

METHOD STATEMENT



Determinand:

Preparation of Samples for Filtered and Total Metals Analysis.

This preparation is suitable for the analysis of Cadmium, Chromium, Copper, Lead, Nickel, Zinc, Iron, Manganese, Aluminium, Calcium, Magnesium, Sodium, Potassium, Lithium, Strontium, Barium, Bismuth, Boron, Beryllium, Cobalt, Vanadium, Tin, Molybdenum, Titanium, Zirconium, Thallium, Silver, Phosphorus, Arsenic, Selenium, Antimony, Tellurium and Uranium.

Matrix:

Effluents, Leachates, Untreated Sewage, Groundwaters and Wastewaters.

Principle of Method:

Filtered Metals:-

The samples are filtered through a 0.45 µm filter prior to pre treatment. Internal standard is added during preparation in order to compensate for matrix effects during analysis. Pre treatment also ensures that the sample is in the correct matrix. The sample can be analysed using various spectroscopic methods, including ICP-OES and ICP-MS.

Total Metals:-

The pre-treatment ensures that any metals present in suspended or colloidal forms are converted to the soluble form. Internal standard is added during preparation in order to compensate for matrix effects during analysis. The sample can be analysed using various spectroscopic methods, including ICP-OES and ICP-MS.

Sampling and Sample Preparation:

Samples requiring metals analysis are collected from a 1 litre PET bottle.

Interferences:

Full dissolution of samples with high silica content can prove difficult.

References:

Methods for the examination of Waters and Associated Materials, Cadmium, Chromium, Copper, Lead, Nickel and Zinc in sewage sludges by Nitric Acid/AAS1981. ISBN. 011 7516155.

