



## **EVALUATION OF MEASUREMENT UNCERTAINTY (MU)**

### **SGS INDUSTRIES & ENVIROMENT, ENVIRONMENTAL TESTING: TRARALGON LABORATORY, VIC**

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

< 5xLOR, 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 cleint 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.

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	8.3
AN109	Colour Pt/Co Hazen makeup spectrophotometric	Colour	6.1
AN113	Total Dissolved Solids	TDS @ 180°C	9.2
AN113	Total Solids	TS	13.5
AN114	Total Suspended Solids	TSS	21.8
AN119	Turbidity	Turbidity	7.3
AN126	Chloride in Water Colourimetric UV-Vis (Gippsland)	Chloride	16.6
AN132	Sulfate Turbidimetric UV-Vis	Sulfate	23.4
AN135	Alkalinity in Aqueous Solution (Total as CaCO <sub>3</sub> )	Total Alkalinity	15.9
AN140	Acidity	Acidity	18.3
AN141	Fluoride (ion selective)	Fluoride	9.9
AN160	Reactive Phosphorus by UV-Vis	FRP	11.4
AN166	Nitrite by UV Vis	Nitrite as N	22.4
AN197	Reactive Silica UV-Vis	Silica	13.3
AN240	Redox Potential (Eh)	Redox Potential	3.9
AN165	Nitrate by UV Vis	Nitrate as N	8.8
AN172	Ammonium by UV Vis	Ammonium as N	9.7
AN503	Deposit Gauge Dust Deposition	AS3580.10	
		Total Insoluble Solids	6.9
		Total Soluble Solids	13.4
AN701	Heterotrophic (Std or Total) Plate Count-Pour Plate Technique	Heterotrophic Plate Count	0.38 log <sub>10</sub> org/mL
AN735	E.coli and Faecal Coliforms by Colilert-18 (Defined Substrate Technology)	Coliforms	0.66 log <sub>10</sub> MPN/100mL
		E. coli	0.32 log <sub>10</sub> MPN/100mL
		Faecal coliforms	0.20 log <sub>10</sub> MPN/100mL
AN736	Legionella spp	Legionella	0.29 log <sub>10</sub> org/mL
AN750	Enterolert Test Kit Enterococci	Enterococci	0.10 log <sub>10</sub> MPN/100mL