APPENDIX E: SUITABLE TECHNIQUES FOR THE PRESERVATION, STORAGE AND TRANSPORTING OF SAMPLES (ADAPTED FROM SWANEPOEL ET AL., 2008)

Parameter to be analysed	Type of container	Preservation technique	Maximum recommended preservation time before analysis	Transport condition	Comments
Chemical analysis - Major inorganics (e.g. NH_3, NO_2, NO_3, Total Nitrogen, SO_4, PO_4, Total Alkalinity, pH, TDS, F, K, etc.)	Glass, plastic or polyethylene bottles (minimum 350 mℓ, but preferably 1 ℓ)	None, or alternatively $HgCl_2$	24 hours	Transport on crushed or cubed ice (4°C)	• Samples should be submitted to laboratory as soon as possible following collection. • Sampled should be analysed within 7 days following collection
Chemical analysis - Minor inorganics (B, Al, V, Cr, Mn, Fe, Ni, Cu, Zn, As, Sr, Mo, Cd, Ba, Pb, etc.)	Glass or polyethylene bottles (100 mℓ)	HNO_3	24 hours	Transport on crushed or cubed ice (4°C)	• Samples should be submitted to laboratory as soon as possible following collection. • Sampled should be analysed within 7 days following collection
Biological Oxygen Demand (BOD) and Chemical Oxygen Demand (COD)	Glass or polyethylene bottles (500 mℓ)	None	24 hours	Transport on crushed or cubed ice (4°C)	• Samples should be submitted to laboratory as soon as possible following collection. • Sampled should be analysed within 7 days following collection
Pesticides and algaecides	Brown glass bottle (500 mℓ)	None	24 hours	Transport on crushed or cubed ice (4°C)	• Samples should be submitted to laboratory as soon as possible following collection. • Sampled should be analysed within 7 days following collection
Biological (Faecal coliforms, total coliforms, *E. coli*)	Sterilized glass or polyethylene bottles (1 ℓ)	• Preserve with Sodium Thiosulfate • Store on crushed or cubed ice, or in refrigerator (4°C)	24 hours	Transport on crushed or cubed ice (4°C)	• Samples should be analysed within 6 hours following collection if not cooled, or within 24 hours if cooled
Phytoplankton and cyanobacteria identification	Brown glass or polyethylene bottle (100 mℓ)	None	Within 8 hours	Cool to < 8°C and keep in the dark	• Samples should be kept in the dark especially if clear sample bottles are used. • Analysis should be conducted as soon as possible following sample collection
		2 mℓ 40% formaldehyde in 100 mℓ	Up to 2 years	Cool to < 8°C and keep in the dark	• Samples should be preserved as soon as possible after collection.
Cyanotoxins	Brown glass or polyethylene bottle (100 mℓ)	None	Within 8 hours	Cool to < 8°C and keep in the dark	• Samples should be kept in the dark especially if clear sample bottles are used. • Analysis should be conducted as soon as possible following sample collection
		Sample can be frozen and kept in the dark	7 days after sampling and store in dark	Cool to < 8°C and keep in the dark	• Analysis should be conducted as soon as possible following sample collection
Toxicity	Glass or polyethylene bottles (2ℓ)	Store on crushed or cubed ice, or in refrigerator	48 hours	Cool to < 8°C (preferably at 4°C) and keep in the dark	• Samples should be analysed as soon as possible after collection