

METHOD STATEMENT

Determinand:

Determination of Suspended and Ashed Suspended solids including Settled Suspended Solids (1 hour), Part Settled Suspended Solids (30 minutes) and Neutralised (~pH 7) Suspended Solids

Matrix:

Sample Type: Final effluents, trade discharges and crude sewage samples

Principle of Method:

Suspended matter is removed from a measured volume of sample by filtration under reduced pressure through a pre-treated, pre-weighed glass fibre filter paper and determined gravimetrically after washing and drying at $105 \pm 5^\circ\text{C}$. If ashed suspended solids are required, this is followed by ignition at 450°C and weighing the residue.

The sample may be pre-treated by settling the solids for 1 hour and adjusting the pH between 6.5-7.5 (see method WWC4).

Interferences:

Interferences can occur when substances such as oil or dissolved solids are erroneously counted as suspended solids.

Performance of Method:

Range of Application:

2.4 mg/l upwards

Normal reporting level is 2.4mg/l.

Limit of Detection:

2.384 mg/l.

The statistically obtained limit of detection was generated using 200mls of sample. If a smaller volume is used the reporting limit should be adjusted accordingly.

Recoveries of Compounds

Suspended solids

	Low Standard	High Standard	Final Eff	Final Low Spike	Trade	Trade Low Spike	Crude	Crude Low Spike
Concentration mg/l	33.1	463.5	2.0	33.4	10.0	32.8	360.4	930.0
Total Standard Deviation, mg/l	1.8	25.5	0.8	2.4	1.8	1.9	21.3	48.0
Recovery %	94.6	92.7	-	94.9	-	87.7	-	91.9

Ashed Solids

	AQC	Final	Trade	Crude
Ash mg/l	18555.46	-0.14	0.89	79.46
RSD mg/l	1235.00	0.94	0.88	6.58

Note: As the majority of the suspended solids within the samples were volatile at 450°C , the ashed solids results approximate to 0.0mg/l, giving artificially high %RSD values during validation testing. The absolute standard deviation for the samples were all below 5mg/l and as ashed solids is the residue from the volatile suspended matter, the performance of both methods are fundamentally linked



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Uncertainty of measurement:

$\pm 20.7\%$

References:

Suspended, Settleable, and Total Dissolved Solids in Waters and Effluents 1980.

Methods for the Examination of Waters and Associated Materials. HMSO. ISBN 011 751957 x.

Wakefield Solids Instrument Interfacing Manual (Version 1.0)

