

EVALUATION OF MEASUREMENT UNCERTAINTY (MU)

SGS INDUSTRIES & ENVIROMENT, ENVIRONMENTAL TESTING:

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Evaluation of measurement uncertainty (MU) was calculated at the 95% confidence interval, coverage factor $k = 2$ using batch control sample results. The following MU values are derived from as mentioned batch control samples ranging from 10 to 100 times the limit of reporting (LOR). As analyte results decrease and approach the LOR, estimated MU will increase. At concentrations $< 5 \times \text{LOR}$, MU will be reported as the LOR concentration. i/s indicates insufficient data for MU Evaluation.

Microbiological measurement uncertainty (MU) is evaluated by analysis of client unknowns and PT samples by a minimum of two analysts and calculated from the standard deviation of the reproducibility of the final results which is then used to evaluate the uncertainty associated with the method.

Last Reivew Date: 16/04/2025

Method Number	Method Description	Test/Analyte	Water
			Relative MU % unless otherwise stated
AN101	pH soil sludge sed water	pH	0.2 pH units
AN106	Conductivity and TDS by Calculation	Conductivity	5.1
AN109	Colour Pt/Co Hazen makeup spectrophotometric	True Colour	12.6
AN113	Total Dissolved Solids	Total Dissolved Solids (TDS)	14
	Total Solids	Total Solids (TS)	12.2
AN114	Total Suspended Solids	Total Suspended Solids (TSS)	15.4
AN119	Turbidity	Turbidity 200	8.0
AN135	Alkalinity in Aqueous Solution (Total Alk)	Total Alkalinity	12.0
AN141	Fluoride (ion selective)	Fluoride	6.8
AN144	Chlorine free and total DPD (colourmetric)	Total Chlorine	13.8
AN178	COD by Vis Colourimetric	Chemical Oxygen Demand	8.8
AN183	BOD	Biochemical Oxygen Demand	13.4
AN319	Metals/Elements in Water/Solution by MP-AES	Acid Soluble Al	8.5
		Total Al	9.0
		Total Na	8.2
		Total K	6.1
		Total Ca	9.3
		Total Mg	7.3
		Total Fe	13.2
		Total Mn	8.6
AN701	Heterotrophic (Std or Total) Plate Count- Pour Plate Technique	Heterotrophic Plate Count	0.10 log ₁₀ cfu/mL
AN735	E.coli and Faecal Coliforms by Colilert-18 (Defined Substrate Technology)	Coliforms	0.14 log ₁₀ MPN/100mL
		E. coli	0.24 log ₁₀ MPN/100mL
		Thermotolerant coliforms	0.32 log ₁₀ MPN/100mL
AN736	Total Legionella	Legionella	0.41 log ₁₀ org/mL
AN900 & AN906	Sampling of Water & Wastewater	Sampling	3.5

