:2008 (ICP)	4
24	Sulphate (mg/l as SO_4) *	Hach 8051	4
102	Sulphate (mg/l as SO_4) *	Discrete Analyzer using the Gallery	1.0
46	Sulphide (mg/l as S^{2-})	STD Method 4500-S^2D (1992)	-
N/A	Taste	*(Outsourced)*	-
92	Tin (µg/l as Sn) *	Based on SANS 11885:2008 (ICP)	10
92a	Tin (µg/l as Sn) *	Based on SANS 11885:2008 (ICP)	10
92	Titanium (mg/l as Ti)	*(Outsourced)*	-
92a	Titanium (µg/l as Ti)	Based on SANS 11885:2008 (ICP)	5
28	Total Alkalinity (mg/l as $CaCO_3$)	STD Methods 2320 (1992)	1
Calc	Total Carbonate Species (mg/l)	Calculation	-
66	Total Chlorine	Lovibond Method 3	0.05
92	Total Chromium (µg/l as Cr) *	Based on SANS 11885:2008 (ICP)	7
92a	Total Chromium (µg/l as Cr) *	Based on SANS 11885:2008 (ICP)	7
85	Total Coliforms Bacteria (count per 100 ml) *	Colilert - 18 / Quanti-Tray Method	-
7	Total Dissolved Solids	STD Method 2501 A (1992)	1
Calc	Total Hardness (mg/l as $CaCO_3$)	Calculation	1
15	Total Kjeldahl Nitrogen (mg/l)	Hach 8075	0.15
N/A	Total Microcystin (µg/l as LR)	Algal Toxin Strip Test	-
105	Total Organic Carbon (mg/l as C)	Hach 10128	1.0
N/A	Total Petroleum Hydrocarbons (TPH)	*(Outsourced)*	-
11	Total Phosphate (mg/l as P)	STD Method 4500-PB (1992) / Hach 8114	0.20
13	Total Plate Count (count per ml) *	Petrifilm ™	1
N/A	Total Trihalomethanese (µg/l)	Gas Chromatography	-
N/A	Trihalomethane (Chloroform)	Gas Chromatography	-
N/A	Trihalomethane (Bromodichloromethane)	Gas Chromatography	-
N/A	Trihalomethane (Dibromochloromethane)	Gas Chromatography	-
N/A	Trihalomethane (Bromoform)	Gas Chromatography	-
27	Turbidity (NTU) *	Hach 8237	0.08
6A	Total Suspended Solids (mg/l) *	STD Method 2540 D (1992)	4
N/A	TOX (mg/l)	(Outsourced)	-
92	Uranium (µg/l as U)	Based on SANS 11885:2008 (ICP)	15
92a	Uranium (µg/l as U)	Based on SANS 11885:2008 (ICP)	5
N/A	UV Absorption (nm)	*(Outsourced)*	-
92	Vanadium (µg/l as V) *	Based on SANS 11885:2008 (ICP)	139
92a	Vanadium (µg/l as V) *	Based on SANS 11885:2008 (ICP)	5
N/A	Viable Helminths	*(Outsourced)*	-
N/A	Vibrio Cholerae (per 100 ml)	*(Outsourced)*	-
17	Volatile Fatty Acids (mg/l)	Hach 8196	-
Calc	Volatile Fraction (%)	Calculation	-
68	Volatile Suspended Solids (mg/l)	STD Method 2540 E (1992)	4
N/A	Yeast (cfu/100 ml)	(Outsourced)	-
92	Zinc (mg/l as Zn) *	Based on SANS 11885:2008 (ICP)	0.001
92a	Zinc (µg/l as Zn) *	Based on SANS 11885:2008 (ICP)	5

NOTE : ***Tests marked "SANAS Accredited" in this report and are included in the SANAS Schedule of Accreditation for this laboratory. Schedule of Accreditation excludes Sampling**
All bacteriological analyses carried out by Colilert Method unless otherwise indicated on the Certificate of Analysis.
Uncertainty of Measurement and Method Descriptions will be provided upon request.